

**SAF-RC-048**  
**100 Area and 300 Area Component of the**  
**RCBRA Water Sampling**  
**FINAL VALIDATION PACKAGE**

COMPLETE COPY OF VALIDATION PACKAGE TO:

Jeanette Duncan (2) H9-02

*JD* *07/06/06*  
INITIAL/DATE

COMMENTS:

**SDG K0205      SAF-RC-048**

**Sample Location/Waste Site:**

- Cr. 3 Surface Water**
- Cr. 4 Pore Water/Surface Water**
- Cr. 5 Pore Water/Surface Water**
- Cr. 6 Pore Water/Surface Water**
- Cr. 6 Vertical Tube**
- Cr. 10 Pore Water/Surface Water**
- Cr. 7 Pore Water/Surface Water**

**RECEIVED**  
JUL 13 2006  
**EDMC**

Date: 7 June 2006  
To: Washington Closure Hanford (technical representative)  
From: TechLaw, Inc.  
Project: 100 Area and 300 Area Component of the RCBRA Water Sampling  
Subject: Semivolatile - Data Package No. K0205-LLI

## INTRODUCTION

This memo presents the results of data validation on Data Package No. K0205 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J112X3	2/1/06	Water	C	See note 1
J112X9	2/1/06	Water	C	See note 1
J112F9	2/1/06	Water	C	See note 1
J11250	2/1/06	Water	C	See note 1
J112C3	2/1/06	Water	C	See note 1
J112F6	2/1/06	Water	C	See note 1
J11247	2/1/06	Water	C	See note 1
J11238	1/29/06	Water	C	See note 1
J11232	1/29/06	Water	C	See note 1
J11239	1/29/06	Water	C	See note 1
J11279	1/29/06	Water	C	See note 1
J11245	1/29/06	Water	C	See note 1

1 - Semivolatiles by 8270C, gasoline range organics (GRO) and diesel range organics (DRO) by 8015B.

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

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## DATA QUALITY OBJECTIVES

### • Holding Times

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.

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".

All holding times were met.

### • Method Blanks

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

Due to method blank contamination, the bis(2-ethylhexyl)phthalate results in all samples 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.

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· **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 a matrix spike recovery outside QC limits (17%), all 4-chloroaniline results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike or matrix spike duplicate analysis, the TPH-G result in samples J11250, J112C3, J112F6, J11247, J11279 and J11245 were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all 4-chloroaniline (5%), acenaphthylene (47%) and 3-nitroaniline (7%) results in samples were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

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

All surrogate results were acceptable.

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· **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 an RPD outside QC limits (131%), all 4-chloroaniline results were qualified as estimates and flagged "J".

Due to an RPD outside QC limits (95%), all 3-nitroaniline results were qualified as estimates and flagged "J".

Due to an RPD outside QC limits (41%), all 2,4-dinitrophenol results were qualified as estimates and flagged "J".

Due to an RPD outside QC limits (184%), all 3,3-dichlorobenzidine results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike or matrix spike duplicate analysis, the TPH-G result in samples J11250, J112C3, J112F6, J11247, J11279 and J11245 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 met the RQL.

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• **Completeness**

Data package No. K0205 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

**MAJOR DEFICIENCIES**

None found.

**MINOR DEFICIENCIES**

The following minor deficiencies were noted:

- Due to method blank contamination, the bis(2-ethylhexyl)phthalate results in all samples were qualified as undetected, raised to the RQL and flagged "U".
- Due to a matrix spike recovery outside QC limits (17%), all 4-chloroaniline results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike or matrix spike duplicate analysis, the TPH-G result in samples J11250, J112C3, J112F6, J11247, J11279 and J11245 were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits, all 4-chloroaniline (5%), acenaphthylene (47%) and 3-nitroaniline (7%) results in samples were qualified as estimates and flagged "J".
- Due to an RPD outside QC limits (131%), all 4-chloroaniline results were qualified as estimates and flagged "J".
- Due to an RPD outside QC limits (95%), all 3-nitroaniline results were qualified as estimates and flagged "J".
- Due to an RPD outside QC limits (41%), all 2,4-dinitrophenol results were qualified as estimates and flagged "J".
- Due to an RPD outside QC limits (184%), all 3,3-dichlorobenzidine results were qualified as estimates and flagged "J".

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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*.

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**Appendix 1**  
**Glossary of Data Reporting Qualifiers**

**000007**

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).

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**Appendix 2**  
**Summary of Data Qualification**

**000009**

SEMIVOLATILE DATA QUALIFICATION SUMMARY\*

SDG: K0205	REVIEWER: TL	Project: RCBRA	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Bis(2-ethylhexyl)phthalate	U at RQL	All	Blank contamination
4-Chloroaniline	J	All	MS recovery
Gasoline range organics	J	J11250, J112C3 J112F6, J11247 J11279, J11245	No MS/MSD
4-Chloroaniline Acenaphthylene 3-Nitroaniline	J	All	LCS recovery
4-Chloroaniline 3-Nitroaniline 2,4-Dinitrophenol 3,3-Dichlorobenzidine	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.

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**Appendix 3**

**Qualified Data Summary and Annotated Laboratory Reports**

**000011**



Project: WASHINGTON CLOSURE HANFORD																				
Laboratory: LLI										SDG: K0188										
Sample Number		J112X3		J112X9		J112F9		J11250		J112C3		J112F6		J11247		J11238		J11232		
Remarks																				
Sample Date		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		1/29/06		1/29/06		
Extraction Date		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		
Analysis Date		2/8/06		2/9/06		2/9/06		2/9/06		2/9/06		2/9/06		2/9/06		2/8/06		2/8/06		
Semivolatile (8270C)		RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
3-Nitroaniline			26 UJ		26 UJ		26 UJ		25 UJ		25 UJ		26 UJ		25 UJ		26 UJ		25 UJ	
Acenaphthene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
2,4-Dinitrophenol			26 UJ		26 UJ		26 UJ		25 UJ		25 UJ		26 UJ		25 UJ		26 UJ		25 UJ	
4-Nitrophenol			26 U		26 U		26 U		25 U		25 U		26 U		25 U		26 U		25 U	
Dibenzofuran	330		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
2,4-Dinitrotoluene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Diethylphthalate			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
4-Chlorophenyl-phenyl ether			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Fluorene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
4-Nitroaniline			26 U		26 U		26 U		25 U		25 U		26 U		25 U		26 U		25 U	
4,6-Dinitro-2-methylphenol			26 U		26 U		26 U		25 U		25 U		26 U		25 U		26 U		25 U	
N-Nitrosodiphenylamine			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
4-Bromophenyl-phenyl ether			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Hexachlorobenzene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Pentachlorophenol	330		26 U		26 U		26 U		25 U		25 U		26 U		25 U		26 U		25 U	
Phenanthrene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Anthracene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Carbazole			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Di-n-butylphthalate			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Fluoranthene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Pyrene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Butylbenzylphthalate			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
3,3'-Dichlorobenzidine			10 UJ		10 UJ		10 UJ		10 UJ		10 UJ		10 UJ		10 UJ		10 UJ		10 UJ	
Benzo(a)anthracene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Chrysene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
bis(2-Ethylhexyl)phthalate			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Di-n-octylphthalate			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Benzo(b)fluoranthene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Benzo(k)fluoranthene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Benzo(a)pyrene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Indeno(1,2,3-cd)pyrene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Dibenz(a,h)anthracene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	
Benzo(g,h,i)perylene			10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U		10 U	

000013

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

000014

Project: WASHINGTON CLOSURE HANFORD																				
Laboratory: LLI										SDG: K0205										
Sample Number		J11239			J11279			J11245												
Remarks																				
Sample Date		1/29/06			1/29/06			1/29/06												
Extraction Date		2/5/06			2/5/06			2/5/06												
Analysis Date		2/8/06			2/8/06			2/8/06												
Semivolatile (8270C)	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
Phenol		10	U	10	U	10	U													
bis(2-Chloroethyl)ether		10	U	10	U	10	U													
2-Chlorophenol		10	U	10	U	10	U													
1,3-Dichlorobenzene		10	U	10	U	10	U													
1,4-Dichlorobenzene		10	U	10	U	10	U													
1,2-Dichlorobenzene	650	10	U	10	U	10	U													
2-Methylphenol		10	U	10	U	10	U													
2,2'-oxybis(1-chloropropane)		10	U	10	U	10	U													
3 and/or 4-Methylphenol		10	U	10	U	10	U													
N-Nitroso-di-n-propylamine		10	U	10	U	10	U													
Hexachloroethane		10	U	10	U	10	U													
Nitrobenzene		10	U	10	U	10	U													
Isophorone		10	U	10	U	10	U													
2-Nitrophenol		10	U	10	U	10	U													
2,4-Dimethylphenol		10	U	10	U	10	U													
bis(2-Chloroethoxy)methane		10	U	10	U	10	U													
2,4-Dichlorophenol		10	U	10	U	10	U													
1,2,4-Trichlorobenzene	650	10	U	10	U	10	U													
Naphthalene		10	U	10	U	10	U													
4-Chloroaniline		10	UJ	10	UJ	10	UJ													
Hexachlorobutadiene		10	U	10	U	10	U													
4-Chloro-3-methylphenol		10	U	10	U	10	U													
2-Methylnaphthalene		10	U	10	U	10	U													
Hexachlorocyclopentadiene		10	U	10	U	10	U													
2,4,6-Trichlorophenol	330	10	U	10	U	10	U													
2,4,5-Trichlorophenol	330	25	U	25	U	26	U													
2-Chloronaphthalene		10	U	10	U	10	U													
2-Nitroaniline		25	U	25	U	26	U													
Dimethylphthalate		10	U	10	U	10	U													
Acenaphthylene		10	UJ	10	UJ	10	UJ													
2,6-Dinitrotoluene		10	U	10	U	10	U													

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

000015

Project: WASHINGTON CLOSURE HANFORD																				
Laboratory: LLI										SDG: K0205										
Sample Number		J11239			J11279			J11245												
Remarks																				
Sample Date		1/29/06			1/29/06			1/29/06												
Extraction Date		2/5/06			2/5/06			2/5/06												
Analysis Date		2/8/06			2/8/06			2/8/06												
Semivolatile (8270C)	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
3-Nitroaniline		25	UJ	25	UJ	26	UJ													
Acenaphthene		10	U	10	U	10	U													
2,4-Dinitrophenol		25	UJ	25	UJ	26	UJ													
4-Nitrophenol		25	U	25	U	26	U													
Dibenzofuran	330	10	U	10	U	10	U													
2,4-Dinitrotoluene		10	U	10	U	10	U													
Diethylphthalate		10	U	10	U	10	U													
4-Chlorophenyl-phenyl ether		10	U	10	U	10	U													
Fluorene		10	U	10	U	10	U													
4-Nitroaniline		25	U	25	U	26	U													
4,6-Dinitro-2-methylphenol		25	U	25	U	26	U													
N-Nitrosodiphenylamine		10	U	10	U	10	U													
4-Bromophenyl-phenyl ether		10	U	10	U	10	U													
Hexachlorobenzene		10	U	10	U	10	U													
Pentachlorophenol	330	25	U	25	U	26	U													
Phenanthrene		10	U	10	U	10	U													
Anthracene		10	U	10	U	10	U													
Carbazole		10	U	10	U	10	U													
Di-n-butylphthalate		10	U	10	U	10	U													
Fluoranthene		10	U	10	U	10	U													
Pyrene		10	U	10	U	10	U													
Butylbenzylphthalate		10	U	10	U	10	U													
3,3'-Dichlorobenzidine		10	UJ	10	UJ	10	UJ													
Benzo(a)anthracene		10	U	10	U	10	U													
Chrysene		10	U	10	U	10	U													
bis(2-Ethylhexyl)phthalate		10	U	10	U	10	U													
Di-n-octylphthalate		10	U	10	U	10	U													
Benzo(b)fluoranthene		10	U	10	U	10	U													
Benzo(k)fluoranthene		10	U	10	U	10	U													
Benzo(a)pyrene		10	U	10	U	10	U													
Indeno(1,2,3-cd)pyrene		10	U	10	U	10	U													
Dibenz(a,h)anthracene		10	U	10	U	10	U													
Benzo(g,h,i)perylene		10	U	10	U	10	U													

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

Project: WASHINGTON CLOSURE HANFORD																				
Laboratory: LLI                      SDG: K0205																				
Sample Number		J112X3		J112X9		J112F9		J11250		J112C3		J112F6		J11247		J11238		J11232		
Remarks																				
Sample Date		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		1/29/06		1/29/06		
Extraction Date		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		
Analysis Date		2/8/06		2/9/06		2/9/06		2/9/06		2/9/06		2/9/06		2/9/06		2/8/06		2/8/06		
TPH-D & TPH-G		RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q		
Gasoline Range Organics			30	U	30	U	30	U	30	UJ	30	UJ	30	UJ	30	UJ	30	U	30	U
Diesel Range Organics		500	101	U	200		103	U	101	U	102	U	101	U	101	U	102	U	103	U
Sample Number		J11239		J11279		J11245														
Remarks																				
Sample Date		1/29/06		1/29/06		1/29/06														
Extraction Date		2/5/06		2/5/06		2/5/06														
Analysis Date		2/8/06		2/8/06		2/8/06														
TPH-D & TPH-G		RQL	Result	Q	Result	Q	Result	Q												
Gasoline Range Organics			30	U	30	UJ	30	UJ												
Diesel Range Organics		500	104	U	101		101	U												

000016

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

0000000009

	Cust ID:	J112X3	J112X3	J112X3	J112X9	J112X9	J112X9
Sample Information	RFW#:	001	001 MS	001 MSD	002	002 MS	002 MSD
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	Nitrobenzene-d5	80 %	64 %	54 %	72 %	57 %	51 %
Surrogate	2-Fluorobiphenyl	70 %	71 %	66 %	60 %	71 %	65 %
Recovery	Terphenyl-d14	115 %	80 %	74 %	101 %	79 %	73 %
	Phenol-d5	88 %	81 %	83 %	78 %	85 %	77 %
	2-Fluorophenol	81 %	74 %	71 %	75 %	78 %	69 %
	2,4,6-Tribromophenol	91 %	85 %	81 %	80 %	90 %	88 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
	Phenol	10 U	91 %	96 %	10 U	99 %	89 %
	bis(2-Chloroethyl) ether	10 U	86 %	88 %	10 U	93 %	83 %
	2-Chlorophenol	10 U	88 %	86 %	10 U	94 %	84 %
	1,3-Dichlorobenzene	10 U	65 %	63 %	10 U	65 %	66 %
	1,4-Dichlorobenzene	10 U	66 %	64 %	10 U	64 %	65 %
	1,2-Dichlorobenzene	10 U	71 %	70 %	10 U	70 %	71 %
	2-Methylphenol	10 U	81 %	81 %	10 U	93 %	83 %
	2,2'-oxybis(1-Chloropropane)	10 U	86 %	86 %	10 U	90 %	82 %
	4-Methylphenol	10 U	93 %	96 %	10 U	102 %	92 %
	N-Nitroso-di-n-propylamine	10 U	88 %	88 %	10 U	92 %	83 %
	Hexachloroethane	10 U	60 %	59 %	10 U	61 %	63 %
	Nitrobenzene	10 U	71 %	62 %	10 U	63 %	58 %
	Isophorone	10 U	78 %	65 %	10 U	68 %	63 %
	2-Nitrophenol	10 U	67 %	59 %	10 U	61 %	57 %
	2,4-Dimethylphenol	10 U	70 %	64 %	10 U	57 %	53 %
	bis(2-Chloroethoxy) methane	10 U	75 %	63 %	10 U	66 %	60 %
	2,4-Dichlorophenol	10 U	74 %	62 %	10 U	65 %	61 %
	1,2,4-Trichlorobenzene	10 U	60 %	50 %	10 U	54 %	52 %
	Naphthalene	10 U	64 %	54 %	10 U	56 %	53 %
	4-Chloroaniline	10 U J	17 % *	81 %	10 U J	82 %	75 %
	Hexachlorobutadiene	10 U	60 %	50 %	10 U	54 %	55 %
	4-Chloro-3-methylphenol	10 U	78 %	66 %	10 U	72 %	68 %
	2-Methylnaphthalene	10 U	71 %	59 %	10 U	62 %	59 %
	Hexachlorocyclopentadiene	10 U	50 %	55 %	10 U	59 %	65 %
	2,4,6-Trichlorophenol	10 U	103 %	104 %	10 U	104 %	98 %
	2,4,5-Trichlorophenol	26 U	75 %	77 %	26 U	83 %	79 %

\*= Outside of EPA CLP QC limits.

000017

R 6/4/06

Cust ID: J112X3 J112X3 J112X3 J112X9 J112X9 J112X9

RFW#: 001 001 MS 001 MSD 002 002 MS 002 MSD

2-Chloronaphthalene	10	U	82	%	82	%	10	U	85	%	78	%
2-Nitroaniline	26	U	88	%	94	%	26	U	88	%	78	%
Dimethylphthalate	10	U	94	%	87	%	10	U	87	%	79	%
Acenaphthylene	10	U J	83	%	83	%	10	U J	84	%	75	%
2,6-Dinitrotoluene	10	U	94	%	90	%	10	U	88	%	78	%
3-Nitroaniline	26	U J	41	%	116	%	26	U J	104	%	91	%
Acenaphthene	10	U	84	%	83	%	10	U	83	%	75	%
2,4-Dinitrophenol	26	U J	88	%	58	%	26	U J	51	%	47	* %
4-Nitrophenol	26	U	101	%	105	%	26	U	86	%	75	%
Dibenzofuran	10	U	88	%	87	%	10	U	86	%	76	%
2,4-Dinitrotoluene	10	U	102	%	95	%	10	U	90	%	79	%
Diethylphthalate	10	U	96	%	86	%	10	U	85	%	77	%
4-Chlorophenyl-phenylether	10	U	89	%	85	%	10	U	85	%	76	%
Fluorene	10	U	89	%	85	%	10	U	84	%	74	%
4-Nitroaniline	26	U	87	%	102	* %	26	U	91	%	76	%
4,6-Dinitro-2-methylphenol	26	U	95	%	94	%	26	U	83	%	77	%
N-Nitrosodiphenylamine (1)	10	U	61	%	70	%	10	U	72	%	67	%
4-Bromophenyl-phenylether	10	U	76	%	74	%	10	U	77	%	73	%
Hexachlorobenzene	10	U	87	%	84	%	10	U	83	%	80	%
Pentachlorophenol	26	U	102	%	101	%	26	U	100	%	105	* %
Phenanthrene	10	U	89	%	86	%	10	U	86	%	78	%
Anthracene	10	U	89	%	87	%	10	U	87	%	79	%
Carbazole	10	U	93	%	93	%	10	U	88	%	77	%
Di-n-butylphthalate	10	U	89	%	79	%	10	U	80	%	74	%
Fluoranthene	10	U	97	%	90	%	10	U	82	%	73	%
Pyrene	10	U	84	%	82	%	10	U	89	%	81	%
Butylbenzylphthalate	10	U	91	%	84	%	10	U	92	%	83	%
3,3'-Dichlorobenzidine	10	U J	3	%	72	%	10	U J	68	%	65	%
Benzo(a)anthracene	10	U	92	%	88	%	10	U	87	%	79	%
Chrysene	10	U	91	%	88	%	10	U	85	%	78	%
bis(2-Ethylhexyl)phthalate	10	U <sup>IB U</sup>	92	%	79	%	10	U <sup>IB U</sup>	91	%	83	%
Di-n-octyl phthalate	10	U	96	%	79	%	10	U	98	%	89	%
Benzo(b)fluoranthene	10	U	95	%	83	%	10	U	86	%	80	%
Benzo(k)fluoranthene	10	U	92	%	89	%	10	U	87	%	82	%
Benzo(a)pyrene	10	U	87	%	83	%	10	U	83	%	79	%
Indeno(1,2,3-cd)pyrene	10	U	86	%	94	%	10	U	86	%	79	%
Dibenz(a,h)anthracene	10	U	86	%	94	%	10	U	86	%	75	%
Benzo(g,h,i)perylene	10	U	84	%	95	%	10	U	85	%	77	%

000018

00000010

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

*R* 6/4/06

RFW Batch Number: 0602L209

Client: TNUHANFORD RCS-048 K0205

Work Order: 11343606001

Page: 2a

	Cust ID:	J112F9	J11250	J112C3	J112P6	J11247	SBLKTL
Sample Information	RFW#:	003	004	005	006	007	06LE0089-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate	Nitrobenzene-d5	73 %	53 %	58 %	80 %	66 %	68 %
	2-Fluorobiphenyl	63 %	46 %	50 %	70 %	56 %	60 %
Recovery	Terphenyl-d14	110 %	106 %	114 %	129 %	117 %	79 %
	Phenol-d5	73 %	63 %	68 %	79 %	76 %	67 %
	2-Fluorophenol	77 %	54 %	60 %	85 %	67 %	59 %
	2,4,6-Tribromophenol	81 %	71 %	81 %	90 %	85 %	55 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----fl							
	Phenol	10 U	10 U				
	bis(2-Chloroethyl) ether	10 U	10 U				
	2-Chlorophenol	10 U	10 U				
	1,3-Dichlorobenzene	10 U	10 U				
	1,4-Dichlorobenzene	10 U	10 U				
	1,2-Dichlorobenzene	10 U	10 U				
	2-Methylphenol	10 U	10 U				
	2,2'-oxybis(1-Chloropropane)	10 U	10 U				
	4-Methylphenol	10 U	10 U				
	N-Nitroso-di-n-propylamine	10 U	10 U				
	Hexachloroethane	10 U	10 U				
	Nitrobenzene	10 U	10 U				
	Isophorone	10 U	10 U				
	2-Nitrophenol	10 U	10 U				
	2,4-Dimethylphenol	10 U	10 U				
	bis(2-Chloroethoxy)methane	10 U	10 U				
	2,4-Dichlorophenol	10 U	10 U				
	1,2,4-Trichlorobenzene	10 U	10 U				
	Naphthalene	10 U	10 U				
	4-Chloroaniline	10 U <sup>J</sup>	10 U				
	Hexachlorobutadiene	10 U	10 U				
	4-Chloro-3-methylphenol	10 U	10 U				
	2-Methylnaphthalene	10 U	10 U				
	Hexachlorocyclopentadiene	10 U	10 U				
	2,4,6-Trichlorophenol	10 U	10 U				
	2,4,5-Trichlorophenol	26 U	25 U	25 U	26 U	25 U	25 U

\*= Outside of EPA CLP QC limits.

*W* 2/16/06

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000000011

Cust ID: J112F9 J11250 J112C3 J112F6 J11247 SBLKTL  
 RFW#: 003 004 005 006 007 06LE0089-MB1

	003	004	005	006	007	06LE0089-MB1
2-Chloronaphthalene	10 U	10 U				
2-Nitroaniline	26 U	25 U	25 U	26 U	25 U	25 U
Dimethylphthalate	10 U	10 U				
Acenaphthylene	10 U J	10 U				
2,6-Dinitrotoluene	10 U	10 U				
3-Nitroaniline	26 U J	25 U J	25 U J	26 U J	25 U J	25 U
Acenaphthene	10 U	10 U				
2,4-Dinitrophenol	26 U J	25 U J	25 U J	26 U J	25 U J	25 U
4-Nitrophenol	26 U	25 U	25 U	26 U	25 U	25 U
Dibenzofuran	10 U	10 U				
2,4-Dinitrotoluene	10 U	10 U				
Diethylphthalate	10 U	10 U				
4-Chlorophenyl-phenylether	10 U	10 U				
Fluorene	10 U	10 U				
4-Nitroaniline	26 U	25 U	25 U	26 U	25 U	25 U
4,6-Dinitro-2-methylphenol	26 U	25 U	25 U	26 U	25 U	25 U
N-Nitrosodiphenylamine (1)	10 U	10 U				
4-Bromophenyl-phenylether	10 U	10 U				
Hexachlorobenzene	10 U	10 U				
Pentachlorophenol	26 U	25 U	25 U	26 U	25 U	25 U
Phenanthrene	10 U	10 U				
Anthracene	10 U	10 U				
Carbazole	10 U	10 U				
Di-n-butylphthalate	10 U	10 U	0.5 J	10 U	10 U	10 U
Fluoranthene	10 U	10 U				
Pyrene	10 U	10 U				
Butylbenzylphthalate	10 U	10 U				
3,3'-Dichlorobenzidine	10 U J	10 U				
Benzo (a) anthracene	10 U	10 U				
Chrysene	10 U	10 U				
bis (2-Ethylhexyl) phthalate	<del>10 U</del> 100.6 U	<del>10 U</del> 102.4 U	<del>10 U</del> 102.4 U	<del>10 U</del> 101.4 U	<del>10 U</del> 101.4 U	0.6 J
Di-n-octyl phthalate	10 U	10 U				
Benzo (b) fluoranthene	10 U	10 U				
Benzo (k) fluoranthene	10 U	10 U				
Benzo (a) pyrene	10 U	10 U				
Indeno (1,2,3-cd) pyrene	10 U	10 U				
Dibenz (a,h) anthracene	10 U	10 U				
Benzo (g,h,i) perylene	10 U	10 U				

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

*Handwritten signature and date: 6/4/06*

000020

00000012

RFW Batch Number: 0602L209

Client: TNUHANFORD RCS-048 K0205

Work Order: 11343606001

Page: 3a

000000013

Cust ID: SBLKTL BS      SBLKTL BSD      SBLKTP      SBLKTP BS      SBLKTP BSD      J11238

Sample Information	RFW#: 06LE0089-MB1	06LE0089-MB1	06LE0102-MB1	06LE0102-MB1	06LE0102-MB1	184-001
	Matrix: WATER	WATER	WATER	WATER	WATER	WATER
	D.F.: 1.00	1.00	1.00	1.00	1.00	1.00
	Units: ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

Surrogate	Nitrobenzene-d5	80 %	81 %	61 %	53 %	91 %	73 %
Recovery	2-Fluorobiphenyl	73 %	73 %	52 %	63 %	85 %	65 %
	Terphenyl-d14	89 %	83 %	95 %	74 %	92 %	82 %
	Phenol-d5	56 %	84 %	65 %	77 %	94 %	71 %
	2-Fluorophenol	72 %	78 %	57 %	70 %	95 %	63 %
	2,4,6-Tribromophenol	75 %	73 %	71 %	85 %	111 %	63 %

-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----fl

Phenol	84 %	94 %	10 U	85 %	108 %	10 U
bis(2-Chloroethyl) ether	88 %	98 %	10 U	80 %	101 %	10 U
2-Chlorophenol	84 %	90 %	10 U	81 %	104 %	10 U
1,3-Dichlorobenzene	66 %	70 %	10 U	57 %	81 %	10 U
1,4-Dichlorobenzene	67 %	70 %	10 U	56 %	80 %	10 U
1,2-Dichlorobenzene	70 %	73 %	10 U	60 %	86 %	10 U
2-Methylphenol	83 %	89 %	10 U	81 %	101 %	10 U
2,2'-oxybis(1-Chloropropane)	90 %	95 %	10 U	76 %	98 %	10 U
4-Methylphenol	89 %	94 %	10 U	88 %	111 * %	10 U
N-Nitroso-di-n-propylamine	82 %	86 %	10 U	79 %	95 %	10 U
Hexachloroethane	65 %	65 %	10 U	53 %	75 %	10 U
Nitrobenzene	83 %	84 %	10 U	55 %	96 %	10 U
Isophorone	90 %	95 %	10 U	60 %	102 %	10 U
2-Nitrophenol	81 %	82 %	10 U	55 %	96 %	10 U
2,4-Dimethylphenol	85 %	83 %	10 U	58 %	102 %	10 U
bis(2-Chloroethoxy)methane	25 %	82 %	10 U	58 %	98 %	10 U
2,4-Dichlorophenol	79 %	77 %	10 U	59 * %	102 %	10 U
1,2,4-Trichlorobenzene	66 %	65 %	10 U	47 %	88 %	10 U
Naphthalene	73 %	72 %	10 U	49 * %	88 %	10 U
4-Chloroaniline	5 * %	21 %	10 U	70 %	86 %	10 U
Hexachlorobutadiene	62 %	61 %	10 U	47 %	93 %	10 U
4-Chloro-3-methylphenol	84 %	83 %	10 U	64 %	108 %	10 U
2-Methylnaphthalene	78 %	76 %	10 U	55 %	95 %	10 U
Hexachlorocyclopentadiene	58 %	56 %	10 U	52 %	72 %	10 U
2,4,6-Trichlorophenol	76 %	75 %	10 U	94 %	124 * %	10 U
2,4,5-Trichlorophenol	76 %	72 %	25 U	74 %	99 %	26 U

\*= Outside of EPA CLP QC limits.

*R* L/4/06

000021

J

Cust ID: SBLKTL BS

SBLKTL BSD

SBLKTP

SBLKTP BS

SBLKTP BSD

J11238

RFW#: 06LE0089-MB1

06LE0089-MB1

06LE0102-MB1

06LE0102-MB1

06LE0102-MB1

184-001

2-Chloronaphthalene	76 %	75 %	10 U	74 %	97 %	10 U
2-Nitroaniline	87 %	90 %	25 U	76 %	96 %	26 U
Dimethylphthalate	83 %	83 %	10 U	76 %	97 %	10 U
Acenaphthylene	47 * %	75 %	10 U	72 %	91 %	10 U J
2,6-Dinitrotoluene	83 %	83 %	10 U	76 %	96 %	10 U
3-Nitroaniline	7 * %	30 %	25 U	89 %	87 %	26 U J
Acenaphthene	74 %	74 %	10 U	72 %	93 %	10 U
2,4-Dinitrophenol	106 %	95 %	25 U	47 * %	96 %	26 U J
4-Nitrophenol	90 %	91 %	25 U	72 %	93 %	26 U
Dibenzofuran	76 %	74 %	10 U	74 %	95 %	10 U
2,4-Dinitrotoluene	85 %	83 %	10 U	77 %	97 %	10 U
Diethylphthalate	81 %	82 %	10 U	73 %	94 %	10 U
4-Chlorophenyl-phenylether	77 %	75 %	10 U	73 %	95 %	10 U
Fluorene	88 %	85 %	10 U	72 %	92 %	10 U
4-Nitroaniline	19 %	79 %	25 U	76 %	93 %	26 U
4,6-Dinitro-2-methylphenol	105 %	98 %	25 U	73 %	99 %	26 U
N-Nitrosodiphenylamine (1)	36 %	58 %	10 U	57 %	58 %	10 U
4-Bromophenyl-phenylether	72 %	70 %	10 U	68 %	89 %	10 U
Hexachlorobenzene	73 %	71 %	10 U	75 %	97 %	10 U
Pentachlorophenol	97 %	91 %	25 U	92 %	139 * %	26 U
Phenanthrene	82 %	80 %	10 U	74 %	96 %	10 U
Anthracene	81 %	80 %	10 U	75 %	96 %	10 U
Carbazole	49 %	83 %	10 U	75 %	96 %	10 U
Di-n-butylphthalate	82 %	81 %	10 U	73 %	94 %	10 U
Fluoranthene	83 %	82 %	10 U	72 %	94 %	10 U
Pyrene	83 %	84 %	10 U	76 %	97 %	10 U
Butylbenzylphthalate	76 %	89 %	10 U	80 %	104 %	10 U
3,3'-Dichlorobenzidine	0 %	2 %	10 U	41 %	51 %	10 U J
Benzo (a) anthracene	89 %	86 %	10 U	77 %	99 %	10 U
Chrysene	89 %	86 %	10 U	75 %	97 %	10 U
bis (2-Ethylhexyl) phthalate	91 %	87 %	2 J	78 %	102 %	10 U
Di-n-octyl phthalate	159 * %	100 %	10 U	82 %	107 %	10 U
Benzo (b) fluoranthene	155 * %	103 %	10 U	77 %	101 %	10 U
Benzo (k) fluoranthene	154 * %	95 %	10 U	77 %	98 %	10 U
Benzo (a) pyrene	127 %	95 %	10 U	73 %	95 %	10 U
Indeno (1,2,3-cd) pyrene	149 * %	103 %	10 U	77 %	104 %	10 U
Dibenz (a, h) anthracene	160 * %	105 %	10 U	72 %	98 %	10 U
Benzo (g, h, i) perylene	134 %	98 %	10 U	76 %	105 %	10 U

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

*JK* C/4/06

000022

000000014



Cust ID:

J11232

J11239

J11279

J11245

RFW#: 184-002

184-003

184-004

184-005

	184-002	184-003	184-004	184-005
2-Chloronaphthalene	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	26 U
Dimethylphthalate	10 U	10 U	10 U	10 U
Acenaphthylene	10 U <sup>J</sup>	10 U <sup>J</sup>	10 U <sup>J</sup>	10 U <sup>J</sup>
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U <sup>J</sup>	25 U <sup>J</sup>	25 U <sup>J</sup>	26 U <sup>J</sup>
Acenaphthene	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U <sup>J</sup>	25 U <sup>J</sup>	25 U <sup>J</sup>	26 U <sup>J</sup>
4-Nitrophenol	25 U	25 U	25 U	26 U
Dibenzofuran	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	26 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	26 U
N-Nitrosodiphenylamine (1)	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	26 U
Phenanthrene	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U <sup>J</sup>	10 U <sup>J</sup>	10 U <sup>J</sup>	10 U <sup>J</sup>
Benzo (a) anthracene	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U
bis (2-Ethylhexyl) phthalate	10 <sup>10</sup> <del>U</del> <sup>U</sup>			
Di-n-octyl phthalate	10 U	10 U	10 U	10 U
Benzo (b) fluoranthene	10 U	10 U	10 U	10 U
Benzo (k) fluoranthene	10 U	10 U	10 U	10 U
Benzo (a) pyrene	10 U	10 U	10 U	10 U
Indeno (1,2,3-cd) pyrene	10 U	10 U	10 U	10 U
Dibenz (a,h) anthracene	10 U	10 U	10 U	10 U
Benzo (g,h,i) perylene	10 U	10 U	10 U	10 U

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

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✓  
6/4/06

000000016

RFW Batch Number: 0601L184

Client: TNUHANFORD RCS-048 K0205 Work Order: 11343606001 Page: 1

0000000006

	Cust ID:	J11238	J11232	J11239	J11279	J11245	BLK
Sample Information	RFW#:	001	002	003	004	005	06LE0087-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	p-Terphenyl	79 %	61 %	71 %	69 %	60 %	74 %
	Diesel Range Organics	102 U	103 U	104 U	101 U	101 U	100 U

	Cust ID:	BLK BS	BLK BSD
Sample Information	RFW#:	06LE0087-MB1	06LE0087-MB1
	Matrix:	WATER	WATER
	D.F.:	1.00	1.00
	Units:	ug/L	ug/L
	p-Terphenyl	50 %	41 %
	Diesel Range Organics	57 %	57 %

0000025

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

*Handwritten:* ✓  
 2/4/06  
 J. J. J.

DIESEL RANGE ORGANICS BY GC

Report Date: 03/03/06 16:15

RFW Batch Number: 0602L209

Client: TNUHANFORD RCS-048 K0205 Work Order: 11343606001 Page: 1

000000007

Sample Information	Cust ID:	J112X3	J112X3	J112X3	J112X9	J112X9	J112X9
	RFW#:	001	001 MS	001 MSD	002	002 MS	002 MSD
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

p-Terphenyl	66 %	83 %	86 %	77 %	59 %	58 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----fl						
Diesel Range Organics	101 U	83 %	77 %	200	52 %	46 %

Sample Information	Cust ID:	J112F9	J11250	J112C3	J112F6	J11247	BLK
	RFW#:	003	004	005	006	007	06LE0087-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

p-Terphenyl	84 %	76 %	64 %	74 %	65 %	74 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----fl						
Diesel Range Organics	103 U	101 U	102 U	101 U	101 U	100 U

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

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*Handwritten signature and date:*  
 [Signature] 2/3/06

RFW Batch Number: 0602L209

Client: TNUHANFORD RCS-048 K0205 Work Order: 11343606001 Page: 2

0000000008

	Cust ID:	BLK BS	BLK BSD
Sample	RFW#:	06LE0087-MB1	06LE0087-MB1
Information	Matrix:	WATER	WATER
	D.F.:	1.00	1.00
	Units:	ug/L	ug/L

---

	p-Terphenyl	50	%	41	%
	-----	fl	-----	fl	-----
Diesel Range Organics	-----	57	%	57	%

---

000027

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 OC

*Handwritten:* u/u/06 3/3/06

RFW Batch Number: 0601L184

Client: TNUHANFORD RCS-048 K0205 Work Order: 11343606001 Page: 1

	Cust ID:	J11238	J11238	J11238	J11232	J11239	J11279
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
	Fluorobenzene	83 %	90 %	83 %	84 %	85 %	84 %
	-----fl-----fl-----fl-----fl-----fl-----fl-----fl						
	Gasoline Range Organics (GRO) _____	30 U	101 %	86 %	30 U	30 U	30 UJ

	Cust ID:	J11245	TBLKXU	TBLKXU BS	TBLKXV	TBLKXV BS	TBLKXV BSD
Sample Information	RFW#:	005	06LVJ201-MB1	06LVJ201-MB1	06LVJ202-MB1	06LVJ202-MB1	06LVJ202-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
	Fluorobenzene	85 %	86 %	89 %	87 %	91 %	93 %
	-----fl-----fl-----fl-----fl-----fl-----fl-----fl						
	Gasoline Range Organics (GRO) _____	30 U	30 U	103 %	30 U	101 %	101 %

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

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*6/16/06*

*7/2/06*

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	Cust ID: TBLKXW BS	TBLKYB	TBLKYB BS	TBLKYB BSD	
Sample Information	RFW#: 06LVJ207-MB1	06LVJ208-MB1	06LVJ208-MB1	06LVJ208-MB1	
	Matrix: WATER	WATER	WATER	WATER	
	D.F.: 1.00	1.00	1.00	1.00	
	Units: UG/L	UG/L	UG/L	UG/L	
<hr/>					
	Fluorobenzene	90 %	87 %	79 %	93 %
<hr/>					
	Gasoline Range Organics (GRO)	100 %	30 U	87 %	101 %
<hr/>					

*W*  
*6/4/06*

000030

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

*7/2/06*

**Appendix 4**

**Laboratory Narrative and Chain-of-Custody Documentation**

**000031**



Case Narrative

Client: TNU-HANFORD RCS-048  
LVL #: 0601L184 and 0602L209  
SDG/SAF # K0205/RCS-048

W.O. #: 11343-606-001-9999-00  
Date Received: 01-31-2006 &  
02-03-2006

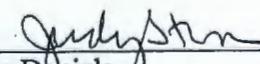
**SEMIVOLATILE**

Twelve (12) water samples were collected on 01-29-2006 and 02-01-2006.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3520C on 02-05,08-2006 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 02-08,09,13-2006.

