

Quanterra Incorporated  
13715 Rider Trail North  
Earth City, Missouri 63045

314 298-8566 Telephone  
314 298-8757 Fax

0052118

CASE NARRATIVE

Bechtel Hanford Incorporated  
3350 George Washington Way  
Richland, Washington 99352

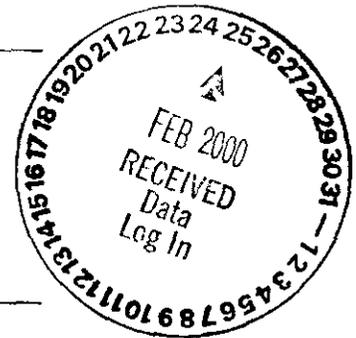
RECEIVED  
MAR 10 2000

EDMC

February 24, 2000

Attention: Joan Kessner

Project Number	:	33548
SDG	:	W03013
Number of Samples	:	one (1)
Sample Matrix	:	Water
Data Deliverable	:	Summary
Date SDG Closed	:	January 14, 2000



II. Introduction

On January 13, 2000, one (1) "water" sample was received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. The samples were received within temperature criteria. See the attached Sample Summary sheet for the client and lab Ids for these samples.

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:

- pH - 150.1
- Sulfate - 375.4
- TDS - 160.1
- TSS - 160.2
- Arsenic - 7060 GFAA
- ICP Metals - 6010 TAL
- Chlorine (Total Residual) - 330.3
- Acrylamide - 8316
- VOA - 8240 (append IX)
- VOA - 8260A (TCL)

Deviation from Request: There were no deviations.

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Project Number: 33548  
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#### 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.  
DUP- Matrix Duplicate  
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.

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

There were no comments or non-conformances associated with the 8260 or 8240 Volatiles data.

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

There were no comments or non-conformances associated with the Acrylamide data.

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.

Several metals had MS or MSD recoveries outside QC criteria. LCS recoveries were within criteria for all compounds.

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Wet Chemistry: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Duplicate were analyzed with the Sulfate preparation batch per the protocol for this analysis. A duplicate was analyzed as QC for the pH, TSS, TDS and Residual Chlorine analyses.

The iodine used for the Residual Chlorine Blank back titration was expired. The data does not indicate that the reagent had deteriorated. The data is being reported with Non-Conformance memo F00021.

There were no other comments or non-conformances associated with the Wet Chemistry data.

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 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:



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Marti Ward  
St. Louis Project Manager



# Nonconformance Memo

Clouseau

NCM #: <b>F00021</b>	Classification: <b>Deficiency</b>
NCM initiated By: <b>Kress, Tracey</b>	Status: <b>CLOSED</b>
Date Opened: <b>01/20/00</b>	Production Area: <b>Classical Chemistry</b>
Date Closed: <b>02/22/00</b>	Tests: <b>330.3</b>
	Lot #'s (Sample #'s): <b>FOA140206 (1); FOA190000 (372); F9L210106 (1); F9L300207 (1)</b>
	QC Batch: <b>0019372</b>
Nonconformance: <b>Expired standards</b>	
Subcategory: <b>Use of expired standards</b>	

### Problem Description / Root Cause

Name	Date	Description
Kress, Tracey	01/20/00	Iodine used for blank back titration was expired. Reagent was used and problem was not discovered until report was generated.

### Corrective Action

Name	Date	Corrective Action
Kress, Tracey	01/20/00	Data did not reflect signs that reagent had deteriorated. Data was reported as is.

### Quality Assurance Verification

Verified By	Due Date	Status	Notes:
Kleszczewski, Jim	N/A	Verified/completed	New reagent ordered.

