Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

Quanterra Environmental Services

0053035

CASE NARRATIVE

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

January 13, 2000

Attention: Joan Kessner

RECEIVED
APR 25 2000
EDMC

JAN 2000
RECEIVED
Data
Log In

Quote Number	:	33811
SDG	:	W02975
Number of Samples	:	Five (5)
Sample Matrix	:	Solid
Data Deliverable	:	Summary
Date SDG Closed	:	December 16, 1999

II. Introduction

On December 16, 1999, five (5) "solid" samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. The samples were received at the St. Louis lab on 12/17/99 at 4 degrees C. See the attached Sample Summary for a listing of Client Ids and their associated Lab numbers.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits.

Analyses requested: ICP Metals - 6010 Super Trace - Lead
Mercury - 7471 - CV
PCBs - 8082

Deviation from Request: None

W02975- STL
Q25

ANALYTICAL REPORT

APR 2000
RECEIVED
Data
Log In

PROJECT NO. D&D

B00-013

Lot #: F9L200118
SDG #: W02975

Original recvd.
1/21/2000
Dayes
4/4/00

Joan Kessner

Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

SEVERN TRENT LABORATORIES, INC.

MARTI WARD
Project Manager

March 17, 2000

000001
DA

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
MS- Matrix Spike.
MSD- Matrix Spike Duplicate.

V. Comments

General: The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

Please refer to the attached cross-reference table for the standard preparation methods used at Quanterra, St. Louis.

Metals: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

The recoveries of the Lead and Mercury matrix spike duplicate were greater than 125%. The Matrix Spike recoveries met criteria.

PCB: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

The RPD for Aroclor 1260 in the MS/MSD is outside of control limits. For sample B0X5M0 and its MS/MSD, TCMX should be used as the primary surrogate due to matrix interferences causing DCB (the other surrogate) to have high recoveries.

Method 3545 (ASE) was used as the extraction method.

I certify that this Summary is in compliance with the SOW, both technically and for completeness, for 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.

Reviewed and approved:

Marti Ward
St. Louis Project Manager

SAMPLE SUMMARY

F9L200118

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
D6LC8	001	B0X5M0	12/15/99	10:08
D6LCD	002	B0X5M1	12/15/99	09:50
D6LCE	003	B0X5M2	12/15/99	09:28
D6LCF	004	B0X5M3	12/15/99	10:30
D6LCG	005	B0X5L9	12/15/99	09:05

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F9L200118

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A	SW846 7471A
PCBs by SW-846 8082	SW846 8082	SW846 3541
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 12/22/99
Time: 15:52:45
User Id.: SEITHELK

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: D&D
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: B00-013
AMOUNT REC"D: 120MLAG
STORAGE LOC: T8C
LOT COMMENTS: Hanford Summary and FEAD EDD required
MATRIX: SOLID
SAMPLE ID: B0X5M0
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 33811
LAB ID: F-9L200118-001
WORK ORDER: D6LC8
RECEIVING DATE: 12/16/99
SAMPLING DATE: 12/15/99
ANALYTICAL DUE DATE: 1/03/00N
REPORT DUE DATE: 1/03/00
PRIORITY: 14
SAMPLING TIME: 10:08
RECEIVING TIME: 9:11
SDG# : W02975

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Soils MT6010_S PB (A-46-QM-01) D6LC8 Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	0/00/00	6/12/00
Mercury (7471A, Cold Vapor) - Solids METALS, TOTAL (Method Exclusive) - Solids M7471_S HG (A-70-09-01) D6LC8 Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	0/00/00	1/12/00
PCBs (8082) SONICATION w/ACID STRIP (PCB) STL: HANFORD PCB GC:LIST-1(7) (A-71-QH-01) D6LC8-1-07 Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	12/29/99	2/07/00

QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 12/22/99
Time: 15:52:45
User Id.: SEITHELK

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: D&D
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: B00-013
AMOUNT REC"D: 120MLAG
STORAGE LOC: T8C
LOT COMMENTS: Hanford Summary and FEAD EDD required
MATRIX: SOLID
SAMPLE ID: B0X5M0
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 33811
LAB ID: F-9L200118-001-D
WORK ORDER: D6LC8 MSD
RECEIVING DATE: 12/16/99
SAMPLING DATE: 12/15/99
ANALYTICAL DUE DATE: 1/03/00N
REPORT DUE DATE: 1/03/00
PRIORITY: 14
SAMPLING TIME: 10:08
RECEIVING TIME: 9:11
SDG# : W02975