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

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. Non-target compounds were detected in the samples.
4. All surrogate recoveries were within acceptance criteria.
5. Four (4) of two hundred fifty-six (256) matrix spike recoveries were outside acceptance criteria.  
Fourteen (14) of two hundred fifty-six (256) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Reports (SDR) has been enclosed.
6. The method blanks contained the common laboratory contaminant Bis (2-Ethylhexyl) phthalate at levels less than the CRQL.
7. Internal standard area and retention time criteria were met.
8. 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").
9. 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.
10. I certify, that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data, contained in this hard-copy data package, has been authorized, by the Laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

2/17/06  
Date

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son\group\data\bna\tnu-hanford\0601-184 & 0602-209.doc  
The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 5 8 pages.

**Lionville Laboratory Sample Discrepancy Report (SDR)**

SDR #: 06MS04F

Initiator: Sharon Taylor  
 Date: 0601184 2-9-06  
 Client: TAM

Batch: 0601184  
 Samples: 85 85D  
 Method: (SWB46)MCAWW/CLP/

Parameter: 8270  
 Matrix: Aqueous  
 Prep Batch: 06LE0089

**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)**

<10% range of 4-chloroaniline, 3-nitroaniline & 3,3'-dichlorobenzidine in blank spike &  
 <10% range of 3,3'-dichlorobenzidine in the blank spike dup

**2. Known or Probable Causes(s)**

loss during extraction

**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)

name

*[Signature]*

**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

Not likely the chloroanilines and benzidines exhibit erratic chromatographic behavior due to their polarity

**5. Final Action...signature/date:**

*[Signature]*

Other Explanation: \_\_\_\_\_

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

*[Signature]*  
2-17

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

Route Distribution of Completed SDR  
 Initiator  
 Lab General Manager: M. Taylor  
 Project Mgr. Stone Johnson  
 Data Management: Stilwell  
 Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR  
 Metals: Beegle  
 Inorganic: Perrone  
 GC/LC: Kiger  
 MS: Rychlak/Daley  
 Log-in: Perry  
 Admin: \_\_\_\_\_  
 Other: \_\_\_\_\_

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06MS052

Initiator: Sharon Saylor  
 Date: 2-10-06  
 Client: THU

Batch: 0602L 209  
 Samples: MS + BS  
 Method: SW846/MCAWW/CLP/

Parameter: 8270  
 Matrix: Agrovs  
 Prep Batch: 06LE0089

**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)

*low recovery of several analytes in the matrix spike and blank spike but matrix spiked up and blank spike dup are ok*

**2. Known or Probable Causes(s)**

*loss during extraction*

**3. Discussion and Proposed Action** Other Description: \_\_\_\_\_

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

*See 4/17/06*

**4. Project Manager Instructions...signature/date:** *Sharon Saylor*

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

*Not likely all compounds that are easily lost during extraction and concentration*

**5. Final Action...signature/date:** *Sharon Saylor* Other Explanation: \_\_\_\_\_

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

*Recovered very well*  
*2- chloroaniline and 4-dichloroaniline exhibit erratic behavior due to*

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
<input type="checkbox"/>	<input checked="" type="checkbox"/> Initiator	<input type="checkbox"/>	<input type="checkbox"/> Metals: Beegle
<input type="checkbox"/>	<input checked="" type="checkbox"/> Lab General Manager: M. Taylor	<input type="checkbox"/>	<input type="checkbox"/> Inorganic: Perrone
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Project Mgr. Stone/Johnson	<input type="checkbox"/>	<input type="checkbox"/> GC/LC: Kiger
<input type="checkbox"/>	<input type="checkbox"/> Data Management: Stowell	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> MS: Rychlak/Daley
<input type="checkbox"/>	<input type="checkbox"/> Sample Prep: Beegle/Kiger	<input type="checkbox"/>	<input type="checkbox"/> Log-in: Perry
		<input type="checkbox"/>	<input type="checkbox"/> Admin: _____
		<input type="checkbox"/>	<input type="checkbox"/> Other: _____

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Lionville Laboratory, Inc.  
BNA ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD RCS-048 K0205

DATE RECEIVED: 01/31/06

LVL LOT # :0601L184

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11238	001	W	06LE0089	01/29/06	02/05/06	02/08/06
J11232	002	W	06LE0089	01/29/06	02/05/06	02/08/06
J11239	003	W	06LE0089	01/29/06	02/05/06	02/08/06
J11279	004	W	06LE0089	01/29/06	02/05/06	02/08/06
J11245	005	W	06LE0089	01/29/06	02/05/06	02/08/06

LAB QC:

SBLKTL	MB1	W	06LE0089	N/A	02/05/06	02/08/06
SBLKTL	MB1 BS	W	06LE0089	N/A	02/05/06	02/08/06
SBLKTL	MB1 BSD	W	06LE0089	N/A	02/05/06	02/08/06

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Lionville Laboratory, Inc.  
 BNA ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD RCS-048 K0205

DATE RECEIVED: 02/03/06

LVL LOT # :0602L209

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J112X3	001	W	06LE0089	02/01/06	02/05/06	02/08/06
J112X3	001 MS	W	06LE0089	02/01/06	02/05/06	02/08/06
J112X3	001 MSD	W	06LE0089	02/01/06	02/05/06	02/09/06
J112X9	002	W	06LE0089	02/01/06	02/05/06	02/09/06
J112X9	002 MS	W	06LE0102	02/01/06	02/08/06	02/13/06
J112X9	002 MSD	W	06LE0102	02/01/06	02/08/06	02/13/06
J112F9	003	W	06LE0089	02/01/06	02/05/06	02/09/06
J11250	004	W	06LE0089	02/01/06	02/05/06	02/09/06
J112C3	005	W	06LE0089	02/01/06	02/05/06	02/09/06
J112F6	006	W	06LE0089	02/01/06	02/05/06	02/09/06
J11247	007	W	06LE0089	02/01/06	02/05/06	02/09/06

LAB QC:

SBLKTL	MB1	W	06LE0089	N/A	02/05/06	02/08/06
SBLKTL	MB1 BS	W	06LE0089	N/A	02/05/06	02/08/06
SBLKTL	MB1 BSD	W	06LE0089	N/A	02/05/06	02/08/06
SBLKTP	MB1	W	06LE0102	N/A	02/08/06	02/13/06
SBLKTP	MB1 BS	W	06LE0102	N/A	02/08/06	02/13/06
SBLKTP	MB1 BSD	W	06LE0102	N/A	02/08/06	02/13/06

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## Case Narrative

**Client:** TNU-HANFORD RCS-048  
**LVL #:** 0601L184 and 0602L209  
**SDG/SAF #** K0205/RCS-048

**W.O. #:** 11343-606-001-9999-00  
**Date Received:** 01-31-2006  
03-03-2006

### DIESEL RANGE ORGANICS

Twelve (12) water samples were collected on 01-29-2006 and 02-01-2006.

The samples and their associated QC samples were extracted on 02-05-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 02-07,08-2006 and 03-03-2006. The analysis was based on method 8015B. The analysis met the intent of method WTPH-D.

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

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The method blanks were below the reporting limit for the target compound.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. 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.

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 36 pages.

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

Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

3/7/6  
Date

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Lionville Laboratory, Inc.  
DRO ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD RCS-048 K0205

DATE RECEIVED: 01/31/06

LVL LOT # :0601L184

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11238	001	W	06LE0087	01/29/06	02/05/06	02/07/06
J11232	002	W	06LE0087	01/29/06	02/05/06	02/07/06
J11239	003	W	06LE0087	01/29/06	02/05/06	02/07/06
J11279	004	W	06LE0087	01/29/06	02/05/06	02/08/06
J11245	005	W	06LE0087	01/29/06	02/05/06	02/08/06

LAB QC:

BLK	MB1	W	06LE0087	N/A	02/05/06	02/07/06
BLK	MB1 BS	W	06LE0087	N/A	02/05/06	02/07/06
BLK	MB1 BSD	W	06LE0087	N/A	02/05/06	02/07/06

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Lionville Laboratory, Inc.  
 DRO ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD RCS-048 K0205

DATE RECEIVED: 02/03/06

LVL LOT # :0602L209

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J112X3	001	W	06LE0087	02/01/06	02/05/06	02/08/06
J112X3	001 MS	W	06LE0087	02/01/06	02/05/06	03/03/06
J112X3	001 MSD	W	06LE0087	02/01/06	02/05/06	03/03/06
J112X9	002	W	06LE0087	02/01/06	02/05/06	02/08/06
J112X9	002 MS	W	06LE0087	02/01/06	02/05/06	02/08/06
J112X9	002 MSD	W	06LE0087	02/01/06	02/05/06	02/08/06
J112F9	003	W	06LE0087	02/01/06	02/05/06	02/08/06
J11250	004	W	06LE0087	02/01/06	02/05/06	02/08/06
J112C3	005	W	06LE0087	02/01/06	02/05/06	02/08/06
J112F6	006	W	06LE0087	02/01/06	02/05/06	02/08/06
J11247	007	W	06LE0087	02/01/06	02/05/06	02/08/06

LAB QC:

BLK	MB1	W	06LE0087	N/A	02/05/06	02/07/06
BLK	MB1 BS	W	06LE0087	N/A	02/05/06	02/07/06
BLK	MB1 BSD	W	06LE0087	N/A	02/05/06	02/07/06

*[Handwritten signature]*

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Case Narrative

Client: TNU-HANFORD RCS-048  
LVL #: 0601L184 and 0602L209  
SDG/SAF # K0205/RCS-048

W.O. #: 11343-606-001-9999-00  
Date Received: 01-31-2006 & 02-03-2006

**GRO**

Twelve (12) water samples were collected on 01-29-2006 and 02-01-2006.

The samples and their associated QC samples were analyzed according to Lionville Laboratory SOPs based on SW-846 method 8015B for Gasoline Range Organics (GRO) on 02-01,02,07,08-2006.

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

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were analyzed within required holding time.
3. The method blanks were below the reporting limit for the target compound.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. The initial calibrations associated with this data set were within acceptance criteria.
8. The continuing calibration standards analyzed prior to sample extracts were within the acceptance criteria.
9. 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.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

2/22/06  
Date

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The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 3 5 pages.

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Lionville Laboratory, Inc.  
GRO ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD RCS-048 K0205

DATE RECEIVED: 01/31/06

LVL LOT # :0601L184

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11238	001	W	06LVJ201	01/29/06	N/A	02/01/06
J11238	001 MS	W	06LVJ201	01/29/06	N/A	02/01/06
J11238	001 MSD	W	06LVJ201	01/29/06	N/A	02/01/06
J11232	002	W	06LVJ201	01/29/06	N/A	02/01/06
J11239	003	W	06LVJ201	01/29/06	N/A	02/01/06
J11279	004	W	06LVJ202	01/29/06	N/A	02/02/06
J11245	005	W	06LVJ202	01/29/06	N/A	02/02/06

LAB QC:

TBLKXU	MB1	W	06LVJ201	N/A	N/A	02/01/06
TBLKXU	MB1 BS	W	06LVJ201	N/A	N/A	02/01/06
TBLKXV	MB1	W	06LVJ202	N/A	N/A	02/02/06
TBLKXV	MB1 BS	W	06LVJ202	N/A	N/A	02/02/06
TBLKXV	MB1 BSD	W	06LVJ202	N/A	N/A	02/02/06

*Handwritten signature and date: 2/3/06*

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Lionville Laboratory, Inc.  
 GRO ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD RCS-048 K0205

DATE RECEIVED: 02/03/06

LVL LOT # :0602L209

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J112X3	001	W	06LVJ207	02/01/06	N/A	02/07/06
J112X3	001 MS	W	06LVJ207	02/01/06	N/A	02/07/06
J112X3	001 MSD	W	06LVJ207	02/01/06	N/A	02/07/06
J112X9	002	W	06LVJ207	02/01/06	N/A	02/07/06
J112X9	002 MS	W	06LVJ207	02/01/06	N/A	02/07/06
J112X9	002 MSD	W	06LVJ207	02/01/06	N/A	02/07/06
J112F9	003	W	06LVJ207	02/01/06	N/A	02/07/06
J11250	004	W	06LVJ208	02/01/06	N/A	02/08/06
J112C3	005	W	06LVJ208	02/01/06	N/A	02/08/06
J112F6	006	W	06LVJ208	02/01/06	N/A	02/08/06
J11247	007	W	06LVJ208	02/01/06	N/A	02/08/06

LAB QC:

TBLKXW	MB1	W	06LVJ207	N/A	N/A	02/07/06
TBLKXW	MB1 BS	W	06LVJ207	N/A	N/A	02/07/06
TBLKYB	MB1	W	06LVJ208	N/A	N/A	02/08/06
TBLKYB	MB1 BS	W	06LVJ208	N/A	N/A	02/08/06
TBLKYB	MB1 BSD	W	06LVJ208	N/A	N/A	02/08/06

*Handwritten signature*

000043

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-251		Page 1 of 2	
Collector TILLER, B <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>7N</b>	
Project Designation 100 Area and 300 Area Component of the RCRA Water Sa		Sampling Location Cr 3, SURFACE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>	
Ice Chest No. <b>ERC-96-012</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>		Offsite Property No. <b>A060273</b>		Bill of Lading/Air Bill No. SEE OSPC					

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL AC	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	

000044  SAMPLE ANALYSIS	Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium [Thorium-232]	Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]	Radium-226: Ra-226	See item (2) in Special Instructions.	Semi-VOA - E270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time									
J11238	WATER	1-29-06	1330					X	X	X	X	

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 1-29-06 2000	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 1-29-06 2000	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquid T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 0710 01-30-06	Received By/Stored In <b>RZ Staffler R.Z. Staffler</b>	Date/Time 0710 1-30-06					
Relinquished By/Removed From <b>RZ Staffler R.Z. Staffler</b>	Date/Time 1500 1-30-06	Received By/Stored In <b>FED EX</b>	Date/Time					
Relinquished By/Removed From <b>[Signature]</b>	Date/Time 1-31-06/0910	Received By/Stored In <b>[Signature]</b>	Date/Time 1-31-06/0910					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-048-251 Page 2 of 2

Collector TILLER, B <b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code <b>7N</b>	Data Turnaround <b>45 Days</b>
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location Cr 3, SURFACE WATER	SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. <b>ERC-96-012</b>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / <b>LIONVILLE</b>	Offsite Property No. <b>A060273</b>	Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS  
POTENTIAL RADIOACTIVE < DOT LIMITS

Special Handling and/or Storage  
COOL 4C

Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C
Type of Container	P	G	G/P	aG	aGa*
No. of Container(s)	1	1	1	1	1
Volume	125mL	500mL	125mL	1000mL	40mL

000045

SAMPLE ANALYSIS

See item #1 in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G

Sample No.	Matrix *	Sample Date	Sample Time								
J11238	WATER	1-29-06	1330	X	X	X	X	X			

CHAIN OF POSSESSION

Sign/Print Names

SPECIAL INSTRUCTIONS

Matrix \*

Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 1-29-06 2000	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 1-29-06 2000	SPECIAL INSTRUCTIONS 3 J11238 (X) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)	Matrix * S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trash W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 0710	Received By/Stored In <b>R. Steffler R. J. Steffler</b>	Date/Time 1-30-06		
Relinquished By/Removed From <b>R. Steffler R. J. Steffler</b>	Date/Time 1-30-06	Received By/Stored In <b>FED EX</b>	Date/Time		
Relinquished By/Removed From <b>FED EX</b>	Date/Time 1-31-06 10910	Received By/Stored In <b>D. J. Steffler</b>	Date/Time 1-31-06 10910		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time		

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-244	Page 2 of 2
Collector TILLER, B	<b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Days	000000034
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location Cr 4, PORE WATER	SAF No. RC-048	Air Quality <input type="checkbox"/>				
Ice Chest No. AFS-04-052	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>	Offsite Property No. A060274	Bill of Lading/Air Bill No. SEE OSPC					

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C.	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	Cool 4C
	Type of Container	P	G	G/P	aG	aGs*	G/P	G/P	G/P	G/P
	No. of Container(s)	1	1	1	1	1	1	1	1	1
	Volume	125mL 3	500mL 3	125mL	1000mL	40mL	125mL	250mL	125mL	250mL

0000046	SAMPLE ANALYSIS										
	See item #1 in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.2		

Sample No.	Matrix *	Sample Date	Sample Time									
J11232	WATER	1-29-06	1415	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Soil/soil SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dryness Solids DL=Dryness Liquids T=Titrim W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1-29-06 2000	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1-29-06 2000	3 1/2 12/06 IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 01-30-06 0710	Received By/Stored In RZ STELLER R.Z. STELLER	Date/Time 1-30-06					
Relinquished By/Removed From RZ STELLER R.Z. STELLER	Date/Time 1-30-06 1500	Received By/Stored In FED EX	Date/Time					
Relinquished By/Removed From FED EX	Date/Time 1-31-06 10910	Received By/Stored In D. J. J. J.	Date/Time 1-31-06 10910					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Washington Closure Hanford				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-244		Page 1 of 2							
Collector TILLER, B <b>JAMES BERNHARD</b>				Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days							
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa				Sampling Location Cr 4, PORE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>											
Ice Chest No. <b>AFS-04-052</b>				Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX											
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>				Offsite Property No. <b>A060274</b>		Bill of Lading/Air Bill No. SEE OSCP													
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C				Preservation			None	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C			
				Type of Container			P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	
				No. of Container(s)			1	1	1	1	1	1	1	1	1	1	1	1	
				Volume			125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL			
SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081						
				Sample No.	Matrix *	Sample Date	Sample Time												
J11232	WATER	1-29-06	1415							X	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *							
Relinquished By/Removed From <b>JAMES BERNHARD</b>				Date/Time 1-29-06 1415				Received By/Stored In <b>EAS LOCKED STORAGE</b>				Date/Time 1-29-06 1415				(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)			
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>				Date/Time 01-30-06				Received By/Stored In <b>R2 Steffler R. J. Steffler</b>				Date/Time 0710 1-30-06							
Relinquished By/Removed From <b>R2 Steffler R. J. Steffler</b>				Date/Time 1-30-06 1500				Received By/Stored In <b>Fed Ex</b>				Date/Time							
Relinquished By/Removed From <b>Fed Ex</b>				Date/Time 1-31-06 10910				Received By/Stored In <b>WJ Madsen</b>				Date/Time 1-31-06 10910							
Relinquished By/Removed From				Date/Time				Received By/Stored In				Date/Time							
Relinquished By/Removed From				Date/Time				Received By/Stored In				Date/Time							
LABORATORY SECTION				Received By				Title				Date/Time							
FINAL SAMPLE DISPOSITION				Disposal Method				Disposed By				Date/Time							

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Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-252	Page 1 of 2
Collector TILLER, B	<b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Date Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Ss		Sampling Location Cr 4, SURFACE WATER		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. AFS-04-050	Field Logbook No. EL-1597	COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060272		Bill of Lading/Air Bill No. SEE OSPC			

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POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C					
	Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL

000048	SAMPLE ANALYSIS	Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time									
J11239	WATER	1-27-06	1530						X	X	X	X

<b>CHAIN OF POSSESSION</b> Relinquished By/Removed From: <b>JAMES BERNHARD</b> Date/Time: 1-29-06 2000 Received By/Stored In: <b>EAS LOCKED STORAGE</b> Date/Time: 1-29-06 2000 Relinquished By/Removed From: <b>EAS LOCKED STORAGE</b> Date/Time: 01-30-06 0710 Received By/Stored In: <b>RZ Steffler R.P. Steffler</b> Date/Time: 1-30-06 Relinquished By/Removed From: <b>RZ Steffler R.P. Steffler</b> Date/Time: 1-30-06 1500 Received By/Stored In: <b>FED EX</b> Date/Time: Relinquished By/Removed From: <b>[Signature]</b> Date/Time: 1-31-06/0910 Received By/Stored In: <b>[Signature]</b> Date/Time: 1-31-06/0910 Relinquished By/Removed From: Date/Time: Received By/Stored In: Date/Time: Relinquished By/Removed From: Date/Time: Received By/Stored In: Date/Time:		<b>SPECIAL INSTRUCTIONS</b> (1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Rhenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)	<b>Matrix *</b> S=Soil SS=Soil/Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solid DL=Drum Liquid T=Tissue WJ=Wipe L=Liquid V=Vegetation X=Other
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LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-048-252	Page 2 of 2
Collector TILLER, B	<b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Days
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 4, SURFACE WATER		SAF No. RC-048	Air Quality <input type="checkbox"/>	
Ice Chest No. AFS-04-050	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX			
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060272		Bill of Lading/Air Bill No. SEE OSCP		

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C				
	Type of Container	P	G	G/P	aG	aGs*				
	No. of Container(s)	1	1	1	1	1				
	Volume	125mL	500mL	125mL	1000mL	40mL				

000049	SAMPLE ANALYSIS				See item (2) in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G				
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Sample No.	Matrix *	Sample Date	Sample Time										
J11239	WATER	1-29-06	1530	X	X	X	X	X					

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 1-29-06 2000	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 1-29-06 2000	3.1/8/06 (IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate))				S=Soil SE=Submet SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trash W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 01-30-06	Received By/Stored In <b>RZ Staff</b>	Date/Time 1-30-06					
Relinquished By/Removed From <b>RZ Staff</b>	Date/Time 1-30-06	Received By/Stored In <b>Fed Ex</b>	Date/Time					
Relinquished By/Removed From <b>Fed Ex</b>	Date/Time 1-31-06 10910	Received By/Stored In <b>R. J. Miller</b>	Date/Time 1-31-06 10910					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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



Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-048-276	Page 2 of 2							
Collector TILLER, B	<b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days								
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 5, SURFACE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>									
Ice Chest No. AFS-04-050	Field Logbook No. EL-1597	COA BESRAS6520		Method of Shipment FED EX											
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. A060272		Bill of Lading/Air Bill No. SEE OSPC											
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C				Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C						
				Type of Container	F	G	G/P	IG	IGs*						
				No. of Container(s)	1	1	1	1	1						
				Volume	125mL	500mL	125mL	1000mL	40mL						
						340/1260									
SAMPLE ANALYSIS  See item #1 in Special Instructions.				TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G								
Sample No.	Matrix *	Sample Date	Sample Time												
J11279	WATER	1-29-06	1600	X	X	X	X	X							
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *							
Relinquished By/Removed From JAMES BERNHARD		Date/Time 1-29-06 2000	Received By/Stored In EAS LOCKED STORAGE		Date/Time 1-29-06 2000	340/1260 (1) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)		S=Soil SE=Settlement SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trace W/L=W/L L=Liquid V=Vegetation X=Other							
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 1-30-06 0710	Received By/Stored In R2 Staff/ R2 Staff		Date/Time 1-30-06										
Relinquished By/Removed From R2 Staff/ R2 Staff		Date/Time 1-30-06 1500	Received By/Stored In Fed Ex		Date/Time										
Relinquished By/Removed From Fed Ex		Date/Time 1-31-06 1010	Received By/Stored In D Staff		Date/Time 1-31-06 1010										
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time										
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time										
LABORATORY SECTION	Received By	Title				Date/Time									
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time									

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-258	Page 1 of 2
Collector TILLER, B	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sample Location Cr 5, PORE WATER	SAF No. RC-048		Air Quality <input type="checkbox"/>		000000040
Ice Chest No. ERC-96-012	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES, LIONVILLE		Offsite Property No. A060273	Bill of Lading/Air Bill No. SEE OSCP				

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C					
	Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
	Volume	25ml 600 ml	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL

000052	SAMPLE ANALYSIS										
	Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	

Sample No.	Matrix *	Sample Date	Sample Time								
J11245	WATER	1-29-06	1630						X	X	X

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S-Soil SE-Sediment SO-Solid SL-Sludge W-Water C-Oil A-Air DS-Dry Solids DL-Drum Liquids T-Tissue WI-Wipe L-Liquid V-Vegetation X-Other
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1-29-06 2000	Received By/Stored In ALZ	Date/Time 1-29-06 2000	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 21-30-00	Received By/Stored In RE Steffler R.J. Steffler	Date/Time 1-30-06					
Relinquished By/Removed From RE Steffler R.J. Steffler	Date/Time 1-30-06	Received By/Stored In Fed Ex	Date/Time					
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1-31-06 10910	Received By/Stored In D. Johnson	Date/Time 1-31-06 10910					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Collector TILLER, B <b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code <b>7N</b>	Data Turnaround <b>45 Days</b>
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location Cr 5, PORE WATER	SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. <b>ERC-96-012</b>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>	Offsite Property No. <b>A060273</b>	Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	Cool 4C
	Type of Container	P	G	G/P	aG	aGs*	G/P	G/P	G/P	G/P
	No. of Container(s)	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	125mL	1000mL	40mL	125mL	250mL	125mL	250mL

000053	SAMPLE ANALYSIS		See item # in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.2
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Sample No.	Matrix *	Sample Date	Sample Time								
J11245	WATER	1-29-06	1630	X	X	X	X	X	X	X	X

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>		<b>Matrix *</b> S-Sediment SO-Solid SL-Sludge W-Water O-Oil A-Air DS-Drum Solids DL-Drum Liquids T-Tissue WJ-Wipe L-Liquid V-Vegetation X-Other
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 1-29-06 7000	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 1-29-06 2000	3 1000 0480 IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)		
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 01-30-06	Received By/Stored In <b>RZ Steffler R. Z. Steffler</b>	Date/Time 1-30-06			
Relinquished By/Removed From <b>RZ Steffler R. Z. Steffler</b>	Date/Time 1-30-06 1500	Received By/Stored In <b>Fed EX</b>	Date/Time			
Relinquished By/Removed From <b>Fed EX</b>	Date/Time 1-31-06 10910	Received By/Stored In <b>D. J. Miller</b>	Date/Time 1-31-06 10910			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-290		Page 1 of 2	
Collector TILLER, B JAMES BERNHARD		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sample Location Cr-6, PORE WATER FULL QC			SAF No. RC-048		Air Quality <input type="checkbox"/>		
Ice Chest No. FIC-02-504		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060278			Bill of Lading/Air Bill No. SEE OSPC				

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C						
		Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
		No. of Container(s)	1	1	1	1	1	1	1	3	2	3
		Volume	125mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL

SPECIAL HANDLING AND/OR STORAGE COOL 4C	SAMPLE ANALYSIS											
	Tridium - H3	See item (1) in Special Instructions	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	PCBs - 8062	Pesticides - 8061		

Sample No.	Matrix *	Sample Date	Sample Time									
J112X3	WATER	02-01-06	1445							X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 02-04-06 2030	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02/01/06	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)		S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquid T=Tissue W=Wgc L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02/02/06	Received By/Stored In David Johnson	Date/Time 02-02-06 1200			
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02/02/06 1400	Received By/Stored In Fed Ex	Date/Time			
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 2-3-06 0930	Received By/Stored In EAS LOCKED STORAGE	Date/Time 2-3-06 0930			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-290	Page 2 of 2
Collector TILLER, B JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location C-6 PORE WATER FULL QC		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. ERC-02-504	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES ALIONVILLE		Offsite Property No. A060278		Bill of Lading/Air Bill No. SEE OSCP			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	Cool 4C	
	Type of Container	P	G	G/P	gG	gGs*	G/P	G/P	G/P	G/P	
	No. of Container(s)	1	1	1	2	2	1	1	1	1	
	Volume	125mL	1000mL	125mL	1000mL	40mL	125mL	250mL	125mL	250mL	

000055	SAMPLE ANALYSIS				See item #1 in Special Instructions	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.2

Sample No.	Matrix *	Sample Date	Sample Time										
J112X3	WATER	02-01-06	1445	X	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2030 02-01-06	Received By/Stored In FAS LOCKED STORAGE	Date/Time 2030 02-01-06	3 410/3006 (A) IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}								S=Soil SB=Soil/soil SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solid DL=Dry Liquid TL=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 1200 02-02-06	Received By/Stored In [Signature]	Date/Time 1200 02-02-06									
Relinquished By/Removed From [Signature]	Date/Time 1400 02/02/06	Received By/Stored In Fed Ex	Date/Time									
Relinquished By/Removed From Fed Ex	Date/Time 0930 2/3/06	Received By/Stored In [Signature]	Date/Time 0930									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-296		Page 1 of 2	
Collector TILLER, B JAMES BERNHARD		Company Contact JOAN KBSSNER		Telephone No. 375-4688		Project Coordinator KBSSNER, JH		Price Code 7N	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location C-6, SURFACE WATER FULL QC		SAF No. RC-048		Air Quality <input type="checkbox"/>		Data Turnaround 45 Days	
Ice Chest No. ERC-99-061		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060278		Bill of Lading/Air Bill No. SEE OSCP					

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS	Preservation	None	HNO3 to pH < 2	Cool 4C	Cool 4C	Cool 4C					
	Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	3	2	3
	Volume	125mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL

000056	SAMPLE ANALYSIS	Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time									
J112X9	WATER	02-01-06	1430						X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 02-01-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02-01-06	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SE=Settlement SO=Solid SL=Sludge W=Water Co=Oil A=Air DS=Drum Inside DL=Drum Outside T=Truck Wh=Wipe Lo=Log V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-02-06	Received By/Stored In David St. John WCK	Date/Time 02-02-06					
Relinquished By/Removed From David St. John WCK	Date/Time 02/02/06	Received By/Stored In FedEx	Date/Time					
Relinquished By/Removed From FED EX	Date/Time 2-3-06 0930	Received By/Stored In [Signature]	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					

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-048-296	Page 2 of 2
Collector TILLER, B JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location Cr-6 SURFACE WATER FULL QC		SAF No. RC-048		Air Quality <input type="checkbox"/>	00000004
Ice Chest No. ERC-99-061	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX			
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060278	Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C				
	Type of Container	P	G	G/P	aG	aGs*				
	No. of Container(s)	1	1	1	2	2				
	Volume	125mL	1000mL	125mL	1000mL	40mL				

000057	SAMPLE ANALYSIS				See item #1 in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G				
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Sample No.	Matrix *	Sample Date	Sample Time										
J112X9	WATER	02-01-06	1430	X	X	X	X	X					

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 02-01-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02-01-06	3 46013006 (1) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-02-06	Received By/Stored In David St. John WCH	Date/Time 02-02-06					
Relinquished By/Removed From David St. John WCH	Date/Time 02-02-06	Received By/Stored In FedEx	Date/Time					
Relinquished By/Removed From FedEx	Date/Time 02-02-06	Received By/Stored In J. Bernhardt	Date/Time 02-06-06					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

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Collector TILLER, B JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Days
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location Cr 10, SURFACE WATER	SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. ERC-96-061	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / CLONVILLE	Offsite Property No. A060278	Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C					
	Type of Container	P	G	G/P	aG	aGs*					
	No. of Container(s)	1	1	1	1	1					
	Volume	125mL	500mL	125mL	1000mL	40mL					

000058	SAMPLE ANALYSIS				See Item (A) in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G						
	Sample No.	Matrix *	Sample Date	Sample Time											
J112F9	WATER	02-01-06	1830	X	X	X	X	X							

CHAIN OF POSSESSION			Sign/Print Names			SPECIAL INSTRUCTIONS					Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 02-01-06	2130	Received By/Stored In EAS LOCKED STORAGE	Date/Time 2-1-06	2130	3 110/2606 IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)					Se=Seal 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
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-02-06	1800	Received By/Stored In David St. John WCH	Date/Time 02-02-06	1200						
Relinquished By/Removed From Della St. John WCH	Date/Time 02/02/06	1400	Received By/Stored In Fed Ex	Date/Time							
Relinquished By/Removed From Fed Ex	Date/Time 2-3-06	0930	Received By/Stored In P. H. ...	Date/Time 2-3-06	0930						
Relinquished By/Removed From	Date/Time		Received By/Stored In	Date/Time							

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

Collector TILLER, B <b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code <b>7N</b>	Data Turnaround <b>45 Days</b>
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location Cr 10, SURFACE WATER	SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. <b>ERC-96-061</b>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>	Offsite Property No. <b>A060278</b>	Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNCO3 to pH < 2	Cool 4C	Cool 4C	Cool 4C						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
	Volume	60mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	

000059	SAMPLE ANALYSIS										Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotope Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VDA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time									
J112F9	WATER	07-01-06	1830							X	X	X

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>								<b>Matrix *</b>
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 2-1-06	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 2-1-06	(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238] (2) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7470 - (CV)								S=Soil SB=Soilscent SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dross Solids DL=Dross Liquids TW=Tissue W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 02-02-06	Received By/Stored In <b>David S. Johnson</b>	Date/Time 02-02-06									
Relinquished By/Removed From <b>David S. Johnson</b>	Date/Time 02/02/06	Received By/Stored In <b>Fed EX</b>	Date/Time									
Relinquished By/Removed From <b>Fed EX</b>	Date/Time 2-3-06	Received By/Stored In <b>W. Hernandez</b>	Date/Time 2-3-06 0930									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									

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

<b>Washington Closure Hanford</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				RC-048-263		Page 2 of 2	
Collector TILLER, B JAMES BERNHARD		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KBSSNER, JH		Price Code 7N Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 10, PORE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>		45 Days	
Ice Chest No. ERC-02-002		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060278		Bill of Lading/Air Bill No. SEE OSCP					

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	Cool 4C
	Type of Container	P	G	G/P	nG	aG*	G/P	G/P	G/P	G/P
	No. of Container(s)	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	125mL	1000mL	40mL	125mL	250mL	125mL	250mL

090000	<b>SAMPLE ANALYSIS</b>				See item (if) in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.3
	Sample No.	Matrix *	Sample Date	Sample Time									
J11250	WATER	02-01-06	1900	X	X	X	X	X	X	X	X	X	X

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b> S=Soil SE=Soil/vent SO=Solid SL=Sludge W = Water O=Oil A=Air DL=Drum Solids DL=Liquid TL=Trailer W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From JAMES BERNHARD	Date/Time 02-01-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02-01-06	3 AH/2606 (*) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-02-06	Received By/Stored In David J. Johnson	Date/Time 02-02-06					
Relinquished By/Removed From David J. Johnson	Date/Time 02/02/06	Received By/Stored In FED EX	Date/Time					
Relinquished By/Removed From FED EX	Date/Time 2-3-06 0930	Received By/Stored In V. K. ...	Date/Time 2-3-06 0930					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-263	Page 1 of 2
Collector TILLER, B JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround <sup>1</sup> 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 10, PORE WATER		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. ERC-02-002	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES LIONVILLE		Offsite Property No. AD60278	Bill of Lading/Air Bill No. SEE OSCP				

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C					
	Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS	Tritium - H3	See Item (1) in Special Instructions.	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See Item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time									
J11250	WATER	02-01-06	1900						X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS								Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 02-01-06 2030	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02-01-06 2030	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7470 - (CV)								S=Soil SE=Soil/moss SO=Soil/d SL=Soil/g W=Water O=Oil A=Air CD=Dry Solid DL=Dry Liquid T=Tissue WP=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-02-06 1200	Received By/Stored In David St...	Date/Time 02-02-06 1200									
Relinquished By/Removed From Fed Ex	Date/Time 02-02-06 1400	Received By/Stored In Fed Ex	Date/Time									
Relinquished By/Removed From Fed Ex	Date/Time 2-3-06 0930	Received By/Stored In T. Bernhardt	Date/Time 2-3-06 0930									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-280		Page 1 of 2	
Collector TILLER, B JAMES BERNHARD		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 6, VERTICAL TUBE		SAF No. RC-048		Air Quality <input type="checkbox"/>		Data Turnaround 45 Days	
Ice Chest No. ERC-02-002		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060278 <del>A0600</del> P43 02/02/06		Bill of Lading/Air Bill No. SEE OSPC					

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNO3 to pH 4	Cool 4C	Cool 4C	Cool 4C						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
	Volume	60mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	1000mL

000062	SAMPLE ANALYSIS											
		Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	
Sample No.	Matrix *	Sample Date	Sample Time									
J112C3	WATER	02-01-06	1530						X	X	X	X

CHAIN OF POSSESSION			Sign/Print Names			SPECIAL INSTRUCTIONS						Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 02-01-06	2070	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02-01-06	2036	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)						S=Soil SS=Soilment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-22-06	1206	Received By/Stored In David Stroh WCH	Date/Time 02-02-06	1200							
Relinquished By/Removed From David Stroh WCH	Date/Time 02/02/06	1420	Received By/Stored In Fed Ex	Date/Time								
Relinquished By/Removed From Fed Ex	Date/Time 2-3-06	0930	Received By/Stored In J. J. J. J.	Date/Time 2-3-06	0930							
Relinquished By/Removed From	Date/Time		Received By/Stored In	Date/Time								
Relinquished By/Removed From	Date/Time		Received By/Stored In	Date/Time								

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

<b>Washington Closure Hanford</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				RC-048-280		Page 2 of 2	
Collector TILLER, B <b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround <b>45 Days</b>		
Project Designation 100 Area and 300 Area Component of the RCRA Water Sa		Sampling Location Cr 6, VERTICAL TUBE		SAF No. RC-048		Air Quality <input type="checkbox"/>			
Ice Chest No. <b>ERC-02-002</b>	Field Logbook No. EL-1597	COA BESRAS6520		Method of Shipment FED EX					
Shipped To EBERLINE SERVICES / LIONVILLE		Offsite Property No.		Bill of Lading/Air Bill No. SEE OSPC					

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	Cool 4C
	Type of Container	P	G	G/P	aG	aGs*	G/P	G/P	G/P	G/P
	No. of Container(s)	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	125mL	1000mL	40mL	125mL	250mL	125mL	250mL

000063	SAMPLE ANALYSIS				See item (2) in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.2
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Sample No.	Matrix *	Sample Date	Sample Time										
J112C3	WATER	02-01-06	1530	X	X	X	X	X	X	X	X	X	X

<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>				Matrix * S=Soil SS=Soilment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time Wt=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 2030 02-01-06	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 2030 02-01-06	3 AP 13006 (1) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)								
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 1200 02-02-06	Received By/Stored In <b>Daniel</b>	Date/Time 1000 02-02-06									
Relinquished By/Removed From <b>David St. John</b>	Date/Time 1400 02/02/06	Received By/Stored In <b>Fed Ex</b>	Date/Time									
Relinquished By/Removed From <b>Fed Ex</b>	Date/Time 2-306 0930	Received By/Stored In <b>Theresa</b>	Date/Time 2-306 0930									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-282		Page 1 of 2	
Collector TILLER, B <i>Bernhard</i>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>7N</b> Data Turnaround <b>45 Days</b>	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 7. SURFACE WATER				SAF No. RC-048		Air Quality <input type="checkbox"/>	
Ice Chest No. <i>ERC-03-106</i>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A060278</i>				Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C					
	Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
	Volume	60mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL

000064	SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226, Ra-228	See item (2) in Special Instructions.	Semi-VOA - B270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time											
J112F8	WATER	<i>2-1-06</i>	<i>1600</i>								X	X	X	Λ

