W03157

Quanterra
Environmental Services

0053571

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

CASE NARRATIVE

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

June 13, 2000

Attention: Joan Kessner

Project Number	:	33548
SAF	:	B99-018
SDG	:	W03157
Number of Samples	:	one (1)
Sample Matrix	:	Water
Data Deliverable	:	Summary
Date SDG Closed	:	May 17, 2000

RECEIVED
AUG 17 2000
EDMC

II. Introduction

On May 17, 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
Chlorine (Total Residual) – 330.3
VOA – 8260A (TCL)

Deviation from Request: There were no deviations.

Quanterra

Bechtel Hanford Incorporated
June 13, 2000
Project Number: 33548
SDG: W03157
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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 Volatiles data.

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 and Residual Chlorine analyses. There were no 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:

MWard

Marti Ward
St. Louis Project Manager

SAMPLE SUMMARY

F0E180331

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
DDE2D	001	B0Y673	05/17/00	10:36

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

F0E180331

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH (Electrometric)	MCAWW 150.1	MCAWW 150.1
Residual Chlorine 330.3	MCAWW 330.3	
Sulfate	MCAWW 375.4	MCAWW 375.4
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.

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

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 5/18/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 17:13:21
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 33548
PROJECT MANAGER: MARTI WARD LAB ID: F-0E180331-001
PROJECT #: PERMIT MONITOR WORK ORDER: DDE2D
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 5/17/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 5/17/00
SITE: B99-018 ANALYTICAL DUE DATE: 6/15/00N
AMOUNT REC'D: 3X40,120P,250P,LP REPORT DUE DATE: 7/03/00
STORAGE LOC: S4F,V5C PRIORITY: 29
LOT COMMENTS: Hanford EDD and Package Format required SAMPLING TIME: 10:36
MATRIX: WATER RECEIVING TIME: 11:54
SAMPLE ID: B0Y673
QC PACKAGE: Special Report - see checklist SDG# : W03157
SAMPLE COMMENTS:
RUN A DUPLICATE ON PH, SULFATE, CHLORINE.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06	5/18/00	0/00/00	5/31/00
PURGE AND TRAP - 5 mL purge				
STL: SW-846 8260A				
(I-15-MZ-01) DDE2D-1-01 Protocol: A QC Program: STANDARD TEST SET				
pH - Aqueous (150.1)	06	5/18/00	0/00/00	5/19/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(I-88-AJ-01) DDE2D-1-04 Protocol: A QC Program: STANDARD TEST SET				
Chlorine, Residual (330.3)	06	5/18/00	0/00/00	5/18/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(I-88-RD-01) DDE2D-1-07 Protocol: A QC Program: STANDARD TEST SET				
Sulfate 375.4)	06	5/18/00	0/00/00	6/14/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(I-88-UV-01) DDE2D-1-0A Protocol: A QC Program: STANDARD TEST SET				

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 5/18/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 17:13:21
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 33548
PROJECT MANAGER: MARTI WARD LAB ID: F-0E180331-001-D
PROJECT #: PERMIT MONITOR WORK ORDER: DDE2D MSD
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 5/17/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 5/17/00
SITE: B99-018 ANALYTICAL DUE DATE: 6/15/00N
AMOUNT REC"D: 3X40,120P,250P,LP REPORT DUE DATE: 7/03/00
STORAGE LOC: S4F,V5C PRIORITY: 29
LOT COMMENTS: Hanford EDD and Package Format required SAMPLING TIME: 10:36
MATRIX: WATER RECEIVING TIME: 11:54
SAMPLE ID: B0Y673
QC PACKAGE: Special Report - see checklist SDG# : W03157
SAMPLE COMMENTS:
RUN A DUPLICATE ON PH, SULFATE, CHLORINE.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06	5/18/00	0/00/00	5/31/00

PURGE AND TRAP - 5 mL purge
STL: SW-846 8260A
(I-15-MZ-01) DDE2D-1-03 Protocol: A QC Program: STANDARD TEST SET

PSL20300
Page 1

SEVERN TRENT LABORATORIES, INC
CLIENT ANALYSIS SUMMARY
STL St. Louis

Run Date: 5/18/00
Time: 17:13:21
User Id.: WILSONS

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: 3X40,120P,250P,LP
STORAGE LOC: S4F,V5C
LOT COMMENTS: Hanford EDD and Package Format required
MATRIX: WATER
SAMPLE ID: B0Y673
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:
RUN A DUPLICATE ON PH, SULFATE, CHLORINE.
Beginning Depth: .00 **Ending Depth:** .00

QUOTE/SAR #: 33548
LAB ID: F-0E180331-001-S
WORK ORDER: DDE2D MS
RECEIVING DATE: 5/17/00
SAMPLING DATE: 5/17/00
ANALYTICAL DUE DATE: 6/15/00N
REPORT DUE DATE: 7/03/00
PRIORITY: 29
SAMPLING TIME: 10:36
RECEIVING TIME: 11:54
SDG# : W03157

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06	5/18/00	0/00/00	5/31/00
PURGE AND TRAP - 5 mL purge				
STL: SW-846 8260A				
(I-15-MZ-01) DDE2D-1-02 Protocol: A QC Program: STANDARD TEST SET				
Sulfate 375.4)	06	5/18/00	0/00/00	6/14/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(I-88-UV-01) DDE2D-1-0C Protocol: A QC Program: STANDARD TEST SET				