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace)	06	12/20/99	0/00/00	6/12/00
METALS, TOTAL - Soils				
MT6010_S PB				
(A-46-QM-01) D6LC8 Protocol: A QC Program: STANDARD TEST SET				
Mercury (7471A, Cold Vapor) - Solids	06	12/20/99	0/00/00	1/12/00
METALS, TOTAL (Method Exclusive) - Solids				
M7471_S HG				
(A-70-09-01) D6LC8 Protocol: A QC Program: STANDARD TEST SET				
PCBs (8082)	06	12/20/99	12/29/99	2/07/00
SONICATION w/ACID STRIP (PCB)				
STL: HANFORD PCB GC:LIST-1(7)				
(A-71-QH-01) D6LC8-1-09 Protocol: A QC Program: STANDARD TEST SET				

QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 12/22/99
Time: 15:52:45
User Id.: SEITHELK

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: D&D
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: B00-013
AMOUNT REC"D: 120MLAG
STORAGE LOC: T8C
LOT COMMENTS: Hanford Summary and FEAD EDD required
MATRIX: SOLID
SAMPLE ID: B0X5M0
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 33811
LAB ID: F-9L200118-001-S
WORK ORDER: D6LC8 MS
RECEIVING DATE: 12/16/99
SAMPLING DATE: 12/15/99
ANALYTICAL DUE DATE: 1/03/00N
REPORT DUE DATE: 1/03/00
PRIORITY: 14
SAMPLING TIME: 10:08
RECEIVING TIME: 9:11
SDG# : W02975

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Soils MT6010_S PB	06	12/20/99	0/00/00	6/12/00
(A-46-QM-01) D6LC8 Protocol: A QC Program: STANDARD TEST SET				
Mercury (7471A, Cold Vapor) - Solids METALS, TOTAL (Method Exclusive) - Solids M7471_S HG	06	12/20/99	0/00/00	1/12/00
(A-70-O9-01) D6LC8 Protocol: A QC Program: STANDARD TEST SET				
PCBs (8082) SONICATION w/ACID STRIP (PCB) STL: HANFORD PCB GC:LIST-1(7)	06	12/20/99	12/29/99	2/07/00
(A-71-QH-01) D6LC8-1-08 Protocol: A QC Program: STANDARD TEST SET				

QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 12/22/99
Time: 15:52:45
User Id.: SEITHELK

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: D&D
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: B00-013
AMOUNT REC"D: 120MLAG
STORAGE LOC: T8C
LOT COMMENTS: Hanford Summary and FEAD EDD required
MATRIX: SOLID
SAMPLE ID: B0X5M1
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 33811
LAB ID: F-9L200118-002
WORK ORDER: D6LCD
RECEIVING DATE: 12/16/99
SAMPLING DATE: 12/15/99
ANALYTICAL DUE DATE: 1/03/00N
REPORT DUE DATE: 1/03/00
PRIORITY: 14
SAMPLING TIME: 9:50
RECEIVING TIME: 9:11
SDG# : W02975

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Soils MT6010_S PB (A-46-QM-01) D6LCD Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	0/00/00	6/12/00
Mercury (7471A, Cold Vapor) - Solids METALS, TOTAL (Method Exclusive) - Solids M7471_S HG (A-70-O9-01) D6LCD Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	0/00/00	1/12/00
PCBs (8082) SONICATION w/ACID STRIP (PCB) STL: HANFORD PCB GC:LIST-1(7) (A-71-QH-01) D6LCD-1-03 Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	12/29/99	2/07/00

QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 12/22/99
Time: 15:52:45
User Id.: SEITHELK

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: D&D
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: B00-013
AMOUNT REC"D: 120MLAG
STORAGE LOC: T8C
LOT COMMENTS: Hanford Summary and FEAD EDD required
MATRIX: SOLID
SAMPLE ID: B0X5M2
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 33811
LAB ID: F-9L200118-003
WORK ORDER: D6LCE
RECEIVING DATE: 12/16/99
SAMPLING DATE: 12/15/99
ANALYTICAL DUE DATE: 1/03/00N
REPORT DUE DATE: 1/03/00
PRIORITY: 14
SAMPLING TIME: 9:28
RECEIVING TIME: 9:11
SDG# : W02975

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Soils MT6010_S PB (A-46-QM-01) D6LCE Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	0/00/00	6/12/00
Mercury (7471A, Cold Vapor) - Solids METALS, TOTAL (Method Exclusive) - Solids M7471_S HG (A-70-09-01) D6LCE Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	0/00/00	1/12/00
PCBs (8082) SONICATION w/ACID STRIP (PCB) STL: HANFORD PCB GC:LIST-1(7) (A-71-QH-01) D6LCE-1-03 Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	12/29/99	2/07/00

QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 12/22/99
Time: 15:52:45
User Id.: SEITHELK

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: D&D
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: B00-013
AMOUNT REC"D: 120MLAG
STORAGE LOC: T8C
LOT COMMENTS: Hanford Summary and FEAD EDD required
MATRIX: SOLID
SAMPLE ID: B0X5M3
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 33811
LAB ID: F-9L200118-004
WORK ORDER: D6LCF
RECEIVING DATE: 12/16/99
SAMPLING DATE: 12/15/99
ANALYTICAL DUE DATE: 1/03/00N
REPORT DUE DATE: 1/03/00
PRIORITY: 14
SAMPLING TIME: 10:30
RECEIVING TIME: 9:11
SDG# : W02975

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Soils MT6010_S PB (A-46-QM-01) D6LCF Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	0/00/00	6/12/00
Mercury (7471A, Cold Vapor) - Solids METALS, TOTAL (Method Exclusive) - Solids M7471_S HG (A-70-O9-01) D6LCF Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	0/00/00	1/12/00
PCBs (8082) SONICATION w/ACID STRIP (PCB) STL: HANFORD PCB GC:LIST-1(7) (A-71-QH-01) D6LCF-1-03 Protocol: A QC Program: STANDARD TEST SET	06	12/20/99	12/29/99	2/07/00

QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 12/22/99
Time: 15:52:45
User Id.: SEITHELK

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: D&D
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: B00-013
AMOUNT REC"D: 120MLAG
STORAGE LOC: T8C
LOT COMMENTS: Hanford Summary and FEAD EDD required
MATRIX: SOLID
SAMPLE ID: B0X5L9
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 33811
LAB ID: F-9L200118-005
WORK ORDER: D6LCG
RECEIVING DATE: 12/16/99
SAMPLING DATE: 12/15/99
ANALYTICAL DUE DATE: 1/03/00N
REPORT DUE DATE: 1/03/00
PRIORITY: 14
SAMPLING TIME: 9:05
RECEIVING TIME: 9:11
SDG# : W02975

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace)	06	12/20/99	0/00/00	6/12/00
METALS, TOTAL - Soils				
MT6010_S PB				
(A-46-QM-01) D6LCG Protocol: A QC Program: STANDARD TEST SET				
Mercury (7471A, Cold Vapor) - Solids	06	12/20/99	0/00/00	1/12/00
METALS, TOTAL (Method Exclusive) - Solids				
M7471_S HG				
(A-70-09-01) D6LCG Protocol: A QC Program: STANDARD TEST SET				
PCBs (8082)	06	12/20/99	12/29/99	2/07/00
SONICATION w/ACID STRIP (PCB)				
STL: HANFORD PCB GC:LIST-1(7)				
(A-71-QH-01) D6LCG-1-03 Protocol: A QC Program: STANDARD TEST SET				

CUR# 020462 4°

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B00-013-03	Page 1 of 1
Collector: R. Fahlberg/R. Nielson	Company Contact: Jason Adler	Telephone No.: 373-4316	Project Coordinator: TRENT, SJ	Price Code: 9L; Data Turnaround: 21 Days
Project Designation: 105-F/DR Phase III Below-grade Areas Sampling and Analy	Sampling Location: 105-DR		SAF No.: B00-013	Air Quality
Ice Chest No.: SML600 ~~ER-06~~ RAT 12.16.99	Field Logbook No.: EL-1424	COA: R105D2280C	Method of Shipment: Federal Express	
Shipped To: Quanterra Richland ~~TMA/RECRA~~ RF 12.15.99 RAT 12.16.99	Offsite Property No.: ~~A000072~~ RAT 12.16.99		Bill of Lading/Air Bill No.: ~~72357953 2914~~ RAT 12.16.99	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	None	None	None							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	0	0	1	1							
Volume	60mL	60mL	60mL	60mL							
SAMPLE ANALYSIS	PCBs - 8082	Isotopic Uranium	See item (1) in Special Instructions	ICP Metals - 6010A (Supertrace) (Lead); Mercury - 7471 - (CV)							