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time <i>2-1-06 2:30</i>	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time <i>2-1-06 2:30</i>	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SE=Bediment SO=Soil SH=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquid T=Time W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time <i>02-02-06 1200</i>	Received By/Stored In <i>David St. John w.c.H.</i>	Date/Time <i>02-02-06 1200</i>					
Relinquished By/Removed From <i>James Bernhard</i>	Date/Time <i>02/02/06 1400</i>	Received By/Stored In <b>Fed Ex</b>	Date/Time					
Relinquished By/Removed From <b>FRW CO</b>	Date/Time <i>2-3-06 0930</i>	Received By/Stored In <i>James Bernhard</i>	Date/Time <i>2-3-06 0930</i>					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-282	Page 2 of 2
Collector TILLER, B <i>Bernhard</i>	Company Contact JOAN KBSSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 7, SURFACE WATER		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. <i>ERC-03-106</i>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A660278</i>		Bill of Lading/Air Bill No. SEE OSCP			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C					
	Type of Container	P	G	G/P	aG	aGs*					
	No. of Container(s)	1	1	1	1	1					
	Volume	125mL	500mL	125mL	1000mL	40mL					

000065	SAMPLE ANALYSIS				See item #5 in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 333.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G				
	Sample No.	Matrix *	Sample Date	Sample Time									
J112F6	WATER	2-1-06	1600	X	X	X	X	X					

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <i>JAMES BERNHARD</i>	Date/Time 2-1-06 2130	Received By/Stored In <i>EAS LOCKED STORAGE</i>	Date/Time 2-1-06 2130	<i>3/21/2006</i> (*) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				Soil SB=Bottoms SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trash W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>EAS LOCKED STORAGE</i>	Date/Time 1200	Received By/Stored In <i>David St. John WCH</i>	Date/Time 1200					
Relinquished By/Removed From <i>Bernhard</i>	Date/Time 02/22/06 1400	Received By/Stored In <i>Fed Ex</i>	Date/Time					
Relinquished By/Removed From <i>Fed Ex</i>	Date/Time 2-3-06 0930	Received By/Stored In <i>T. Neumann</i>	Date/Time 2-3-06 0930					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-260	Page 1 of 2
Collector TILLER, B. JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 7, PORE WATER		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. ERC-03-106	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060278		Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	

990066	SAMPLE ANALYSIS											
	Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8062	Pesticides - 8081		

Sample No.	Matrix *	Sample Date	Sample Time									
J11247	WATER	2-1-06	1615						X	X	X	X

CHAIN OF POSSESSION			Sign/Print Names			SPECIAL INSTRUCTIONS						Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-1-06 2:30	Received By/Stored In EAS LOCKED STORAGE	Date/Time 2-1-06 2:30	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)						S-Soil SE-Sediment SO-Solid SL-Sludge W-Water O-Oil A-Air DS-Drum Solids DL-Drum Liquids T-Tissue WL-Wipe L-Liquid V-Vegetation X-Other		
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 01-02-06 1200	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02-02-06 1200									
Relinquished By/Removed From [Signature]	Date/Time 02/02/06 1600	Received By/Stored In Fed Ex	Date/Time									
Relinquished By/Removed From [Signature]	Date/Time 2-3-06 0930	Received By/Stored In [Signature]	Date/Time 2-3-06 0930									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-260	Page 2 of 2
Collector TILLER, B	JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Days	00000005
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 7, PORE WATER		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. ERC-03-106	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES LIONVILLE		Offsite Property No. 4060278	Bill of Lading/Air Bill No. SEE OSPC				

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL IC	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	Cool 4C
	Type of Container	P	G	G/P	aG	aGs*	G/P	G/P	G/P	G/P
	No. of Container(s)	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	125mL	1000mL	40mL	125mL	250mL	125mL	250mL

000067	SAMPLE ANALYSIS	See item #1 in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.2
--------	-----------------	--------------------------------------	---------------------	-----------------	---------------------------	-----------------------------	-----------------	------------------------------	--------------------	--------------------------

Sample No.	Matrix *	Sample Date	Sample Time									
J11247	WATER	2-1-06	1615	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-1-06 2:30	Received By/Stored In EAS LOCKED STORAGE	Date/Time 2-1-06 2:30	3/11/2606 IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				S-Soil SB-Sediment SO-Solid SI-Sludge W-Water O-Oil A-Air DS-Dryer Solids DL-Dryer Liquids T-Tissue WI-Wipe L-Liquid V-Vegetation X-Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-02-06 12:00	Received By/Stored In David St. John WCH	Date/Time 02-02-06 12:00					
Relinquished By/Removed From David St. John WCH	Date/Time 02/02/06 1400	Received By/Stored In Fed Ex	Date/Time					
Relinquished By/Removed From Fed Ex	Date/Time 2-3-06 09:30	Received By/Stored In K. [Signature]	Date/Time 2-3-06 09:30					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

**Appendix 5**

**Data Validation Supporting Documentation**

**000068**

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	<u>C</u>	D	E
PROJECT:	RCBRA water		DATA PACKAGE: K0205		
VALIDATOR:	TLI	LAB:	LID	DATE: 6/3/06	
			SDG:	K0205	
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	<u>SW-846 8270</u>	<u>8310B</u>	SW-846 8270 (TCLP)
SAMPLES/MATRIX					
J112X3 J112X9 J112F9 J11250 J112C3					
J112FL J11247 J11238 J11232 J11239					
J11279 J11245					
Water					

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: \_\_\_\_\_

000069

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: no FB

bis(2-ethylhexyl)phthalate - U at RQL - all

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 - 4chloroaniline - 1790 MS - J all no PMS

LCS - " " 570 - J all

LCS - acenaphthylene - 4790 - J all

LCS - 3-nitroaniline - 790 - J all

ARO - 79+45 - NO MS/MSD - J all

ARO - 50, C3, F6, 47 - NO MS/MSD - J all

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: GRO - 79, 45, 50, C3, F6, 47 - NO MS/MSD - Jell  
4-chloroaniline - RPD 1370 - Jell  
3-nitroaniline - RPD 9590 - Jell  
2,4-dinitrophenol - RPD - 4170 - Jell  
3,3-dichlorobenzide - RPD - 18470 - Jell

6. SYSTEM PERFORMANCE (Levels D and E)

- Internal standards analyzed? ..... Yes  No  N/A
- Internal 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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date: 7 June 2006  
To: Washington Closure Hanford (technical representative)  
From: TechLaw, Inc.  
Project: 100 Area and 300 Area Component of the RCBRA Water Sampling  
Subject: PCB/Pesticide - Data Package No. K0205-LLI

## INTRODUCTION

This memo presents the results of data validation on Data Package No. K0205 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J112X3	2/1/06	Water	C	See note 1
J112X9	2/1/06	Water	C	See note 1
J112F9	2/1/06	Water	C	See note 1
J11250	2/1/06	Water	C	See note 1
J112C3	2/1/06	Water	C	See note 1
J112F6	2/1/06	Water	C	See note 1
J11247	2/1/06	Water	C	See note 1
J11238	1/29/06	Water	C	See note 1
J11232	1/29/06	Water	C	See note 1
J11239	1/29/06	Water	C	See note 1
J11279	1/29/06	Water	C	See note 1
J11245	1/29/06	Water	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 data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil

**000001**

samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

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

All holding times were acceptable.

#### • **Method Blank**

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

All method blank results were acceptable.

#### Field Blanks

No field blanks were submitted for analysis.

#### • **Accuracy**

##### Matrix Spike & Laboratory Control Sample

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

000002

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

All other accuracy results were acceptable.

#### Surrogate Recovery

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

All surrogate results were acceptable.

#### **· Precision**

#### Matrix Spike/Matrix Spike Duplicate Samples

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

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

All other precision results were acceptable.

#### Field Duplicate Samples

No field duplicates were submitted for analysis.

000003

- **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 analytes met the RQL.

- **Completeness**

Data Package No. K0205 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 a matrix spike, matrix spike duplicate and LCS analysis, all toxaphene results were qualified as estimates and flagged "J". Data flagged "J" indicates that the associated concentration is an estimate, but under the BHI statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

### **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*.

000004

**Appendix 1**

**Glossary of Data Reporting Qualifiers**

**000005**

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).

000006

**Appendix 2**  
**Summary of Data Qualification**

**000007**

PESTICIDE/PCB DATA QUALIFICATION SUMMARY\*

SDG: K0205	REVIEWER: TLI	Project: RCBRA	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Toxaphene	J	All	No MS, MSD or LCS

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

000008

**Appendix 3**

**Qualified Data Summary and Annotated Laboratory Reports**

**000009**

Project: WASHINGTON CLOSURE HANFORD																			
Laboratory: LLI                      SDG: K0205																			
Sample Number	J112X3		J112X9		J112F9		J11250		J112C3		J112F6		J11247		J11238		J11232		
Remarks																			
Sample Date	2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		1/29/06		1/29/06		
Extraction Date	2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		
Analysis Date	2/7/06		2/7/06		2/7/06		2/7/06		2/7/06		2/7/06		2/7/06		2/7/06		2/7/06		
PCB	RQL	Result	Q	Result	Q	Result	Q												
Aroclor-1016		0.41	U	0.40	U	0.41	U	0.41	U										
Aroclor-1221		0.41	U	0.40	U	0.41	U	0.41	U										
Aroclor-1232	16.5	0.41	U	0.40	U	0.41	U	0.41	U										
Aroclor-1242	16.5	0.41	U	0.40	U	0.41	U	0.41	U										
Aroclor-1248		0.41	U	0.40	U	0.41	U	0.41	U										
Aroclor-1254	16.5	0.41	U	0.40	U	0.41	U	0.41	U										
Aroclor-1260	16.5	0.41	U	0.40	U	0.41	U	0.41	U										
Sample Number	J112X3		J112X9		J112F9		J11250		J112C3		J112F6		J11247		J11238		J11232		
Remarks																			
Sample Date	2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		1/29/06		1/29/06		
Extraction Date	2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		2/5/06		
Analysis Date	2/7/06		2/7/06		2/7/06		2/7/06		2/7/06		2/7/06		2/7/06		2/7/06		2/7/06		
Pesticide	RQL	Result	Q	Result	Q	Result	Q												
Alpha-BHC	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Gamma-BHC (Lindane)	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Beta-BHC	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Heptachlor	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Delta-BHC	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Aldrin	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Heptachlor Epoxide	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Endosulfan I	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Dieldrin	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
4,4'-DDE	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Endrin	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Endosulfan II	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
4,4'-DDD	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Endosulfan Sulfate	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
4,4'-DDT	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Methoxychlor	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Endrin Ketone	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Endrin Aldehyde	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
alpha-Chlordane	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
gamma-Chlordane	5	0.052	U	0.051	U	0.052	U	0.051	U	0.051	U	0.051	U	0.050	U	0.052	U	0.051	U
Toxaphene	5	0.52	UJ	0.51	UJ	0.52	UJ	0.51	UJ	0.51	UJ	0.51	UJ	0.50	UJ	0.52	UJ	0.51	UJ

000010

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: K0205			
Sample Number		J11239	J11279	J11245			
Remarks							
Sample Date		1/29/06	1/29/06	1/29/06			
Extraction Date		2/5/06	2/5/06	2/5/06			
Analysis Date		2/7/06	2/7/06	2/7/06			
PCB	RQL	Result	Q	Result	Q	Result	Q
Aroclor-1016		0.41	U	0.41	U	0.41	U
Aroclor-1221		0.41	U	0.41	U	0.41	U
Aroclor-1232	16.5	0.41	U	0.41	U	0.41	U
Aroclor-1242	16.5	0.41	U	0.41	U	0.41	U
Aroclor-1248		0.41	U	0.41	U	0.41	U
Aroclor-1254	16.5	0.41	U	0.41	U	0.41	U
Aroclor-1260	16.5	0.41	U	0.41	U	0.41	U
Sample Number		J11239	J11279	J11245			
Remarks							
Sample Date		1/29/06	1/29/06	1/29/06			
Extraction Date		2/5/06	2/5/06	2/5/06			
Analysis Date		2/7/06	2/7/06	2/7/06			
Pesticide	RQL	Result	Q	Result	Q	Result	Q
Alpha-BHC	5	0.051	U	0.051	U	0.051	U
Gamma-BHC (Lindane)	5	0.051	U	0.051	U	0.051	U
Beta-BHC	5	0.051	U	0.051	U	0.051	U
Heptachlor	5	0.051	U	0.051	U	0.051	U
Delta-BHC	5	0.051	U	0.051	U	0.051	U
Aldrin	5	0.051	U	0.051	U	0.051	U
Heptachlor Epoxide	5	0.051	U	0.051	U	0.051	U
Endosulfan I	5	0.051	U	0.051	U	0.051	U
Dieldrin	5	0.051	U	0.051	U	0.051	U
4,4'-DDE	5	0.051	U	0.051	U	0.051	U
Endrin	5	0.051	U	0.051	U	0.051	U
Endosulfan II	5	0.051	U	0.051	U	0.051	U
4,4'-DDD	5	0.051	U	0.051	U	0.051	U
Endosulfan Sulfate	5	0.051	U	0.051	U	0.051	U
4,4'-DDT	5	0.051	U	0.051	U	0.051	U
Methoxychlor	5	0.051	U	0.051	U	0.051	U
Endrin Ketone	5	0.051	U	0.051	U	0.051	U
Endrin Aldehyde	5	0.051	U	0.051	U	0.051	U
alpha-Chlordane	5	0.051	U	0.051	U	0.051	U
gamma-Chlordane	5	0.051	U	0.051	U	0.051	U
Toxaphene	5	0.51	UJ	0.51	UJ	0.51	UJ

000011

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.

0000000000

	Cust ID:	J112X3	J112X3	J112X3	J112X9	J112F9	J11250
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate:	Tetrachloro-m-xylene	76 %	78 %	87 %	74 %	75 %	84 %
	Decachlorobiphenyl	65 %	70 %	75 %	80 %	82 %	85 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Aroclor-1016		0.41 U	93 %	101 %	0.41 U	0.41 U	0.41 U
Aroclor-1221		0.41 U	0.40 U	0.41 U	0.41 U	0.41 U	0.41 U
Aroclor-1232		0.41 U	0.40 U	0.41 U	0.41 U	0.41 U	0.41 U
Aroclor-1242		0.41 U	0.40 U	0.41 U	0.41 U	0.41 U	0.41 U
Aroclor-1248		0.41 U	0.40 U	0.41 U	0.41 U	0.41 U	0.41 U
Aroclor-1254		0.41 U	0.40 U	0.41 U	0.41 U	0.41 U	0.41 U
Aroclor-1260		0.41 U	96 %	103 %	0.41 U	0.41 U	0.41 U

000012

	Cust ID:	J112C3	J112F6	J11247	PBLKBA	PBLKBA BS	PBLKBA BSD
Sample Information	RFW#:	005	006	007	06LE0088-MB1	06LE0088-MB1	06LE0088-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate:	Tetrachloro-m-xylene	88 %	82 %	68 %	51 %	70 %	77 %
	Decachlorobiphenyl	92 %	87 %	77 %	73 %	75 %	89 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Aroclor-1016		0.41 U	0.41 U	0.40 U	0.40 U	80 %	91 %
Aroclor-1221		0.41 U	0.41 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1232		0.41 U	0.41 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1242		0.41 U	0.41 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1248		0.41 U	0.41 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1254		0.41 U	0.41 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1260		0.41 U	0.41 U	0.40 U	0.40 U	89 %	100 %

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

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00000005

Sample Information	Cust ID:	J11238	J11232	J11239	J11279	J11245	PBLKBA
	RFW#:	001	002	003	004	005	06LE0088-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate:	Tetrachloro-m-xylene	101 %	82 %	80 %	79 %	75 %	51 %
	Decachlorobiphenyl	95 %	81 %	80 %	76 %	83 %	73 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Aroclor-1016		0.41 U	0.40 U				
Aroclor-1221		0.41 U	0.40 U				
Aroclor-1232		0.41 U	0.40 U				
Aroclor-1242		0.41 U	0.40 U				
Aroclor-1248		0.41 U	0.40 U				
Aroclor-1254		0.41 U	0.40 U				
Aroclor-1260		0.41 U	0.40 U				

Cust ID: PBLKBA BS PBLKBA BSD

Sample Information	RFW#:	06LE0088-MB1	06LE0088-MB1
	Matrix:	WATER	WATER
	D.F.:	1.00	1.00
	Units:	UG/L	UG/L

*R 4/5/06*

Surrogate:	Tetrachloro-m-xylene	70 %	77 %
	Decachlorobiphenyl	75 %	89 %
		-----fl-----	-----fl-----
Aroclor-1016		80 %	91 %
Aroclor-1221		0.40 U	0.40 U
Aroclor-1232		0.40 U	0.40 U
Aroclor-1242		0.40 U	0.40 U
Aroclor-1248		0.40 U	0.40 U
Aroclor-1254		0.40 U	0.40 U
Aroclor-1260		89 %	100 %

*9/2/06*

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

000013

000000007

Sample Information	Cust ID:	J112X3	J112X3	J112X3	J112X9	J112F9	J11250
	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

Surrogate:	Tetrachloro-m-xylene	59 %	57 %	60 %	55 %	58 %	59 %
	Decachlorobiphenyl	52 %	47 %	46 %	63 %	66 %	64 %

	fl	fl	fl	fl	fl	fl	fl
Alpha-BHC	0.052 U	93 %	88 %	0.051 U	0.052 U	0.051 U	
gamma-BHC (Lindane)	0.052 U	93 %	87 %	0.051 U	0.052 U	0.051 U	
Beta-BHC	0.052 U	84 %	75 %	0.051 U	0.052 U	0.051 U	
Heptachlor	0.052 U	82 %	79 %	0.051 U	0.052 U	0.051 U	
Delta-BHC	0.052 U	91 %	84 %	0.051 U	0.052 U	0.051 U	
Aldrin	0.052 U	85 %	83 %	0.051 U	0.052 U	0.051 U	
Heptachlor epoxide	0.052 U	90 %	84 %	0.051 U	0.052 U	0.051 U	
gamma-Chlordane	0.052 U	88 %	82 %	0.051 U	0.052 U	0.051 U	
Endosulfan I	0.052 U	85 %	80 %	0.051 U	0.052 U	0.051 U	
alpha-Chlordane	0.052 U	88 %	82 %	0.051 U	0.052 U	0.051 U	
4,4'-DDE	0.052 U	89 %	86 %	0.051 U	0.052 U	0.051 U	
Dieldrin	0.052 U	94 %	88 %	0.051 U	0.052 U	0.051 U	
Endrin	0.052 U	103 %	96 %	0.051 U	0.052 U	0.051 U	
4,4'-DDD	0.052 U	96 %	89 %	0.051 U	0.052 U	0.051 U	
Endosulfan II	0.052 U	83 %	79 %	0.051 U	0.052 U	0.051 U	
4,4'-DDT	0.052 U	87 %	85 %	0.051 U	0.052 U	0.051 U	
Endrin aldehyde	0.052 U	85 %	79 %	0.051 U	0.052 U	0.051 U	
Endosulfan sulfate	0.052 U	92 %	86 %	0.051 U	0.052 U	0.051 U	
Methoxychlor	0.052 U	84 %	81 %	0.051 U	0.052 U	0.051 U	
Endrin ketone	0.052 U	93 %	87 %	0.051 U	0.052 U	0.051 U	
Toxaphene	0.52 U J	0.51 U	0.51 U	0.51 U J	0.52 U J	0.51 U J	

000014

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

C/S/06

78/16

00000000

	Cust ID:	J112C3	J112F6	J11247	PBLKBA	PBLKBA BS	PBLKBA BSD
Sample Information	RFW#:	005	006	007	06LE0088-MB1	06LE0088-MB1	06LE0088-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

Surrogate:	Tetrachloro-m-xylene	62 %	51 %	50 %	39 %	64 %	61 %
	Decachlorobiphenyl	69 %	59 %	62 %	60 %	50 %	69 %

	fl	fl	fl	fl	fl	fl	fl
Alpha-BHC	0.051 U	0.051 U	0.050 U	0.050 U	94 %	92 %	
gamma-BHC (Lindane)	0.051 U	0.051 U	0.050 U	0.050 U	93 %	94 %	
Beta-BHC	0.051 U	0.051 U	0.050 U	0.050 U	96 %	105 %	
Heptachlor	0.051 U	0.051 U	0.050 U	0.050 U	83 %	83 %	
Delta-BHC	0.051 U	0.051 U	0.050 U	0.050 U	91 %	93 %	
Aldrin	0.051 U	0.051 U	0.050 U	0.050 U	89 %	86 %	
Heptachlor epoxide	0.051 U	0.051 U	0.050 U	0.050 U	89 %	92 %	
gamma-Chlordane	0.051 U	0.051 U	0.050 U	0.050 U	89 %	91 %	
Endosulfan I	0.051 U	0.051 U	0.050 U	0.050 U	90 %	92 %	
alpha-Chlordane	0.051 U	0.051 U	0.050 U	0.050 U	89 %	91 %	
4,4'-DDE	0.051 U	0.051 U	0.050 U	0.050 U	96 %	98 %	
Dieldrin	0.051 U	0.051 U	0.050 U	0.050 U	95 %	97 %	
Endrin	0.051 U	0.051 U	0.050 U	0.050 U	101 %	103 %	
4,4'-DDD	0.051 U	0.051 U	0.050 U	0.050 U	97 %	100 %	
Endosulfan II	0.051 U	0.051 U	0.050 U	0.050 U	92 %	93 %	
4,4'-DDT	0.051 U	0.051 U	0.050 U	0.050 U	93 %	95 %	
Endrin aldehyde	0.051 U	0.051 U	0.050 U	0.050 U	86 %	88 %	
Endosulfan sulfate	0.051 U	0.051 U	0.050 U	0.050 U	92 %	94 %	
Methoxychlor	0.051 U	0.051 U	0.050 U	0.050 U	85 %	88 %	
Endrin ketone	0.051 U	0.051 U	0.050 U	0.050 U	93 %	95 %	
Toxaphene	0.51 U J	0.51 U J	0.50 U J	0.50 U	0.50 U	0.50 U	0.50 U

000015

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

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00000005

Sample Information	Cust ID:	J11238	J11232	J11239	J11279	J11245	PBLKBA
	RFW#:	001	002	003	004	005	06LE0088-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate: Tetrachloro-m-xylene		59 %	57 %	55 %	62 %	58 %	39 %
Decachlorobiphenyl		62 %	66 %	58 %	61 %	68 %	60 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Alpha-BHC		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
gamma-BHC (Lindane)		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Beta-BHC		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Heptachlor		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Delta-BHC		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Aldrin		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Heptachlor epoxide		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
gamma-Chlordane		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Endosulfan I		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
alpha-Chlordane		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
4,4'-DDE		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Dieldrin		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Endrin		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
4,4'-DDD		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Endosulfan II		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
4,4'-DDT		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Endrin aldehyde		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Endosulfan sulfate		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Methoxychlor		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Endrin ketone		0.052 U	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
Toxaphene		0.52 UJ	0.51 UJ	0.51 UJ	0.51 UJ	0.51 U	0.50 U

000016

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

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**Appendix 4**

**Laboratory Narrative and Chain-of-Custody Documentation**

**000018**



Case Narrative

Client: TNU-HANFORD RCS-048  
LVL #: 0601L184 and 0602L209  
SDG/SAF # K0205/RCS-048

W.O. #: 11343-606-001-9999-00  
Date Received: 01-31-2006 and 02-03-2006

PCB

Twelve (12) water samples were collected on 01-29-2006 and 02-01-2006.

The samples and their associated QC samples were extracted on 02-05-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 02-06,07-2006. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8082.

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

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
4. The method blank was below the reporting limits for all target compounds.
5. All surrogate recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. The initial calibrations associated with this data set were within acceptance criteria.
9. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. LVL is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

2/10/06  
Date

son\l:\group\data\pest\tnu hanford\0601-184&0602-209.pcb

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 3 4 pages.

000019



Case Narrative

Client: TNU-HANFORD RCS-048  
LVL #: 0601L184 and 0602L209  
SDG/SAF # K0205/RCS-048

W.O. #: 11343-606-001-9999-00  
Date Received: 01-31-2006 and 02-03-2006

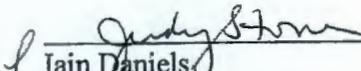
**CHLORINATED PESTICIDES**

Twelve (12) water samples were collected on 01-29-2006 and 02-01-2006.

The samples and their associated QC samples were extracted on 02-05-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 02-06,07-2006. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8081A.

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

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The samples and their associated QC samples received a Copper-Sulfur cleanup according to Lionville Laboratory SOPs based on SW846 method 3660A.
4. The method blank was below the reporting limits for all target compounds.
5. All surrogate recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. The initial calibrations associated with this data set were within acceptance criteria.
9. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. LVL is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager

2/10/06  
Date

Lionville Laboratory Incorporated

som\c:\group\data\pest\tnu hanford\0601-184 & 0602-209.pst  
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 36 pages.

000020

0000003

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-U48-251						
Collector TILLER, B	<b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Day							
Project Destination 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 3, SURFACE WATER		SAF No. RC-048	Air Quality <input type="checkbox"/>								
Ice Chest No. ERC-96-012	Field Logbook No. BL-1597	COA BESRAS6520		Method of Shipment FED EX									
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. A060273		Bill of Lading/Air Bill No. SEE OSPC									
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C		Preservation	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	
		Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
		No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
		Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	
SAMPLE ANALYSIS		Tritium - H3	See Item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081		
		Sample No.	Matrix *	Sample Date	Sample Time								
J11238	WATER	1-29-06	1330					X	X	X	X		
CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS					Matrix *				
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 1-29-06 2000	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 1-29-06 2000	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)					S=Soil SE=Soil/Stone SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Set DL=Drum Ls T=Tissue Wp=Wipe L=Liquid V=Vegetation X=Other				
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 01-30-06 0710	Received By/Stored In <b>RZ Steffler R.P. Steffler</b>	Date/Time 1-30-06										
Relinquished By/Removed From <b>RZ Steffler R.P. Steffler</b>	Date/Time 1-30-06 1500	Received By/Stored In <b>FED EX</b>	Date/Time										
Relinquished By/Removed From <b>[Signature]</b>	Date/Time 1-31-06/0910	Received By/Stored In <b>D. Smith</b>	Date/Time 1-31-06/10910										
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time										
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time										
LABORATORY SECTION	Received By	Title		Date/Time									
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By		Date/Time									

000021

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						KCC-048-244						
Collector TILLER, B	<b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Days	Air Quality <input type="checkbox"/>							
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 4, PORE WATER		SAF No. RC-048										
Ice Chest No. AFS-04-052	Field Logbook No. EL-1597	COA BESRAS6520		Method of Shipment FED EX										
Shipped To EBERLINE SERVICES/LIONVILLE		Offsite Property No. A060274		Bill of Lading/Air Bill No. SEE OSPC										
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C				Preservation	None	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C
				Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
				No. of Container(s)	1	1	1	1	1	1	1	1	1	1
				Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS				Tritium - H3	See Item (1) in Special Instructions	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium - 226; Ra-228	See Item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	
Sample No.	Matrix *	Sample Date	Sample Time											
J11232	WATER	1-29-06	1415							X	X	X	X	
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *						
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 1-29-06 1415	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 1-29-06 1415	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SE=Sludges SD=Solid SL=Sludge W=Water O=Oil A=Air DS=Drawn Sub. DL=Drawn Liquef. T=Tissue W=Wipe L=Liquid V=Vegetation X=Other						
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 0710	Received By/Stored In <b>RZ Steffler R.Z. Steffler</b>	Date/Time 1-30-06											
Relinquished By/Removed From <b>RZ Steffler R.Z. Steffler</b>	Date/Time 1500	Received By/Stored In <b>Fed Ex</b>	Date/Time 1-30-06											
Relinquished By/Removed From <b>Fed Ex</b>	Date/Time 1-31-06 10910	Received By/Stored In <b>D. J. Muth</b>	Date/Time 1-31-06 10910											
Relinquished By/Removed From	Date/Time	Received By/Stored In	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											
LABORATORY SECTION	Received By	Title						Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By						Date/Time						

000022

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-252		Page 1 of 2				
Collector TILLER, B <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days				
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sample Location Cr 4, SURFACE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>								
Ice Chest No. AFS-04-050		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX								
Shipped To BERLINE SERVICES (LIONVILLE)		Offsite Property No. A060272		Bill of Lading/Air Bill No. SBE OSPC										
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C			Preservation	None	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C	
			Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
			Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	
SAMPLE ANALYSIS			Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Scn-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081		
			Sample No.	Matrix *	Sample Date	Sample Time								
J11239	WATER	1-29-06	1530						X	X	X	X		
CHAIN OF POSSESSION			Sign/Print Names				SPECIAL INSTRUCTIONS					Matrix *		
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 1-29-06 2000	Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 1-29-06 2000	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)					S=Soil SB=Soilsand SO=Solid SL=Sludge W=Water O=Oil A=Air DB=Dryn Soil DL=Dryn Lq T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 01-30-06	Received By/Stored In <b>R. Steffler R. J. Steffler</b>		Date/Time 0710 1-30-06									
Relinquished By/Removed From <b>R. Steffler R. J. Steffler</b>		Date/Time 1-30-06 1500	Received By/Stored In <b>FED EX</b>		Date/Time									
Relinquished By/Removed From <b>[Signature]</b>		Date/Time 1-31-06/0910	Received By/Stored In <b>D. J. Miller</b>		Date/Time 1-31-06/0910									
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title							Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By							Date/Time			

000023

Collector <b>TILLER, B</b> <b>JAMES BERNHARD</b>	Company Contact <b>JOAN KESSNER</b>	Telephone No. <b>375-4688</b>	Project Coordinator <b>KESSNER, JH</b>	Price Code <b>7N</b>	Data Turnaround <b>45 Days</b>
Project Designation <b>100 Area and 300 Area Component of the RCBRA Water Sa</b>	Sampling Location <b>Cr 5, SURFACE WATER</b>	SAF No. <b>RC-048</b>	Air Quality <input type="checkbox"/>		
Ice Chest No. <b>AFS-04-050</b>	Field Logbook No. <b>EL-1597</b>	COA <b>BESRAS6520</b>	Method of Shipment <b>FED EX</b>		
Shipped To <b>EBERLINE SERVICES (LIONVILLE)</b>	Offsite Property No. <b>A060272</b>	Bill of Lading/Air Bill No. <b>SEE OSCP</b>			

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
	Volume	60mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	

SAMPLE ANALYSIS	Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Br	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226, Ra-228	See item (2) in Special Instructions.	Semi-VOA - <270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time								
J11279	WATER	1-29-06	1600					X	X	X	X

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>		<b>Matrix *</b> S=Soil SB=Bottom SO=Solid SL=Sludge W=Water U=Oil A=Air DS=Drum Solids DL=Drum Liquid T=Trace WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time <b>1-29-06 1600</b>	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time <b>1-29-06 1600</b>	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)		
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time <b>01/30/06 1020</b>	Received By/Stored In <b>RZ Stoffler R.Z. Stoffler</b>	Date/Time <b>1-30-06 0700</b>			
Relinquished By/Removed From <b>RZ Stoffler R.Z. Stoffler</b>	Date/Time <b>1-30-06 1500</b>	Received By/Stored In <b>Fed Ex</b>	Date/Time			
Relinquished By/Removed From <b>Fed Ex</b>	Date/Time <b>1-31-06 1010</b>	Received By/Stored In <b>D. J. [Signature]</b>	Date/Time <b>1-31-06/0910</b>			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

000022

000000014

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-258	Page 1 of 2
Collector TILLER, B	JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Days	000000016
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 5, PORE WATER		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. ERC-96-012	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES LIONVILLE		Offsite Property No. A060273	Bill of Lading/Air Bill No. SEE OSPC				

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
	Volume	425ml 60 BA 1-29-06	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	

000025	SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - B270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time											
J11245	WATER	1-29-06	1630								X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS								Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1-29-06 2000AS	Received By/Stored In LOCKED STORAGE	Date/Time 1-29-06 2000	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)								S=Soil
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 2-3-06 0710	Received By/Stored In R2 Steffler R2 Steffler	Date/Time 1-30-06									SS=Soilment
Relinquished By/Removed From R2 Steffler R2 Steffler	Date/Time 1-30-06 1500	Received By/Stored In FED EX	Date/Time									SO=Solid
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									SL=Sludge
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									W=Water
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	LA=Liquid								
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	V=Vegetation								
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	X=Other								

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-048-290	Page 1 of 2
Collector TILLER, B JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location Cr. 6, PORE WATER FULL QC	SAF No. RC-048	Air Quality <input type="checkbox"/>			
Ice Chest No. FCC-02-504	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX			
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060278	Bill of Lading/Air Bill No. SEE OSPC				

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	3	2	3
	Volume	125mL	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS	Tritium - H3	See Item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See Item (2) in Special Instructions.	Semi-VOA - E270A (TCL)	PCBs - 8082	Pesticides - 8081
	000026									

Sample No.	Matrix *	Sample Date	Sample Time									
J112X3	WATER	02-01-06	1445						X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 02-01-06 2030	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02/01/06	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)		S=Soil SO=Soil SL=Soil W=Water O=Oil A=Air DS=Dry Solid DL=Dry Liquid T=Trace W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02/02/06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02/02/06			
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02/02/06 1400	Received By/Stored In Fed Ex	Date/Time			
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 2-3-06 0930	Received By/Stored In Fed Ex	Date/Time 2-3-06 0930			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-296		Page 1 of 2	
Collector TILLER, B JAMES BERNHARD		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr-6, SURFACE WATER FULL QC		SAF No. RC-048		Air Quality <input type="checkbox"/>		45 Days	
Ice Chest No. ERC-99-061		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060278		Bill of Lading/Air Bill No. SEE OSPC					

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOLAC	Preservation	Note	HNO3 to pH	Cool AC	Cool AC	Cool AC						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	3	2	3
	Volume	125mL	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL

000027	SAMPLE ANALYSIS											
	Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081		

Sample No.	Matrix *	Sample Date	Sample Time									
J112X9	WATER	02-01-06	1430						X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS								Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 02-01-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02-01-06	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)								S=Soil SE=Sediment SO=Soil SL=Sludge W=Water O=Oil A=Air ES=Drum Solids DL=Drum Liquids T=Trash W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-02-06	Received By/Stored In David St. John WCH	Date/Time 02-02-06									
Relinquished By/Removed From David St. John WCH	Date/Time 02/02/06	Received By/Stored In Fed Ex	Date/Time									
Relinquished By/Removed From EAS	Date/Time 2-3-06 0930	Received By/Stored In E. Kennedy	Date/Time 2-3-06 0930									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									

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

Washington Closure Hanford				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-285		Page 1 of 2											
Collector TILLER, B JAMES BERNHARD				Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days											
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa				Sampling Location Cr 10, SURFACE WATER				SAF No. RC-048		Air Quality <input type="checkbox"/>													
Ice Chest No. ERC-96-061				Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX															
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>				Offsite Property No. A06D278				Bill of Lading/Air Bill No. SEE OSCP															
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C				Preservation			Nons			Cool 4C													
				Type of Container			P			aG													
				No. of Container(s)			1			1													
				Volume			60mL			1000mL													
SAMPLE ANALYSIS				Tritium - H3		See Item (1) in Special Instructions.		Strontium-89,90 - Total Sr		Isotopic Thorium (Thorium-232)		Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)		Radium-226; Ra-228		See Item (2) in Special Instructions.		Semi-VOA - 8270A (TCL)		PCBs - 8082		Pesticides - 8081	
				Sample No.		Matrix *		Sample Date		Sample Time													
J112F9		WATER		07-01-06		1830																	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS								Matrix *							
Relinquished By/Removed From JAMES BERNHARD				Date/Time 2-1-06				Received By/Stored In EAS LOCKED STORAGE				Date/Time 2-1-06				(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SE=Soil/soot SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solid DL=Dry Liquid T=Tissue WJ=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From EAS LOCKED STORAGE				Date/Time 02-02-06				Received By/Stored In David S. Johnson WCH				Date/Time 02-02-06											
Relinquished By/Removed From David S. Johnson				Date/Time 02/02/06				Received By/Stored In FED EX				Date/Time											
Relinquished By/Removed From FED EX				Date/Time 2-3-06				Received By/Stored In W. Hernandez				Date/Time 2-3-06											
Relinquished By/Removed From				Date/Time				Received By/Stored In				Date/Time											
Relinquished By/Removed From				Date/Time				Received By/Stored In				Date/Time											
LABORATORY SECTION		Received By		Title				Date/Time															
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time															

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-048-263		Page 1 of 2							
Collector TILLBR, B JAMES BERNHARD		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround						
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sample Location Cr 10, PORE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>		45 Days								
Ice Chest No. ERC-02-002		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX										
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. AD60278			Bill of Lading/Air Bill No. SEE OSPC											
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C				Preservation	None	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C		
				Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
				No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1	1
				Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL		
SAMPLE ANALYSIS				Tritium - H3	See Item (1) in Special Instructions	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium -226; Ra-228	See Item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081			
				Sample No.	Matrix *	Sample Date	Sample Time									
J11250	WATER	02-01-06	1900							X	X	X	X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *				
Relinquished By/Removed From JAMES BERNHARD		Date/Time 02-01-06 2030		Received By/Stored In EAS LOCKED STORAGE		Date/Time 02-01-06 2030		(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238] (2) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7470 - (CV)				S=Soil SE=Soil/mud SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Spills DL=Drum Leaks T=Traces W=Wipe L=Leak V=Vegetation X=Other				
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 02-02-06 1200		Received By/Stored In David St. ... WCA		Date/Time 02-02-06 1200										
Relinquished By/Removed From ...		Date/Time 02-02-06 1400		Received By/Stored In Fed Ex		Date/Time										
Relinquished By/Removed From ...		Date/Time 02-06 0930		Received By/Stored In T. ...		Date/Time 02-06 0930										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
LABORATORY SECTION		Received By		Title				Date/Time								
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time								