### Approval History

Name	Date Approved:	Position
Kress, Tracey	01/20/00	Chemist
Ward, Marti	01/28/00	Project Manager
Kleszczewski, Jim	02/22/00	Quality Assurance

## SAMPLE SUMMARY

FOA140206

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT</u>	<u>SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
D7FPR	001	BOX9X6		01/12/00	07:51

**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**

FOA140206

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
pH (Electrometric)	MCAWW 150.1	MCAWW 150.1
Acrylamide, Acrylonitrile and Acrolein by HPLC	SWDFT 8316	
Arsenic (AA, Furnace Technique)	SW846 7060	SW846 7060
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
Non-Filterable Residue (TSS)	MCAWW 160.2	MCAWW 160.2
Residual Chlorine 330.3	MCAWW 330.3	
Sulfate	MCAWW 375.4	MCAWW 375.4
Volatile Organics by GC/MS	SW846 8240A	SW846 8240A
Volatile Organics by GC/MS	SW846 8260A	SW846 5030/8260

**References:**

- MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.
- SWDFT "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Draft Methods.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

PSL20300  
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QUANTERRA INCORPORATED  
CLIENT ANALYSIS SUMMARY  
Quanterra - St. Louis

Run Date: 1/15/00  
Time: 9:06:14  
User Id.: SEITHELK

CLIENT: 127642 BECHTEL HANFORD, INC.  
PROJECT MANAGER: MARTI WARD  
PROJECT #: PERMIT MONITOR  
REPORT TO: Bechtel Hanford, Inc.  
P.O. NUMBER: MRC-SBB-A-19981  
SITE: B99-018  
AMOUNT REC'D: 4X500P,20P,LP,9X40V,250P  
STORAGE LOC: T4C  
LOT COMMENTS:  
MATRIX: WATER  
SAMPLE ID: BOX9X6  
QC PACKAGE: Special Report - see checklist  
SAMPLE COMMENTS:  
RUN DUP ON PH,TDS,TSS,RESID.CHLOR,SULFTE  
Beginning Depth: .00 Ending Depth: .00

QUOTE/SAR #: 33548  
LAB ID: F-0A140206-001  
WORK ORDER: D7FPR  
RECEIVING DATE: 1/13/00  
SAMPLING DATE: 1/12/00  
ANALYTICAL DUE DATE: 2/11/00  
REPORT DUE DATE: 2/28/00  
PRIORITY: 29  
SAMPLING TIME: 7:51  
RECEIVING TIME: 9:00  
SDG# : W03013

\*\*\*\*\* ANALYSIS \*\*\*\*\*

	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A) PURGE AND TRAP - 5 mL purge STL: SW-846 8260A (I-15-MZ-01) D7FPR-1-04 Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	1/26/00
Acrylamide, Acrylonitrile, Acrolein (831) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION STL: Acrylamide by HPLC (I-88-A9-01) D7FPR-1-07 Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	1/26/00
Arsenic (7060, Furnace) METALS, TOTAL - Waters M7060_L AS (I-05-DT-01) D7FPR Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	7/10/00
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,AL,BA,BE,CA,CD,CO,CR,CU,FE,KX,MG,MN,NA,NI,SB,VX,ZN (I-05-QO-01) D7FPR Prctocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	7/10/00
pH - Aqueous (150.1) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (I-88-AJ-01) D7FPR-1-27 Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	1/14/00
Solids, Filterable "TDS" (160.1) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (I-88-AK-01) D7FPR-1-2A Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	1/19/00
Chlorine, Residual (330.3) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (I-88-RD-01) D7FPR-1-2E Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	1/13/00
Sulfate 375.4) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (I-88-UV-01) D7FPR-1-2H Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	2/09/00

STL- St. Louis

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QUANTERRA INCORPORATED  
CLIENT ANALYSIS SUMMARY  
Quanterra - St. Louis

Run Date: 1/15/00  
Time: 9:06:14  
User Id.: SEITHELK

CLIENT: 127642 BECHTEL HANFORD, INC.  
PROJECT MANAGER: MARTI WARD  
PROJECT #: PERMIT MONITOR  
REPORT TO: Bechtel Hanford, Inc.  
P.O. NUMBER: MRC-SBB-A-19981  
SITE: B99-018  
AMOUNT REC'D: 4X500P,20P,LP,9X40V,250P  
STORAGE LOC: T4C  
LOT COMMENTS:  
MATRIX: WATER  
SAMPLE ID: B0X9X6  
QC PACKAGE: Special Report - see checklist  
SAMPLE COMMENTS:  
RUN DUP ON PH,TDS,TSS,RESID.CHLOR,SULFTE  
Beginning Depth: .00 Ending Depth: .00