SDG W02975

Sample No.	Matrix *	Sample Date	Sample Time										
B0X5M0	Other Solid	12.15.99	1008	X			X	1X120mLAG	100% full	RAT 12.15.99			B0X4N6 ~~B0X469~~
B0X5M1	other solid	12.15.99	0950	X			X						
B0X5M2	other solid	12.15.99	0928	X			X						
B0X5M3	other solid	12.15.99	1030	X			X						
B0X5L9	other solid	12.15.99	0905	X			X						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: R Fahlberg/R Fahlberg	Date/Time: 12.15.99 1315	Received By: Ref 2-A	Date/Time: 12.15.99 1315
Relinquished By: Ref 2A	Date/Time: 12.16.99/0700	Received By: R. Thoren	Date/Time: 12.16.99/0700
Relinquished By: R. Thoren	Date/Time: 12.16.99/1430	Received By: ~~FED EX~~ RAT	Date/Time: 12.16.99
Relinquished By: R. Thoren	Date/Time: 12.16.99/0911	Received By: R. [illegible]	Date/Time: 12-16-99 0911
Relinquished By: R. [illegible]	Date/Time: 12-16-99 1600	Received By: Jason Neumann	Date/Time: 12-17-99 0900
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cobalt-60); Gamma Spec - Add-on (Barium-133); Isotopic Plutonium; Strontium-89.90 -- Total Sr: Technetium-99; Americium-241; Nickel-63; Carbon-14

Note: out of ICP metals analyze for PCBs.
Out of Gamma Spec. analyze for Iso uranium.

Matrix *: S=Soil, SE=Sediment, SO=Solid, S=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, T=Tissue, WI=Wipe, L=Liquid, V=Vegetation, X=Other

LABORATORY SECTION	Received By: Jason Neumann	Title	Date/Time: 12-17-99 0900
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

000014

BHI-EE-011 (10/99)

ERC Radiological Counting Facility Analysis Report

RCF Number RCF6874

Sample Date & Time 12/7/99 1130

Project ID: 105-DR **SAF Number:** B00-013 **Date Analyzed** 12/8/99 7:54:3

Sample ID: B0X4N6

Gamma Energy Analysis

Nuclide		Activity (pCi/g)		Error (pCi/g)	MDC (pCi/g)
K-40	<	1.7E+02			1.7E+02
Co-60	<	2.3E+01			2.3E+01
Cs-137	<	2.1E+01			2.1E+01
Eu-152		1.5E+02	+/-	5.5E+01	5.8E+01
Eu-154	<	6.0E+01			6.0E+01
Eu-155	<	8.6E+01			8.6E+01
Th-232D	<	5.3E+01			5.3E+01
Th-234	<	2.4E+02			2.4E+02
U-235	<	1.7E+02			1.7E+02
U-238D		2.7E+02	+/-	6.8E+01	6.2E+01
U-238	<	3.1E+03			3.1E+03
Am-241	<	4.4E+01			4.4E+01

B0X5M0
B0X5M1
B0X5M2
B0X5M3
B0X5L9

Total GEA (pCi/g)	4.1E+02	+/-	1.2E+02

	Activity (pCi/g)		Error (pCi/g)
Gross Alpha**	1.1E+01	+/-	1.6E+00
Gross Beta	8.5E+01	+/-	4.0E+00

Alpha MDC (pCi/g)
4.2E+00
Beta MDC (pCi/g)
4.7E+01

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDC = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst T. J. Snider 12/8/99

Report To JASON ADLER **Fax** 373-7719

Report Printed: Wednesday, December 08, 1999

Quanterra Environmental Services

020462

Login No.: F9L200118
W0297J

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Bechtel Hanford
Date: 12-17-99 Time: 0900
Project No: 33811
Initiated by: Jason Tiemann
Shipper/No: Airborne/4012571 010
RFA/COC Numbers: B00-013-03

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4°C ± 2°C
     Record temperature: _____
   - ☐ pH _____
   - ☐ other: _____
3. ☐ Sample received in improper container.
4. ☐ Sample received without proper paperwork. Explain: _____
5. ☐ Paperwork received without sample.
6. ☐ No sample ID on sample container.
7. ☐ Custody tape disturbed/broken/missing/not tamper evident type (circle all that apply).
8. ☐ Sample ID on container does not match sample ID on paperwork. Explain: _____
9. ☐ All coolers on airbill not received with shipment.
10. ☐ Other (explain below): _____

☒ **No variances were noted during sample receipt.** **Cooler Temperature Upon Receipt:** 4°

Temperature Variance Does Not Affect the Following Analyses: _____

Notes: _____

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____

☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Sample(s) processed "as is".