Washington Closure Hanford				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-280		Page 1 of 2						
Collector TILLER, B <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>7N</b>		Data Turnaround <b>45 Days</b>								
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa				Sample Location Cr 6, VERTICAL TUBE		SAF No. RC-048		Air Quality <input type="checkbox"/>										
Ice Chest No. <b>ERC-02-002</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX												
Shipped To EBERLINE SERVICES (LIONVILLE)				Offsite Property No. <b>A060278</b> <del>A0600</del> <b>RA3 02/02/06</b>		Bill of Lading/Air Bill No. SEE OSCP												
POSSIBLE SAMPLE HAZARDS/REMARKS <b>POTENTIAL RADIOACTIVE &lt; DOT LIMITS</b>  Special Handling and/or Storage <b>COOL 4C</b>				Preservation		None	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C			
				Type of Container		P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	
				No. of Container(s)		1	1	1	1	1	1	1	1	1	1	1	1	1
				Volume		60mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL			
SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium -226, Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081					
				Sample No.	Matrix *	Sample Date	Sample Time											
J112C3				WATER		02-01-06		1530						X	X	X	X	
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>						<b>Matrix *</b>				
Relinquished By/Removed From <b>JAMES BERNHARD</b> 02-01-06				Date/Time 2030		Received By/Stored In <b>EAS LOCKED STORAGE</b> 02-01-06		Date/Time 2030		(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)						S=Soil SE=Soil/soot SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Truss WI=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b> 02-02-06				Date/Time 1200		Received By/Stored In <b>David St. John WCH</b> 02-02-06		Date/Time 1200										
Relinquished By/Removed From <b>David St. John WCH</b> 02/02/06				Date/Time 1430		Received By/Stored In <b>Fed Ex</b>		Date/Time										
Relinquished By/Removed From <b>Fed Ex</b> 2-3-06 0930				Date/Time		Received By/Stored In <b>J. Bernhardt</b> 2-3-06 0930		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										
<b>LABORATORY SECTION</b>		Received By		Title						Date/Time								
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By						Date/Time								

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-048-282		Page 1 of 2						
Collector TILLER, B <i>Bernhard</i>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days					
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 7, SURFACE WATER			SAF No. RC-048		Air Quality <input type="checkbox"/>								
Ice Chest No. <i>ERC-03-106</i>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX									
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A060278</i>			Bill of Lading/Air Bill No. SEE OSPC										
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt; DOT LIMITS</i>  Special Handling and/or Storage <i>COOL4C</i>				Preservation	None	HNO3 to pH Δ	HNO3 to pH Δ	HNO3 to pH Δ	HNO3 to pH Δ	HNO3 to pH Δ	HNO3 to pH Δ	Cool 4C	Cool 4C	Cool 4C	
				Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
				No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
				Volume	60mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	
SAMPLE ANALYSIS				Tritium - H3	See Item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See Item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081		
				Sample No.	Matrix *	Sample Date	Sample Time								
J112F6		WATER		<i>2-1-06</i>		<i>1600</i>						X	X	X	X
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From <i>JAMES BERNHARD</i>		Date/Time <i>2-1-06 2:30</i>		Received By/Stored In <i>EAS LOCKED STORAGE</i>		Date/Time <i>2-1-06 2:30</i>		(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238] (2) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7470 - (CV)				S=Soil SE=Sediment SO=Sludge SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From <i>EAS LOCKED STORAGE</i>		Date/Time <i>2-1-06 1200</i>		Received By/Stored In <i>David Strohman wch</i>		Date/Time <i>02-02-06</i>									
Relinquished By/Removed From <i>David Strohman wch</i>		Date/Time <i>02/02/06 1400</i>		Received By/Stored In <i>Fed Ex</i>		Date/Time									
Relinquished By/Removed From <i>David Strohman wch</i>		Date/Time <i>2-3-06 0930</i>		Received By/Stored In <i>David Strohman wch</i>		Date/Time <i>2-3-06 0930</i>									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							

Collector TILLER, B <b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code <b>7N</b>	Data Turnaround <b>45 Days</b>
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location Cr 7, PORE WATER	SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. <b>ERC-03-106</b>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>	Offsite Property No. <b>A060278</b>	Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	1000mL

000032	SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium - 226, Ra-228	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time											
J11247	WATER	2-1-06	1615								X	X	X	X

<b>CHAIN OF POSSESSION</b>				<b>SPECIAL INSTRUCTIONS</b>				Matrix * S=Soil ES=Solvent SO=Solid ST=Storage W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trucks WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 2-1-06 2:30	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 2-1-06 2:30	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 02-02-06 1200	Received By/Stored In <b>John Well</b>	Date/Time 02-02-06 1200					
Relinquished By/Removed From <b>John Well</b>	Date/Time 02/02/06 1600	Received By/Stored In <b>Fed Ex</b>	Date/Time					
Relinquished By/Removed From <b>Fed Ex</b>	Date/Time 2-3-06 0930	Received By/Stored In <b>J. Bernhardt</b>	Date/Time 2-3-06 0930					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

**Appendix 5**

**Data Validation Supporting Documentation**

**000033**

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	<b>C</b>	D	E
PROJECT:	RCBRA water		DATA PACKAGE: K0205		
VALIDATOR:	TLI	LAB:	LLI	DATE: 6/3/06	
			SDG:	K0205	
ANALYSES PERFORMED					
<b>SW-846 8081</b>	SW-846 8081 (TCLP)	<b>SW-846 8082</b>	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J11238 J11232 J11239 J11279 J11245					
J112X3 J112X9 J112F9 J11250 J112C3					
J112F6 J11247					
water					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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

Initial calibrations acceptable? ..... Yes No **N/A**  
 Continuing calibrations acceptable? ..... Yes No **N/A**  
 Standards traceable? ..... Yes No **N/A**  
 Standards expired? ..... Yes No **N/A**  
 Calculation check acceptable? ..... Yes No **N/A**  
 DDT and endrin breakdowns acceptable? ..... Yes No **N/A**

Comments: \_\_\_\_\_  
 \_\_\_\_\_

PCB DATA VALIDATION CHECKLIST

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

Calibration blanks analyzed? (Levels D, E)..... Yes No N/A  
Calibration blank results acceptable? (Levels D, E)..... Yes No N/A  
Laboratory blanks analyzed?..... Yes No N/A  
Laboratory blank results acceptable?..... Yes No N/A  
Field/trip blanks analyzed? (Levels C, D, E)..... Yes No N/A  
Field/trip blank results acceptable? (Levels C, D, E)..... Yes No N/A  
Transcription/calculation errors? (Levels D, E)..... Yes No N/A  
Comments: no FB

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

Surrogates analyzed?..... Yes No N/A  
Surrogate recoveries acceptable?..... Yes No N/A  
Surrogates traceable? (Levels D, E)..... Yes No N/A  
Surrogates expired? (Levels D, E)..... Yes No N/A  
MS/MSD samples analyzed?..... Yes No N/A  
MS/MSD results acceptable?..... Yes No N/A  
MS/MSD standards NIST traceable? (Levels D, E)..... Yes No N/A  
MS/MSD standards expired? (Levels D, E)..... Yes No N/A  
LCS/BSS samples analyzed?..... Yes No N/A  
LCS/BSS results acceptable?..... Yes No N/A  
Standards traceable? (Levels D, E)..... Yes No N/A  
Standards expired? (Levels D, E)..... Yes No N/A  
Transcription/calculation errors? (Levels D, E)..... Yes No N/A  
Performance audit sample(s) analyzed?..... Yes No N/A  
Performance audit sample results acceptable?..... Yes No N/A  
Comments: no Pts

no toxaphene 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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**6. SYSTEM PERFORMANCE (Levels D and E)**

- Chromatographic performance acceptable? .....  Yes  No  N/A
- Positive results resolved acceptably? .....  Yes  No  N/A

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**7. HOLDING TIMES (all levels)**

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

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PCB DATA VALIDATION CHECKLIST

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

Compound identification acceptable? (Levels D, E)..... Yes No N/A  
Compound quantitation acceptable? (Levels D, E)..... Yes No N/A  
Results reported for all requested analyses?..... Yes No N/A  
Results supported in the raw data? (Levels D, E)..... Yes No N/A  
Samples properly prepared? (Levels D, E)..... Yes No N/A  
Detection limits meet RDL?..... Yes No N/A  
Transcription/calculation errors? (Levels D, E)..... Yes No N/A  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. SAMPLE CLEANUP (Levels D and E)

Fluorilicil ® (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: 7 June 2006  
To: Washington Closure Hanford (technical representative)  
From: TechLaw, Inc.  
Project: 100 Area and 300 Area Component of the RCBRA Water Sampling  
Subject: Wet Chemistry - Data Package No. K0205-LLI

## INTRODUCTION

This memo presents the results of data validation on Data Package No. K0205 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J112X3	2/1/06	Water	C	See note 1 & 2
J112X9	2/1/06	Water	C	See note 1
J112F9	2/1/06	Water	C	See note 1
J11250	2/1/06	Water	C	See note 1 & 2
J112C3	2/1/06	Water	C	See note 1 & 2
J112F6	2/1/06	Water	C	See note 1
J11247	2/1/06	Water	C	See note 1 & 2
J11238	1/29/06	Water	C	See note 1
J11232	1/29/06	Water	C	See note 1 & 2
J11239	1/29/06	Water	C	See note 1
J11279	1/29/06	Water	C	See note 1
J11245	1/29/06	Water	C	See note 1 & 2

1 - IC anions by 300.0, nitrate/nitrite by 353.2, total organic carbon by 415.1 and petroleum hydrocarbons by 418.1.

2 - Alkalinity by 310.1, total kjeldahl organic carbon (TKN) by 351.3, ammonia by 350.3, total dissolved solids by 160.1 and total suspended solids by 160.2.

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

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## 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: 28 days for petroleum hydrocarbons, total organic carbon, total kieldahl carbon, ammonia, nitrate/nitrite, fluoride, bromide, chloride and sulfate; fourteen days for alkalinity; seven days for total suspended and dissolved solids; and 48 hours for phosphate, nitrate and nitrite.

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

Due to the holding time being exceeded by less than twice the limit, all phosphate, nitrate and nitrite results in samples J11238, J11232, J11239, J11279 and J11245 were qualified as estimates and flagged "J".

Due to the holding time being exceeded by greater than twice the limit, all phosphate and nitrite results in samples J112X3, J112X9, J112F9, J11250, J112C3, J112F6 and J11247 were rejected and flagged "UR".

Due to the holding time being exceeded by greater than twice the limit, all nitrate results in samples J112X3, J112X9, J112F9, J11250, J112C3, J112F6 and J11247 were qualified as estimates and flagged "J".

All other holding times were acceptable.

### • **Method Blanks**

#### Method Blanks

Method blank analyses are performed 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. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

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### 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 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J".

Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all nitrate/nitrite and sulfate results in samples J11238, J11232, J11239, J11279 and J11245 were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all TKN and petroleum hydrocarbon 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 the lack of a matrix spike and matrix spike duplicate analysis, all

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nitrate/nitrite and sulfate results in samples J11238, J11232, J11239, J11279 and J11245 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 required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

#### • **Completeness**

Data package No. K0205 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 87%.

#### **MAJOR DEFICIENCIES**

Due to the holding time being exceeded by greater than twice the limit, all phosphate and nitrite results in samples J112X3, J112X9, J112F9, J11250, J112C3, J112F6 and J11247 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 phosphate, nitrate and nitrite results in samples J11238, J11232, J11239, J11279 and J11245 were qualified as estimates and flagged "J".
- Due to the holding time being exceeded by greater than twice the limit, all nitrate results in samples J112X3, J112X9, J112F9, J11250, J112C3, J112F6 and J11247 were qualified as estimates and flagged "J".

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- Due to the lack of a matrix spike and matrix spike duplicate analysis, all nitrate/nitrite and sulfate results in samples J11238, J11232, J11239, J11279 and J11245 were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike analysis, all TKN and petroleum hydrocarbon 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*.

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**Appendix 1**

**Glossary of Data Reporting Qualifiers**

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

- U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.
- UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
- J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.
- BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.
- R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.
- UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.
- NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).
- N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

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**Appendix 2**  
**Summary of Data Qualification**

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WET CHEMISTRY DATA QUALIFICATION SUMMARY\*

SDG: K0205		REVIEWER: TLI	Project: RGBRA	PAGE 1 OF 1
COMMENTS:				
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON	
Nitrate Nitrite Phosphate	J	J11238, J11232 J11239, J11279 J11245	Holding time	
Nitrate	J	J112X3, J112X9 J112F9, J11250 J112C3, J112F6 J11247	Holding time	
Phosphate Nitrite	UR	J112X3, J112X9 J112F9, J11250 J112C3, J112F6 J11247	Holding time	
Nitrate/nitrite Sulfate	J	J11238, J11232 J11239, J11279 J11245	No MS/MSD	
TKN Petroleum hydrocarbon	J	All	No matrix spike	

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

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**Appendix 3**

**Qualified Data Summary and Annotated Laboratory Reports**

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Project: WASHINGTON CLOSURE HANFORD																			
Laboratory: Lionville Laboratory Inc. SDG: K0205																			
Sample Number		J112X3		J112X9		J112F9		J11250		J112C3		J112F6		J11247		J11238		J11232	
Remarks																			
Sample Date		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		1/29/06		1/29/06	
General Chemistry	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Alkalinity	5000	59.9		NA		NA		64.2		68.5		NA		59.9		NA		64.8	
Bromide		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Chloride	100	1.0		1.0		1.0		1.0		2.4		1.0		0.99		1.0		1.8	
Fluoride	500	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Nitrite		0.25	UR	0.25	UR	0.25	UR	0.25	UR	0.25	UR	0.25	UR	0.25	UR	0.25	UR	0.25	UR
Nitrate	250	0.56	J	0.54	J	0.56	J	0.55	J	2.01	J	0.50	J	0.54	J	1.94	J	0.89	J
Phosphate	500	0.25	UR	0.25	UR	0.25	UR	0.25	UR	0.25	UR	0.25	UR	0.25	UR	0.25	UR	0.25	UR
Sulfate	500	10.7		10.5		10.4		10.3		29.7		10.1		10.1		42.3	J	10.6	J
Nitrate/Nitrite		0.15		0.13		0.14		0.14		0.45		0.14		0.14		2.0	J	25	J
Ammonia	50	0.10	U	NA		NA		0.10	U	0.10	U	NA		0.10	U	NA		0.10	U
Total Kjeldahl Nitrogen	50	0.10	UJ	NA		NA		0.14	J	0.10	UJ	NA		0.10	J	NA		0.10	UJ
Total Organic Carbon	25	1.2		1.1		1.0		0.88		0.83		1.5		0.98		1.3		1.2	
Petroleum Hydrocarbons	500	1.0	UJ	1.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ
Total Dissolved Solids		82.0		NA		NA		88.0		129		NA		88.0		NA		83.0	
Total Suspended Solids		5.00	U	NA		NA		5.00	U	5.00	U	NA		5.00	U	NA		5.00	U
Sample Number		J11239		J11279		J11245													
Remarks																			
Sample Date		1/29/06		1/29/06		1/29/06													
General Chemistry	CRDL	Result	Q	Result	Q	Result	Q												
Alkalinity	5000	NA		NA		60.5													
Bromide		0.25	U	0.25	U	0.25	U												
Chloride	100	1.0		1.0		1.0													
Fluoride	500	0.25	U	0.25	U	0.25	U												
Nitrite		0.25	UJ	0.25	UJ	0.25	UJ												
Nitrate	250	2.37	J	0.90	J	0.73	J												
Phosphate	500	0.25	UJ	0.25	UJ	0.25	UJ												
Sulfate	500	19.2	J	14.7	J	10.3	J												
Nitrate/Nitrite		0.73	J	2.5	J	0.77	J												
Ammonia	50	NA		NA		0.10	U												
Total Kjeldahl Nitrogen	50	NA		NA		0.10	UJ												
Total Organic Carbon	25	1.2		1.3		1.0													
Petroleum Hydrocarbons	500	2.0	UJ	2.0	UJ	2.0	UJ												
Total Dissolved Solids		NA		NA		85.0													
Total Suspended Solids		NA		NA		5.00	U												

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 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J112X3	Alkalinity	59.9	MG/L	4.0	1.0
		Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	1.0	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	uR MG/L	0.25	1.0
		Nitrate by IC	0.56	J MG/L	0.25	1.0
		Phosphate by IC	0.25	uR MG/L	0.25	1.0
		Sulfate by IC	10.7	MG/L	0.50	2.0
		Nitrate Nitrite	0.15	MG/L	0.020	1.0
		Ammonia, as N	0.10	u MG/L	0.10	1.0
		TKN	0.10	uJ MG/L	0.10	1.0
		Total Organic Carbon	1.2	MG/L	0.50	1.0
		Petroleum Hydrocarbons	1.0	uJ MG/L	1.0	1.0
		Total Dissolved Solids	82.0	MG/L	5.00	1.0
		Total Suspended Solids	5.00	u MG/L	5.00	1.0
-002	J112X9	Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	1.0	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	uR MG/L	0.25	1.0
		Nitrate by IC	0.54	J MG/L	0.25	1.0
		Phosphate by IC	0.25	uR MG/L	0.25	1.0
		Sulfate by IC	10.5	MG/L	0.50	2.0
		Nitrate Nitrite	0.13	MG/L	0.020	1.0
		Total Organic Carbon	1.1	MG/L	0.50	1.0
		Petroleum Hydrocarbons	1.0	uJ MG/L	1.0	1.0
-003	J112F9	Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	1.0	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	uR MG/L	0.25	1.0
		Nitrate by IC	0.56	J MG/L	0.25	1.0
		Phosphate by IC	0.25	uR MG/L	0.25	1.0
		Sulfate by IC	10.4	MG/L	0.50	2.0
		Nitrate Nitrite	0.14	MG/L	0.020	1.0
		Total Organic Carbon	1.0	MG/L	0.50	1.0
		Petroleum Hydrocarbons	2.0	uJ MG/L	2.0	1.0

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*u/s/02*

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J11250	Alkalinity	64.2	MG/L	4.0	1.0
		Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	1.0	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	uR MG/L	0.25	1.0
		Nitrate by IC	0.55	J MG/L	0.25	1.0
		Phosphate by IC	0.25	uR MG/L	0.25	1.0
		Sulfate by IC	10.3	MG/L	0.50	2.0
		Nitrate Nitrite	0.14	J MG/L	0.020	1.0
		Ammonia, as N	0.10	u MG/L	0.10	1.0
		TKN	0.14	J MG/L	0.10	1.0
		Total Organic Carbon	0.88	MG/L	0.50	1.0
		Petroleum Hydrocarbons	2.0	uJ MG/L	2.0	1.0
		Total Dissolved Solids	88.0	MG/L	5.00	1.0
		Total Suspended Solids	5.00	u MG/L	5.00	1.0
-005	J112C3	Alkalinity	68.5	MG/L	4.0	1.0
		Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	2.4	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	uR MG/L	0.25	1.0
		Nitrate by IC	2.01	J MG/L	0.25	1.0
		Phosphate by IC	0.25	uR MG/L	0.25	1.0
		Sulfate by IC	29.7	MG/L	1.2	5.0
		Nitrate Nitrite	0.45	J MG/L	0.020	1.0
		Ammonia, as N	0.10	u MG/L	0.10	1.0
		TKN	0.10	uJ MG/L	0.10	1.0
		Total Organic Carbon	0.83	MG/L	0.50	1.0
		Petroleum Hydrocarbons	2.0	uJ MG/L	2.0	1.0
		Total Dissolved Solids	129	MG/L	5.00	1.0
		Total Suspended Solids	5.00	u MG/L	5.00	1.0
-006	J112F6	Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	1.0	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	uR MG/L	0.25	1.0
		Nitrate by IC	0.50	J MG/L	0.25	1.0
		Phosphate by IC	0.25	uR MG/L	0.25	1.0
		Sulfate by IC	10.1	MG/L	0.50	2.0
		Nitrate Nitrite	0.14	J MG/L	0.020	1.0

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 6/4/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J112F6	Total Organic Carbon	1.5	MG/L	0.50	1.0
		Petroleum Hydrocarbons	2.0	u MG/L	2.0	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L184

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11238	Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	1.0	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	u J MG/L	0.25	1.0
		Nitrate by IC	1.94	J MG/L	0.25	1.0
		Phosphate by IC	0.25	u J MG/L	0.25	1.0
		Sulfate by IC	42.3	J MG/L	1.2	5.0
		Nitrate Nitrite	2.0	J MG/L	0.10	5.0
		Total Organic Carbon	1.3	MG/L	0.50	1.0
		Petroleum Hydrocarbons	2.0	u J MG/L	2.0	1.0
-002	J11232	Alkalinity	64.8	MG/L	4.0	1.0
		Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	1.8	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	u J MG/L	0.25	1.0
		Nitrate by IC	0.89	J MG/L	0.25	1.0
		Phosphate by IC	0.25	u J MG/L	0.25	1.0
		Sulfate by IC	10.6	J MG/L	0.50	2.0
		Nitrate Nitrite	0.25	J MG/L	0.020	1.0
		Ammonia, as N	0.10	u MG/L	0.10	1.0
		TKN	0.10	u J MG/L	0.10	1.0
		Total Organic Carbon	1.2	MG/L	0.50	1.0
		Petroleum Hydrocarbons	2.0	u J MG/L	2.0	1.0
		Total Dissolved Solids	83.0	MG/L	5.00	1.0
		Total Suspended Solids	5.00	u MG/L	5.00	1.0
-003	J11239	Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	1.0	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	u J MG/L	0.25	1.0
		Nitrate by IC	2.37	J MG/L	0.25	1.0
		Phosphate by IC	0.25	u J MG/L	0.25	1.0
		Sulfate by IC	19.2	J MG/L	1.2	5.0
		Nitrate Nitrite	0.73	J MG/L	0.020	1.0
		Total Organic Carbon	1.2	MG/L	0.50	1.0
		Petroleum Hydrocarbons	2.0	u J MG/L	2.0	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L184

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J11279	Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	1.0	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	u J MG/L	0.25	1.0
		Nitrate by IC	0.90	J MG/L	0.25	1.0
		Phosphate by IC	0.25	u J MG/L	0.25	1.0
		Sulfate by IC	14.7	J MG/L	0.50	2.0
		Nitrate Nitrite	2.5	J MG/L	0.10	5.0
		Total Organic Carbon	1.3	MG/L	0.50	1.0
		Petroleum Hydrocarbons	2.0	u J MG/L	2.0	1.0
-005	J11245	Alkalinity	60.5	MG/L	4.0	1.0
		Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	1.0	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	u J MG/L	0.25	1.0
		Nitrate by IC	0.73	J MG/L	0.25	1.0
		Phosphate by IC	0.25	u J MG/L	0.25	1.0
		Sulfate by IC	10.3	J MG/L	0.50	2.0
		Nitrate Nitrite	0.77	J MG/L	0.020	1.0
		Ammonia, as N	0.10	u MG/L	0.10	1.0
		TKN	0.10	u J MG/L	0.10	1.0
		Total Organic Carbon	1.0	MG/L	0.50	1.0
		Petroleum Hydrocarbons	2.0	u J MG/L	2.0	1.0
		Total Dissolved Solids	85.0	MG/L	5.00	1.0
		Total Suspended Solids	5.00	u MG/L	5.00	1.0

*W*  
 6/4/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J11247	Alkalinity	59.9	MG/L	4.0	1.0
		Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	0.99	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	uR MG/L	0.25	1.0
		Nitrate by IC	0.54	J MG/L	0.25	1.0
		Phosphate by IC	0.25	uR MG/L	0.25	1.0
		Sulfate by IC	10.1	J MG/L	0.50	2.0
		Nitrate Nitrite	0.14	J MG/L	0.020	1.0
		Ammonia, as N	0.10	u MG/L	0.10	1.0
		TKN	0.10	J MG/L	0.10	1.0
		Total Organic Carbon	0.98	MG/L	0.50	1.0
		Petroleum Hydrocarbons	2.0	uJ MG/L	2.0	1.0
		Total Dissolved Solids	88.0	MG/L	5.00	1.0
		Total Suspended Solids	5.00	u MG/L	5.00	1.0

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 6/4/06

**Appendix 4**

**Laboratory Narrative and Chain-of-Custody Documentation**

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## Analytical Report

Client: TNU-HANFORD RCS-048 K0205  
LVL#: 0602L184; 209

W.O.#: 11343-606-001-9999-00  
Date Received: 01-31-06;02-03-06

### INORGANIC NARRATIVE

1. This narrative covers the analyses of 12 water samples.
2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.

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

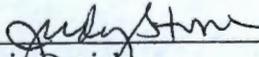
3. Sample holding times as required by the method and/or contract were met with the exception of Nitrite, Nitrate and Phosphate (see the sample chronology summary for analyses times for short hold samples).
4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for Petroleum Hydrocarbons (PHC), Alkalinity, Ammonia, Total Kjeldahl Nitrogen (TKN), Total Dissolved Solids (TDS) and Total Suspended Solids (TSS) were within the 20% Relative Percent Difference (RPD) control limit.
7. The matrix spike recoveries for Bromide, Chloride, Fluoride, Nitrite, Nitrate, Phosphate, Sulfate, Nitrate Nitrite, Total Organic Carbon (TOC) and Ammonia were within the 75-125% control limits. Insufficient sample was provided so as to perform matrix spike analyses for TKN and PHC.

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 57 pages.

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8. The replicate analyses for Alkalinity, Bromide, Chloride, Fluoride, Nitrite, Nitrate, Phosphate, Sulfate, Nitrate Nitrite, Ammonia, TDS, TSS and TOC were within the 20% RPD control limit. Insufficient sample was provided so as to perform replicate analyses for TKN and PHC.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
\_\_\_\_\_  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

3/20/06  
Date

njp02-209



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Lionville Laboratory, Inc.  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD RCS-048 K0205



DATE RECEIVED: 01/31/06

LVL LOT # :0601L184

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	ANALYSIS Time
J11238							
BROMIDE BY IC	001	W	06LIC014	01/29/06	01/31/06	01/31/06	
BROMIDE BY IC	001 REP	W	06LIC014	01/29/06	01/31/06	01/31/06	
BROMIDE BY IC	001 MS	W	06LIC014	01/29/06	01/31/06	01/31/06	
CHLORIDE BY IC	001	W	06LIC014	01/29/06	01/31/06	01/31/06	
CHLORIDE BY IC	001 REP	W	06LIC014	01/29/06	01/31/06	01/31/06	
CHLORIDE BY IC	001 MS	W	06LIC014	01/29/06	01/31/06	01/31/06	
FLUORIDE BY IC	001	W	06LIC014	01/29/06	01/31/06	01/31/06	
FLUORIDE BY IC	001 REP	W	06LIC014	01/29/06	01/31/06	01/31/06	
FLUORIDE BY IC	001 MS	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRITE BY IC	001	W	06LIC014	01/29/06	01/31/06	01/31/06	1932
NITRITE BY IC	001 REP	W	06LIC014	01/29/06	01/31/06	01/31/06	1945
NITRITE BY IC	001 MS	W	06LIC014	01/29/06	01/31/06	01/31/06	1958
NITRATE BY IC	001	W	06LIC014	01/29/06	01/31/06	01/31/06	1932
NITRATE BY IC	001 REP	W	06LIC014	01/29/06	01/31/06	01/31/06	1945
NITRATE BY IC	001 MS	W	06LIC014	01/29/06	01/31/06	01/31/06	1958
PHOSPHATE BY IC	001	W	06LIC014	01/29/06	01/31/06	01/31/06	1932
PHOSPHATE BY IC	001 REP	W	06LIC014	01/29/06	01/31/06	01/31/06	1945
PHOSPHATE BY IC	001 MS	W	06LIC014	01/29/06	01/31/06	01/31/06	1958
SULFATE BY IC	001	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRATE NITRITE	001	W	06LN3010	01/29/06	02/23/06	02/23/06	
TOTAL ORGANIC CARBON	001	W	06LTC006	01/29/06	02/13/06	02/13/06	
PETROLEUM HYDROCARBO	001	W	06LHC014	01/29/06	02/19/06	02/21/06	
J11232							
ALKALINITY	002	W	06LAK006	01/29/06	02/01/06	02/01/06	
BROMIDE BY IC	002	W	06LIC014	01/29/06	01/31/06	01/31/06	
CHLORIDE BY IC	002	W	06LIC014	01/29/06	01/31/06	01/31/06	
FLUORIDE BY IC	002	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRITE BY IC	002	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRATE BY IC	002	W	06LIC014	01/29/06	01/31/06	01/31/06	
PHOSPHATE BY IC	002	W	06LIC014	01/29/06	01/31/06	01/31/06	
SULFATE BY IC	002	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRATE NITRITE	002	W	06LN3010	01/29/06	02/23/06	02/23/06	
AMMONIA	002	W	06LAM006	01/29/06	02/06/06	02/06/06	

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 TNUHANFORD RCS-048 K0205

DATE RECEIVED: 01/31/06

LVL LOT # :0601L184

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	ANALYSIS Time
TOTAL KJELDAHL NITRO	002	W	06LAM009	01/29/06	02/10/06	02/10/06	
TOTAL ORGANIC CARBON	002	W	06LTC006	01/29/06	02/13/06	02/13/06	
TOTAL ORGANIC CARBON	002 REP	W	06LTC006	01/29/06	02/13/06	02/13/06	
PETROLEUM HYDROCARBO	002	W	06LHC014	01/29/06	02/19/06	02/21/06	
TOTAL DISSOLVED SOLI	002	W	06LSSA10	01/29/06	02/03/06	02/03/06	
TOTAL DISSOLVED SOLI	002 REP	W	06LSSA10	01/29/06	02/03/06	02/03/06	
TOTAL SUSPENDED SOLI	002	W	06LSS010	01/29/06	02/03/06	02/03/06	
TOTAL SUSPENDED SOLI	002 REP	W	06LSS010	01/29/06	02/03/06	02/03/06	
J11239							
BROMIDE BY IC	003	W	06LIC014	01/29/06	01/31/06	01/31/06	
CHLORIDE BY IC	003	W	06LIC014	01/29/06	01/31/06	01/31/06	
FLUORIDE BY IC	003	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRITE BY IC	003	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRATE BY IC	003	W	06LIC014	01/29/06	01/31/06	01/31/06	2025 I
PHOSPHATE BY IC	003	W	06LIC014	01/29/06	01/31/06	01/31/06	
SULFATE BY IC	003	W	06LIC018	01/29/06	02/07/06	02/07/06	
NITRATE NITRITE	003	W	06LN3010	01/29/06	02/23/06	02/23/06	
TOTAL ORGANIC CARBON	003	W	06LTC006	01/29/06	02/13/06	02/13/06	
TOTAL ORGANIC CARBON	003 MS	W	06LTC006	01/29/06	02/13/06	02/13/06	
PETROLEUM HYDROCARBO	003	W	06LHC014	01/29/06	02/19/06	02/21/06	
J11279							
BROMIDE BY IC	004	W	06LIC014	01/29/06	01/31/06	01/31/06	
CHLORIDE BY IC	004	W	06LIC014	01/29/06	01/31/06	01/31/06	
FLUORIDE BY IC	004	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRITE BY IC	004	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRATE BY IC	004	W	06LIC014	01/29/06	01/31/06	01/31/06	2025 I
PHOSPHATE BY IC	004	W	06LIC014	01/29/06	01/31/06	01/31/06	
SULFATE BY IC	004	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRATE NITRITE	004	W	06LN3010	01/29/06	02/23/06	02/23/06	
TOTAL ORGANIC CARBON	004	W	06LTC006	01/29/06	02/13/06	02/13/06	
PETROLEUM HYDROCARBO	004	W	06LHC014	01/29/06	02/19/06	02/21/06	
J11245							
ALKALINITY	005	W	06LAK006	01/29/06	02/01/06	02/01/06	

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 TNUHANFORD RCS-048 K0205

DATE RECEIVED: 01/31/06

LVL LOT # :0601L184

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	ANALYSIS TIME
ALKALINITY	005 REP	W	06LAK006	01/29/06	02/01/06	02/01/06	
BROMIDE BY IC	005	W	06LIC014	01/29/06	01/31/06	01/31/06	
CHLORIDE BY IC	005	W	06LIC014	01/29/06	01/31/06	01/31/06	
FLUORIDE BY IC	005	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRITE BY IC	005	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRATE BY IC	005	W	06LIC014	01/29/06	01/31/06	01/31/06	
PHOSPHATE BY IC	005	W	06LIC014	01/29/06	01/31/06	01/31/06	
SULFATE BY IC	005	W	06LIC014	01/29/06	01/31/06	01/31/06	
NITRATE NITRITE	005	W	06LN3010	01/29/06	02/23/06	02/23/06	
AMMONIA	005	W	06LAM006	01/29/06	02/06/06	02/06/06	
TOTAL KJELDAHL NITRO	005	W	06LAM009	01/29/06	02/10/06	02/10/06	
TOTAL ORGANIC CARBON	005	W	06LTC006	01/29/06	02/13/06	02/13/06	
PETROLEUM HYDROCARBO	005	W	06LHC014	01/29/06	02/19/06	02/21/06	
TOTAL DISSOLVED SOLI	005	W	06LSSA10	01/29/06	02/03/06	02/03/06	
TOTAL SUSPENDED SOLI	005	W	06LSS010	01/29/06	02/03/06	02/03/06	

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LAB QC:

BROMIDE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06	
BROMIDE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06	
CHLORIDE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06	
CHLORIDE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06	
FLUORIDE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06	
FLUORIDE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06	
NITRITE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06	
NITRITE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06	
NITRATE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06	
NITRATE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06	
PHOSPHATE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06	
PHOSPHATE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06	
SULFATE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06	
SULFATE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06	
NITRATE NITRITE	MB1	W	06LN3010	N/A	02/23/06	02/23/06	
NITRATE NITRITE	MB1 BS	W	06LN3010	N/A	02/23/06	02/23/06	
TOTAL ORGANIC CARBON	MB1	W	06LTC006	N/A	02/13/06	02/13/06	
TOTAL ORGANIC CARBON	MB1 BS	W	06LTC006	N/A	02/13/06	02/13/06	
PETROLEUM HYDROCARBO	MB1	W	06LHC014	N/A	02/19/06	02/21/06	
PETROLEUM HYDROCARBO	MB1 BS	W	06LHC014	N/A	02/19/06	02/21/06	

Lionville Laboratory, Inc.  
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 TNUHANFORD RCS-048 K0205

DATE RECEIVED: 01/31/06

LVL LOT # :0601L184

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PETROLEUM HYDROCARBO	MB1 BSD	W	06LHC014	N/A	02/19/06	02/21/06
ALKALINITY	MB1	W	06LAK006	N/A	02/01/06	02/01/06
ALKALINITY	MB1 BS	W	06LAK006	N/A	02/01/06	02/01/06
ALKALINITY	MB1 BSD	W	06LAK006	N/A	02/01/06	02/01/06
AMMONIA	MB1	W	06LAM006	N/A	02/06/06	02/06/06
AMMONIA	MB1 BS	W	06LAM006	N/A	02/06/06	02/06/06
AMMONIA	MB1 BSD	W	06LAM006	N/A	02/06/06	02/06/06
TOTAL KJELDAHL NITRO	MB1	W	06LAM009	N/A	02/10/06	02/10/06
TKN	MB1 BS	W	06LAM009	N/A	02/10/06	02/10/06
TKN	MB1 BSD	W	06LAM009	N/A	02/10/06	02/10/06
TOTAL DISSOLVED SOLI	MB1	W	06LSSA10	N/A	02/03/06	02/03/06
TOTAL DISSOLVED SOLI	MB1 BS	W	06LSSA10	N/A	02/03/06	02/03/06
TOTAL DISSOLVED SOLI	MB1 BSD	W	06LSSA10	N/A	02/03/06	02/03/06
TOTAL SUSPENDED SOLI	MB1	W	06LSS010	N/A	02/03/06	02/03/06
TOTAL SUSPENDED SOLI	MB1 BS	W	06LSS010	N/A	02/03/06	02/03/06
TOTAL SUSPENDED SOLI	MB1 BSD	W	06LSS010	N/A	02/03/06	02/03/06
SULFATE BY IC	MB1	W	06LIC018	N/A	02/07/06	02/07/06
SULFATE BY IC	MB1 BS	W	06LIC018	N/A	02/07/06	02/07/06

Lionville Laboratory, Inc.  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD RCS-048 K0205

DATE RECEIVED: 02/03/06

LVL LOT # :0602L209

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	ANALYSIS Time
J112X3							
ALKALINITY	001	W	06LAK007	02/01/06	02/05/06	02/05/06	
ALKALINITY	001 REP	W	06LAK007	02/01/06	02/05/06	02/05/06	
BROMIDE BY IC	001	W	06LICA18	02/01/06	02/07/06	02/08/06	
BROMIDE BY IC	001 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	
BROMIDE BY IC	001 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	
CHLORIDE BY IC	001	W	06LICA18	02/01/06	02/07/06	02/08/06	
CHLORIDE BY IC	001 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	
CHLORIDE BY IC	001 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	
FLUORIDE BY IC	001	W	06LICA18	02/01/06	02/07/06	02/08/06	
FLUORIDE BY IC	001 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	
FLUORIDE BY IC	001 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRITE BY IC	001	W	06LICA18	02/01/06	02/07/06	02/08/06	1052
NITRITE BY IC	001 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	1105
NITRITE BY IC	001 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	1117
NITRATE BY IC	001	W	06LICA18	02/01/06	02/07/06	02/08/06	1052
NITRATE BY IC	001 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	1105
NITRATE BY IC	001 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	1117
PHOSPHATE BY IC	001	W	06LICA18	02/01/06	02/07/06	02/08/06	1052
PHOSPHATE BY IC	001 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	1105
PHOSPHATE BY IC	001 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	1117
SULFATE BY IC	001	W	06LICA18	02/01/06	02/07/06	02/07/06	
SULFATE BY IC	001 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	
SULFATE BY IC	001 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRATE NITRITE	001	W	06LN3010	02/01/06	02/23/06	02/23/06	
NITRATE NITRITE	001 REP	W	06LN3010	02/01/06	02/23/06	02/23/06	
NITRATE NITRITE	001 MS	W	06LN3010	02/01/06	02/23/06	02/23/06	
AMMONIA	001	W	06LAM006	02/01/06	02/06/06	02/06/06	
AMMONIA	001 REP	W	06LAM006	02/01/06	02/06/06	02/06/06	
AMMONIA	001 MS	W	06LAM006	02/01/06	02/06/06	02/06/06	
TOTAL KJELDAHL NITRO	001	W	06LAM009	02/01/06	02/10/06	02/10/06	
TOTAL ORGANIC CARBON	001	W	06LTC007	02/01/06	02/15/06	02/15/06	
TOTAL ORGANIC CARBON	001 REP	W	06LTC007	02/01/06	02/15/06	02/15/06	
TOTAL ORGANIC CARBON	001 MS	W	06LTC007	02/01/06	02/15/06	02/15/06	
PETROLEUM HYDROCARBO	001	W	06LHC014	02/01/06	02/19/06	02/21/06	
TOTAL DISSOLVED SOLI	001	W	06LSSA11	02/01/06	02/04/06	02/04/06	

Lionville Laboratory, Inc.  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD RCS-048 K0205