QUOTE/SAR #: 33548  
LAB ID: F-0A140206-001  
WORK ORDER: D7FPR  
RECEIVING DATE: 1/13/00  
SAMPLING DATE: 1/12/00  
ANALYTICAL DUE DATE: 2/11/00N  
REPORT DUE DATE: 2/28/00  
PRIORITY: 29  
SAMPLING TIME: 7:51  
RECEIVING TIME: 9:00  
SDG# : W03013

\*\*\*\*\* ANALYSIS \*\*\*\*\*

	<u>WRK</u>	<u>REQUEST</u>	<u>EXTRACTION</u>	<u>ANALYSIS</u>
	<u>LOC</u>	<u>DATE</u>	<u>EXP DATE</u>	<u>EXP DATE</u>
Solids, Total Suspended "TSS" (160.2) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (I-88-AL-01) D7FPR-1-2L Protocol: A	06	1/14/00	0/00/00	1/19/00
QC Program: STANDARD TEST SET				
Volatile Organics, GC/MS (8240) PURGE AND TRAP - 5 mL purge STL: HANFORD 8240APPX VOA GC/MS LIST (I-15-FB-5I) D7FPR-1-2P Protocol: A	06	1/14/00	0/00/00	1/26/00
QC Program: CLIENT: HANFORD				

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QUANTERRA INCORPORATED  
CLIENT ANALYSIS SUMMARY  
Quanterra - St. Louis

Run Date: 1/15/00  
Time: 9:06:14  
User Id.: SEITHELK

CLIENT: 127642 BECHTEL HANFORD, INC.  
PROJECT MANAGER: MARTI WARD  
PROJECT #: PERMIT MONITOR  
REPORT TO: Bechtel Hanford, Inc.  
P.O. NUMBER: MRC-SBB-A-19981  
SITE: B99-018  
AMOUNT REC'D: 4X500P,20P,LP,9X40V,250P  
STORAGE LOC: T4C  
LOT COMMENTS:  
MATRIX: WATER  
SAMPLE ID: BOX9X6  
QC PACKAGE: Special Report - see checklist  
SAMPLE COMMENTS:  
RUN DUP ON PH,TDS,TSS,RESID.CHLOR,SULFTE  
Beginning Depth: .00 Ending Depth: .00

QUOTE/SAR #: 33548  
LAB ID: F-0A140206-001-D  
WORK ORDER: D7FPR MSD  
RECEIVING DATE: 1/13/00  
SAMPLING DATE: 1/12/00  
ANALYTICAL DUE DATE: 2/11/00N  
REPORT DUE DATE: 2/28/00  
PRIORITY: 29  
SAMPLING TIME: 7:51  
RECEIVING TIME: 9:00  
SDG# : W03013

\*\*\*\*\* ANALYSIS \*\*\*\*\*

	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A) PURGE AND TRAP - 5 mL purge STL: SW-846 8260A (I-15-MZ-01) D7FPR-1-06 Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	1/26/00
Acrylamide, Acrylonitrile, Acrolein (831 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION STL: Acrylamide by HPLC (I-88-A9-01) D7FPR-1-09 Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	1/26/00
Arsenic (7060, Furnace) METALS, TOTAL - Waters M7060_L AS (I-05-DT-01) D7FPR Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	7/10/00
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,AL,BA,BE,CA,CD,CO,CR,CU,FE,KX,MG,MN,NA,NI,SB,VX,ZN (I-05-QO-01) D7FPR Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	7/10/00
Volatile Organics, GC/MS (8240) PURGE AND TRAP - 5 mL purge STL: HANFORD 8240APPIX VOA GC/MS LIST (I-15-FB-5I) D7FPR-1-2R Protocol: A QC Program: CLIENT: HANFORD	06	1/14/00	0/00/00	1/26/00

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QUANTERRA INCORPORATED  
CLIENT ANALYSIS SUMMARY  
Quanterra - St. Louis