Comments: _____

☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: Jason Tiemann (or designee) Date: 12-17-99

Project Management Review: Sheila Lowrie Date: 12-22-99

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 6/29/99

BECHTEL HANFORD, INC.

Client Sample ID: B0X5M0

~~GC Semivolatiles~~ PCBs Dayes 1/24/2000

Lot-Sample #...: F9L200118-001 **Work Order #...:** D6LC8107 **Matrix.....:** SOLID
Date Sampled...: 12/15/99 **Date Received..:** 12/16/99
Prep Date.....: 12/29/99 **Analysis Date..:** 12/30/99
Prep Batch #...: 9364258
Dilution Factor: 1 **Method.....:** SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	33	ug/kg
Aroclor 1221	ND	33	ug/kg
Aroclor 1232	ND	33	ug/kg
Aroclor 1242	ND	33	ug/kg
Aroclor 1248	ND	33	ug/kg
Aroclor 1254	ND	33	ug/kg
Aroclor 1260	**130**	**33**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	95	(15 - 168)
Decachlorobiphenyl	422 *	(10 - 207)

NOTE(S):

* Surrogate recovery is outside stated control limits.

BECHTEL HANFORD, INC.

Client Sample ID: B0X5M1

~~GC Semivolatiles~~ PCBs D Cayes 1/24/2000

Lot-Sample #...: F9L200118-002 **Work Order #...:** D6LCD103 **Matrix.....:** SOLID
Date Sampled...: 12/15/99 **Date Received..:** 12/16/99
Prep Date.....: 12/29/99 **Analysis Date..:** 12/30/99
Prep Batch #...: 9364258
Dilution Factor: 1 **Method.....:** SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	33	ug/kg
Aroclor 1221	ND	33	ug/kg
Aroclor 1232	ND	33	ug/kg
Aroclor 1242	ND	33	ug/kg
Aroclor 1248	ND	33	ug/kg
Aroclor 1254	ND	33	ug/kg
Aroclor 1260	**190**	**33**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	29	(15 - 168)
Decachlorobiphenyl	46	(10 - 207)

BECHTEL HANFORD, INC.

Client Sample ID: B0X5M2

~~GC Semivolatiles~~ PCBs Dayes 1/24/2000

Lot-Sample #...:	F9L200118-003	**Work Order #...:**	D6LCE103	**Matrix.....:**	SOLID
Date Sampled...:	12/15/99	**Date Received..:**	12/16/99		
Prep Date.....:	12/29/99	**Analysis Date..:**	12/30/99		
Prep Batch #...:	9364258				
Dilution Factor:	1	**Method.....:**	SW846 8082		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	33	ug/kg
Aroclor 1221	ND	33	ug/kg
Aroclor 1232	ND	33	ug/kg
Aroclor 1242	ND	33	ug/kg
Aroclor 1248	ND	33	ug/kg
Aroclor 1254	ND	33	ug/kg
Aroclor 1260	**200**	**33**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	29	(15 - 168)
Decachlorobiphenyl	49	(10 - 207)

BECHTEL HANFORD, INC.

Client Sample ID: B0X5M3

~~GC Semivolatiles~~ PCBs Dayes 1/24/2000

Lot-Sample #...:	F9L200118-004	**Work Order #...:**	D6LCF103	**Matrix.....:**	SOLID
Date Sampled...:	12/15/99	**Date Received..:**	12/16/99		
Prep Date.....:	12/29/99	**Analysis Date..:**	12/30/99		
Prep Batch #...:	9364258				
Dilution Factor:	1	**Method.....:**	SW846 8082		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	33	ug/kg
Aroclor 1221	ND	33	ug/kg
Aroclor 1232	ND	33	ug/kg
Aroclor 1242	ND	33	ug/kg
Aroclor 1248	ND	33	ug/kg
Aroclor 1254	ND	33	ug/kg
Aroclor 1260	**42**	**33**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	55	(15 - 168)
Decachlorobiphenyl	24	(10 - 207)

BECHTEL HANFORD, INC.

Client Sample ID: B0X5L9

~~GC Semivolatiles~~ PCBs D Ayres 1/24/2000

Lot-Sample #...:	F9L200118-005	**Work Order #...:**	D6LCG103	**Matrix.....:**	SOLID
Date Sampled...:	12/15/99	**Date Received..:**	12/16/99		
Prep Date.....:	12/29/99	**Analysis Date..:**	12/30/99		
Prep Batch #...:	9364258				
Dilution Factor:	1	**Method.....:**	SW846 8082		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	33	ug/kg
Aroclor 1221	ND	33	ug/kg
Aroclor 1232	ND	33	ug/kg
Aroclor 1242	ND	33	ug/kg
Aroclor 1248	ND	33	ug/kg
Aroclor 1254	ND	33	ug/kg
Aroclor 1260	ND	33	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	65	(15 - 168)
Decachlorobiphenyl	72	(10 - 207)

BECHTEL HANFORD, INC.