DATE RECEIVED: 02/03/06

LVL LOT # :0602L209

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	ANALYSIS TIME
TOTAL DISSOLVED SOLI	001 REP	W	06LSSA11	02/01/06	02/04/06	02/04/06	
TOTAL SUSPENDED SOLI	001	W	06LSS011	02/01/06	02/04/06	02/04/06	
TOTAL SUSPENDED SOLI	001 REP	W	06LSS011	02/01/06	02/04/06	02/04/06	
J112X9							
BROMIDE BY IC	002	W	06LICA18	02/01/06	02/07/06	02/08/06	
BROMIDE BY IC	002 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	
BROMIDE BY IC	002 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	
CHLORIDE BY IC	002	W	06LICA18	02/01/06	02/07/06	02/08/06	
CHLORIDE BY IC	002 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	
CHLORIDE BY IC	002 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	
FLUORIDE BY IC	002	W	06LICA18	02/01/06	02/07/06	02/08/06	
FLUORIDE BY IC	002 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	
FLUORIDE BY IC	002 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRITE BY IC	002	W	06LICA18	02/01/06	02/07/06	02/08/06	1204
NITRITE BY IC	002 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	1222
NITRITE BY IC	002 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	1235
NITRATE BY IC	002	W	06LICA18	02/01/06	02/07/06	02/08/06	1204
NITRATE BY IC	002 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	1222
NITRATE BY IC	002 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	1235
PHOSPHATE BY IC	002	W	06LICA18	02/01/06	02/07/06	02/08/06	1204
PHOSPHATE BY IC	002 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	1222
PHOSPHATE BY IC	002 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	1235
SULFATE BY IC	002	W	06LICA18	02/01/06	02/07/06	02/08/06	
SULFATE BY IC	002 REP	W	06LICA18	02/01/06	02/07/06	02/08/06	
SULFATE BY IC	002 MS	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRATE NITRITE	002	W	06LN3010	02/01/06	02/23/06	02/23/06	
NITRATE NITRITE	002 REP	W	06LN3010	02/01/06	02/23/06	02/23/06	
NITRATE NITRITE	002 MS	W	06LN3010	02/01/06	02/23/06	02/23/06	
TOTAL ORGANIC CARBON	002	W	06LTC007	02/01/06	02/15/06	02/15/06	
TOTAL ORGANIC CARBON	002 REP	W	06LTC007	02/01/06	02/15/06	02/15/06	
TOTAL ORGANIC CARBON	002 MS	W	06LTC007	02/01/06	02/15/06	02/15/06	
PETROLEUM HYDROCARBO	002	W	06LHC014	02/01/06	02/19/06	02/21/06	
J112F9							
BROMIDE BY IC	003	W	06LICA18	02/01/06	02/07/06	02/08/06	

Lionville Laboratory, Inc.  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD RCS-048 K0205

DATE RECEIVED: 02/03/06

LVL LOT # :0602L209

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	ANALYSIS TIME
CHLORIDE BY IC	003	W	06LICA18	02/01/06	02/07/06	02/08/06	
FLUORIDE BY IC	003	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRITE BY IC	003	W	06LICA18	02/01/06	02/07/06	02/08/06	1418
NITRATE BY IC	003	W	06LICA18	02/01/06	02/07/06	02/08/06	
PHOSPHATE BY IC	003	W	06LICA18	02/01/06	02/07/06	02/08/06	
SULFATE BY IC	003	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRATE NITRITE	003	W	06LN3010	02/01/06	02/23/06	02/23/06	
TOTAL ORGANIC CARBON	003	W	06LTC007	02/01/06	02/15/06	02/15/06	
PETROLEUM HYDROCARBO	003	W	06LHC014	02/01/06	02/19/06	02/21/06	
J11250							
ALKALINITY	004	W	06LAK007	02/01/06	02/05/06	02/05/06	
BROMIDE BY IC	004	W	06LICA18	02/01/06	02/07/06	02/08/06	
CHLORIDE BY IC	004	W	06LICA18	02/01/06	02/07/06	02/08/06	
FLUORIDE BY IC	004	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRITE BY IC	004	W	06LICA18	02/01/06	02/07/06	02/08/06	1431
NITRATE BY IC	004	W	06LICA18	02/01/06	02/07/06	02/08/06	
PHOSPHATE BY IC	004	W	06LICA18	02/01/06	02/07/06	02/08/06	
SULFATE BY IC	004	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRATE NITRITE	004	W	06LN3010	02/01/06	02/23/06	02/23/06	
AMMONIA	004	W	06LAM006	02/01/06	02/06/06	02/06/06	
TOTAL KJELDAHL NITRO	004	W	06LAM009	02/01/06	02/10/06	02/10/06	
TOTAL ORGANIC CARBON	004	W	06LTC007	02/01/06	02/15/06	02/15/06	
PETROLEUM HYDROCARBO	004	W	06LHC014	02/01/06	02/19/06	02/21/06	
TOTAL DISSOLVED SOLI	004	W	06LSSA11	02/01/06	02/04/06	02/04/06	
TOTAL SUSPENDED SOLI	004	W	06LSS011	02/01/06	02/04/06	02/04/06	
J112C3							
ALKALINITY	005	W	06LAK007	02/01/06	02/05/06	02/05/06	
BROMIDE BY IC	005	W	06LICA18	02/01/06	02/07/06	02/08/06	
CHLORIDE BY IC	005	W	06LICA18	02/01/06	02/07/06	02/08/06	
FLUORIDE BY IC	005	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRITE BY IC	005	W	06LICA18	02/01/06	02/07/06	02/08/06	1444
NITRATE BY IC	005	W	06LICA18	02/01/06	02/07/06	02/08/06	
PHOSPHATE BY IC	005	W	06LICA18	02/01/06	02/07/06	02/08/06	
SULFATE BY IC	005	W	06LICA18	02/01/06	02/07/06	02/08/06	

Lionville Laboratory, Inc.  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD RCS-048 K0205

DATE RECEIVED: 02/03/06

LVL LOT # :0602L209

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	ANALYSIS TIME
NITRATE NITRITE	005	W	06LN3010	02/01/06	02/23/06	02/23/06	
AMMONIA	005	W	06LAM006	02/01/06	02/06/06	02/06/06	
TOTAL KJELDAHL NITRO	005	W	06LAM009	02/01/06	02/10/06	02/10/06	
TOTAL ORGANIC CARBON	005	W	06LTC007	02/01/06	02/15/06	02/15/06	
PETROLEUM HYDROCARBO	005	W	06LHC014	02/01/06	02/19/06	02/21/06	
TOTAL DISSOLVED SOLI	005	W	06LSSA11	02/01/06	02/04/06	02/04/06	
TOTAL SUSPENDED SOLI	005	W	06LSS011	02/01/06	02/04/06	02/04/06	
J112F6							
BROMIDE BY IC	006	W	06LICA18	02/01/06	02/07/06	02/08/06	
CHLORIDE BY IC	006	W	06LICA18	02/01/06	02/07/06	02/08/06	
FLUORIDE BY IC	006	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRITE BY IC	006	W	06LICA18	02/01/06	02/07/06	02/08/06	1457
NITRATE BY IC	006	W	06LICA18	02/01/06	02/07/06	02/08/06	1
PHOSPHATE BY IC	006	W	06LICA18	02/01/06	02/07/06	02/08/06	
SULFATE BY IC	006	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRATE NITRITE	006	W	06LN3010	02/01/06	02/23/06	02/23/06	
TOTAL ORGANIC CARBON	006	W	06LTC007	02/01/06	02/15/06	02/15/06	
PETROLEUM HYDROCARBO	006	W	06LHC014	02/01/06	02/19/06	02/21/06	
J11247							
ALKALINITY	007	W	06LAK007	02/01/06	02/05/06	02/05/06	
BROMIDE BY IC	007	W	06LICA18	02/01/06	02/07/06	02/08/06	
CHLORIDE BY IC	007	W	06LICA18	02/01/06	02/07/06	02/08/06	
FLUORIDE BY IC	007	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRITE BY IC	007	W	06LICA18	02/01/06	02/07/06	02/08/06	1510
NITRATE BY IC	007	W	06LICA18	02/01/06	02/07/06	02/08/06	1
PHOSPHATE BY IC	007	W	06LICA18	02/01/06	02/07/06	02/08/06	
SULFATE BY IC	007	W	06LICA18	02/01/06	02/07/06	02/08/06	
NITRATE NITRITE	007	W	06LN3010	02/01/06	02/23/06	02/23/06	
AMMONIA	007	W	06LAM006	02/01/06	02/06/06	02/06/06	
TOTAL KJELDAHL NITRO	007	W	06LAM009	02/01/06	02/10/06	02/10/06	
TOTAL ORGANIC CARBON	007	W	06LTC007	02/01/06	02/15/06	02/15/06	
PETROLEUM HYDROCARBO	007	W	06LHC014	02/01/06	02/19/06	02/21/06	
TOTAL DISSOLVED SOLI	007	W	06LSSA11	02/01/06	02/04/06	02/04/06	
TOTAL SUSPENDED SOLI	007	W	06LSS011	02/01/06	02/04/06	02/04/06	

LAB QC:

000028

08

Lionville Laboratory, Inc.  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD RCS-048 K0205

DATE RECEIVED: 02/03/06

LVL LOT # :0602L209

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ALKALINITY	MB1	W	06LAK007	N/A	02/05/06	02/05/06
ALKALINITY	MB1 BS	W	06LAK007	N/A	02/05/06	02/05/06
ALKALINITY	MB1 BSD	W	06LAK007	N/A	02/05/06	02/05/06
BROMIDE BY IC	MB1	W	06LICA18	N/A	02/07/06	02/08/06
BROMIDE BY IC	MB1 BS	W	06LICA18	N/A	02/07/06	02/08/06
CHLORIDE BY IC	MB1	W	06LICA18	N/A	02/07/06	02/08/06
CHLORIDE BY IC	MB1 BS	W	06LICA18	N/A	02/07/06	02/08/06
FLUORIDE BY IC	MB1	W	06LICA18	N/A	02/07/06	02/08/06
FLUORIDE BY IC	MB1 BS	W	06LICA18	N/A	02/07/06	02/08/06
NITRITE BY IC	MB1	W	06LICA18	N/A	02/07/06	02/08/06
NITRITE BY IC	MB1 BS	W	06LICA18	N/A	02/07/06	02/08/06
NITRATE BY IC	MB1	W	06LICA18	N/A	02/07/06	02/08/06
NITRATE BY IC	MB1 BS	W	06LICA18	N/A	02/07/06	02/08/06
PHOSPHATE BY IC	MB1	W	06LICA18	N/A	02/07/06	02/08/06
PHOSPHATE BY IC	MB1 BS	W	06LICA18	N/A	02/07/06	02/08/06
SULFATE BY IC	MB1	W	06LICA18	N/A	02/07/06	02/08/06
NITRATE NITRITE	MB1	W	06LN3010	N/A	02/23/06	02/23/06
NITRATE NITRITE	MB1 BS	W	06LN3010	N/A	02/23/06	02/23/06
AMMONIA	MB1	W	06LAM006	N/A	02/06/06	02/06/06
AMMONIA	MB1 BS	W	06LAM006	N/A	02/06/06	02/06/06
AMMONIA	MB1 BSD	W	06LAM006	N/A	02/06/06	02/06/06
TOTAL KJELDAHL NITRO	MB1	W	06LAM009	N/A	02/10/06	02/10/06
TKN	MB1 BS	W	06LAM009	N/A	02/10/06	02/10/06
TKN	MB1 BSD	W	06LAM009	N/A	02/10/06	02/10/06
TOTAL ORGANIC CARBON	MB1	W	06LTC007	N/A	02/15/06	02/15/06
TOTAL ORGANIC CARBON	MB1 BS	W	06LTC007	N/A	02/15/06	02/15/06
PETROLEUM HYDROCARBO	MB1	W	06LHC014	N/A	02/19/06	02/21/06
PETROLEUM HYDROCARBO	MB1 BS	W	06LHC014	N/A	02/19/06	02/21/06
PETROLEUM HYDROCARBO	MB1 BSD	W	06LHC014	N/A	02/19/06	02/21/06
TOTAL DISSOLVED SOLI	MB1	W	06LSSA11	N/A	02/04/06	02/04/06
TOTAL DISSOLVED SOLI	MB1 BS	W	06LSSA11	N/A	02/04/06	02/04/06
TOTAL DISSOLVED SOLI	MB1 BSD	W	06LSSA11	N/A	02/04/06	02/04/06
TOTAL SUSPENDED SOLI	MB1	W	06LSS011	N/A	02/04/06	02/04/06
TOTAL SUSPENDED SOLI	MB1 BS	W	06LSS011	N/A	02/04/06	02/04/06
TOTAL SUSPENDED SOLI	MB1 BSD	W	06LSS011	N/A	02/04/06	02/04/06

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-290	Page 2 of 2
Collector TILLER, B JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location C-6 PORE WATER FULL QC		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. ERC-02-504	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES ALIONVILLE		Offsite Property No. A060278		Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	Cool 4C
	Type of Container	P	G	G/P	aG	aGs*	G/P	G/P	G/P	G/P
	No. of Container(s)	1	1	1	2	2	1	1	1	1
	Volume	125mL	1000mL	125mL	1000mL	40mL	125mL	250mL	125mL	250mL

Special Handling and/or Storage COOL 4C	See item (f) in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.2
	SAMPLE ANALYSIS								

Sample No.	Matrix *	Sample Date	Sample Time									
1112X3	WATER	02-01-06	1445	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 02-01-06 2030	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02-01-06 2030	3 A060278 (f) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				S=Soil SE=Soliment SO=Solid St=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trails WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-02-06 1200	Received By/Stored In David St. John West	Date/Time 02-02-06 1200					
Relinquished By/Removed From David St. John West	Date/Time 02/02/06 1400	Received By/Stored In Fed Ex	Date/Time					
Relinquished By/Removed From Fed Ex	Date/Time 2/3/06 0930	Received By/Stored In	Date/Time 2-3-06 0930					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Collector TILLER, B. <b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code <b>7N</b>	Data Turnaround <b>45 Days</b>
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location C-6 SURFACE WATER FULL QC	SAF No. RC-048	Air Quality <input type="checkbox"/>	<b>46</b>	
Ice Chest No. <b>ERC-99-061</b>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>	Offsite Property No. <b>A060278</b>	Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <1 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C				
	Type of Container	P	G	Q/P	uG	uGs*				
	No. of Container(s)	1	1	1	2	2				
	Volume	125mL	1000mL	125mL	1000mL	40mL				

0000031	SAMPLE ANALYSIS	See item (4) in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G				
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Sample No.	Matrix *	Sample Date	Sample Time							
J112X9	WATER	02-01-06	1430	X	X	X	X	X		

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b> S=Soil SE=Settlement SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dryen Solids DL=Dryen Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 2030 02-01-06	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 2030 02-01-06	3 <b>MS100C</b> (1) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 1200 02-02-06	Received By/Stored In <b>David St. John with</b>	Date/Time 1200 02-02-06					
Relinquished By/Removed From <b>David St. John with</b>	Date/Time 1400 02-02-06	Received By/Stored In <b>FedEx</b>	Date/Time					
Relinquished By/Removed From <b>FedEx</b>	Date/Time 0930 2-2-06	Received By/Stored In <b>J. Bernhardt</b>	Date/Time 0930 2-3-06					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Collector TILLER, B <b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code <b>7N</b>	Data Turnaround <b>45 Days</b>
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location Cr 10, SURFACE WATER	SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. <b>ERC-96-061</b>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (CLONVILLE)	Offsite Property No. <b>A060278</b>	Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C					
	Type of Container	P	G	G/P	aG	aGs*					
	No. of Container(s)	1	1	1	1	1					
	Volume	125mL	500mL	125mL	1000mL	40mL					

000032	SAMPLE ANALYSIS				See item #1 in Special instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G				
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Sample No.	Matrix *	Sample Date	Sample Time										
J112F9	WATER	02-01-06	1830	X	X	X	X	X					

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 2/30	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 2-1-06	<b>3 AP/2006</b> IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)		S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drydown Solids DL=Drydown Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 02-02-06	Received By/Stored In <b>David St. John</b>	Date/Time 02-02-06			
Relinquished By/Removed From <b>Debra St. John</b>	Date/Time 02/02/06	Received By/Stored In <b>Fed Ex</b>	Date/Time			
Relinquished By/Removed From <b>Fed Ex</b>	Date/Time 2-30 0930	Received By/Stored In <b>P. Hernandez</b>	Date/Time 2-30 0930			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-048-263		Page 2 of 2			
Collector TILLER, B JAMES BERNHARD			Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days		
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa			Sampling Location Cr 10, PORE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>		49				
Ice Chest No. ERC-02-002			Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX						
Shipped To EBERLINE SERVICES ALIONVILLE			Offsite Property No. A060278			Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL AC				Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	Cool 4C	
				Type of Container	P	G	G/P	aG	aGs*	G/P	G/P	G/P	G/P
				No. of Container(s)	1	1	1	1	1	1	1	1	1
				Volume	125mL	500mL	125mL	1000mL	40mL	125mL	250mL	125mL	250mL
SAMPLE ANALYSIS				See item # in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.2	
				000033									
Sample No.	Matrix *	Sample Date	Sample Time										
J11250	WATER	02-01-06	1900	X	X	X	X	X	X	X	X		
CHAIN OF POSSESSION													
Relinquished By/Removed From JAMES BERNHARD 02-01-06 2030				Received By/Stored In EAS LOCKED STORAGE 02-01-06 2030				SPECIAL INSTRUCTIONS 3 AH/2606 ① IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				Matrix * S=Soil SE=Settlement SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Driven Solids DL=Drain Liquids T=Trace W=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From EAS LOCKED STORAGE 02-01-06 1200				Received By/Stored In EAS LOCKED STORAGE 02-01-06 1200									
Relinquished By/Removed From EAS LOCKED STORAGE 02-01-06 1400				Received By/Stored In FED EX									
Relinquished By/Removed From FED EX 2-3-06 0930				Received By/Stored In V. N. Kennedy 2-3-06 0930									
Relinquished By/Removed From				Received By/Stored In									
Relinquished By/Removed From				Received By/Stored In									
LABORATORY SECTION	Received By			Title			Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time						

Washington Closure Hanford				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST								RC-048-280		Page 2 of 2			
Collector TILLER, B <b>JAMES BERNHARD</b>				Company Contact JOAN KESSNER				Telephone No. 375-4688				Project Coordinator KESSNER, JH		Price Code <b>7N</b>		Data Turnaround <b>45 Days</b>	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa				Sampling Location Cr 6, VERTICAL TUBE				SAF No. RC-048				Air Quality <input type="checkbox"/>					
Ice Chest No. <b>ERC-02-002</b>				Field Logbook No. EL-1597				COA BESRAS6520				Method of Shipment FED EX		<b>52</b>			
Shipped To EBERLINE SERVICES / <b>LIONVILLE</b>				Offsite Property No.				Bill of Lading/Air Bill No. SEE OSPC									
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> POTENTIAL RADIOACTIVE < DOT LIMITS  <b>Special Handling and/or Storage</b> COOL 4C  000034				Preservation		Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	Cool 4C			
				Type of Container		P	G	G/P	aG	aGs*	G/P	G/P	G/P	G/P	G/P	G/P	
				No. of Container(s)		1	1	1	1	1	1	1	1	1	1	1	
				Volume		125mL	500mL	125mL	1000mL	40mL	125mL	250mL	125mL	250mL			
SAMPLE ANALYSIS				See item (7) in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.2					
Sample No.	Matrix *	Sample Date	Sample Time														
J112C3	WATER	02-01-06	1530	X	X	X	X	X	X	X	X	X	X				
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *					
Relinquished By/Removed From <b>JAMES BERNHARD</b>				Received By/Stored In <b>EAS LOCKED STORAGE</b>				3 AP 13106 IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				S=Soil SE=Soilmont SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trace Wl=Wipe L=Liquid V=Vegetation X=Other					
Date/Time 2030 02-01-06				Date/Time 2030 02-01-06													
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>				Received By/Stored In <b>David St. John WCH</b>													
Date/Time 1200 02-02-06				Date/Time 1200 02-02-06													
Relinquished By/Removed From <b>David St. John WCH</b>				Received By/Stored In <b>Fed Ex</b>													
Date/Time 1400 02/02/06				Date/Time 1400 02/02/06													
Relinquished By/Removed From <b>Fed Ex</b>				Received By/Stored In <b>Fed Ex</b>													
Date/Time 2-3-06 0930				Date/Time 2-3-06 0930													
Relinquished By/Removed From				Received By/Stored In													
Date/Time				Date/Time													
Relinquished By/Removed From				Received By/Stored In													
Date/Time				Date/Time													
LABORATORY SECTION		Received By		Title		Date/Time											
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time											

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-048-282	Page 2 of 2
Collector TILLER, B <i>Bernhard</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days
Project Destination 100 Area and 300 Area Component of the RCBRA Water Sa	Sample Location Cr 7, SURFACE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>	
Ice Chest No. <i>ERC-03-106</i>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX			
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A660278</i>	Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl to pH <2 Cool 4C					
	Type of Container	P	G	G/P	aG	aG*					
	No. of Container(s)	1	1	1	1	1					
	Volume	125mL	500mL <i>3 ADD/1006</i>	125mL	1000mL	40mL					

000035	SAMPLE ANALYSIS		See item (7) in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 333.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G				
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Sample No.	Matrix *	Sample Date	Sample Time								
J112F6	WATER	2-1-06	1600	X	X	X	X	X			

CHAIN OF POSSESSION			Sign/Print Names			SPECIAL INSTRUCTIONS					Matrix *
Relinquished By/Removed From <i>JAMES BERNHARD</i>	Date/Time 2-1-06 2:30	Received By/Stored In <i>EAS LOCKED STORAGE</i>	Date/Time 2-1-06 2:30	<i>3 ADD/1006</i> (*) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)					S=Soil SE=Soil/Stream SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Tissue Ws=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From <i>EAS LOCKED STORAGE</i>	Date/Time 2-02-06 1:00	Received By/Stored In <i>David St. John wch</i>	Date/Time 02-02-06 1:00								
Relinquished By/Removed From <i>David St. John wch</i>	Date/Time 02/02/06 1400	Received By/Stored In <i>Fed Ex</i>	Date/Time								
Relinquished By/Removed From <i>Fed Ex</i>	Date/Time 2-3-06 0930	Received By/Stored In <i>T. Neumann</i>	Date/Time 2-3-06 0930								
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time								
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time								

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

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-260		Page 2 of 2																																																																															
Collector TILLER, B <b>JAMES BERNHARD</b>			Company Contact JOAN KESSNER			Telephone No. 375-4688			Project Coordinator KESSNER, JH		Price Code 7N      Data Turnaround 45 Days																																																																															
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa			Sampling Location Cr 7, PORE WATER			SAF No. RC-048			Air Quality <input type="checkbox"/>																																																																																	
Ice Chest No. <b>ERC-03-106</b>			Field Logbook No. EL-1597			COA BESRAS6520			Method of Shipment FED EX		<b>95</b>																																																																															
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>			Offsite Property No. <b>4060278</b>			Bill of Lading/Air Bill No. SEE OSPC																																																																																				
POSSIBLE SAMPLE HAZARDS/REMARKS <b>POTENTIAL RADIOACTIVE &lt; DOT LIMITS</b>				Preservation		Cool 4C	HCl to pH < 2 Cool 4C	H2SO4 to pH < 2 Cool 4C	HCl to pH < 2 Cool 4C	HCl to pH < 2 Cool 4C	H2SO4 to pH < 2 Cool 4C	H2SO4 to pH < 2 Cool 4C	Cool 4C	Cool 4C																																																																												
				Type of Container		P	G	G/P	aG	aGs*	G/P	G/P	G/P	G/P																																																																												
				No. of Container(s)		1	1	1	1	1	1	1	1	1																																																																												
				Volume		125mL	500mL	125mL	1000mL	40mL	125mL	250mL	125mL	250mL																																																																												
Special Handling and/or Storage <b>COOL 4C</b>																																																																																										
SAMPLE ANALYSIS				Sec Item #1 in Special Instructions.		TPH (Total) - 418.1	NO2/NO3 - 553.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.2																																																																													
000036																																																																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Sample No.</th> <th>Matrix *</th> <th>Sample Date</th> <th>Sample Time</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>J11247</td> <td>WATER</td> <td>2-1-06</td> <td>1615</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>													Sample No.	Matrix *	Sample Date	Sample Time										J11247	WATER	2-1-06	1615	X	X	X	X	X	X	X	X	X																																																				
Sample No.	Matrix *	Sample Date	Sample Time																																																																																							
J11247	WATER	2-1-06	1615	X	X	X	X	X	X	X	X	X																																																																														
CHAIN OF POSSESSION						SPECIAL INSTRUCTIONS						Matrix *																																																																														
Relinquished By/Removed From <b>JAMES BERNHARD</b>			Date/Time 2-1-06			Received By/Stored In <b>EAS LOCKED STORAGE</b>			Date/Time 2-1-06			3/10/2006 (Cl Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate))  S=Soil SB=Soil/rock SO=Solid SL=Sludge W=Water O=Oil A=Air US=Dross Solids DL=Dross Liquids T=Truss WL=Wipe L=Liquid V=Vegetation X=Other																																																																														
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>			Date/Time 02-02-06			Received By/Stored In <b>David St. John WCH</b>			Date/Time 02-02-06																																																																																	
Relinquished By/Removed From <b>David St. John WCH</b>			Date/Time 02/02/06			Received By/Stored In <b>Fed Ex</b>			Date/Time																																																																																	
Relinquished By/Removed From <b>David St. John WCH</b>			Date/Time 2-3-06 0930			Received By/Stored In <b>David St. John WCH</b>			Date/Time 2-3-06 0930																																																																																	
Relinquished By/Removed From			Date/Time			Received By/Stored In			Date/Time																																																																																	
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LABORATORY SECTION		Received By				Title				Date/Time																																																																																
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time																																																																																

Washington Closure Hanford				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-048-251		Page 2 of 2			
Collector TILLER, B <b>JAMES BERNHARD</b>				Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days		
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa				Sampling Location Cr 3, SURFACE WATER			SAF No. RC-048		Air Quality <input type="checkbox"/>					
Ice Chest No. <b>ERC-96-012</b>				Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX						
Shipped To EBERLINE SERVICES / LIONVILLE				Offsite Property No. <b>A060273</b>			Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C				Preservation		Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C				
				Type of Container		P	G	G/P	aG	aGs*				
				No. of Container(s)		1	1	1	1	1				
				Volume		125mL	500mL	125mL	1000mL	40mL				
(000037)  SAMPLE ANALYSIS				See item(s) in Special Instructions.		TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G					
				Sample No.	Matrix *	Sample Date	Sample Time							
J11238	WATER	1-29-06	1330	X	X	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 1-29-06 2000		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 1-29-06 2000		3 3/10/2406 (*) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				S=Soil SE=Soilment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solid DL=Drum Liquid T=Tree W=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 0710		Received By/Stored In <b>R2 Stiller R. J. Stiller</b>		Date/Time 1-30-06								
Relinquished By/Removed From <b>R2 Stiller R. J. Stiller</b>		Date/Time 1500		Received By/Stored In <b>FED EX</b>		Date/Time								
Relinquished By/Removed From <b>FED EX</b>		Date/Time 1-31-06 10910		Received By/Stored In <b>D. J. Stiller</b>		Date/Time 1-31-06 10910								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
LABORATORY SECTION		Received By				Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time				

Washington Closure Hanford				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST								RC-048-244		Page 2 of 2			
Collector TILLER, B <b>JAMES BERNHARD</b>				Company Contact JOAN KESSNER				Telephone No. 375-4688				Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa				Sample Location Cr 4, PORE WATER				SAF No. RC-048				Air Quality <input type="checkbox"/>					
Ice Chest No. <b>AFS-04-052</b>				Field Logbook No. EL-1597				COA BESRAS6520				Method of Shipment FED EX					
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>				Offsite Property No. <b>A060274</b>				Bill of Lading/Air Bill No. SEE OSPC									
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> POTENTIAL RADIOACTIVE < DOT LIMITS  <b>Special Handling and/or Storage</b> COOL 4C  000038				Preservation		Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	Cool 4C			
				Type of Container		P	G	G/P	aG	aGs*	G/P	G/P	G/P	G/P	G/P	G/P	
				No. of Container(s)		1	1	1	1	1	1	1	1	1	1	1	
				Volume		125ml 15 3 40/2406	500mL	125mL	1000mL	40mL	125mL	250mL	125mL	250mL			
<b>SAMPLE ANALYSIS</b>				See Item (1) in Special Instructions.		TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.2				
Sample No.		Matrix *		Sample Date		Sample Time											
J11232		WATER		1-29-06		1415		X	X	X	X	X	X	X			
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>					
Relinquished By/Removed From <b>JAMES BERNHARD</b>				Received By/Stored In <b>EAS LOCKED STORAGE</b>				3 1/0/2406 (1) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				S=Soil SE=Soil/Element SL=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W/W=Wipe L=Liquid V=Vegetation X=Other					
Date/Time 1-29-06 2000				Date/Time 1-29-06 2000													
Relinquished By/Removed From <b>JAMES BERNHARD</b>				Received By/Stored In <b>R2 Steffler R.P. Steffler</b>													
Date/Time 01-30-06 0710				Date/Time 1-30-06													
Relinquished By/Removed From <b>R2 Steffler R.P. Steffler</b>				Received By/Stored In <b>Fed Ex</b>													
Date/Time 01-30-06 1500				Date/Time 1-30-06													
Relinquished By/Removed From <b>Fed Ex</b>				Received By/Stored In <b>D. J. M... J...</b>													
Date/Time 1-31-06 10910				Date/Time 1-31-06 10910													
Relinquished By/Removed From				Received By/Stored In													
Date/Time				Date/Time													
Relinquished By/Removed From				Received By/Stored In													
Date/Time				Date/Time													
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time											
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By		Date/Time											

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

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Collector TILLER, B <b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Days
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location Cr 4, SURFACE WATER	SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. <b>AFS-04-050</b>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>	Offsite Property No. <b>A060272</b>	Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C  000039	Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C					
	Type of Container	P	G	G/P	aG	aGr*					
	No. of Container(s)	1	1	1	1	1					
	Volume	125mL	500mL <i>3.4 Liters</i>	125mL	1000mL	40mL					
SAMPLE ANALYSIS		See memo(s) in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G					

Sample No.	Matrix *	Sample Date	Sample Time								
J11239	WATER	1-29-06	1530	X	X	X	X	X			

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 1-29-06 2000	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 1-29-06 2000	3.1/1/06 IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)		S=Soil SB=Soilment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 01-30-06	Received By/Stored In <b>R2 Staffer R. J. Staffer</b>	Date/Time 1-30-06			
Relinquished By/Removed From <b>R2 Staffer R. J. Staffer</b>	Date/Time 1-30-06	Received By/Stored In <b>Fed Ex</b>	Date/Time			
Relinquished By/Removed From <b>Fed Ex</b>	Date/Time 1-31-06 10910	Received By/Stored In <b>D. J. Smith</b>	Date/Time 1-31-06 10910			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-048-276		Page 2 of 2		
Collector TILLER, B <b>JAMES BERNHARD</b>			Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround	
Project Designation 100 Area and 300 Area Component of the RC/BRA Water Sa			Sampling Location Cr 5, SURFACE WATER			SAF No. RC-048		Air Quality <input type="checkbox"/>		45 Days		
Ice Chest No. <b>AFS-04-050</b>			Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX					
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>			Offsite Property No. <b>A060272</b>			Bill of Lading/Air Bill No. SEE OSPC						
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt; DOT LIMITS</i>  Special Handling and/or Storage <i>COOL 4C</i>				Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C			
				Type of Container	P	G	G/P	aG	aGs*			
				No. of Container(s)	1	1	1	1	1			
				Volume	125mL	500mL <b>340 1260L</b>	125mL	1000mL	40mL			
SAMPLE ANALYSIS				See item # in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 353.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G				
				000040								
Sample No.	Matrix *	Sample Date	Sample Time									
J11279	WATER	1-29-06	1500	X	X	X	X	X				
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 1-29-06 2000		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 1-29-06 2000		<b>340 1260L</b> (1) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				S=Soil SE=Soilment SO=Solid SL=Sludge W=Water O=Oil A=Air US=Drum Solids DL=Drum Liquids T=Tissue W/W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>off file</i>		Date/Time <i>0710</i>		Received By/Stored In <i>R2 Steffler R2 Steffler</i>		Date/Time <i>1-30-06</i>						
Relinquished By/Removed From <i>R2 Steffler R2 Steffler</i>		Date/Time <i>1-30-06</i>		Received By/Stored In <i>W. Steffler</i>		Date/Time <i>1-30-06</i>						
Relinquished By/Removed From <i>Red Ex</i>		Date/Time <i>1-31-06 1090</i>		Received By/Stored In <i>D. Steffler</i>		Date/Time <i>1-31-06 1090</i>						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION	Received By			Title			Date/Time					
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time					

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-048-258		Page 2 of 2							
Collector TILLER, B <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>7N</b>		Data Turnaround <b>45 Days</b>						
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr. 5, PORE WATER			SAF No. RC-048		Air Quality <input type="checkbox"/>									
Ice Chest No. <b>ERC-96-012</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX				<b>40</b>						
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>		Offsite Property No. <b>A060273</b>			Bill of Lading/Air Bill No. SEE OSPC											
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C				Preservation	Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	Cool 4C			
				Type of Container	P	G	G/P	aG	aGs*	G/P	G/P	G/P	G/P	G/P	G/P	
				No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1	1
				Volume	125mL	500mL	125mL	1000mL	40mL	125mL	250mL	125mL	250mL	125mL	250mL	125mL
000041  SAMPLE ANALYSIS				See Item # in Special Instructions.	TPH (Total) - 418.1	NO2/NO3 - 333.2	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	Ammonia - 350.3	Nitrogen by Kjeldahl - 351.2	Alkalinity - 310.1	TDS - 160.1; TSS - 160.2				
Sample No.	Matrix *	Sample Date	Sample Time													
J11245	WATER	1-29-06	1630	X	X	X	X	X	X	X	X	X	X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *				
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 1-29-06 7000		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 1-29-06 2000		<b>3 1260480</b> IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)				S-Salt SS-Sediment SO-Solid SI-Sludge W-Water O-Oil A-Air DS-Drawn Solids DL-Drawn Liquids T-Tissue WI-Wipe L-Liquid V-Vegetation X-Other				
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 01-30-06		Received By/Stored In <b>RZ Steffler RZ Steffler</b>		Date/Time 1-30-06										
Relinquished By/Removed From <b>RZ Steffler RZ Steffler</b>		Date/Time 1-30-06		Received By/Stored In <b>Fed Ex</b>		Date/Time										
Relinquished By/Removed From <b>Fed Ex</b>		Date/Time 1-31-06 10910		Received By/Stored In <b>D. J. Misch</b>		Date/Time 1-31-06 10910										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
LABORATORY SECTION	Received By			Title			Date/Time									
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time									

**Appendix 5**

**Data Validation Supporting Documentation**

**000042**

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	<u>C</u>	D	E
PROJECT:	RCBRA Water		DATA PACKAGE: K0205		
VALIDATOR:	TLI	LAB: LLI	DATE: 6/3/06		
			SDG:	K0205	
ANALYSES PERFORMED					
<u>Anions/IC</u>	<u>TOC</u>	TOX	<u>TPH-418.1</u>	Oil and Grease	<u>Alkalinity</u>
<u>Ammonia</u>	BOD/COD	Chloride	Chromium-VI	pH	<u>NO<sub>3</sub>/NO<sub>2</sub></u>
Sulfate	<u>TDS</u>	<u>TKN</u>	Phosphate		
<u>TSS</u>					
SAMPLES/MATRIX					
J11238 J11232 J11239 J11279 J11245					
J112X3 J112X9 J112F9 J11250 J112C3 J112F6					
J11247					
Water					

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  
 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: \_\_\_\_\_  
 \_\_\_\_\_

**GENERAL CHEMISTRY 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: NO FB

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

Spike samples analyzed? ..... Yes No N/A  
 Spike recoveries acceptable? ..... Yes No N/A  
 Spike standards NIST traceable? (Levels D, E) ..... Yes No N/A  
 Spike standards expired? (Levels D, E) ..... Yes No N/A  
 LCS/BSS samples analyzed? ..... Yes No N/A  
 LCS/BSS results acceptable? ..... Yes No N/A  
 Standards traceable? (Levels D, E) ..... Yes No N/A  
 Standards expired? (Levels D, E) ..... Yes No N/A  
 Transcription/calculation errors? (Levels D, E) ..... Yes No N/A  
 Performance audit sample(s) analyzed? ..... Yes No N/A  
 Performance audit sample results acceptable? ..... Yes No N/A

Comments:  
No <sup>MS/MSD</sup> for NO<sub>2</sub>/NO<sub>3</sub> 38, 32, 39, 79, 45  
+ sulfate →  
TKN PH - all

GENERAL CHEMISTRY 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: \_\_\_\_\_

no ms/msd for no2/no3 - J all

6. HOLDING TIMES (all levels)

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

nitrate nitrite phosphate - 238, 232, 239, 277, 245  
over by < 2x - J all

nitrate, nitrite phosphate - X3, X9, F9, S0, C3, F6, 247  
> 2x limits - J/OR all

**GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST**

**7. 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**

**000047**

## Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L184

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	06LIC014-MB1	Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	0.25 u	MG/L	0.25	1.0
		Fluoride by IC	0.25 u	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	0.25 u	MG/L	0.25	1.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	06LN3010-MB1	Nitrate Nitrite	0.020u	MG/L	0.020	1.0
BLANK10	06LTC006-MB1	Total Organic Carbon	0.50 u	MG/L	0.50	1.0
BLANK10	06LHC014-MB1	Petroleum Hydrocarbons	1.0 u	MG/L	1.0	1.0
BLANK10	06LAK006-MB1	Alkalinity	0.50 u	MG/L	0.50	1.0
BLANK10	06LAM006-MB1	Ammonia, as N	0.10 u	MG/L	0.10	1.0
BLANK10	06LAM009-MB1	TKN	0.10 u	MG/L	0.10	1.0
BLANK10	06LSSA10-MB1	Total Dissolved Solids	5.00 u	MG/L	5.00	1.0
BLANK10	06LSS010-MB1	Total Suspended Solids	5.00 u	MG/L	5.00	1.0
BLANK10	06LIC018-MB1	Sulfate by IC	0.25 u	MG/L	0.25	1.0

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Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L184