Run Date: 1/15/00  
Time: 9:06:14  
User Id.: SEITHELK

CLIENT: 127642 BECHTEL HANFORD, INC.  
PROJECT MANAGER: MARTI WARD  
PROJECT #: PERMIT MONITOR  
REPORT TO: Bechtel Hanford, Inc.  
P.O. NUMBER: MRC-SBB-A-19981  
SITE: B99-018  
AMOUNT REC'D: 4X500P,20P,LP,9X40V,250P  
STORAGE LOC: T4C  
LOT COMMENTS:  
MATRIX: WATER  
SAMPLE ID: B0X9X6  
QC PACKAGE: Special Report - see checklist  
SAMPLE COMMENTS:  
RUN DUP ON PH,TDS,TSS,RESID.CHLOR,SULFTE  
Beginning Depth: .00 Ending Depth: .00

QUOTE/SAR #: 33548  
LAB ID: F-0A140206-001-S  
WORK ORDER: D7FPR MS  
RECEIVING DATE: 1/13/00  
SAMPLING DATE: 1/12/00  
ANALYTICAL DUE DATE: 2/11/00  
REPORT DUE DATE: 2/28/00  
PRIORITY: 29  
SAMPLING TIME: 7:51  
RECEIVING TIME: 9:00  
SDG# : W03013

\*\*\*\*\* ANALYSIS \*\*\*\*\*

	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A) PURGE AND TRAP - 5 mL purge STL: SW-846 8260A (I-15-MZ-01) D7FPR-1-05 Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	1/26/00
Acrylamide, Acrylonitrile, Acrolein (831 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION STL: Acrylamide by HPLC (I-88-A9-01) D7FPR-1-08 Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	1/26/00
Arsenic (7060, Furnace) METALS, TOTAL - Waters M7060_L AS (I-05-DT-01) D7FPR Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	7/10/00
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,AL,BA,BE,CA,CD,CO,CR,CU,FE,KX,MG,MN,NA,NI,SB,VX,ZN (I-05-QO-01) D7FPR Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	7/10/00
Sulfate 375.4) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (I-88-UV-01) D7FPR-1-2J Protocol: A QC Program: STANDARD TEST SET	06	1/14/00	0/00/00	2/09/00
Volatile Organics, GC/MS (8240) PURGE AND TRAP - 5 mL purge STL: HANFORD 8240APPX VOA GC/MS LIST (I-15-FB-5I) D7FPR-1-2Q Protocol: A QC Program: CLIENT: HANFORD	06	1/14/00	0/00/00	1/26/00

UUR 020634 3°C

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				Page 1 of 2	
Collector R. Nielson / M. Winterrose	Company Contact DORMAN Blankenship	Telephone No. 509-373-5456	Project Coordinator TRENT, SJ	Price Code 7N	Date Turnaround 45 Days		
Project Designation 193N Backwash Discharge Pond - Permit Monitoring	Sampling Location 183N	SAF No. B99-018	Air Quality <input type="checkbox"/>				
Ice Chest No. ERC 99 017	Field Logbook No. EL-1381-3	COA 77BK27YA40	Method of Shipment FEDEX				
Shipped To QUANTERRA INC.	Offsite Property No. A440 089	Bill of Lading/Air Bill No. 42857953 3303					

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation		None	None	Cool 4C	Cool 4C	Cool 4C	HNO3 to pH<2	HNO3 to pH<2	None	Cool 4C	HCl to pH<2 Cool 4C
		Type of Container	P	P	P	P	P	P	P	P	P	aGs*
	No. of Container(s)	1	1	1	1	1	1	1	1	1	3	3
Special Handling and/or Storage Cool to 4 degrees C.	Volume	20 mL	125 mL	250 mL	500 mL	500 mL	500 mL	500 mL	500 mL	1000 mL	40 mL	40 mL
SAMPLE ANALYSIS		Activity Scan	pH - 150.1	Sulfate - 375.4	TDS - 160.1	TDS - 160.2	Arsenic 7060 - (GFAA)	ICP Metals 6010A (LTAL)	Chlorine (Total Residual) - 330.3	Acrylamide 8316	VOA - 8240A (Append 1X)	

Sample No.	Matrix *	Sample Date	Sample Time	Activity Scan	pH	Sulfate	TDS	TDS	Arsenic	ICP Metals	Chlorine	Acrylamide	VOA
B0X9X6	Water	1-12-08	0751	X	X	X	X	X	X	X	X	X	X
				100% Full	100% Full	100% Full	100% Full	100% Full	100% Full	100% Full	100% Full	100% Full	100% Full