Client Sample ID: B0X5M0

TOTAL Metals

Lot-Sample #...: F9L200118-001 Matrix.....: SOLID
Date Sampled...: 12/15/99 Date Received..: 12/16/99
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0006352						
Chromium	52.6	1.0	mg/kg	SW846 6010B	01/06-01/07/00	D6LC810U
		Dilution Factor: 1		MDL.....: 0.30		
Lead	25.7	0.30	mg/kg	SW846 6010B	01/06-01/07/00	D6LC8101
		Dilution Factor: 1		MDL.....: 0.15		
Prep Batch #...: 9363254						
Mercury	0.29	0.033	mg/kg	SW846 7471A	12/29/99	D6LC8104
		Dilution Factor: 1		MDL.....: 0.0070		

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BECHTEL HANFORD, INC.

Client Sample ID: B0X5M1

TOTAL Metals

Lot-Sample #...: F9L200118-002 Matrix.....: SOLID
Date Sampled...: 12/15/99 Date Received..: 12/16/99
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0006352						
Chromium	128	1.0	mg/kg	SW846 6010B	01/06-01/07/00	D6LCD104
		Dilution Factor: 1		MDL.....: 0.30		
Lead	6.3	0.30	mg/kg	SW846 6010B	01/06-01/07/00	D6LCD101
		Dilution Factor: 1		MDL.....: 0.15		
Prep Batch #...: 9363254						
Mercury	0.050	0.033	mg/kg	SW846 7471A	12/29/99	D6LCD102
		Dilution Factor: 1		MDL.....: 0.0070		

BECHTEL HANFORD, INC.

Client Sample ID: B0X5M2

TOTAL Metals

Lot-Sample #...: F9L200118-003 Matrix.....: SOLID
Date Sampled...: 12/15/99 Date Received..: 12/16/99
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0006352						
Chromium	17.1	1.0	mg/kg	SW846 6010B	01/06-01/07/00	D6LCE104
		Dilution Factor: 1		MDL.....: 0.30		
Lead	33.6	0.30	mg/kg	SW846 6010B	01/06-01/07/00	D6LCE101
		Dilution Factor: 1		MDL.....: 0.15		
Prep Batch #...: 9363254						
Mercury	0.56	0.033	mg/kg	SW846 7471A	12/29/99	D6LCE102
		Dilution Factor: 1		MDL.....: 0.0070		

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BECHTEL HANFORD, INC.

Client Sample ID: B0X5M3

TOTAL Metals

Lot-Sample #...: F9L200118-004 Matrix.....: SOLID
Date Sampled...: 12/15/99 Date Received..: 12/16/99
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0006352						
Chromium	14.3	1.0	mg/kg	SW846 6010B	01/06-01/07/00	D6LCF104
		Dilution Factor: 1		MDL.....: 0.30		
Lead	2.5	0.30	mg/kg	SW846 6010B	01/06-01/07/00	D6LCF101
		Dilution Factor: 1		MDL.....: 0.15		
Prep Batch #...: 9363254						
Mercury	0.019 B	0.033	mg/kg	SW846 7471A	12/29/99	D6LCF102
		Dilution Factor: 1		MDL.....: 0.0070		

NOTE(S):

B Estimated result. Result is less than RL.

Results and reporting limits have been adjusted for dry weight.

BECHTEL HANFORD, INC.

Client Sample ID: B0X5L9

TOTAL Metals

Lot-Sample #...: F9L200118-005 Matrix.....: SOLID
Date Sampled...: 12/15/99 Date Received..: 12/16/99
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0006352						
Chromium	13.8	1.0	mg/kg	SW846 6010B	01/06-01/07/00	D6LCG104
		Dilution Factor: 1		MDL.....: 0.30		
Lead	14.5	0.30	mg/kg	SW846 6010B	01/06-01/07/00	D6LCG101
		Dilution Factor: 1		MDL.....: 0.15		
Prep Batch #...: 9363254						
Mercury	0.070	0.033	mg/kg	SW846 7471A	12/29/99	D6LCG102
		Dilution Factor: 1		MDL.....: 0.0070		

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