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	J11238	Bromide by IC	9.7	0.00	10.0	96.8	2.0
		Chloride by IC	10.6	1.0	10.0	95.6	2.0
		Fluoride by IC	9.6	0.029	10.0	96.1	2.0
		Nitrite by IC	9.77	0.25u	10.0	97.7	2.0
		Nitrate by IC	11.6	1.94	10.0	97.1	2.0
		Phosphate by IC	9.7	0.25u	10.0	97.3	2.0
-003	J11239	Total Organic Carbon	5.7	1.2	5.0	89.8	1.0
BLANK10	06LIC014-MB1	Bromide by IC	4.9	0.25u	5.0	97.2	1.0
		Chloride by IC	4.7	0.25u	5.0	93.7	1.0
		Fluoride by IC	4.9	0.25u	5.0	98.2	1.0
		Nitrite by IC	5.03	0.25u	5.00	100.6	1.0
		Nitrate by IC	4.94	0.25u	5.00	98.9	1.0
		Phosphate by IC	5.6	0.25u	5.0	111.5	1.0
		Sulfate by IC	5.0	0.25u	5.0	100.2	1.0
BLANK10	06LN3010-MB1	Nitrate Nitrite	0.48	0.02u	0.50	97.0	1.0
BLANK10	06LTC006-MB1	Total Organic Carbon	4.9	0.50u	5.0	97.9	1.0
BLANK10	06LHC014-MB1	Petroleum Hydrocarbons	4.4	1.0 u	4.2	104.5	1.0
		Petroleum Hydrocarbons	4.2	1.0 u	4.2	99.0	1.0
BLANK10	06LAK006-MB1	Alkalinity	100	0.50u	100	100.4	1.0
		Alkalinity MSD	100	0.50u	100	100.4	1.0
BLANK10	06LAM006-MB1	Ammonia, as N	2.0	0.10u	2.0	98.0	1.0
		Ammonia, as N MSD	2.0	0.10u	2.0	99.5	1.0
BLANK10	06LAM009-MB1	TKN	4.4	0.10u	4.0	109.2	1.0
		TKN MSD	4.3	0.10u	4.0	107.0	1.0
BLANK10	06LSSA10-MB1	Total Dissolved Solids	102	5.00u	100	102.0	1.0
		Total Dissolved Solids	94.0	5.00u	100	94.0	1.0

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Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L184

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
BLANK10	06LSS010-MB1	Total Suspended Solids	101	5.00u	100	100.9	1.0
		Total Suspended Solids	99.4	5.00u	100	99.4	1.0
BLANK10	06LIC018-MB1	Sulfate by IC	4.6	0.25u	5.0	92.9	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L184

SAMPLE	SITE ID	ANALYTE	SPIKE#1 SPIKE#2		%DIFF
			%RECOV	%RECOV	
BLANK10	06LHC014-MB1	Petroleum Hydrocarbons	104.5	99.0	5.4
BLANK10	06LAK006-MB1	Alkalinity	100.4	100.4	0.00
BLANK10	06LAM006-MB1	Ammonia, as N	98.0	99.5	1.5
BLANK10	06LAM009-MB1	TKN	109.2	107.0	2.1
BLANK10	06LSSA10-MB1	Total Dissolved Solids	102.0	94.0	8.2
BLANK10	06LSS010-MB1	Total Suspended Solids	100.9	99.4	1.5

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L184

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE RPD		DILUTION FACTOR (REP)
-001REP	J11238	Bromide by IC	0.25u	0.25u	NC	1.0
		Chloride by IC	1.0	1.0	4.0	1.0
		Fluoride by IC	0.25u	0.25u	NC	1.0
		Nitrite by IC	0.25u	0.25u	NC	1.0
		Nitrate by IC	1.94	1.90	1.7	1.0
		Phosphate by IC	0.25u	0.25u	NC	1.0
-002REP	J11232	Total Organic Carbon	1.2	1.1	4.1	1.0
		Total Dissolved Solids	83.0	75.0	10.1	1.0
		Total Suspended Solids	5.00u	5.00u	NC	1.0
-005REP	J11245	Alkalinity	60.5	62.6	3.5	1.0

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Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK10	06LAK007-MB1	Alkalinity	0.50 u	MG/L	0.50	1.0
BLANK10	06LICA18-MB1	Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	0.25 u	MG/L	0.25	1.0
		Fluoride by IC	0.25 u	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	0.25 u	MG/L	0.25	1.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	06LN3010-MB1	Nitrate Nitrite	0.020u	MG/L	0.020	1.0
BLANK10	06LAM006-MB1	Ammonia, as N	0.10 u	MG/L	0.10	1.0
BLANK10	06LAM009-MB1	TKN	0.10 u	MG/L	0.10	1.0
BLANK10	06LTC007-MB1	Total Organic Carbon	0.50 u	MG/L	0.50	1.0
BLANK10	06LHC014-MB1	Petroleum Hydrocarbons	1.0 u	MG/L	1.0	1.0
BLANK10	06LSSA11-MB1	Total Dissolved Solids	5.00 u	MG/L	5.00	1.0
BLANK10	06LSS011-MB1	Total Suspended Solids	5.00 u	MG/L	5.00	1.0

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Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	J112X3	Bromide by IC	9.6	0.00	10.0	95.7	2.0
		Chloride by IC	10.6	1.0	10.0	95.7	2.0
		Fluoride by IC	9.4	0.031	10.0	93.6	2.0
		Nitrite by IC	9.72	0.25u	10.0	97.2	2.0
		Nitrate by IC	10.4	0.56	10.0	98.4	2.0
		Phosphate by IC	9.7	0.25u	10.0	96.6	2.0
		Sulfate by IC	35.9	10.7	25.0	100.8	5.0
		Nitrate Nitrite	0.63	0.15	0.50	95.6	1.0
		Ammonia, as N	2.1	0.10u	2.0	104.5	1.0
		Total Organic Carbon	6.5	1.2	5.0	106.0	1.0
-002	J112X9	Bromide by IC	9.9	0.00	10.0	99.2	2.0
		Chloride by IC	10.8	1.0	10.0	98.4	2.0
		Fluoride by IC	9.8	0.030	10.0	98.0	2.0
		Nitrite by IC	10.0	0.25u	10.0	100.2	2.0
		Nitrate by IC	10.5	0.54	10.0	100	2.0
		Phosphate by IC	9.7	0.25u	10.0	96.5	2.0
		Sulfate by IC	35.0	10.5	25.0	98.0	5.0
		Nitrate Nitrite	0.61	0.13	0.50	94.8	1.0
		Total Organic Carbon	6.8	1.1	5.0	114.7	1.0
BLANK10	06LAK007-MB1	Alkalinity	99.5	0.50u	100	99.5	1.0
		Alkalinity MSD	98.4	0.50u	100	98.4	1.0
BLANK10	06LICA18-MB1	Bromide by IC	4.8	0.25u	5.0	96.6	1.0
		Chloride by IC	4.6	0.25u	5.0	92.6	1.0
		Fluoride by IC	4.8	0.25u	5.0	96.8	1.0
		Nitrite by IC	4.92	0.25u	5.00	98.4	1.0
		Nitrate by IC	4.76	0.25u	5.00	95.2	1.0
		Phosphate by IC	5.3	0.25u	5.0	106.3	1.0
BLANK10	06LN3010-MB1	Nitrate Nitrite	0.48	0.02u	0.50	97.0	1.0
BLANK10	06LAM006-MB1	Ammonia, as N	2.0	0.10u	2.0	98.0	1.0
		Ammonia, as N MSD	2.0	0.10u	2.0	99.5	1.0
BLANK10	06LAM009-MB1	TKN	4.4	0.10u	4.0	109.2	1.0
		TKN MSD	4.3	0.10u	4.0	107.0	1.0
BLANK10	06LTC007-MB1	Total Organic Carbon	5.1	0.50u	5.0	101.4	1.0
BLANK10	06LHC014-MB1	Petroleum Hydrocarbons	4.4	1.0 u	4.2	104.5	1.0
		Petroleum Hydrocarbons	4.2	1.0 u	4.2	99.0	1.0
BLANK10	06LSSA11-MB1	Total Dissolved Solids	103	5.00u	100	103.0	1.0
		Total Dissolved Solids	101	5.00u	100	101.0	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
BLANK10	06LSS011-MB1	Total Suspended Solids	98.0	5.00u	100	98.0	1.0
		Total Suspended Solids	98.6	5.00u	100	98.6	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	SPIKE#1	SPIKE#2	%DIFF
			%RECOV	%RECOV	
BLANK10	06LAK007-MB1	Alkalinity	99.5	98.4	1.1
BLANK10	06LAM006-MB1	Ammonia, as N	98.0	99.5	1.5
BLANK10	06LAM009-MB1	TKN	109.2	107.0	2.1
BLANK10	06LHC014-MB1	Petroleum Hydrocarbons	104.5	99.0	5.4
BLANK10	06LSSA11-MB1	Total Dissolved Solids	103.0	101.0	2.0
BLANK10	06LSS011-MB1	Total Suspended Solids	98.0	98.6	0.61

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/28/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION
			RESULT	REPLICATE RPD		
-001REP	J112X3	Alkalinity	59.9	59.9	0.00	1.0
		Bromide by IC	0.25u	0.25u	NC	1.0
		Chloride by IC	1.0	0.99	2.8	1.0
		Fluoride by IC	0.25u	0.25u	NC	1.0
		Nitrite by IC	0.25u	0.25u	NC	1.0
		Nitrate by IC	0.56	0.59	4.2	1.0
		Phosphate by IC	0.25u	0.25u	NC	1.0
		Sulfate by IC	10.7	10.8	1.3	2.0
		Nitrate Nitrite	0.15	0.15	1.3	1.0
		Ammonia, as N	0.10u	0.10u	NC	1.0
		Total Organic Carbon	1.2	1.3	1.6	1.0
		Total Dissolved Solids	82.0	79.0	3.7	1.0
		Total Suspended Solids	5.00u	5.00u	NC	1.0
-002REP	J112X9	Bromide by IC	0.25u	0.25u	NC	1.0
		Chloride by IC	1.0	1.0	3.3	1.0
		Fluoride by IC	0.25u	0.25u	NC	1.0
		Nitrite by IC	0.25u	0.25u	NC	1.0
		Nitrate by IC	0.54	0.54	0.56	1.0
		Phosphate by IC	0.25u	0.25u	NC	1.0
		Sulfate by IC	10.5	10.8	3.2	2.0
		Nitrate Nitrite	0.13	0.14	2.2	1.0
		Total Organic Carbon	1.1	1.1	4.0	1.0

Date: 7 June 2006  
 To: Washington Closure Hanford Inc. (technical representative)  
 From: TechLaw, Inc.  
 Project: 100 Area and 300 Area Component of the RCBRA Water Sampling  
 Subject: Inorganics - Data Package No. K0205-LLI

## INTRODUCTION

This memo presents the results of data validation on Data Package No. K0205 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J112X3	2/1/06	Water	C	See note 1
J112X9	2/1/06	Water	C	See note 1
J112F9	2/1/06	Water	C	See note 1
J11250	2/1/06	Water	C	See note 1
J112C3	2/1/06	Water	C	See note 1
J112F6	2/1/06	Water	C	See note 1
J11247	2/1/06	Water	C	See note 1
J11238	1/29/06	Water	C	See note 1
J11232	1/29/06	Water	C	See note 1
J11239	1/29/06	Water	C	See note 1
J11279	1/29/06	Water	C	See note 1
J11245	1/29/06	Water	C	See note 1

1 - ICP metals (6010B) and mercury (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

**000001**

requirements are as follows: Soil samples must be analyzed within 28 days for mercury and 6 months for ICP metals.

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, the lithium results in samples J112X9, J112F9, J11250, J112C3, J112F6, J11247 and J11245 were qualified as estimates and flagged "UJ".

Due to method blank contamination, the zinc results in samples J112X3, J112F9, J11250, J112C3, J112F6, J11247 and J11232 were qualified as estimates and flagged "UJ".

All other preparation blank results were acceptable.

##### Field (Equipment) Blank

No field blanks were submitted for analysis.

000002

· **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.

All 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.

All 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.

000003

## **Completeness**

Data package No. K0205 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

## **MAJOR DEFICIENCIES**

None found.

## **MINOR DEFICIENCIES**

The following minor deficiencies were noted:

- Due to method blank contamination, the lithium results in samples J112X9, J112F9, J11250, J112C3, J112F6, J11247 and J11245 were qualified as estimates and flagged "UJ".
- Due to method blank contamination, the zinc results in samples J112X3, J112F9, J11250, J112C3, J112F6, J11247 and J11232 were qualified as estimates and flagged "UJ".

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*.

000004

**Appendix 1**  
**Glossary of Data Reporting Qualifiers**

**000005**

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.
- UU - 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).

000006

**Appendix 2**  
**Summary of Data Qualification**

**000007**

METALS DATA QUALIFICATION SUMMARY\*

SDG: K0205	REVIEWER: TLI	Project: RCBRA	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Lithium	UJ	J112X9, J112F9 J11250, J112C3 J112F6, J11247 J11245	Blank contamination
Zinc	UJ	J112X3, J112F9 J11250, J112C3 J112F6, J11247 J11232	Blank contamination

\* - 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.

000008

**Appendix 3**

**Qualified Data Summary and Annotated Laboratory Reports**

**000009**

000010

Project: WASHINGTON CLOSURE HANFORD																			
Laboratory: LLI SDG: K0205																			
Sample Number		J112X3		J112X9		J112F9		J11250		J112C3		J112F6		J11247		J11238		J11232	
Remarks																			
Sample Date		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		1/29/06		1/29/06	
Inorganics	RQL	Result	Q	Result	Q	Result	Q												
Silver	10	1.4	U	1.4	U	1.4	U												
Aluminum	50	30.5	U	32.7		30.5	U	39.3		30.5	U	30.5	U	30.5	U	30.5	U	30.5	U
Arsenic	100	3.4	U	5.1		3.4	U	3.4	U	3.4	U								
Boron		11.7		12.3		8.1		31.1		6.0		6.7		4.4		8.2		6.2	
Barium	20	25.9		27.2		27.2		27.3		27.3		27.0		27.2		27.1		27.4	
Beryllium	5	0.20	U	0.20	U	0.20	U												
Bismuth		6.1	U	6.1	U	6.1	U												
Calcium		21700		21300		21600		21400		31600		21500		21500		20600		21000	
Cadmium	5	0.70	U	0.70	U	0.70	U												
Cobalt		1.2	U	1.2	U	1.2	U												
Chromium	10	1.6	U	1.6	U	1.6	U	1.6	U	4.1		1.6	U	1.6	U	1.6	U	1.6	U
Copper	10	2.9	U	2.9	U	2.9	U												
Iron	50	32.1	U	37.2		32.1	U	32.1	U	32.1	U								
Mercury	0.5	0.10	U	0.10	U	0.10	U												
Potassium		540	U	1040		650		959		1330		781		880		1070		636	
Lithium		1.8		1.6	UJ	1.6	UJ	1.4	UJ	0.91	UJ	1.3	UJ	1.3	UJ	2.6		2.1	
Magnesium		4860		4890		4940		4880		6240		4910		4880		4730		4810	
Manganese	5	2.2		3.4		2.3		2.1		8.3		2.4		1.9		2.4		1.8	
Molybdenum		1.3	U	1.3	U	1.3	U	1.5		1.3	U	1.6		1.8		1.3	U	1.3	U
Sodium		2310		2210		2190		2190		3750		2150		2120		2110		2210	
Nickel	40	1.3	U	1.3	U	1.3	U	1.3	U	1.7		1.3	U	1.3	U	1.3	U	1.3	U
Phosphorous		9.8		9.4		8.3	U	8.3	U	22.3		8.3	U	8.3	U	8.3	U	8.3	U
Lead	50	3.1	U	3.1	U	3.1	U												
Antimony	60	4.0	U	5.7		4.0	U	4.0	U	4.0	U								
Selenium		3.6	U	5.9		3.6	U	3.6	U	3.6	U								
Silicon		2490		2250		2270		2280		4620		2260		2260		2150		2190	
Tin	100	5.2	U	5.2	U	5.2	U												
Strontium		102		102		102		101		135		101		100		101		102	
Thallium		6.4	U	6.4	U	6.4	U												
Uranium	3000	20.6	U	20.6	U	20.6	U												
Vanadium	25	0.90	U	0.90	U	0.90	U												
Zinc	10	2.1	UJ	4.1		1.7	UJ	2.1	UJ	2.3	UJ	1.5	UJ	3.1	UJ	4.2		1.6	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

Project: WASHINGTON CLOSURE HANFORD								
Laboratory: LLI SDG: K0205								
Sample Number		J11239		J11279		J11245		
Remarks								
Sample Date		1/29/06		1/29/06		1/29/06		
Inorganics	RQL	Result	Q	Result	Q	Result	Q	
Silver	10	1.4	U	1.4	U	1.4	U	
Aluminum	50	30.5	U	30.5	U	30.5	U	
Arsenic	100	3.4	U	3.4	U	3.4	U	
Boron		5.2		5.5		3.9		
Barium	20	27.8		27.8		28.1		
Beryllium	5	0.20	U	0.20	U	0.20	U	
Bismuth		6.1	U	6.1	U	6.1	U	
Calcium		21100		21100		20900		
Cadmium	5	0.70	U	0.70	U	0.70	U	
Cobalt		1.2	U	1.2	U	1.2	U	
Chromium	10	1.6	U	1.6	U	1.6	U	
Copper	10	2.9	U	2.9	U	2.9	U	
Iron	50	32.1	U	32.1	U	32.1	U	
Mercury	0.5	0.10	U	0.10	U	0.10	U	
Potassium		973		843		830		
Lithium		1.9		1.8		1.6	UJ	
Magnesium		4800		4830		4690		
Manganese	5	2.4		2.9		1.1		
Molybdenum		1.3	U	1.3		1.3	U	
Sodium		2130		2170		2150		
Nickel	40	1.3	U	1.3	U	1.3	U	
Phosphorous		8.3	U	8.3	U	9.1		
Lead	50	3.1	U	3.1	U	3.1	U	
Antimony	60	4.0	U	4.0	U	4.0	U	
Selenium		3.6	U	3.6	U	3.6	U	
Silicon		2150		2180		2980		
Tin	100	5.2	U	5.2	U	5.2	U	
Strontium		102		103		97.8		
Thallium		6.4	U	6.5		6.4	U	
Uranium	3000	20.6	U	20.6	U	20.6	U	
Vanadium	25	0.90	U	0.90	U	0.90	U	
Zinc	10	3.7		4.2		3.7		

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 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11243-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J112X3	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	11.7	UG/L	2.7	1.0
		Barium, Total	25.9	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	21700	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	540	u UG/L	540	1.0
		Lithium, Total	1.8	UG/L	0.30	1.0
		Magnesium, Total	4860	UG/L	13.5	1.0
		Manganese, Total	2.2	UG/L	0.20	1.0
		Molybdenum, Total	1.3	u UG/L	1.3	1.0
		Sodium, Total	2310	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	9.8	UG/L	8.3	1.0
		Lead, Total	2.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	2490	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	102	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	2.1	UJ UG/L	0.50	1.0

*Handwritten signature/initials*  
 6/14/06

000012

000000029

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J112X9	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	32.7	UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	12.3	UG/L	2.7	1.0
		Barium, Total	27.2	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	21300	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	37.2	UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	1040	UG/L	540	1.0
		Lithium, Total	1.6	u UG/L	0.30	1.0
		Magnesium, Total	4890	UG/L	13.5	1.0
		Manganese, Total	3.4	UG/L	0.20	1.0
		Molybdenum, Total	1.3	u UG/L	1.3	1.0
		Sodium, Total	2210	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	9.4	UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	6.7	UG/L	4.0	1.0
		Selenium, Total	5.9	UG/L	3.6	1.0
		Silicon, Total	2250	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	102	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	4.1	UG/L	0.50	1.0

*Handwritten:* 12  
6/9/04

000013

000000030

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/17/06

CLIENT: TNUKANFORD RCS-048 K0205

LVL LOT #: 0602L209

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J112F9	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	8.1	UG/L	2.7	1.0
		Barium, Total	27.2	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	21600	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	650	UG/L	540	1.0
		Lithium, Total	1.6	UJ UG/L	0.30	1.0
		Magnesium, Total	4940	UG/L	13.5	1.0
		Manganese, Total	2.3	UG/L	0.20	1.0
		Molybdenum, Total	1.3	u UG/L	1.3	1.0
		Sodium, Total	2190	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	8.3	u UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	2270	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	102	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	1.7	UJ UG/L	0.50	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J11250	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	39.3	UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	31.1	UG/L	2.7	1.0
		Barium, Total	27.3	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	21400	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	959	UG/L	540	1.0
		Lithium, Total	1.4	u UG/L	0.30	1.0
		Magnesium, Total	4880	UG/L	13.5	1.0
		Manganese, Total	2.1	UG/L	0.20	1.0
		Molybdenum, Total	1.5	UG/L	1.3	1.0
		Sodium, Total	2190	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	8.3	u UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	2280	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	101	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	2.1	u UG/L	0.50	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J112C3	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	6.0	UG/L	2.7	1.0
		Barium, Total	27.3	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	31600	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	4.1	UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	1330	UG/L	540	1.0
		Lithium, Total	0.91	UJ UG/L	0.30	1.0
		Magnesium, Total	6240	UG/L	13.5	1.0
		Manganese, Total	8.3	UG/L	0.20	1.0
		Molybdenum, Total	1.3	u UG/L	1.3	1.0
		Sodium, Total	3750	UG/L	28.2	1.0
		Nickel, Total	1.7	UG/L	1.3	1.0
		Phosphorus, Total	22.3	UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	4620	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	135	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	2.3	UJ UG/L	0.50	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J112F6	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	5.1	UG/L	3.4	1.0
		Boron, Total	6.7	UG/L	2.7	1.0
		Barium, Total	27.0	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	21500	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	781	UG/L	540	1.0
		Lithium, Total	1.3	UJ UG/L	0.30	1.0
		Magnesium, Total	4910	UG/L	13.5	1.0
		Manganese, Total	2.4	UG/L	0.20	1.0
		Molybdenum, Total	1.6	UG/L	1.3	1.0
		Sodium, Total	2150	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	8.3	u UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	2260	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	101	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	1.5	UJ UG/L	0.50	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J11247	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	4.4	UG/L	2.7	1.0
		Barium, Total	27.2	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	21500	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	880	UG/L	540	1.0
		Lithium, Total	1.3	UJ UG/L	0.30	1.0
		Magnesium, Total	4880	UG/L	13.5	1.0
		Manganese, Total	1.9	UG/L	0.20	1.0
		Molybdenum, Total	1.8	UG/L	1.3	1.0
		Sodium, Total	2120	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	8.3	u UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	2260	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	100	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	3.1	UJ UG/L	0.50	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205

LVL LOT #: 0601184

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11238	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	8.2	UG/L	2.7	1.0
		Barium, Total	27.1	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	20600	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	1070	UG/L	540	1.0
		Lithium, Total	2.6	UG/L	0.30	1.0
		Magnesium, Total	4730	UG/L	13.5	1.0
		Manganese, Total	2.4	UG/L	0.20	1.0
		Molybdenum, Total	1.3	u UG/L	1.3	1.0
		Sodium, Total	2110	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	8.3	u UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	2150	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	101	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	4.2	UG/L	0.50	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L184

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J11232	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	6.2	UG/L	2.7	1.0
		Barium, Total	27.4	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	21000	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	636	UG/L	540	1.0
		Lithium, Total	2.1	UG/L	0.30	1.0
		Magnesium, Total	4810	UG/L	13.5	1.0
		Manganese, Total	1.8	UG/L	0.20	1.0
		Molybdenum, Total	1.3	u UG/L	1.3	1.0
		Sodium, Total	2210	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	11.3	UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	2190	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	102	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	1.6	UJ UG/L	0.50	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205

LVL LOT #: 0601L184

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J11239	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	5.2	UG/L	2.7	1.0
		Barium, Total	27.8	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	21100	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	973	UG/L	540	1.0
		Lithium, Total	1.9	UG/L	0.30	1.0
		Magnesium, Total	4800	UG/L	13.5	1.0
		Manganese, Total	2.4	UG/L	0.20	1.0
		Molybdenum, Total	1.3	u UG/L	1.3	1.0
		Sodium, Total	2130	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	8.3	u UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	2150	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	102	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	3.7	UG/L	0.50	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205

LVL LOT #: 0601L184

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J11279	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	5.5	UG/L	2.7	1.0
		Barium, Total	27.8	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	21100	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	843	UG/L	540	1.0
		Lithium, Total	1.8	UG/L	0.20	1.0
		Magnesium, Total	4830	UG/L	13.5	1.0
		Manganese, Total	2.9	UG/L	0.20	1.0
		Molybdenum, Total	1.3	UG/L	1.3	1.0
		Sodium, Total	2170	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	8.3	u UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	2180	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	103	UG/L	0.10	1.0
		Thallium, Total	6.5	UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	4.2	UG/L	0.50	1.0

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Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L184

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J11245	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	3.9	UG/L	2.7	1.0
		Barium, Total	28.1	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	20900	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	830	UG/L	540	1.0
		Lithium, Total	1.6	UG/L	0.30	1.0
		Magnesium, Total	4690	UG/L	13.5	1.0
		Manganese, Total	1.1	UG/L	0.20	1.0
		Molybdenum, Total	1.3	u UG/L	1.3	1.0
		Sodium, Total	2150	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	9.1	UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	2980	UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	97.8	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	3.7	UG/L	0.50	1.0

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**Appendix 4**

**Laboratory Narrative and Chain-of-Custody Documentation**

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**Analytical Report**

**Client:** TNU-HANFORD RCS-048  
**LVL#:** 0601L184/0602L209  
**SDG/SAF#:** K0205/RCS-048

**W.O.#:** 11343-606-001-9999-00  
**Dates Received:** 01-31-06/02-03-06

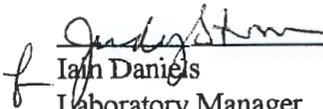
**METALS CASE NARRATIVE**

1. This narrative covers the analyses of 12 water samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples were rerun for Aluminum, Beryllium, Copper, Potassium, Sodium, and Phosphorous due to high concentrations and sample matrix.
3. All analyses were performed within the required holding times.
4. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.
11. The duplicate analyses for 3 analytes on sample J112X3 and for 6 analytes on sample J112X9 were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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 <sup>69</sup> pages.

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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.

  
\_\_\_\_\_  
Ian Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

2/17/06  
Date

jjw/m01-184



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Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-251	Page 1 of 2
Collector TILLER, B	<b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 3, SURFACE WATER		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. ERC-96-012	Field Logbook No. EL-1597	COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. A060273		Bill of Lading/Air Bill No. SEE OSCP			

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C  000027	Preservation	None	HNO3 to pH < 4	Cool 4C	Cool 4C	Cool 4C					
	Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS				Tritium - H3	See Item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See Item (2) in Special Instructions.	Sevent-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
Sample No.	Matrix *	Sample Date	Sample Time										
J11238	WATER	1-29-06	1330							X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Received By <b>JAMES BERNHARD</b>	Date/Time 1-29-06 2000	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 1-29-06 2000	(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238] (2) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7470 - (CV)				S=Soil SE=Sediment SO=Soil/Sediment SL=Soil/Liquid W=Water O=Oil A=Air DS=Drum Solids LL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 01-30-06 0710	Received By/Stored In <b>R2 Steffler R.P. Steffler</b>	Date/Time 1-30-06					
Relinquished By/Removed From <b>R2 Steffler R.P. Steffler</b>	Date/Time 01-30-06 1500	Received By/Stored In <b>FED EX</b>	Date/Time					
Relinquished By/Removed From <b>[Signature]</b>	Date/Time 1-31-06 10910	Received By/Stored In <b>[Signature]</b>	Date/Time 1-31-06 10910					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-244		Page 1 of 2	
Collector TILLER, B <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 4, PORE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>		45 Days	
Ice Chest No. <b>AFS-04-052</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>		Offsite Property No. <b>A060274</b>		Bill of Lading/Air Bill No. SEE OSCP					

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C  000028	Preservation	None	HNO3 to pH < 2	Cool 4C	Cool 4C	Cool 4C						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS		Tritium - H3	See item (1) in Special Instructions	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time										
J11232	WATER	1-29-06	1415							X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS								Matrix *	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)								S=Soil SB=Soil/soil SO=Soil D=Sludge W=Water Cu=Oil A=Air US=Dry/Soil DL=Dry/Liquid T=Tissue W=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From	Date/Time	Received By/Stored In	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										
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time										

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-252	Page 1 of 2
Collector TILLER, B	<b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 4, SURFACE WATER		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. AFS-04-050	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060272	Bill of Lading/Air Bill No. SEE OSPC				

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C					
	Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL

000029	SAMPLE ANALYSIS		Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time									
J11239	WATER	1-29-06	1530						X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 1-29-06 2000	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 1-29-06 2000	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SE=Soil/mud 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
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 01-30-06	Received By/Stored In <b>R. Stiller R.P. Stiller</b>	Date/Time 0710 1-30-06					
Relinquished By/Removed From <b>R. Stiller R.P. Stiller</b>	Date/Time 1-30-06 1500	Received By/Stored In <b>Fed Ex</b>	Date/Time					
Relinquished By/Removed From <b>[Signature]</b>	Date/Time 1-31-06 10910	Received By/Stored In <b>D.J. Muth</b>	Date/Time 1-31-06 10910					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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



Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-258		Page 1 of 2	
Collector TILLER, B <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 5, PORE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>		Data Turnaround 45 Days	
Ice Chest No. <b>ERC-96-012</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>		Offsite Property No. <b>A060273</b>		Bill of Lading/Air Bill No. SEE OSPC					

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C	Preservation	None	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C					
	Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
	Volume	45 mL 60 BA 1-24-06	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL

0000031	SAMPLE ANALYSIS										
	Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-235/234, Uranium-238)	Radium-226, Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	

Sample No.	Matrix *	Sample Date	Sample Time								
J11245	WATER	1-29-06	1630						X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS								Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 1-29-06 2000	Received By/Stored In <b>ALL</b>	Date/Time 1-29-06 2000	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)								S-Soil
Relinquished By/Removed From <b>EAS</b>	Date/Time 1-30-06	Received By/Stored In <b>RE STEFFER</b>	Date/Time 1-30-06									S-Soil
Relinquished By/Removed From <b>RE STEFFER</b>	Date/Time 1-30-06	Received By/Stored In <b>FED EX</b>	Date/Time									S-Soil
Relinquished By/Removed From <b>RE STEFFER</b>	Date/Time 1-31-06/0910	Received By/Stored In <b>D. J. MOON</b>	Date/Time 1-31-06/0910									S-Soil
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									S-Soil
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	S-Soil								

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

Washington Closure Hanford		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				RC-048-290		Page 1 of 2			
Collector TILLER, B <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround <b>45 Days</b>	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr-6, PORE WATER FULL QC		SAF No. RC-048		Air Quality <input type="checkbox"/>					
Ice Chest No. <b>FRC-02-504</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX					
Shipped To EBERLINE SERVICES <b>LIONVILLE</b>		Offsite Property No. <b>A060278</b>				Bill of Lading/Air Bill No. SEE OSPC					

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C  0000032	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	3	2	3
	Volume	125mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS		Tritium - H3	See Item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See Item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time									
J112X3	WATER	02-01-06	1445						X	X	X	X

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>	
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 02-01-06 2030	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 02/01/06	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cerium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SB=Soilmat SD=Solid SL=Sludge W=Water O=Oil A=Air DL=Drum Solids LL=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 02/02/06 1200	Received By/Stored In <b>David Stephen WCH</b>	Date/Time 02/02/06 1200						
Relinquished By/Removed From <b>David Stephen WCH</b>	Date/Time 02/02/06 1400	Received By/Stored In <b>Fed Ex</b>	Date/Time						
Relinquished By/Removed From <b>Fed Ex</b>	Date/Time 2-3-06 0930	Received By/Stored In	Date/Time						
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time						

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

Collector <b>TILLER, B JAMES BERNHARD</b>	Company Contact <b>JOAN KESSNER</b>	Telephone No. 375-4688	Project Coordinator <b>KESSNER, JH</b>	Price Code <b>7N</b>	Data Turnaround <b>45 Days</b>
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location <b>Cr 10, SURFACE WATER</b>	SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. <b>ERC-96-061</b>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment <b>FED EX</b>		
Shipped To <b>EBERLINE SERVICES (LIONVILLE)</b>	Offsite Property No. <b>A060278</b>	Bill of Lading/Air Bill No. <b>SBE OSPC</b>			

POSSIBLE SAMPLE HAZARDS/REMARKS <b>POTENTIAL RADIOACTIVE &lt; DOT LIMITS</b>	Preservation	None	HNO3 to pH < 2	Cool 4C	Cool 4C	Cool 4C						
		Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
		No. of Container(s)	1	1	1	1	1	1	1	1	1	1
		Volume	60mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL

SPECIAL HANDLING AND/OR STORAGE <b>COOL 4C</b>	SAMPLE ANALYSIS										
	Tritium - H3	See item (1) in Special Instructions	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	

Sample No.	Matrix *	Sample Date	Sample Time								
J112F9	WATER	02-01-06	1830					X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 2-1-06	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 2-1-06	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SE=Sediment SO=Solid SI=Sludge W = Water O=Oil A=Air DS=Drawn Solids DL=Drawn Liquids T=Tissue Ws=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 02-02-06	Received By/Stored In <b>David Stephen wch</b>	Date/Time 02-02-06					
Relinquished By/Removed From <b>David Stephen wch</b>	Date/Time 02/02/06	Received By/Stored In <b>Fed EX</b>	Date/Time					
Relinquished By/Removed From <b>Fed EX</b>	Date/Time 2-20-06	Received By/Stored In <b>W. Hernandez</b>	Date/Time 2-20-06					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Washington Closure Hanford				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-263		Page 1 of 2								
Collector TILLER, B JAMES BERNHARD		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days								
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa				Sampling Location Cr 10, PORE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>										
Ice Chest No. ERC-02-002		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX												
Shipped To EBERLINE SERVICES (LIONVILLE)				Offsite Property No. AD60278		Bill of Lading/Air Bill No. SEE OSPC												
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C  000035				Preservation		None	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C			
				Type of Container		P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	
				No. of Container(s)		1	1	1	1	1	1	1	1	1	1	1	1	1
				Volume		125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL			
SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081					
Sample No.	Matrix *	Sample Date	Sample Time															
J11250	WATER	02-01-06	1900							X	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *						
Relinquished By/Removed From JAMES BERNHARD		Date/Time 02-01-06 2030		Received By/Stored In EAS LOCKED STORAGE		Date/Time 02-01-06 2030		(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SE=Soil/Inert SO=Solid SL=Sludge W=Water LO=Oil A=Air OS=Organic Solids DL=Drum Liquids T=Tissue Ws=Wipe L=Liquid V=Vegetation X=Other						
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 02-02-06 1200		Received By/Stored In David J. Johnson		Date/Time 02-02-06 1200												
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 02/02/06 1400		Received By/Stored In Fed Ex		Date/Time												
Relinquished By/Removed From JAMES BERNHARD		Date/Time 02-03-06 0930		Received By/Stored In T. Kessner		Date/Time 02-03-06 0930												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
LABORATORY SECTION		Received By		Title				Date/Time										
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time										

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-280		Page 1 of 2	
Collector TILLER, B JAMES BERNHARD		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sample Location Cr 6, VERTICAL TUBE		SAF No. RC-048		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC-02-002		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060278 <del>A0600</del> PAS 02/02/06		Bill of Lading/Air Bill No. SEE OSPC					

POSSIBLE SAMPLE HAZARDS/REMARKS  
POTENTIAL RADIOACTIVE < DOT LIMITS

Special Handling and/or Storage  
COOL 4C

000036

Preservation	None	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C						
Type of Container	P	G/P	aG	aG	aG						
No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
Volume	60mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	

SAMPLE ANALYSIS				Tridium - HD	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226, Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time										
J112C3	WATER	02-01-06	1530							X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS								Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 02-01-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 02-01-06	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)								S=Soil
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-02-06	Received By/Stored In David Smith WCH	Date/Time 02-02-06									SE=Soil/soil
Relinquished By/Removed From David Smith WCH	Date/Time 02/02/06	Received By/Stored In Fed Ex	Date/Time									SO=Solid
Relinquished By/Removed From Fed Ex	Date/Time 2-3-06 0930	Received By/Stored In J. Bernhardt	Date/Time 2-3-06 0930									SL=Sludge
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									W=Water
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	D=Oil								
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	A=Air								
				DS=Drum Solids								
				DL=Drum Liquids								
				T=Filter								
				W=Wipe								
				L=Liquid								
				V=Vegetation								
				X=Other								

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

<b>Washington Closure Hanford</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				RC-048-282		Page 1 of 2	
Collector TILLER, B <i>Bernhard</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code	7N	Data Turnaround 45 Days		
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 7, SURFACE WATER		SAF No. RC-048	Air Quality <input type="checkbox"/>				
Ice Chest No. <i>ERC-03-106</i>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX						
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A060278</i>		Bill of Lading/Air Bill No. SEE OSPC					

000000064

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C  0000337	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C					
	Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
	Volume	60mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS	Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time									
J112F6	WATER	2-1-06	1600						X	X	X	^

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>						<b>Matrix *</b> S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil DS=Drum Solids L=Liquid T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 2-1-06 2:30	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 2-1-06 2:30	(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238] (2) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]; Mercury - 7470 - (CV)						
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 2-1-06 1200	Received By/Stored In <b>James Bernhardt</b>	Date/Time 2-1-06 1200							
Relinquished By/Removed From <b>James Bernhardt</b>	Date/Time 2-1-06 1400	Received By/Stored In <b>FedEx</b>	Date/Time							
Relinquished By/Removed From <b>FedEx</b>	Date/Time 2-3-06 0930	Received By/Stored In <b>James Bernhardt</b>	Date/Time 2-3-06 0930							
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time							
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time							

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-260		Page 1 of 2	
Collector TILLER, B JAMES BERNHARD		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround 90	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 7, PORE WATER		SAF No. RC-048		Air Quality <input type="checkbox"/>		45 Days	
Ice Chest No. ERC-03-106		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060278		Bill of Lading/Air Bill No. SEE OSPC					

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C  000038	Preservation	None	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C
	Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
	Volume	125mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	
SAMPLE ANALYSIS		Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium -226, Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	

Sample No.	Matrix *	Sample Date	Sample Time									
J11247	WATER	2-1-06	1615						X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS								Matrix *	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-1-06 2130	Received By/Stored In EAS LOCKED STORAGE	Date/Time 2-1-06 2130	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)								B=Soil SB=Soilment SO=Solid SL=Sludge W = Water O=Oil A=Ask DS=Drum Solids DL=Drum Liquids T=Truss WT=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 07-02-06 1200	Received By/Stored In John Well	Date/Time 02-02-06 1200										
Relinquished By/Removed From John Well	Date/Time 02/02/06 1600	Received By/Stored In Fed Ex	Date/Time										
Relinquished By/Removed From Fed Ex	Date/Time 2-3-06 0930	Received By/Stored In J. Bernhard	Date/Time 2-3-06 0930										
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time										
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time										