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By R. Nielson / M. Winterrose	Date/Time 1/13/08 12:00	Received By Ref # 2C	Date/Time 1/13/08 12:00
Relinquished By R. Thoren	Date/Time 1/13/08 14:30	Received By FEDEX	Date/Time 1/13/08 14:30
Relinquished By FEDEX	Date/Time 1-14-08	Received By Jennifer Smith	Date/Time 1-14-08 09:00
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

**SPECIAL INSTRUCTIONS**  
 Sample originated in NON RAD controlled area. <2000 pCi/g NO TA REQUIRED

**Matrix \***  
 S - Soil  
 SF - Sediment  
 SO - Solid  
 S - Sludge  
 W - Water  
 O - Oil  
 A - Air  
 DS - Dross Solids  
 DL - Dross Liquids  
 T - Tissue  
 W - Wipe  
 L - Liquid  
 V - Vegetation  
 X - Other

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

Data is Incomplete without Case Narrative

CLUR 02063A 3°C

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			Page 2 of 2	
Collector R. Nielson / M. WINTERROSE	Company Contact DORMAN Blankenship	Telephone No. 509-393-5456	Project Coordinator TRENT, JJ	Price Code 7N	Data Turnaround 45 Days	
Project Designation 183N Backwash Discharge Pond - Permit Monitoring	Sampling Location 183N	SAP No. B99-018	Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 99 017	Field Logbook No. EL-1381-3	COA 77BK27A4A	Method of Shipment FED EX			
Shipped To QUANTERRA INC.	Office Property No. A00089	Bill of Lading/Air Bill No. 42357953 B303				

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	HCl to pH < 2 Cool 4C																		
	Type of Container	aGs*																		
	No. of Container(s)	3																		
	Special Handling and/or Storage	Cool to 4 degrees C.																		
SAMPLE ANALYSIS		VOA- 8260A (TCL)																		
Sample No.	Matrix *	Sample Date	Sample Time																	
B0X9X6	Water	1-12-00	0751																	

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *	
Relinquished By <del>R. Nielson</del>	Date/Time 1/12/00	Received By REF # 2C	Date/Time 1/13/00	Samples did not originate from a Rad Area.		<ul style="list-style-type: none"> <li>S-Soil</li> <li>SB-Sediment</li> <li>SD-Solid</li> <li>T-Sludge</li> <li>W-Water</li> <li>CO-Oil</li> <li>A-Air</li> <li>DB-Drum Bottom</li> <li>DL-Drum Lids</li> <li>T-Tissue</li> <li>WY-Wipe</li> <li>L-Liquid</li> <li>V-Vegetation</li> <li>X-Other</li> </ul>	
Relinquished By R. Nielson	Date/Time 1/13/00/0830	Received By R. Thoman	Date/Time 1/13/00/0830				
Relinquished By R. Thoman	Date/Time 1/13/00/0830	Received By FED EX	Date/Time 1-14-00				
Relinquished By FED EX	Date/Time 1-14-00	Received By Jennifer Smith	Date/Time 1-14-00 0850 0900 JRS 1-14-00				
Relinquished By	Date/Time	Received By	Date/Time				

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

Data is Incomplete without Case Narrative



020634

Login No.: FOIA0206  
W03013

Condition Upon Receipt Variance Report  
St. Louis Laboratory

Client: Richland

Date: 1-14-00 Time: 0900

Project No: 33548

Initiated by: J. Smith

Shipper/No: Airborne 4235 1953 3303

RFA/COC Numbers: n/a

Condition/Variance (Check all that apply):

1. <input type="checkbox"/> Sample received broken/leaking.	8. <input type="checkbox"/> Sample ID on container does not match sample ID on paperwork. Explain: _____
2. <input type="checkbox"/> Sample received without proper preservative. <input type="checkbox"/> Cooler temperature not within 4C ± 2C Record temperature: _____ <input type="checkbox"/> pH _____ <input type="checkbox"/> other: _____	9. <input type="checkbox"/> All coolers on airbill not received with shipment.
3. <input type="checkbox"/> Sample received in improper container.	10. <input type="checkbox"/> Other (explain below): _____
4. <input type="checkbox"/> Sample received without proper paperwork. Explain: _____	
5. <input type="checkbox"/> Paperwork received without sample.	
6. <input type="checkbox"/> No sample ID on sample container.	
7. <input type="checkbox"/> Custody tape disturbed/broken/missing.	