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

**Appendix 5**  
**Data Validation Supporting Documentation**

**000039**

**INORGANIC ANALYSIS DATA VALIDATION CHECKLIST**

VALIDATION LEVEL:	A	B	<b>C</b>	D	E
PROJECT: RCBRA Water	DATA PACKAGE: K0205				
VALIDATOR: TLI	LAB: LLI		DATE: 6/3/06		
			SDG: K0205		
ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg	SW-846 Cyanide		
SAMPLES/MATRIX					
J112K3	J112X9	J112F9	J11250	J112C3	
J112FC	J11247	J11238	J11232	J11239	
J11279	J11245				
					Water

**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: \_\_\_\_\_  
 \_\_\_\_\_

000040

**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: no FB

Lithium - X9, F9, 50, C3, F6, 47, 45 - UJ  
Zinc - X3, F9, 50, C3, F6, 47, 32 - UJ

**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: no P45

**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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**Appendix 6**

**Additional Documentation Requested by Client**

**000045**

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L184 / 0602209

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	06L0091-MB1	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	2.7	u UG/L	2.7	1.0
		Barium, Total	0.20	u UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	12.5	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	2.9	u UG/L	2.9	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Potassium, Total	540	u UG/L	540	1.0
		Lithium, Total	0.36	UG/L	0.30	1.0
		Magnesium, Total	13.5	u UG/L	13.5	1.0
		Manganese, Total	0.20	u UG/L	0.20	1.0
		Molybdenum, Total	1.3	u UG/L	1.3	1.0
		Sodium, Total	28.2	u UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	8.3	u UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	8.2	u UG/L	8.2	1.0
		Tin, Total	5.2	u UG/L	5.2	1.0
		Strontium, Total	0.10	u UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	0.69	UG/L	0.50	1.0
BLANK1	06C0025-MB1	Mercury, Total	0.10	u UG/L	0.10	1.0

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Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/17/06

CLIENT: TNUHANFORD RCS-048 K0205

LVL LOT #: 0602L209

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	J112X3	Silver, Total	50.5	1.4 u	50.0	101.0	1.0
		Aluminum, Total	1990	30.5 u	2000	99.3	1.0
		Arsenic, Total	2000	3.4 u	2000	99.9	1.0
		Boron, Total	1080	11.7	1000	106.5	1.0
		Barium, Total	1960	25.9	2000	96.9	1.0
		Beryllium, Total	49.8	0.20u	50.0	99.6	1.0
		Bismuth, Total	4640	6.1 u	5000	92.8	1.0
		Calcium, Total	49100	21700	25000	109.6	1.0
		Cadmium, Total	49.7	0.70u	50.0	99.4	1.0
		Cobalt, Total	503	1.2 u	500	100.5	1.0
		Chromium, Total	207	1.6 u	200	103.6	1.0
		Copper, Total	250	2.9 u	250	99.8	1.0
		Iron, Total	1050	32.1 u	1000	105.2	1.0
		Mercury, Total	1.0	0.10u	1.0	101.6	1.0
		Potassium, Total	26400	540 u	25000	105.6	1.0
		Lithium, Total	1160	1.8	1000	116.2	1.0
		Magnesium, Total	31500	4860	25000	106.4	1.0
		Manganese, Total	544	2.2	500	108.4	1.0
		Molybdenum, Total	1030	1.3 u	1000	102.6	1.0
		Sodium, Total	27700	2310	25000	101.6	1.0
		Nickel, Total	502	1.3 u	500	100.5	1.0
		Phosphorus, Total	4940	9.8	5000	98.6	1.0
		Lead, Total	517	3.1 u	500	103.3	1.0
		Antimony, Total	517	4.0 u	500	103.4	1.0
		Selenium, Total	2030	3.6 u	2000	101.5	1.0
		Silicon, Total	3550	2490	1000	106.0	1.0
		Tin, Total	1050	5.2 u	1000	105.2	1.0
		Strontium, Total	1090	102	1000	99.3	1.0
		Thallium, Total	1980	6.4 u	2000	99.1	1.0
		Uranium, Total	2470	20.6 u	<del>5000</del> 2500	<del>49.2</del> 98.5	1.0
		Vanadium, Total	510	0.90u	500	101.9	1.0
		Zinc, Total	512	2.1	500	102.1	1.0

*corrected entry JW 2/17/06*

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Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-002	J112X9	Silver, Total	50.4	1.4 u	50.0	100.8	1.0
		Aluminum, Total	2000	32.7	2000	98.4	1.0
		Arsenic, Total	2030	3.4 u	2000	101.6	1.0
		Boron, Total	1100	12.3	1000	108.4	1.0
		Barium, Total	2000	27.2	2000	98.6	1.0
		Beryllium, Total	50.5	0.20u	50.0	101.0	1.0
		Bismuth, Total	4640	6.1 u	5000	92.8	1.0
		Calcium, Total	49400	21300	25000	112.8	1.0
		Cadmium, Total	50.8	0.70u	50.0	101.6	1.0
		Cobalt, Total	511	1.2 u	500	102.2	1.0
		Chromium, Total	211	1.6 u	200	105.7	1.0
		Copper, Total	254	2.9 u	250	101.7	1.0
		Iron, Total	1090	37.2	1000	105.0	1.0
		Mercury, Total	1.0	0.10u	1.0	100	1.0
		Potassium, Total	27000	1040	25000	103.7	1.0
		Lithium, Total	1200	1.6	1000	119.6	1.0
		Magnesium, Total	32200	4890	25000	109.1	1.0
		Manganese, Total	556	3.4	500	110.5	1.0
		Molybdenum, Total	1050	1.3 u	1000	105.0	1.0
		Sodium, Total	28200	2210	25000	103.8	1.0
		Nickel, Total	508	1.3 u	500	101.6	1.0
		Phosphorus, Total	5000	9.4	5000	99.9	1.0
		Lead, Total	528	3.1 u	500	105.6	1.0
		Antimony, Total	528	5.7	500	104.6	1.0
		Selenium, Total	2060	5.9	2000	102.6	1.0
		Silicon, Total	3430	2250	1000	117.4	1.0
		Tin, Total	1050	5.2 u	1000	105.5	1.0
		Strontium, Total	1110	102	1000	101.3	1.0
		Thallium, Total	2020	6.4 u	2000	101.2	1.0
		Uranium, Total	2530	20.6 u	<del>500</del> 500	101.2	1.0
		Vanadium, Total	519	0.90u	500	103.8	1.0
		Zinc, Total	520	4.1	500	103.3	1.0

*corrected entry  
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Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205

LVL LOT #: 0601L184 / 06021209

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	06L0091-LC1	Silver, LCS	496	500	UG/L	99.1
		Aluminum, LCS	4970	5000	UG/L	99.4
		Arsenic, LCS	9700	10000	UG/L	97.0
		Boron, LCS	5020	5000	UG/L	100.3
		Barium, LCS	4790	5000	UG/L	95.8
		Beryllium, LCS	244	250	UG/L	97.8
		Bismuth, LCS	4850	5000	UG/L	97.0
		Calcium, LCS	25000	25000	UG/L	100.1
		Cadmium, LCS	243	250	UG/L	97.1
		Cobalt, LCS	2420	2500	UG/L	96.7
		Chromium, LCS	488	500	UG/L	97.5
		Copper, LCS	1220	1250	UG/L	97.2
		Iron, LCS	4920	5000	UG/L	98.4
		Potassium, LCS	24600	25000	UG/L	98.2
		Lithium, LCS	5260	5000	UG/L	105.2
		Magnesium, LCS	24900	25000	UG/L	99.5
		Manganese, LCS	769	750	UG/L	102.5
		Molybdenum, LCS	4960	5000	UG/L	99.2
		Sodium, LCS	23900	25000	UG/L	95.8
		Nickel, LCS	1940	2000	UG/L	96.9
		Phosphorus, LCS	4850	5000	UG/L	97.0
		Lead, LCS	2470	2500	UG/L	98.7
		Antimony, LCS	3020	3000	UG/L	100.7
		Selenium, LCS	9850	10000	UG/L	98.5
		Silicon, LCS	4900	5000	UG/L	98.1
		Tin, LCS	5050	5000	UG/L	101.0
		Strontium, LCS	4760	5000	UG/L	95.2
		Thallium, LCS	9810	10000	UG/L	98.1
		Uranium, LCS	2430	5000	UG/L	<del>10.2</del>
		Vanadium, LCS	2470	2500	UG/L	98.6
		Zinc, LCS	978	1000	UG/L	97.8
LCS1	06C0025-LC1	Mercury, LCS	5.4	5.0	UG/L	108.1

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Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L209

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION
			RESULT	REPLICATE	RPD	
-002REP	J112X9	Silver, Total	1.4 u	1.4 u	NC	1.0
		Aluminum, Total	32.7	30.5 u	<del>NC</del>	1.0
		Arsenic, Total	3.4 u	3.4 u	NC	1.0
		Boron, Total	12.3	11.2	9.4	1.0
		Barium, Total	27.2	27.8	2.2	1.0
		Beryllium, Total	0.20u	0.20u	NC	1.0
		Bismuth, Total	6.1 u	6.1 u	NC	1.0
		Calcium, Total	21300	21300	0.14	1.0
		Cadmium, Total	0.70u	0.70u	NC	1.0
		Cobalt, Total	1.2 u	1.2 u	NC	1.0
		Chromium, Total	1.6 u	1.6 u	NC	1.0
		Copper, Total	2.9 u	2.9 u	NC	1.0
		Iron, Total	37.2	36.3	2.4	1.0
		Mercury, Total	0.10u	0.10u	NC	1.0
		Potassium, Total	1040	942	10.0	1.0
		Lithium, Total	1.6	2.4	40.0	1.0
		Magnesium, Total	4890	4870	0.34	1.0
		Manganese, Total	3.4	3.6	5.7	1.0
		Molybdenum, Total	1.3 u	1.3 u	NC	1.0
		Sodium, Total	2210	2150	2.8	1.0
		Nickel, Total	1.3 u	1.3 u	NC	1.0
		Phosphorus, Total	9.4	8.3 u	<del>NC</del>	1.0
		Lead, Total	3.1 u	3.1 u	NC	1.0
		Antimony, Total	5.7	4.0 u	<del>NC</del>	1.0
		Selenium, Total	5.9	3.6 u	<del>NC</del>	1.0
		Silicon, Total	2250	2240	0.62	1.0
		Tin, Total	5.2 u	5.2 u	NC	1.0
		Strontium, Total	102	102	0.39	1.0
		Thallium, Total	6.4 u	6.4 u	NC	1.0
		Uranium, Total	20.6 u	20.6 u	NC	1.0
		Vanadium, Total	0.90u	0.90u	NC	1.0
		Zinc, Total	4.1	2.0	68.9	1.0

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Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/17/06

CLIENT: TNUHANFORD RCS-048 K0205

LVL LOT #: 0602L209

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-001RBP	J112X3	Silver, Total	1.4 u	1.4 u	NC	1.0
		Aluminum, Total	30.5 u	30.5 u	NC	1.0
		Arsenic, Total	3.4 u	3.4 u	NC	1.0
		Boron, Total	11.7	10.8	8.0	1.0
		Barium, Total	25.9	25.6	1.2	1.0
		Beryllium, Total	0.20u	0.20u	NC	1.0
		Bismuth, Total	6.1 u	6.1 u	NC	1.0
		Calcium, Total	21700	21700	0.18	1.0
		Cadmium, Total	0.70u	0.70u	NC	1.0
		Cobalt, Total	1.2 u	1.2 u	NC	1.0
		Chromium, Total	1.6 u	1.6 u	NC	1.0
		Copper, Total	2.9 u	2.9 u	NC	1.0
		Iron, Total	32.1 u	32.1 u	NC	1.0
		Mercury, Total	0.10u	0.10u	NC	1.0
		Potassium, Total	540 u	735	<del>NC</del>	1.0
		Lithium, Total	1.8	1.3	32.3	1.0
		Magnesium, Total	4860	4880	0.39	1.0
		Manganese, Total	2.2	2.3	4.4	1.0
		Molybdenum, Total	1.3 u	1.3 u	NC	1.0
		Sodium, Total	2310	2290	0.98	1.0
		Nickel, Total	1.3 u	1.3 u	NC	1.0
		Phosphorus, Total	9.8	12.3	22.6	1.0
		Lead, Total	3.1 u	3.1 u	NC	1.0
		Antimony, Total	4.0 u	4.0 u	NC	1.0
		Selenium, Total	3.6 u	3.6 u	NC	1.0
		Silicon, Total	2490	2500	0.22	1.0
		Tin, Total	5.2 u	5.2 u	NC	1.0
		Strontium, Total	102	102	0.098	1.0
		Thallium, Total	6.4 u	6.4 u	NC	1.0
		Uranium, Total	20.6 u	20.6 u	NC	1.0
		Vanadium, Total	0.90u	0.90u	NC	1.0
		Zinc, Total	2.1	1.9	10.0	1.0

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Date: 7 June 2006  
 To: Washington Closure Hanford Inc. (technical representative)  
 From: TechLaw, Inc.  
 Project: 100 Area and 300 Area Component of the RCBRA Water Sampling  
 Subject: Radiochemistry - Data Package No. K0205-EB

## INTRODUCTION

This memo presents the results of data validation on Data Package No. K0205 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	Date
J112X3	2/1/06	Water	C	See note 1
J112X9	2/1/06	Water	C	See note 1
J112F9	2/1/06	Water	C	See note 1
J11250	2/1/06	Water	C	See note 1
J112C3	2/1/06	Water	C	See note 1
J112F6	2/1/06	Water	C	See note 1
J11247	2/1/06	Water	C	See note 1
J11238	1/29/06	Water	C	See note 1 & 2
J11232	1/29/06	Water	C	See note 1 & 2
J11239	1/29/06	Water	C	See note 1 & 2
J11279	1/29/06	Water	C	See note 1
J11245	1/29/06	Water	C	See note 1

1 - Tritium, radium-228, radium-226, total strontium, isotopic thorium, isotopic uranium, 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 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 Data Requested by Client

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## 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.

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Due to the lack of an LCS analysis, all 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. One analyte exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

· **Completeness**

Data package No. K0205 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.

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## MINOR DEFICIENCIES

Due to the lack of an LCS analysis, all thorium-228 and thorium-232 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.

One analyte 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 & Analysis Plan*.

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**Appendix 1**

**Glossary of Data Reporting Qualifiers**

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

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**Appendix 2**  
**Summary of Data Qualification**

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RADIOCHEMISTRY DATA QUALIFICATION SUMMARY\*

SDG: K0205	REVIEWER: TLI	Project: RCBRA	PAGE <u>1</u> OF <u>1</u>
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.

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**Appendix 3**

**Qualified Data Summary and Annotated Laboratory Reports**

**000009**

Project: WASHINGTON CLOSURE HANFORD																			
Laboratory: EB		SDG: K0205																	
Sample Number		J112X3		J112X9		J112F9		J11250		J112C3		J112F6		J11247		J11238		J11232	
Remarks																			
Sample Date		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		2/1/06		1/29/06		1/29/06	
Radiochemistry	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Tritium	400	54.1	U	-8.64	U	39.8	U	-34.8	U	39.3	U	68.8	U	-43.4	U	0	U	17.2	U
Carbon-14	50	NA		NA		NA		NA		NA		NA		NA		4.67	U	-19.8	U
Total Strontium	1	0.013	U	0.048	U	-0.005	U	-0.025	U	-0.053	U	-0.334	U	-0.009	U	0.065	U	-0.014	U
Radium-228	3	0.238	U	0.013	U	-0.260	U	0.108	U	0.516	U	-0.038	U	-0.377	U	0.102	U	-0.620	U
Thorium-228		0.026	UJ	0.264	UJ	0.085	UJ	0	UJ	0	UJ	-0.045	UJ	0.095	UJ	0.065	UJ	0.031	UJ
Thorium-230		-0.026	U	-0.087	U	-0.042	U	0.075	U	0.027	U	-0.045	U	-0.063	U	-0.065	U	-0.093	U
Thorium-232	1	0	UJ	0	UJ	0	UJ	0.037	UJ	0	UJ	0	UJ	0	UJ	0	UJ	0	UJ
Uranium-233/234	1	0.167		0.247		0.194		0.237		0.311		0.173		0.157	U	0.197		0.243	
Uranium-235	1	0	U	0	U	0	U	0	U	0.079	U	0.021	U	0.027	U	0	U	0	U
Uranium-238	1	0.146	U	0.247		0.242		0.158		0.360		0.173		0.270		0.217		0.243	
Radium-226	1	0.218	U	-0.100	U	-0.309	U	0.022	U	0.908		0.128	U	-0.092	U	0.133	U	-0.022	U
Potassium-40			U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cobalt 60	25		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cesium 137	15		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
Radium-228			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
Europium 154			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
Thorium-228			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
Uranium-235(gea)			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
Americium-241(gea)			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
Antimony-125			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
Cesium-134			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		SDG: K0205																	
Sample Number		J11239			J11279			J11245											
Remarks																			
Sample Date		1/29/06			1/29/06			1/29/06											
Radiochemistry	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q		
Tritium	400	-42.8	U	-22.2	U	34.1	U												
Carbon-14	50	-18.0	U	NA		NA													
Total Strontium	1	-0.033	U	-0.054	U	0.220	U												
Radium-228	3	0.118	U	-0.339	U	-0.060	U												
Thorium-228		0.028	UJ	-0.051	UJ	0	UJ												
Thorium-230		-0.055	U	0.179	U	0	U												
Thorium-232	1	0	UJ	0.026	UJ	0	UJ												
Uranium-233/234	1	0.246		0.190		0.099	U												
Uranium-235	1	0	U	0	U	0	U												
Uranium-238	1	0.202		0.316		0.079	U												
Radium-226	1	0.078	U	0.214	U	0.215	U												
Potassium-40			U	U		U	U												
Cobalt 60	25		U	U		U	U												
Cesium 137	15		U	U		U	U												
Radium-226			U	U		U	U												
Radium-228			U	U		U	U												
Europium 152			U	U		U	U												
Europium 154			U	U		U	U												
Europium 155			U	U		U	U												
Thorium-228			U	U		U	U												
Thorium-232			U	U		U	U												
Uranium-235(gea)			U	U		U	U												
Uranium-238(gea)			U	U		U	U												
Americium-241(gea)			U	U		U	U												
Ruthenium-106			U	U		U	U												
Antimony-125			U	U		U	U												
Beryllium-7			U	U		U	U												
Cesium-134			U	U		U	U												

000011

\* - 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 K0205**

7372-009

J112X3

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602010-09</u>	Client sample id <u>J112X3</u>	
Dept sample id <u>7372-009</u>	Location/Matrix <u>Cr 6, Pore Water Full QC WATER</u>	
Received <u>02/03/06</u>	Collected/Volume <u>02/01/06 14:45 5.0 L</u>	
	Custody/SAF No <u>RC-048-290 RC-048</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	54.1	140	230	400	U	H
Total Strontium	SR-RAD	0.013	0.24	0.50	2.0	U	SR
Radium 228	15262-20-1	0.238	0.64	1.7	3.0	U	AC
Thorium 228	14274-82-9	0.026	0.10	0.25		U <i>J</i>	TH
Thorium 230	14269-63-7	-0.026	0.10	0.20	1.0	U	TH
Thorium 232	TH-232	0	0.052	0.20	1.0	U <i>J</i>	TH
Uranium 233/234	U-233/234	0.167	0.13	0.16	1.0		U
Uranium 235	15117-96-1	0	0.051	0.19	1.0	U	U
Uranium 238	U-238	0.146	0.13	0.16	1.0	U	U
Radium 226	13982-63-3	0.218	0.41	0.72	2.0	U	RA
Potassium 40	13966-00-2	U		630		U	GAM
Cobalt 60	10198-40-0	U		23	25	U	GAM
Cesium 137	10045-97-3	U		22	15	U	GAM
Radium 226	13982-63-3	U		51		U	GAM
Radium 228	15262-20-1	U		99		U	GAM
Europium 152	14683-23-9	U		60	50	U	GAM
Europium 154	15585-10-1	U		64	50	U	GAM
Europium 155	14391-16-3	U		73	50	U	GAM
Thorium 228	14274-82-9	U		35		U	GAM
Thorium 232	TH-232	U		99		U	GAM
Uranium 235	15117-96-1	U		88		U	GAM
Uranium 238	U-238	U		2400		U	GAM
Americium 241	14596-10-2	U		180		U	GAM
Ruthenium 106	13967-48-1	U		190		U	GAM
Antimony 125	14234-35-6	U		49		U	GAM
Beryllium 7	13966-02-4	U		210		U	GAM
Cesium 134	13967-70-9	U		24		U	GAM

100&300Area Component RCBRA Water Sa

*M*  
*cel/5/06*

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/21/06</u>

000012

**EBERLINE SERVICES / RICHMOND**

SAMPLE DELIVERY GROUP K0205

7372-010

J112X9

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602010-10</u>	Client sample id <u>J112X9</u>	
Dept sample id <u>7372-010</u>	Location/Matrix <u>Cr 6, Pore Water Full QC WATER</u>	
Received <u>02/03/06</u>	Collected/Volume <u>02/01/06 14:30</u> <u>5.0 L</u>	
	Custody/SAF No <u>RC-048-296</u> <u>RC-048</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	-8.64	140	230	400	U	H
Total Strontium	SR-RAD	0.048	0.35	0.71	2.0	U	SR
Radium 228	15262-20-1	0.013	0.65	1.8	3.0	U	AC
Thorium 228	14274-82-9	0.264	0.27	0.49		U J	TH
Thorium 230	14269-63-7	-0.087	0.088	0.33	1.0	U	TH
Thorium 232	TH-232	0	0.087	0.33	1.0	U J	TH
Uranium 233/234	U-233/234	0.247	0.14	0.14	1.0		U
Uranium 235	15117-96-1	0	0.043	0.16	1.0	U	U
Uranium 238	U-238	0.247	0.14	0.14	1.0		U
Radium 226	13982-63-3	-0.100	0.36	0.70	2.0	U	RA
Potassium 40	13966-00-2	U		100		U	GAM
Cobalt 60	10198-40-0	U		10	25	U	GAM
Cesium 137	10045-97-3	U		10	15	U	GAM
Radium 226	13982-63-3	U		19		U	GAM
Radium 228	15262-20-1	U		39		U	GAM
Europium 152	14683-23-9	U		31	50	U	GAM
Europium 154	15585-10-1	U		32	50	U	GAM
Europium 155	14391-16-3	U		36	50	U	GAM
Thorium 228	14274-82-9	U		15		U	GAM
Thorium 232	TH-232	U		39		U	GAM
Uranium 235	15117-96-1	U		48		U	GAM
Uranium 238	U-238	U		1200		U	GAM
Americium 241	14596-10-2	U		52		U	GAM
Ruthenium 106	13967-48-1	U		89		U	GAM
Antimony 125	14234-35-6	U		26		U	GAM
Beryllium 7	13966-02-4	U		110		U	GAM
Cesium 134	13967-70-9	U		13		U	GAM

100&300Area Component RCBRA Water Sa

*Mel 3/06*

Lab id <u>EBRLINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/21/06</u>

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP K0205**

7372-008

J112F9

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602010-08</u>	Client sample id <u>J112F9</u>	
Dept sample id <u>7372-008</u>	Location/Matrix <u>Cr 10, Surface Water</u>	<u>WATER</u>
Received <u>02/03/06</u>	Collected/Volume <u>02/01/06 18:30</u>	<u>3.5 L</u>
	Custody/SAF No <u>RC-048-285</u>	<u>RC-048</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	39.8	140	230	400	U	H
Total Strontium	SR-RAD	-0.005	0.27	0.54	2.0	U	SR
Radium 228	15262-20-1	-0.260	0.58	1.6	3.0	U	AC
Thorium 228	14274-82-9	0.085	0.17	0.33		UJ	TH
Thorium 230	14269-63-7	-0.042	0.085	0.32	1.0	U	TH
Thorium 232	TH-232	0	0.085	0.32	1.0	UJ	TH
Uranium 233/234	U-233/234	0.194	0.13	0.12	1.0	U	U
Uranium 235	15117-96-1	0	0.039	0.15	1.0	U	U
Uranium 238	U-238	0.242	0.13	0.12	1.0		U
Radium 226	13982-63-3	-0.309	0.31	0.69	2.0	U	RA
Potassium 40	13966-00-2	U		110		U	GAM
Cobalt 60	10198-40-0	U		10	25	U	GAM
Cesium 137	10045-97-3	U		11	15	U	GAM
Radium 226	13982-63-3	U		21		U	GAM
Radium 228	15262-20-1	U		45		U	GAM
Europium 152	14683-23-9	U		35	50	U	GAM
Europium 154	15585-10-1	U		32	50	U	GAM
Europium 155	14391-16-3	U		38	50	U	GAM
Thorium 228	14274-82-9	U		18		U	GAM
Thorium 232	TH-232	U		45		U	GAM
Uranium 235	15117-96-1	U		53		U	GAM
Uranium 238	U-238	U		1400		U	GAM
Americium 241	14596-10-2	U		57		U	GAM
Ruthenium 106	13967-48-1	U		93		U	GAM
Antimony 125	14234-35-6	U		28		U	GAM
Beryllium 7	13966-02-4	U		120		U	GAM
Cesium 134	13967-70-9	U		13		U	GAM

100&300Area Component RCBRA Water Sa

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*Cal/5/06*

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/21/06</u>

000014

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP K0205**

7372-012

J11250

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602010-12</u>	Client sample id <u>J11250</u>	
Dept sample id <u>7372-012</u>	Location/Matrix <u>Cr 10, Pore Water</u>	<u>WATER</u>
Received <u>02/03/06</u>	Collected/Volume <u>02/01/06 19:00</u>	<u>3.5 L</u>
	Custody/SAF No <u>RC-048-263</u>	<u>RC-048</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	-34.8	140	240	400	U	H
Total Strontium	SR-RAD	-0.025	0.22	0.45	2.0	U	SR
Radium 228	15262-20-1	0.108	0.63	1.7	3.0	U	AC
Thorium 228	14274-82-9	0	0.15	0.36		UJ	TH
Thorium 230	14269-63-7	0.075	0.15	0.29	1.0	U	TH
Thorium 232	TH-232	0.037	0.075	0.29	1.0	UJ	TH
Uranium 233/234	U-233/234	0.237	0.13	0.12	1.0		U
Uranium 235	15117-96-1	0	0.038	0.15	1.0	U	U
Uranium 238	U-238	0.158	0.095	0.12	1.0		U
Radium 226	13982-63-3	0.022	0.36	0.72	2.0	U	RA
Potassium 40	13966-00-2	U		280		U	GAM
Cobalt 60	10198-40-0	U		14	25	U	GAM
Cesium 137	10045-97-3	U		14	15	U	GAM
Radium 226	13982-63-3	U		23		U	GAM
Radium 228	15262-20-1	U		56		U	GAM
Europium 152	14683-23-9	U		33	50	U	GAM
Europium 154	15585-10-1	U		41	50	U	GAM
Europium 155	14391-16-3	U		44	50	U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	TH-232	U		56		U	GAM
Uranium 235	15117-96-1	U		56		U	GAM
Uranium 238	U-238	U		1700		U	GAM
Americium 241	14596-10-2	U		100		U	GAM
Ruthenium 106	13967-48-1	U		110		U	GAM
Antimony 125	14234-35-6	U		31		U	GAM
Beryllium 7	13966-02-4	U		140		U	GAM
Cesium 134	13967-70-9	U		14		U	GAM

100&300Area Component RCBRA Water Sa

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Lab id <u>EBRLINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/21/06</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP K0205**

7372-006

J112C3

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602010-06</u>	Client sample id <u>J112C3</u>	
Dept sample id <u>7372-006</u>	Location/Matrix <u>Cr 6, Vertical Tube</u>	<u>WATER</u>
Received <u>02/03/06</u>	Collected/Volume <u>02/01/06 15:30</u>	<u>3.5 L</u>
	Custody/SAF No <u>RC-048-280</u>	<u>RC-048</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	39.3	140	230	400	U	H
Total Strontium	SR-RAD	-0.053	0.27	0.51	2.0	U	SR
Radium 228	15262-20-1	0.516	0.87	2.0	3.0	U	AC
Thorium 228	14274-82-9	0	0.055	0.21		U J	TH
Thorium 230	14269-63-7	0.027	0.11	0.21	1.0	U	TH
Thorium 232	TH-232	0	0.055	0.21	1.0	U J	TH
Uranium 233/234	U-233/234	0.311	0.13	0.13	1.0		U
Uranium 235	15117-96-1	0.079	0.079	0.15	1.0	U	U
Uranium 238	U-238	0.360	0.16	0.13	1.0		U
Radium 226	13982-63-3	0.908	0.52	0.74	2.0		RA
Potassium 40	13966-00-2	U		270		U	GAM
Cobalt 60	10198-40-0	U		16	25	U	GAM
Cesium 137	10045-97-3	U		15	15	U	GAM
Radium 226	13982-63-3	U		27		U	GAM
Radium 228	15262-20-1	U		62		U	GAM
Europium 152	14683-23-9	U		36	50	U	GAM
Europium 154	15585-10-1	U		44	50	U	GAM
Europium 155	14391-16-3	U		47	50	U	GAM
Thorium 228	14274-82-9	U		21		U	GAM
Thorium 232	TH-232	U		62		U	GAM
Uranium 235	15117-96-1	U		64		U	GAM
Uranium 238	U-238	U		1800		U	GAM
Americium 241	14596-10-2	U		100		U	GAM
Ruthenium 106	13967-48-1	U		110		U	GAM
Antimony 125	14234-35-6	U		33		U	GAM
Beryllium 7	13966-02-4	U		140		U	GAM
Cesium 134	13967-70-9	U		17		U	GAM

100&300Area Component RCBRA Water Sa

*W/S/06*

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Lab id <u>EBRLINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/21/06</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP K0205**

7372-007

J112F6

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602010-07</u>	Client sample id <u>J112F6</u>	
Dept sample id <u>7372-007</u>	Location/Matrix <u>Cr 7, Surface Water</u>	<u>WATER</u>
Received <u>02/03/06</u>	Collected/Volume <u>02/01/06 16:00</u>	<u>3.5 L</u>
	Custody/SAF No <u>RC-048-282</u>	<u>RC-048</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	68.8	140	230	400	U	H
Total Strontium	SR-RAD	-0.334	0.36	0.71	2.0	U	SR
Radium 228	15262-20-1	-0.038	0.65	1.8	3.0	U	AC
Thorium 228	14274-82-9	-0.045	0.18	0.50		UJ	TH
Thorium 230	14269-63-7	-0.045	0.090	0.35	1.0	U	TH
Thorium 232	TH-232	0	0.090	0.35	1.0	UJ	TH
Uranium 233/234	U-233/234	0.173	0.10	0.13	1.0		U
Uranium 235	15117-96-1	0.021	0.042	0.16	1.0	U	U
Uranium 238	U-238	0.173	0.10	0.13	1.0		U
Radium 226	13982-63-3	0.128	0.35	0.65	2.0	U	RA
Potassium 40	13966-00-2	U		230		U	GAM
Cobalt 60	10198-40-0	U		17	25	U	GAM
Cesium 137	10045-97-3	U		15	15	U	GAM
Radium 226	13982-63-3	U		27		U	GAM
Radium 228	15262-20-1	U		58		U	GAM
Europium 152	14683-23-9	U		39	50	U	GAM
Europium 154	15585-10-1	U		51	50	U	GAM
Europium 155	14391-16-3	U		37	50	U	GAM
Thorium 228	14274-82-9	U		21		U	GAM
Thorium 232	TH-232	U		58		U	GAM
Uranium 235	15117-96-1	U		55		U	GAM
Uranium 238	U-238	U		1700		U	GAM
Americium 241	14596-10-2	U		50		U	GAM
Ruthenium 106	13967-48-1	U		130		U	GAM
Antimony 125	14234-35-6	U		39		U	GAM
Beryllium 7	13966-02-4	U		150		U	GAM
Cesium 134	13967-70-9	U		20		U	GAM

100&300Area Component RCBRA Water Sa

*Mel/slo6*

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Lab id	<u>EBRLNE</u>
Protocol	<u>Hanford</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-DS</u>
Version	<u>3.06</u>
Report date	<u>03/21/06</u>

000017

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP K0205**

7372-011

J11247

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602010-11</u>	Client sample id <u>J11247</u>	
Dept sample id <u>7372-011</u>	Location/Matrix <u>Cr 7, Pore Water</u>	<u>WATER</u>
Received <u>02/03/06</u>	Collected/Volume <u>02/01/06 16:15</u>	<u>3.5 L</u>
	Custody/SAF No <u>RC-048-260</u>	<u>RC-048</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	-43.4	140	240	400	U	H
Total Strontium	SR-RAD	-0.009	0.19	0.40	2.0	U	SR
Radium 228	15262-20-1	-0.377	0.54	1.6	3.0	U	AC
Thorium 228	14274-82-9	0.095	0.13	0.24		U <b>J</b>	TH
Thorium 230	14269-63-7	-0.063	0.063	0.24	1.0	U	TH
Thorium 232	TH-232	0	0.063	0.24	1.0	U <b>J</b>	TH
Uranium 233/234	U-233/234	0.157	0.14	0.17	1.0	U	U
Uranium 235	15117-96-1	0.027	0.054	0.21	1.0	U	U
Uranium 238	U-238	0.270	0.14	0.17	1.0	U	U
Radium 226	13982-63-3	-0.092	0.30	0.67	2.0	U	RA
Potassium 40	13966-00-2	U		340		U	GAM
Cobalt 60	10198-40-0	U		15	25	U	GAM
Cesium 137	10045-97-3	U		14	15	U	GAM
Radium 226	13982-63-3	U		26		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Europium 152	14683-23-9	U		32	50	U	GAM
Europium 154	15585-10-1	U		39	50	U	GAM
Europium 155	14391-16-3	U		33	50	U	GAM
Thorium 228	14274-82-9	U		18		U	GAM
Thorium 232	TH-232	U		60		U	GAM
Uranium 235	15117-96-1	U		45		U	GAM
Uranium 238	U-238	U		1600		U	GAM
Americium 241	14596-10-2	U		58		U	GAM
Ruthenium 106	13967-48-1	U		110		U	GAM
Antimony 125	14234-35-6	U		29		U	GAM
Beryllium 7	13966-02-4	U		120		U	GAM
Cesium 134	13967-70-9	U		17		U	GAM

100&300Area Component RCBRA Water Sa

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/21/06</u>

000018

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP K0205**

7372-002

J11238

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602010-02</u>	Client sample id <u>J11238</u>	
Dept sample id <u>7372-002</u>	Location/Matrix <u>Cr 3, Surface Water</u>	<u>WATER</u>
Received <u>01/31/06</u>	Collected/Volume <u>01/29/06 13:30</u>	<u>3.5 L</u>
	Custody/SAF No <u>RC-048-251</u>	<u>RC-048</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	0	130	230	400	U	H
Carbon 14	14762-75-5	4.67	73	120	200	U	C
Total Strontium	SR-RAD	0.065	0.32	0.65	2.0	U	SR
Radium 228	15262-20-1	0.102	1.1	1.6	3.0	U	AC
Thorium 228	14274-82-9	0.065	0.13	0.31		U J	TH
Thorium 230	14269-63-7	-0.065	0.065	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	0.197	0.12	0.15	1.0		U
Uranium 235	15117-96-1	0	0.048	0.18	1.0	U	U
Uranium 238	U-238	0.217	0.12	0.15	1.0		U
Radium 226	13982-63-3	0.133	0.38	0.69	2.0	U	RA
Potassium 40	13966-00-2	U		53		U	GAM
Cobalt 60	10198-40-0	U		5.2	25	U	GAM
Cesium 137	10045-97-3	U		5.3	15	U	GAM
Radium 226	13982-63-3	U		9.8		U	GAM
Radium 228	15262-20-1	U		20		U	GAM
Europium 152	14683-23-9	U		17	50	U	GAM
Europium 154	15585-10-1	U		14	50	U	GAM
Europium 155	14391-16-3	U		19	50	U	GAM
Thorium 228	14274-82-9	U		8.6		U	GAM
Thorium 232	TH-232	U		20		U	GAM
Uranium 235	15117-96-1	U		26		U	GAM
Uranium 238	U-238	U		600		U	GAM
Americium 241	14596-10-2	U		28		U	GAM
Beryllium 7	13966-02-4	U		57		U	GAM
Ruthenium 106	13967-48-1	U		49		U	GAM
Antimony 125	14234-35-6	U		14		U	GAM
Cesium 134	13967-70-9	U		6.4		U	GAM

100&300Area Component RCBRA Water Sa

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 6/5/06

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Lab id	<u>EBRLNE</u>
Protocol	<u>Hanford</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-DS</u>
Version	<u>3.06</u>
Report date	<u>04/03/06</u>

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP K0205**

7372-001

J11232

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602010-01</u>	Client sample id <u>J11232</u>	
Dept sample id <u>7372-001</u>	Location/Matrix <u>Cr 4, Pore Water</u>	<u>WATER</u>
Received <u>01/31/06</u>	Collected/Volume <u>01/29/06 14:15</u>	<u>3.5 L</u>
	Custody/SAF No <u>RC-048-244</u>	<u>RC-048</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	17.2	140	230	400	U	H
Carbon 14	14762-75-5	-19.8	73	120	200	U	C
Total Strontium	SR-RAD	-0.014	0.34	0.62	2.0	U	SR
Radium 228	15262-20-1	-0.620	0.65	1.9	3.0	U	AC
Thorium 228	14274-82-9	0.031	0.12	0.24		U J	TH
Thorium 230	14269-63-7	-0.093	0.063	0.24	1.0	U	TH
Thorium 232	TH-232	0	0.062	0.24	1.0	U J	TH
Uranium 233/234	U-233/234	0.243	0.12	0.12	1.0		U
Uranium 235	15117-96-1	0	0.037	0.14	1.0	U	U
Uranium 238	U-238	0.243	0.12	0.12	1.0		U
Radium 226	13982-63-3	-0.022	0.36	0.64	2.0	U	RA
Potassium 40	13966-00-2	U		260		U	GAM
Cobalt 60	10198-40-0	U		12	25	U	GAM
Cesium 137	10045-97-3	U		14	15	U	GAM
Radium 226	13982-63-3	U		25		U	GAM
Radium 228	15262-20-1	U		62		U	GAM
Europium 152	14683-23-9	U		34	50	U	GAM
Europium 154	15585-10-1	U		47	50	U	GAM
Europium 155	14391-16-3	U		43	50	U	GAM
Thorium 228	14274-82-9	U		35		U	GAM
Thorium 232	TH-232	U		62		U	GAM
Uranium 235	15117-96-1	U		61		U	GAM
Uranium 238	U-238	U		1700		U	GAM
Americium 241	14596-10-2	U		100		U	GAM
Ruthenium 106	13967-48-1	U		130		U	GAM
Antimony 125	14234-35-6	U		33		U	GAM
Beryllium 7	13966-02-4	U		150		U	GAM
Cesium 134	13967-70-9	U		14		U	GAM

100&300Area Component RCBRA Water Sa

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Cal/Slag*

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
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Report date <u>03/21/06</u>

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP K0205**

7372-003

J11239

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602010-03</u>	Client sample id <u>J11239</u>	
Dept sample id <u>7372-003</u>	Location/Matrix <u>Cr 4, Surface Water</u>	<u>WATER</u>
Received <u>01/31/06</u>	Collected/Volume <u>01/29/06 15:30</u>	<u>3.5 L</u>
	Custody/SAF No <u>RC-048-252</u>	<u>RC-048</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST
Tritium	10028-17-8	-42.8	130	230	400	U	H
Carbon 14	14762-75-5	-18.0	74	120	200	U	C
Total Strontium	SR-RAD	-0.033	0.34	0.68	2.0	U	SR
Radium 228	15262-20-1	0.118	0.64	1.7	3.0	U	AC
Thorium 228	14274-82-9	0.028	0.11	0.21		UJ	TH
Thorium 230	14269-63-7	-0.055	0.055	0.21	1.0	U	TH
Thorium 232	TH-232	0	0.055	0.21	1.0	UJ	TH
Uranium 233/234	U-233/234	0.246	0.11	0.086	1.0		U
Uranium 235	15117-96-1	0	0.027	0.10	1.0	U	U
Uranium 238	U-238	0.202	0.090	0.086	1.0		U
Radium 226	13982-63-3	0.078	0.38	0.71	2.0	U	RA
Potassium 40	13966-00-2	U		380		U	GAM
Cobalt 60	10198-40-0	U		14	25	U	GAM
Cesium 137	10045-97-3	U		13	15	U	GAM
Radium 226	13982-63-3	U		31		U	GAM
Radium 228	15262-20-1	U		63		U	GAM
Europium 152	14683-23-9	U		37	50	U	GAM
Europium 154	15585-10-1	U		36	50	U	GAM
Europium 155	14391-16-3	U		46	50	U	GAM
Thorium 228	14274-82-9	U		21		U	GAM
Thorium 232	TH-232	U		63		U	GAM
Uranium 235	15117-96-1	U		53		U	GAM
Uranium 238	U-238	U		1600		U	GAM
Americium 241	14596-10-2	U		110		U	GAM
Ruthenium 106	13967-48-1	U		110		U	GAM
Antimony 125	14234-35-6	U		30		U	GAM
Beryllium 7	13966-02-4	U		140		U	GAM
Cesium 134	13967-70-9	U		22		U	GAM

100&300Area Component RCBRA Water Sa

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/21/06</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP K0205**

7372-005

J11279

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602010-05</u>	Client sample id <u>J11279</u>	
Dept sample id <u>7372-005</u>	Location/Matrix <u>Cr 5, Surface Water</u>	<u>WATER</u>
Received <u>01/31/06</u>	Collected/Volume <u>01/29/06 16:00</u>	<u>3.5 L</u>
	Custody/SAF No <u>RC-048-276</u>	<u>RC-048</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	-22.2	130	230	400	U	H
Total Strontium	SR-RAD	-0.054	0.26	0.53	2.0	U	SR
Radium 228	15262-20-1	-0.339	0.72	1.9	3.0	U	AC
Thorium 228	14274-82-9	-0.051	0.10	0.32		UJ	TH
Thorium 230	14269-63-7	0.179	0.15	0.20	1.0	U	TH
Thorium 232	TH-232	0.026	0.051	0.20	1.0	UJ	TH
Uranium 233/234	U-233/234	0.190	0.13	0.16	1.0		U
Uranium 235	15117-96-1	0	0.051	0.20	1.0	U	U
Uranium 238	U-238	0.316	0.17	0.16	1.0		U
Radium 226	13982-63-3	0.214	0.47	0.82	2.0	U	RA
Potassium 40	13966-00-2	U		120		U	GAM
Cobalt 60	10198-40-0	U		11	25	U	GAM
Cesium 137	10045-97-3	U		11	15	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		43		U	GAM
Europium 152	14683-23-9	U		34	50	U	GAM
Europium 154	15585-10-1	U		30	50	U	GAM
Europium 155	14391-16-3	U		38	50	U	GAM
Thorium 228	14274-82-9	U		17		U	GAM
Thorium 232	TH-232	U		43		U	GAM
Uranium 235	15117-96-1	U		54		U	GAM
Uranium 238	U-238	U		1300		U	GAM
Americium 241	14596-10-2	U		59		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Antimony 125	14234-35-6	U		29		U	GAM
Beryllium 7	13966-02-4	U		120		U	GAM
Cesium 134	13967-70-9	U		13		U	GAM

100&300Area Component RCBRA Water Sa

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/21/06</u>

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP K0205**

7372-004

J11245

**DATA SHEET**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602010-04</u>	Client sample id <u>J11245</u>	
Dept sample id <u>7372-004</u>	Location/Matrix <u>Cr 5, Pore Water</u>	<u>WATER</u>
Received <u>01/31/06</u>	Collected/Volume <u>01/29/06 16:30</u>	<u>3.5 L</u>
	Custody/SAF No <u>RC-048-258</u>	<u>RC-048</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	34.1	140	230	400	U	H
Total Strontium	SR-RAD	0.220	0.34	0.64	2.0	U	SR
Radium 228	15262-20-1	-0.060	0.60	1.7	3.0	U	AC
Thorium 228	14274-82-9	0	0.10	0.24		U J	TH
Thorium 230	14269-63-7	0	0.10	0.19	1.0	U	TH
Thorium 232	TH-232	0	0.050	0.19	1.0	U J	TH
Uranium 233/234	U-233/234	0.099	0.080	0.15	1.0	U	U
Uranium 235	15117-96-1	0	0.048	0.18	1.0	U	U
Uranium 238	U-238	0.079	0.079	0.15	1.0	U	U
Radium 226	13982-63-3	0.215	0.41	0.71	2.0	U	RA
Potassium 40	13966-00-2	U		180		U	GAM
Cobalt 60	10198-40-0	U		8.4	25	U	GAM
Cesium 137	10045-97-3	U		7.4	15	U	GAM
Radium 226	13982-63-3	U		15		U	GAM
Radium 228	15262-20-1	U		32		U	GAM
Europium 152	14683-23-9	U		17	50	U	GAM
Europium 154	15585-10-1	U		21	50	U	GAM
Europium 155	14391-16-3	U		20	50	U	GAM
Thorium 228	14274-82-9	U		9.6		U	GAM
Thorium 232	TH-232	U		32		U	GAM
Uranium 235	15117-96-1	U		24		U	GAM
Uranium 238	U-238	U		820		U	GAM
Americium 241	14596-10-2	U		32		U	GAM
Ruthenium 106	13967-48-1	U		54		U	GAM
Antimony 125	14234-35-6	U		16		U	GAM
Beryllium 7	13966-02-4	U		62		U	GAM
Cesium 134	13967-70-9	U		8.7		U	GAM

100&300Area Component RCBRA Water Sa

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Lab id <u>EBRLINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
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Report date <u>03/21/06</u>

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**Appendix 4**

**Laboratory Narrative and Chain-of-Custody Documentation**

**000024**

**1.0 GENERAL**

Washington Closure Hanford (WCH) Sample Delivery Group K0205 was composed of twelve water samples designated under SAF No. RC-048 with a Project Designation of: 100 Area and 300 Area Component of the RCBRA Water Sa.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on March 21, 2006.

**2.0 ANALYSIS NOTES**

**2.1 Tritium Analysis**

No problems were encountered during the course of the analyses.

**2.2 Carbon-14 Analysis**

No problems were encountered during the course of the analyses.

**2.3 Total Strontium Analysis**

No problems were encountered during the course of the analyses.

**2.4 Radium-226 Analysis**

No problems were encountered during the course of the analyses.

**2.5 Radium-228 Analysis**

No other problems were encountered during the course of the analyses.

**2.6 Isotopic Thorium Analysis**

No problems were encountered during the course of the analyses.

**2.7 Isotopic Uranium Analysis**

No problems were encountered during the course of the analyses.

**2.8 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."

  
\_\_\_\_\_  
Melissa C. Mannion  
Senior Program Manager

3/22/06  
\_\_\_\_\_  
000025 Date

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-244		Page 1 of 2				
Collector TILLER, B <b>JAMES BERNHARD</b>			Company Contact JOAN KESSNER			Telephone No. 375-4688			Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround		
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa			Sampling Location Cr 4, PORE WATER <b>K0205 (7372)</b>			SAF No. RC-048			Air Quality <input type="checkbox"/>		45 Days				
Ice Chest No. <b>ERC-03-105</b>			Field Logbook No. EL-1597			COA BESRAS6520			Method of Shipment FED EX						
Shipped To <b>EBERLINE SERVICES</b> LIONVILLE			Offsite Property No. <b>A060238</b>			Bill of Lading/Air Bill No. SEE OSPC									
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt; DOT LIMITS</i>			Preservation	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C		
Special Handling and/or Storage <i>COOL 4C 1-30-06 R25</i> <i>None</i>			Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG		
0000026			No. of Container(s)	1	1	1	1	1	1	1	1	1	1		
			Volume	125ml <i>60 ml 1-24-06</i>	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL		
SAMPLE ANALYSIS			Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081			
Sample No.	Matrix *	Sample Date	Sample Time												
J11232	WATER	1-29-06	1415	X	X	X	X	X	X						
CHAIN OF POSSESSION													Matrix *		
Relinquished By/Removed From <b>JAMES BERNHARD</b>			Date/Time 1-29-06 2:00			Received By/Stored In <b>EAS LOCKED STORAGE</b>			Date/Time 1-29-06 2:00			SPECIAL INSTRUCTIONS (1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)			S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time Wt=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>			Date/Time 01-30-06 07:10			Received By/Stored In <b>RZ Staffer R.Z. Staffer</b>			Date/Time 1-30-06						
Relinquished By/Removed From <b>RZ Staffer R.Z. Staffer</b>			Date/Time 1-30-06 15:00			Received By/Stored In <b>Fed Ex</b>			Date/Time						
Relinquished By/Removed From <b>FED EX</b>			Date/Time			Received By/Stored In <b>Alex Klemm</b>			Date/Time 1/31/06 10:00						
Relinquished By/Removed From			Date/Time			Received By/Stored In			Date/Time						
Relinquished By/Removed From			Date/Time			Received By/Stored In			Date/Time						
LABORATORY SECTION	Received By		Title						Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By						Date/Time						

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-251		Page 1 of 2				
Collector TILLER, B <b>JAMES BERNHARD</b>			Company Contact JOAN KESSNER			Telephone No. 375-4688			Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days		
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa			Sampling Location Cr 3, SURFACE WATER <b>KD905 (7372)</b>			SAF No. RC-048			Air Quality <input type="checkbox"/>						
Ice Chest No. <b>ERC-03-105</b>			Field Logbook No. EL-1597		COA BESRAS6520			Method of Shipment FED EX							
Shipped To <b>EBERLINE SERVICES</b> LIONVILLE			Offsite Property No. <b>A060238</b>			Bill of Lading/Air Bill No. SEE OSCP									
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS				Preservation	None	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	Cool 4C	Cool 4C	Cool 4C
Special Handling and/or Storage <b>COOL 4C R25</b> <b>None 1-30-06</b>				Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
000027				No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
				Volume	125ml 60 ml 1-29-06	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	
SAMPLE ANALYSIS				Tritium - H3 <b>CARBON-14</b>	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081		
Sample No.	Matrix *	Sample Date	Sample Time												
J11238	WATER	1-29-06	1330	X	X	X	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *	
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 1-29-06 2000		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 1-29-06 2000		(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238} (2) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)						S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Transe W=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 0710		Received By/Stored In <b>R2 Steffler R2 Steffler</b>		Date/Time 1-30-06									
Relinquished By/Removed From <b>R2 Steffler R2 Steffler</b>		Date/Time 1500		Received By/Stored In <b>Fed Ex</b>		Date/Time									
Relinquished By/Removed From <b>FEDEX</b>		Date/Time		Received By/Stored In <b>Flex Kellertul</b>		Date/Time 1/31/06 10:00									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION	Received By	Title				Date/Time									
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time									

Washington Closure Hanford				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-252		Page 1 of 2						
Collector TILLER, B <b>JAMES BERNHARD</b>				Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>7N</b>		Data Turnaround <b>45 Days</b>						
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa				Sampling Location Cr 4, SURFACE WATER <b>K0205 (7372)</b>		SAF No. RC-048		Air Quality <input type="checkbox"/>										
Ice Chest No. <b>ERC-03-105</b>				Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX										
Shipped To <b>EBERLINE SERVICES</b> LIONVILLE				Offsite Property No. <b>A060238</b>		Bill of Lading/Air Bill No. SEE OSCP												
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> POTENTIAL RADIOACTIVE < DOT LIMITS  <b>Special Handling and/or Storage</b> <del>COOLIC R2S 1-30-06</del> None <b>000028</b>				Preservation		None	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	Cool 4C	Cool 4C	Cool 4C			
				Type of Container		P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	
				No. of Container(s)		1	1	1	1	1	1	1	1	1	1	1	1	1
				Volume		<del>125mL</del> 60 BH 1-29-06	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081					
				CARBON-14														
Sample No.	Matrix *	Sample Date	Sample Time															
J11239	WATER	1-29-06	1530	X	X	X	X	X	X									
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS										
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 1-29-06 2000		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 1-29-06 2000		(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)						Matrix *				
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 0710		Received By/Stored In <b>RZ Steffler R.Z. Steffler</b>		Date/Time 1-30-06								S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other				
Relinquished By/Removed From <b>RZ Steffler R.Z. Steffler</b>		Date/Time 1-30-06		Received By/Stored In <b>Fed EX</b>		Date/Time												
Relinquished By/Removed From <b>FEDEX</b>		Date/Time		Received By/Stored In <b>Jlex kelum</b>		Date/Time 1/31/06 10:00												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
LABORATORY SECTION		Received By				Title				Date/Time								
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time								

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-258		Page 1 of 2					
Collector TILLER, B <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>7N</b>		Data Turnaround <b>45 Days</b>					
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 5, PORE WATER <b>K0205 (7372)</b>		SAF No. RC-048		Air Quality <input type="checkbox"/>									
Ice Chest No. <b>ERC-03-105</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX									
Shipped To <b>EBERLINE SERVICES LIONVILLE</b>		Offsite Property No. <b>A060238</b>		Bill of Lading/Air Bill No. SEE OSPC											
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt; DOT LIMITS</i>				Preservation	None	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C
Special Handling and/or Storage <i>COOLIC R2S 1-30-06</i> <i>None</i>				Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
000029				No. of Container(s)	<i>1</i> <i>R2S 1-30-06</i>	1	1	1	1	1	1	1	1	1	1
				Volume	<i>125ml</i> <i>60ml</i>	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	
SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226, Ra-228	See item (2) in Special Instructions.	Semi-VOA - 6270A (TCL)	PCBs - 8082	Pesticides - 8081		
Sample No.	Matrix *	Sample Date	Sample Time												
J11245	WATER	1-29-06	1630	X	X	X	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time <i>1-29-06 2000</i>		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time <i>1/29/06 2000</i>		(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				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			
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time <i>0710 01-30-06</i>		Received By/Stored In <i>RZ Steffler R.Z. Steffler</i>		Date/Time <i>1-30-06</i>									
Relinquished By/Removed From <i>RZ Steffler R.Z. Steffler</i>		Date/Time <i>1500 1-30-06</i>		Received By/Stored In <b>FED EX</b>		Date/Time									
Relinquished By/Removed From <b>FED EX</b>		Date/Time		Received By/Stored In <i>flex recovery</i>		Date/Time <i>1/31/06 10:00</i>									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							





<b>Washington Closure Hanford</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>RC-048-282</b>		Page 1 of 2			
Collector TILLER, B <i>Bernhard</i>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>7N</b>		Data Turnaround <b>45 Days</b>	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location Cr 7, SURFACE WATER <i>X0205 (7372)</i>		SAF No. RC-048		Air Quality <input type="checkbox"/>					
Ice Chest No. <i>ERC-96-030</i>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX					
Shipped To <b>EBERLINE SERVICES</b> LIONVILLE		Offsite Property No. <i>A060243</i>				Bill of Lading/Air Bill No. SEE OSPC					

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> POTENTIAL RADIOACTIVE < DOT LIMITS  <b>Special Handling and/or Storage</b> COOL 4C  0000332	<b>Preservation</b>	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C						
	<b>Type of Container</b>	P	G/P	aG	aG	aG						
	<b>No. of Container(s)</b>	1	1	1	1	1	1	1	1	1	1	1
	<b>Volume</b>	60mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	

<b>SAMPLE ANALYSIS</b>				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium - 226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
<b>Sample No.</b>	<b>Matrix *</b>	<b>Sample Date</b>	<b>Sample Time</b>										
J112F6	WATER	2-1-06	1600	X	X	X	X	X	X				

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>								<b>Matrix *</b>
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 2-1-06	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 2-1-06	(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238} (2) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)								S=Soil SE=Sediment SO=Solid SI=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 02-02-06	Received By/Stored In <i>David St. John WCH</i>	Date/Time 02-02-06									
Relinquished By/Removed From <i>David St. John WCH</i>	Date/Time 02/02/06	Received By/Stored In <b>Fed Ex</b>	Date/Time									
Relinquished By/Removed From <b>FED EX</b>	Date/Time 2/3/06	Received By/Stored In <i>Hee Keleuly</i>	Date/Time 2/3/06 10:00									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time									

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

<b>Washington Closure Hanford</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				RC-048-285	Page 1 of 2
Collector TILLER, B <b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code <b>7N</b>	Data Turnaround <b>45 Days</b>	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location Cr 10, SURFACE WATER	<b>KO205 (7372)</b>		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No.	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX				
Shipped To <b>EBERLINE SERVICES</b> LIONVILLE	Offsite Property No.	Bill of Lading/Air Bill No. SEE OSPC					

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> POTENTIAL RADIOACTIVE < DOT LIMITS  <b>Special Handling and/or Storage</b> COOL 4C	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C						
	Type of Container	P	G/P	aG	aG	aG						
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
	Volume	60mL	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	

000033	<b>SAMPLE ANALYSIS</b>				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time											
J112F9	WATER	02-01-06	1830	X	X	X	X	X	X					

<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b> S=Soil SE=Sediment SO=Solid Sl=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wb=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 2-1-06	Received By/Store In <b>EAS LOCKED STORAGE</b>	Date/Time 2-1-06	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)								
Relinquished By/Removed From <b>FAS LOCKED STORAGE</b>	Date/Time 02-01-06	Received By/Store In <b>David St. John WCH</b>	Date/Time 02-02-06									
Relinquished By/Removed From <b>David St. John WCH</b>	Date/Time 02/02/06	Received By/Store In <b>Fed Ex</b>	Date/Time									
Relinquished By/Removed From <b>Jess Kessler</b>	Date/Time 2/3/06	Received By/Store In <b>Jess Kessler</b>	Date/Time 2/3/06 10:00									
Relinquished By/Removed From	Date/Time	Received By/Store In	Date/Time									
Relinquished By/Removed From	Date/Time	Received By/Store In	Date/Time									

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

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-290		Page 1 of 2				
Collector TILLER, B <b>JAMES BERNHARD</b>			Company Contact JOAN KESSNER			Telephone No. 375-4688			Project Coordinator KESSNER, JH		Price Code <b>7N</b>		Data Turnaround <b>45 Days</b>		
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa			Sampling Location Cr-6, PORE WATER FULL QC <b>K0205 (7372)</b>			SAF No. RC-048			Air Quality <input type="checkbox"/>						
Ice Chest No. <b>ERC-96-030</b>			Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX								
Shipped To <b>EBERLINE SERVICES / LIONVILLE</b>			Offsite Property No. <b>A060243</b>			Bill of Lading/Air Bill No. SEE OSPC									
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt; DOT LIMITS</i>				Preservation	None	HNO3 to pH 2	HNO3 to pH 2	HNO3 to pH 2	HNO3 to pH 2	HNO3 to pH 2	HNO3 to pH 2	Cool 4C	Cool 4C	Cool 4C	
Special Handling and/or Storage <i>COOL 4C</i>				Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	
<b>000034</b>				No. of Container(s)	1	1	1	1	1	1	1	3	2	3	
				Volume	125mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium -226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081		
Sample No.	Matrix *	Sample Date	Sample Time												
J112X3	WATER	02-01-06	1445	X	X	X	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *	
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 02/01/06 2030		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 02/01/06 2030		(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)						S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 02/02/06 1200		Received By/Stored In <b>Dan Stodhu wch</b>		Date/Time 02-02-06 1200									
Relinquished By/Removed From <b>Dan Stodhu</b>		Date/Time 02/02/06 1400		Received By/Stored In <b>Fed Ex</b>		Date/Time									
Relinquished By/Removed From <b>FED EX</b>		Date/Time		Received By/Stored In <b>Alex Kelley</b>		Date/Time 2/8/06 10:00									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By				Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time					

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST							RC-048-296		Page 1 of 2				
Collector TILLER, B JAMES BERNHARD			Company Contact JOAN KESSNER			Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days				
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa			Sampling Location Cr-6, SURFACE WATER FULL QC KD205 (7372)				SAF No. RC-048		Air Quality <input type="checkbox"/>							
Ice Chest No. ERC-99-030			Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX									
Shipped To EBERLINE SERVICES LIONVILLE			Offsite Property No. A060243				Bill of Lading/Air Bill No. SEE OSPC									
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C  0000335			Preservation		None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C		
			Type of Container		P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
			No. of Container(s)		1	1	1	1	1	1	1	1	1	3	2	3
			Volume		125mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS			Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234; Uranium-235; Uranium-238)	Radium -226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
Sample No.	Matrix *	Sample Date	Sample Time													
J112X9	WATER	02-01-06	1430	X	X	X	X	X	X							
CHAIN OF POSSESSION			Sign/Print Names				SPECIAL INSTRUCTIONS					Matrix *				
Relinquished By/Removed From JAMES BERNHARD 02-01-06			Received By/Stored In EAS LOCKED STORAGE 02-01-06				(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)					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				
Relinquished By/Removed From EAS LOCKED STORAGE 02-02-06			Received By/Stored In David St. John work 02-02-06													
Relinquished By/Removed From David St. John 02/02/06			Received By/Stored In FED EX													
Relinquished By/Removed From FED EX			Received By/Stored In Alex Kessner 2/3/06 10:00													
Relinquished By/Removed From			Received By/Stored In													
Relinquished By/Removed From			Received By/Stored In													
LABORATORY SECTION		Received By		Title		Date/Time										
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time										

Washington Closure Hanford				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-260		Page 1 of 2						
Collector TILLER, B <b>JAMES BERNHARD</b>				Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>7N</b>		Data Turnaround <b>45 Days</b>						
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa				Sampling Location Cr 7, PORE WATER <b>KD205 (7372)</b>		SAF No. RC-048		Air Quality <input type="checkbox"/>										
Ice Chest No. <b>ERL-01-030</b>				Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX										
Shipped To <b>EBERLINE SERVICES/ LIONVILLE</b>				Offsite Property No. <b>AD60243</b>		Bill of Lading/Air Bill No. SEE OSPC												
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C  000036				Preservation		None	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	Cool 4C	Coal 4C	Cool 4C			
				Type of Container		P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	
				No. of Container(s)		1	1	1	1	1	1	1	1	1	1	1	1	1
				Volume		125mL <b>60 IN 12006</b>	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL			
SAMPLE ANALYSIS				Tritium - H3		See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
				Sample No.	Matrix *	Sample Date	Sample Time											
J11247				WATER		2-1-06		1615		X	X	X	X	X	X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *				
Relinquished By/Removed From <b>JAMES BERNHARD</b>				Date/Time 2-1-06		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-1-06		(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238} (2) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)						S=Soil SE=Setiment SO=Solid SL=Sledge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>				Date/Time 02-01-06		Received By/Stored In <b>[Signature]</b>		Date/Time 02-02-06										
Relinquished By/Removed From <b>[Signature]</b>				Date/Time 02/02/06		Received By/Stored In <b>Fed EX</b>		Date/Time										
Relinquished By/Removed From <b>FED EX</b>				Date/Time		Received By/Stored In <b>[Signature]</b>		Date/Time 2/13/06 10:10										
Relinquished By/Removed From				Date/Time		Received By/Stored In		Date/Time										
Relinquished By/Removed From				Date/Time		Received By/Stored In		Date/Time										
LABORATORY SECTION		Received By		Title						Date/Time								
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By						Date/Time								

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-263		Page 1 of 4							
Collector TILLER, B JAMES BERNHARD			Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days							
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa			Sampling Location Cr 10, PORE WATER			K0205 (7372)			SAF No. RC-048		Air Quality <input type="checkbox"/>							
Ice Chest No. GPC-99-030			Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment FED EX											
Shipped To EBERLINE SERVICES LIONVILLE			Offsite Property No. A066243			Bill of Lading/Air Bill No. SEE OSPC												
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS  Special Handling and/or Storage COOL 4C				Preservation		None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C			
				Type of Container		P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	
				No. of Container(s)		1	1	1	1	1	1	1	1	1	1	1	1	1
				Volume		125mL 60 mL/200	500mL	1000mL	500mL	1000mL	500mL	250mL	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS  000037				Tritium - H3		See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
				Sample No.	Matrix *	Sample Date	Sample Time											
J11250	WATER	02-01-06	1900	X	X	X	X	X	X									
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *						
Relinquished By/Removed From JAMES BERNHARD		Date/Time 2030 02-01-06		Received By/Stored In EAS LOCKED STORAGE		Date/Time 2030 02-01-06		(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SB=Sediment SO=Solid SL=Sludge W=Water U=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other						
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 1200 02-02-06		Received By/Stored In David St. John WCH		Date/Time 1200 02-02-06												
Relinquished By/Removed From David St. John WCH		Date/Time 1400 02/02/06		Received By/Stored In Fed EX		Date/Time												
Relinquished By/Removed From FED EX		Date/Time		Received By/Stored In Alex Kelley		Date/Time 2/3/06 10:00												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
LABORATORY SECTION		Received By		Title				Date/Time										
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time										

**Appendix 5**

**Data Validation Supporting Documentation**

**000038**

**APPENDIX A  
RADIOCHEMICAL DATA VALIDATION CHECKLIST**

VALIDATION LEVEL:	A	B	<u>C</u>	D	E
PROJECT:	RCBRA water		DATA PACKAGE: K0205		
VALIDATOR:	FLI	LAB: EB	DATE: 6/3/05		
			SDG:	K0205	
<b>ANALYSES PERFORMED</b>					
Gross Alpha/Beta	<u>Strontium-90</u>	Technetium-99	<u>Alpha Spectroscopy</u>	<u>Gamma Spectroscopy</u>	
Total Uranium	Radium-226 & 228	Tritium	<u>C-14</u>		
<b>SAMPLES/MATRIX</b>					
J112X3	J112X9	J112F9	J11250	J112CJ	J112F6
J11247	J11238	J11232	J11239	J11279	J11245
					water

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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

000039

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: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

000040

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

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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 229 or 232 LCS - Fall

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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

000041

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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

000042

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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

000043

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: one analyte over

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000044

**Appendix 6**

**Additional Documentation Requested by Client**

**000045**

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0205

7372-014

Method Blank

METHOD BLANK

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602010-14</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7372-014</u>	Material/Matrix <u>WATER</u>	
	SAF No <u>RC-048</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	-254	1300	2300	400	U	H
Carbon 14	14762-75-5	-9.44	37	62	200	U	C
Total Strontium	SR-RAD	0.145	0.27	0.52	2.0	U	SR
Radium 228	15262-20-1	0.191	0.54	1.5	3.0	U	AC
Thorium 228	14274-82-9	0.032	0.20	0.36		U	TH
Thorium 230	14269-63-7	-0.129	0.066	0.31	1.0	U	TH
Thorium 232	TH-232	0	0.064	0.25	1.0	U	TH
Uranium 233/234	U-233/234	0	0.037	0.14	1.0	U	U
Uranium 235	15117-96-1	0	0.044	0.17	1.0	U	U
Uranium 238	U-238	0	0.037	0.14	1.0	U	U
Radium 226	13982-63-3	-0.236	0.34	0.74	2.0	U	RA
Potassium 40	13966-00-2	U		100		U	GAM
Cobalt 60	10198-40-0	U		10	25	U	GAM
Cesium 137	10045-97-3	U		10	15	U	GAM
Radium 226	13982-63-3	U		22		U	GAM
Radium 228	15262-20-1	U		44		U	GAM
Europium 152	14683-23-9	U		34	50	U	GAM
Europium 154	15585-10-1	U		35	50	U	GAM
Europium 155	14391-16-3	U		37	50	U	GAM
Thorium 228	14274-82-9	U		17		U	GAM
Thorium 232	TH-232	U		44		U	GAM
Uranium 235	15117-96-1	U		51		U	GAM
Uranium 238	U-238	U		1200		U	GAM
Americium 241	14596-10-2	U		56		U	GAM
Ruthenium 106	13967-48-1	U		95		U	GAM
Antimony 125	14234-35-6	U		26		U	GAM
Beryllium 7	13966-02-4	U		84		U	GAM
Cesium 134	13967-70-9	U		13		U	GAM

100&300Area Component RCBRA Water Sa

METHOD BLANKS  
Page 1  
SUMMARY DATA SECTION  
Page 11

000046

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/21/06</u>

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP K0205

7372-013

Lab Control Sample

**LAB CONTROL SAMPLE**

SDG <u>7372</u> Contact <u>Melissa C. Mannion</u>	Client/Case no <u>Hanford</u> SDG <u>K0205</u> Contract <u>No. 630</u>
Lab sample id <u>R602010-13</u> Dept sample id <u>7372-013</u>	Client sample id <u>Lab Control Sample</u> Material/Matrix <u>WATER</u> SAF No <u>RC-048</u>

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	21100	2000	<u>2300</u>	400		H	22200	890	95	79-121	80-120
Carbon 14	9340	320	150	200		C	9570	380	98	83-117	80-120
Total Strontium	21.6	1.1	0.46	2.0		SR	19.7	0.79	110	81-119	80-120
Radium 228	17.1	2.1	1.5	3.0		AC	16.7	0.67	102	79-121	80-120
Thorium 230	21.1	2.1	0.17	1.0		TH	22.2	0.89	95	83-117	80-120
Uranium 233/234	17.9	1.4	0.69	1.0		U	19.3	0.77	93	86-114	80-120
Uranium 235	16.2	1.4	0.12	1.0		U	15.7	0.63	103	83-117	80-120
Uranium 238	18.7	1.5	0.66	1.0		U	21.0	0.84	89	86-114	80-120
Radium 226	46.4	2.5	0.75	2.0		RA	50.3	2.0	92	88-112	80-120
Cobalt 60	433	43	<u>34</u>	25		GAM	486	19	89	75-125	80-120
Cesium 137	521	41	<u>31</u>	15		GAM	494	20	106	73-127	80-120

100&300Area Component RCBRA Water Sa

QC-LCS #56041

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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP K0205

7372-015

J11232

**DUPLICATE**

<u>SDG 7372</u>	<u>Client/Case no Hanford</u>	<u>SDG K0205</u>
<u>Contact Melissa C. Mannion</u>	<u>Contract No. 630</u>	
<b>DUPLICATE</b>	<b>ORIGINAL</b>	
<u>Lab sample id R602010-15</u>	<u>Lab sample id R602010-01</u>	<u>Client sample id J11232</u>
<u>Dept sample id 7372-015</u>	<u>Dept sample id 7372-001</u>	<u>Location/Matrix Cr 4, Pore Water WATER</u>
	<u>Received 01/31/06</u>	<u>Collected/Volume 01/29/06 14:15 3.5 L</u>
		<u>Custody/SAP No RC-048-244 RC-048</u>

ANALYTE	DUPLICATE		MDA		RDL		QUALI-		ORIGINAL		MDA		QUALI-		RPD	3σ	DER
	pCi/L	2σ ERR (COUNT)	pCi/L		pCi/L		FIERS	TEST	pCi/L	2σ ERR (COUNT)	pCi/L		FIERS	%			
Carbon 14	-37.5	72	120		200		U	C	-19.8	73	120		U	-			0.3
Radium 228	-0.386	0.62	1.6		3.0		U	AC	-0.620	0.65	1.9		U	-			0.5
Radium 226	0.079	0.41	0.78		2.0		U	RA	-0.022	0.36	0.64		U	-			0.4
Potassium 40	U		110				U	GAM	U		260		U	-			1.1
Cobalt 60	U		11		25		U	GAM	U		12		U	-			0.1
Cesium 137	U		12		15		U	GAM	U		14		U	-			0.2
Radium 226	U		21				U	GAM	U		25		U	-			0.2
Radium 228	U		47				U	GAM	U		62		U	-			0.4
Europium 152	U		32		50		U	GAM	U		34		U	-			0.1
Europium 154	U		32		50		U	GAM	U		47		U	-			0.5
Europium 155	U		37		50		U	GAM	U		43		U	-			0.2
Thorium 228	U		18				U	GAM	U		35		U	-			0.9
Thorium 232	U		47				U	GAM	U		62		U	-			0.4
Uranium 235	U		53				U	GAM	U		61		U	-			0.2
Uranium 238	U		1300				U	GAM	U		1700		U	-			0.4
Americium 241	U		59				U	GAM	U		100		U	-			0.7
Ruthenium 106	U		98				U	GAM	U		130		U	-			0.4
Antimony 125	U		27				U	GAM	U		33		U	-			0.3
Beryllium 7	U		120				U	GAM	U		150		U	-			0.3
Cesium 134	U		15				U	GAM	U		14		U	-			0.1

100&300Area Component RCBRA Water Sa

QC-DUP#1 56043

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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP K0205

7372-017

J112X3

**DUPLICATE**

SDG <u>7372</u> Contact <u>Melissa C. Mannion</u> DUPLICATE Lab sample id <u>R602010-17</u> Dept sample id <u>7372-017</u>	ORIGINAL Lab sample id <u>R602010-09</u> Dept sample id <u>7372-009</u> Received <u>02/03/06</u>	Client/Case no <u>Hanford</u> SDG <u>K0205</u> Contract No. <u>630</u> Client sample id <u>J112X3</u> Location/Matrix <u>Cr 6, Pore Water Full QC WATER</u> Collected/Volume <u>02/01/06 14:45</u> <u>5.0 L</u> Custody/SAF No <u>RC-048-290</u> <u>RC-048</u>
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ANALYTE	DUPLICATE	2σ ERR	MDA	RDL	QUALI-	ORIGINAL	2σ ERR	MDA	QUALI-	RPD	3σ	DER
	pCi/L	(COUNT)	pCi/L	pCi/L	FIERS TEST		pCi/L	(COUNT)	pCi/L	FIERS	%	TOT
Total Strontium	0.101	0.26	0.50	2.0	U SR	0.013	0.24	0.50	U	-		0.5
Thorium 228	0.063	0.13	0.24		U TH	0.026	0.10	0.25	U	-		0.5
Thorium 230	-0.031	0.12	0.24	1.0	U TH	-0.026	0.10	0.20	U	-		0.1
Thorium 232	0.031	0.062	0.24	1.0	U TH	0	0.052	0.20	U	-		0.8
Uranium 233/234	0.203	0.14	0.26	1.0	U U	0.167	0.13	0.16		19	155	0.4
Uranium 235	0	0.082	0.31	1.0	U U	0	0.051	0.19	U	-		0
Uranium 238	0.339	0.21	0.26	1.0	U U	0.146	0.13	0.16	U	80	153	1.6

100&300Area Component RCBRA Water Sa

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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP K0205

7372-018

J112X3

**DUPLICATE**

SDG <u>7372</u>	Client/Case no <u>Hanford</u>	SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 530</u>	
<b>DUPLICATE</b>	<b>ORIGINAL</b>	
Lab sample id <u>R602010-18</u>	Lab sample id <u>R602010-09</u>	Client sample id <u>J112X3</u>
Dept sample id <u>7372-018</u>	Dept sample id <u>7372-009</u>	Location/Matrix <u>Cr 6, Pore Water Full QC WATER</u>
	Received <u>02/03/06</u>	Collected/Volume <u>02/01/06 14:45 5.0 L</u>
		Custody/SAP No <u>RC-048-290 RC-048</u>

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	DER σ
Tritium	2.92	140	240	400	U	H	54.1	140	230	U	-		0.5

100&300Area Component RCBRA Water Sa

QC-DUP#9 56373

DUPLICATES

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Report date <u>03/21/06</u>

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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP K0205

7372-020

J11238

**MATRIX SPIKE**

SDG <u>7372</u> Contact <u>Melissa C. Mannion</u> Lab sample id <u>R602010-20</u> Dept sample id <u>7372-020</u>	Client/Case no <u>Hanford</u> SDG <u>K0205</u> Contract <u>No. 630</u> ORIGINAL Lab sample id <u>R602010-02</u> Dept sample id <u>7372-002</u> Received <u>01/31/06</u>	Client sample id <u>J11238</u> Location/Matrix <u>Cr 3, Surface Water</u> <u>WATER</u> Collected/Volume <u>01/29/06 13:30</u> <u>3.5 L</u> Custody/SAF No <u>RC-048-251</u> <u>RC-048</u>
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ANALYTE	SPIKE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS TEST	ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC 3σ % (TOTAL)	LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	38100	1300	<u>450</u>	200	X    C	38300	1500	4.67	73	99	83-117	60-140

100&300Area Component RCBRA Water Sa

QC-MS #2 56375

MATRIX SPIKES

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-MS</u>
Version <u>3.06</u>
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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP K0205

7372-019

J112X9

**MATRIX SPIKE**

SDG <u>7372</u>		Client/Case no <u>Hanford</u> SDG <u>K0205</u>
Contact <u>Melissa C. Mannion</u>		Contract No. <u>630</u>
<b>MATRIX SPIKE</b>	<b>ORIGINAL</b>	
Lab sample id <u>R602010-19</u>	Lab sample id <u>R602010-10</u>	Client sample id <u>J112X9</u>
Dept sample id <u>7372-019</u>	Dept sample id <u>7372-010</u>	Location/Matrix <u>Cr 6, Pore Water Full QC WATER</u>
	Received <u>02/03/06</u>	Collected/Volume <u>02/01/06 14:30</u> <u>5.0 L</u>
		Custody/SAF No <u>RC-048-296</u> <u>RC-048</u>

ANALYTE	SPIKE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS TEST	ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC 3σ % (TOTAL)	LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	22400	730	340	400	X    H	22400	900	-8.64	140	100	83-117	60-140

100&300Area Component RCBRA Water Sa

QC-MS#10 56374

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-MS</u>
Version <u>3.06</u>
Report date <u>03/21/06</u>

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