No variances were noted during sample receipt. Cooler Temperature Upon Receipt: 30C

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: (or designate) Jennifer Smith Date: 1-14-00

Project Management Review: M. Ward Date: 1-14-00

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

BECHTEL HANFORD, INC.

Client Sample ID: B0X9X6

## GC/MS Volatiles

Lot-Sample #....: FOA140206-001    Work Order #....: D7FPR12P    Matrix.....: WATER  
 Date Sampled...: 01/12/00    Date Received...: 01/13/00  
 Prep Date.....: 01/17/00    Analysis Date...: 01/17/00  
 Prep Batch #...: 0018166  
 Dilution Factor: 1    Method.....: SW846 8240A

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Chloromethane	ND	10	ug/L	2.7
Vinyl chloride	ND	10	ug/L	2.6
Bromomethane	ND	10	ug/L	2.0
Chloroethane	ND	10	ug/L	1.9
Acetone	ND	20	ug/L	1.3
1,1-Dichloroethene	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	1.5
Carbon disulfide	ND	5.0	ug/L	1.3
1,1-Dichloroethane	ND	5.0	ug/L	1.3
2-Butanone	ND	20	ug/L	2.2
1,2-Dichloroethene (total)	ND	5.0	ug/L	5.0
<b>Chloroform</b>	<b>17</b>	<b>5.0</b>	<b>ug/L</b>	<b>1.7</b>
1,1,1-Trichloroethane	ND	5.0	ug/L	5.0
Carbon tetrachloride	ND	5.0	ug/L	1.2
1,2-Dichloroethane	ND	5.0	ug/L	1.9
Benzene	ND	5.0	ug/L	1.6
Trichloroethene	ND	5.0	ug/L	1.3
1,2-Dichloropropane	ND	5.0	ug/L	2.2
Bromodichloromethane	ND	5.0	ug/L	1.2
4-Methyl-2-pentanone	ND	20	ug/L	1.6
cis-1,3-Dichloropropene	ND	5.0	ug/L	1.3
Toluene	ND	5.0	ug/L	1.7
trans-1,3-Dichloropropene	ND	5.0	ug/L	1.3
1,1,2-Trichloroethane	ND	5.0	ug/L	1.2
2-Hexanone	ND	20	ug/L	1.7
Tetrachloroethene	ND	5.0	ug/L	2.0
Dibromochloromethane	ND	5.0	ug/L	5.0
Chlorobenzene	ND	5.0	ug/L	2.7
Ethylbenzene	ND	5.0	ug/L	1.1
Xylenes (total)	ND	5.0	ug/L	1.2
Styrene	ND	5.0	ug/L	1.2
Bromoform	ND	5.0	ug/L	0.97
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	0.97
Acrolein	ND	100	ug/L	100
Acetonitrile	ND	100	ug/L	100
Iodomethane	ND	5.0	ug/L	5.0
Allyl chloride	ND	10	ug/L	10
2-Chloro-1,3-butadiene	ND	5.0	ug/L	5.0

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BECHTEL HANFORD, INC.

Client Sample ID: B0X9X6

## GC/MS Volatiles

Lot-Sample #...: F0A140206-001 Work Order #...: D7FPR12P Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Propionitrile	ND	20	ug/L	20
Methacrylonitrile	ND	5.0	ug/L	5.0
Isobutanol	ND	200	ug/L	200
1,4-Dioxane	ND	500	ug/L	500
Methyl methacrylate	ND	5.0	ug/L	5.0
Dibromomethane	ND	5.0	ug/L	5.0
Ethyl methacrylate	ND	5.0	ug/L	5.0
1,2-Dibromoethane	ND	5.0	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L	5.0
trans-1,4-Dichloro- 2-butene	ND	5.0	ug/L	5.0
1,2,3-Trichloropropane	ND	5.0	ug/L	5.0
1,2-Dibromo-3-chloro- propane	ND	10	ug/L	10
Dichlorodifluoromethane	ND	10	ug/L	10
Trichlorofluoromethane	ND	10	ug/L	10
	PERCENT	RECOVERY		
<u>SURROGATE</u>	<u>RECOVERY</u>	<u>LIMITS</u>		
Bromofluorobenzene	85	(69 - 113)		
Toluene-d8	90	(68 - 132)		
1,2-Dichloroethane-d4	93	(72 - 147)		

BECHTEL HANFORD, INC.

Client Sample ID: BOX9X6

GC/MS Volatiles

Lot-Sample #...: FOA140206-001    Work Order #...: D7FPR104    Matrix.....: WATER  
 Date Sampled...: 01/12/00    Date Received...: 01/13/00  
 Prep Date.....: 01/18/00    Analysis Date...: 01/18/00  
 Prep Batch #...: 0019218  
 Dilution Factor: 1    Method.....: SW846 8260A

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Chloromethane	ND	10	ug/L	1.6
Vinyl chloride	ND	10	ug/L	4.1
Bromomethane	ND	10	ug/L	2.0
Chloroethane	ND	10	ug/L	2.3
Acetone	ND	20	ug/L	6.9
1,1-Dichloroethene	ND	5.0	ug/L	2.2
Methylene chloride	ND	5.0	ug/L	1.8
Carbon disulfide	ND	5.0	ug/L	2.1
1,1-Dichloroethane	ND	5.0	ug/L	1.2
2-Butanone	ND	20	ug/L	6.8
1,2-Dichloroethene (total)	ND	5.0	ug/L	2.7
<b>Chloroform</b>	<b>14</b>	<b>5.0</b>	<b>ug/L</b>	<b>1.5</b>
1,1,1-Trichloroethane	ND	5.0	ug/L	1.3
Carbon tetrachloride	ND	5.0	ug/L	1.3
1,2-Dichloroethane	ND	5.0	ug/L	1.6
Benzene	ND	5.0	ug/L	1.9
Trichloroethene	ND	5.0	ug/L	1.8
1,2-Dichloropropane	ND	5.0	ug/L	1.7
Bromodichloromethane	ND	5.0	ug/L	2.7
4-Methyl-2-pentanone	ND	20	ug/L	3.5
cis-1,3-Dichloropropene	ND	5.0	ug/L	2.0
Toluene	ND	5.0	ug/L	1.6
trans-1,3-Dichloropropene	ND	5.0	ug/L	2.5
1,1,2-Trichloroethane	ND	5.0	ug/L	3.6
2-Hexanone	ND	20	ug/L	4.6
Tetrachloroethene	ND	5.0	ug/L	2.7
Dibromochloromethane	ND	5.0	ug/L	3.2
Chlorobenzene	ND	5.0	ug/L	2.8
Ethylbenzene	ND	5.0	ug/L	2.4
Xylenes (total)	ND	10	ug/L	6.6
Styrene	ND	5.0	ug/L	3.0
Bromoform	ND	5.0	ug/L	3.1
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	3.4

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Dibromofluoromethane	93	(88 - 139)
4-Bromofluorobenzene	85	(80 - 123)
Toluene-d8	93	(77 - 131)

BECHTEL HANFORD, INC.

BOX9X6

GC/MS Volatiles

Lot-Sample #: F0A140206-001

Work Order #: D7FFR104

Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

BECHTEL HANFORD, INC.

Client Sample ID: B0X9X6

HPLC

Lot-Sample #...: F0A140206-001    Work Order #...: D7FFR107    Matrix.....: WATER  
Date Sampled...: 01/12/00    Date Received...: 01/13/00  
Prep Date.....: 01/27/00    Analysis Date...: 01/27/00  
Prep Batch #...: 0028355  
Dilution Factor: 1    Method.....: SWDFT 8316

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Acrylamide	ND	100	ug/L	100

BECHTEL HANFORD, INC.

Client Sample ID: BOX9X6

TOTAL Metals

Lot-Sample #...: FOA140206-001  
 Date Sampled...: 01/12/00

Date Received...: 01/13/00

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0027429						
Aluminum	296	200	ug/L	SW846 6010B	01/27-01/28/00	D7FPR10A
		Dilution Factor: 1		MDL.....: 26.5		
Antimony	ND	60.0	ug/L	SW846 6010B	01/27-01/28/00	D7FPR10E
		Dilution Factor: 1		MDL.....: 19.7		
Barium	24.2 B	200	ug/L	SW846 6010B	01/27-01/28/00	D7FPR10H
		Dilution Factor: 1		MDL.....: 0.90		
Beryllium	ND	5.0	ug/L	SW846 6010B	01/27-01/28/00	D7FPR10L
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	5.0	ug/L	SW846 6010B	01/27-01/28/00	D7FPR10P
		Dilution Factor: 1		MDL.....: 2.0		
Calcium	23100	5000	ug/L	SW846 6010B	01/27-01/28/00	D7FPR10T
		Dilution Factor: 1		MDL.....: 65.3		
Chromium	ND	10.0	ug/L	SW846 6010B	01/27-01/28/00	D7FPR10W
		Dilution Factor: 1		MDL.....: 2.7		
Cobalt	4.0 B	50.0	ug/L	SW846 6010B	01/27-01/28/00	D7FPR11I
		Dilution Factor: 1		MDL.....: 2.5		
Copper	ND	25.0	ug/L	SW846 6010B	01/27-01/28/00	D7FPR114
		Dilution Factor: 1		MDL.....: 4.0		
Iron	102	100	ug/L	SW846 6010B	01/27-01/28/00	D7FPR117
		Dilution Factor: 1		MDL.....: 30.3		
Magnesium	3940 B	5000	ug/L	SW846 6010B	01/27-01/28/00	D7FPR11A
		Dilution Factor: 1		MDL.....: 101		
Manganese	4.8 B	15.0	ug/L	SW846 6010B	01/27-01/28/00	D7FPR11E
		Dilution Factor: 1		MDL.....: 0.90		
Nickel	ND	40.0	ug/L	SW846 6010B	01/27-01/28/00	D7FPR11H
		Dilution Factor: 1		MDL.....: 10.0		
Potassium	ND	5000	ug/L	SW846 6010B	01/27-01/28/00	D7FPR11L
		Dilution Factor: 1		MDL.....: 1810		

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BECHTEL HANFORD, INC.

Client Sample ID: B0X9X6

TOTAL Metals

Lot-Sample #...: FOA140206-001

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Silver	ND	10.0	ug/L	SW846 6010B	01/27-01/28/00	D7FPR11P
		Dilution Factor: 1		MDL.....: 8.0		
Sodium	3140 B	5000	ug/L	SW846 6010B	01/27-01/28/00	D7FPR11T
		Dilution Factor: 1		MDL.....: 44.2		
Vanadium	5.2 B	50.0	ug/L	SW846 6010B	01/27-01/28/00	D7FPR11W
		Dilution Factor: 1		MDL.....: 4.7		
Zinc	18.2 B	20.0	ug/L	SW846 6010B	01/27-01/28/00	D7FPR121
		Dilution Factor: 1		MDL.....: 4.2		
Prep Batch #...: 0045445						
Arsenic	ND	10.0	ug/L	SW846 7060	02/14-02/17/00	D7FPR124
		Dilution Factor: 1		MDL.....: 1.0		

**NOTE(S) :**

B Estimated result. Result is less than RL.

BECHTEL HANFORD, INC.

Client Sample ID: B0X9X6

General Chemistry

Lot-Sample #...: FOA140206-001      Work Order #...: D7FPR      Matrix.....: WATER  
 Date Sampled...: 01/12/00      Date Received...: 01/13/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.1		No Units	MCAWW 150.1	02/09/00	0040240
				MDL.....:		
		Dilution Factor: 1				
Sulfate	25.5	5.0	mg/L	MCAWW 375.4	02/09/00	0052350
				MDL.....: 0.90		
		Dilution Factor: 1				
Total Dissolved Solids	126	5.0	mg/L	MCAWW 160.1	01/19-01/21/00	0021198
				MDL.....: 4.2		
		Dilution Factor: 1				
Total Residual Chlorine	0.10 <	0.10	mg/L	MCAWW 330.3	01/19/00	0019372
				MDL.....: 0.089		
		Dilution Factor: 1				
Total Suspended Solids	4.0	1.0	mg/L	MCAWW 160.2	01/19-01/21/00	0021238
				MDL.....:		
		Dilution Factor: 1				