LOT #F0E180331

STL St. Louis

2' car608

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-018-39	Page 1 of 1
Collector: T Johansen/ M Baechler	Company Contact: D Blankenship	Telephone No.: 373-5456	Project Coordinator: TRENT, SJ	Price Code: 7N; Air Quality ☐; Data Turnaround: 45 Days
Project Designation: 183N Backwash Discharge Pond -- Permit Monitoring	Sampling Location: 183N		SAF No.: B99-018	
Ice Chest No.: ERC 99-035	Field Logbook No.: EL 1516	COA: 77BK27YA40	Method of Shipment: Fed-EX	
Shipped To: Quanterra Incorporated	Offsite Property No.: A000157		Bill of Lading/Air Bill No.: 42357953-5821	

POSSIBLE SAMPLE HAZARDS/REMARKS: NONE

Special Handling and/or Storage

Preservation	5/17/00 None TMS	5/17/00 Cool 4C TMS	5/17/00 None TMS	5/17/00 TMS HCl or H2SO4 to pH <2 Coo								
Type of Container	~~G/P~~ P	~~G/P~~ P	~~G/P~~ P	Gs*								
No. of Container(s)	1	5/17/00 TMS	1	3								
Volume	125mL	~~150mL~~ 250	1000mL	40mL								
SAMPLE ANALYSIS	pH - 150.1	Sulfate -- 375.4	Chlorine (Total residual) - 330.3	VOA - 8260A (TCL)								

WO 3157

Sample No.	Matrix *	Sample Date	Sample Time									
B0Y673	Water	5/17/00	1036	X	X	X	X	all 100% full				

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By: T Johansen Protocol	Date/Time: 5/17/00 1154	Received By: R Thorer	Date/Time: R Thorer 5-17-00/1154
Relinquished By: R Thorer	Date/Time: R Thorer 5-17-00/1430	Received By: FED EX	Date/Time:
Relinquished By: FED EX	Date/Time:	Received By: [illegible] STL 5.18.00 850	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS

Sample media originated from a non-radiological area. No activity report required. Close SDG upon receipt of sample.

Matrix *: S=Self; 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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)

STL St. Louis

000608

Committed to *Your* Success

Lot No.: F0E180331
W03157

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Bechtel Hanford
Date: ~~5-19~~ 5-18-00 SV
Time: ~~84~~ 850 SV
Quote No: 33548
Initiated by: [signature]
Shipper/No: Fed X 423579535821
RFA/COC Numbers: B99-018-39

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. ☐ Sample volume insufficient for analysis
11. ☐ Other (explain below) _____

☑ No variances were noted during sample receipt.

☐ Cooler Temperature Upon Receipt in °C: 2°

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". _____

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

Sample Control Supervisor Review: (or designate) [signature] Date: 5.18.00

Project Management Review: [signature] Date: 5.19.00

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 03/06/00

LOT #F0E180331

BECHTEL HANFORD, INC.

Client Sample ID: B0Y673

GC/MS Volatiles

Lot-Sample #...: F0E180331-001 Work Order #...: DDE2D101 Matrix.....: WATER
Date Sampled...: 05/17/00 Date Received..: 05/17/00
Prep Date.....: 05/24/00 Analysis Date..: 05/24/00
Prep Batch #...: 0146173
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
Chloroform	200	5.0	ug/L	1.5
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
4-Bromofluorobenzene	100	(71 - 118)
Toluene-d8	112	(78 - 124)
Dibromofluoromethane	118	(77 - 138)

BECHTEL HANFORD, INC.

B0Y673

GC/MS Volatiles

Lot-Sample #: F0E180331-001 **Work Order #:** DDE2D101 **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
UNKNOWN ALKANE		0.088	M	26.681	ug/L
UNKNOWN ALKANE		2.0	M	27.168	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

BECHTEL HANFORD, INC.

B0Y673

GC/MS Volatiles

Lot-Sample #: F0E180331-001 **Work Order #:** DDE2D101 **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
UNKNOWN ALKANE		0.088	M	26.681	ug/L
UNKNOWN ALKANE		2.0	M	27.168	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: F0E180331 **Work Order #...:** DDE2D102-MS **Matrix.....:** WATER
MS Lot-Sample #: F0E180331-001 DDE2D103-MSD
Date Sampled...: 05/17/00 **Date Received..:** 05/17/00
Prep Date.....: 05/24/00 **Analysis Date..:** 05/24/00
Prep Batch #...: 0146173
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	ND	50.0	52.3	ug/L	105		SW846 8260A
	ND	50.0	51.7	ug/L	103	1.2	SW846 8260A
Benzene	ND	50.0	60.9	ug/L	122		SW846 8260A
	ND	50.0	59.8	ug/L	120	1.8	SW846 8260A
Trichloroethene	ND	50.0	51.6	ug/L	103		SW846 8260A
	ND	50.0	50.6	ug/L	101	2.0	SW846 8260A
Toluene	ND	50.0	51.6	ug/L	103		SW846 8260A
	ND	50.0	52.4	ug/L	105	1.5	SW846 8260A
Chlorobenzene	ND	50.0	54.6	ug/L	109		SW846 8260A
	ND	50.0	56.7	ug/L	113	3.9	SW846 8260A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	107	(71 - 118)
	107	(71 - 118)
Toluene-d8	106	(78 - 124)
	110	(78 - 124)
Dibromofluoromethane	117	(77 - 138)
	117	(77 - 138)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0E180331 **Work Order #...:** DDNN8101 **Matrix.....:** WATER
MB Lot-Sample #: F0E250000-173

Prep Date.....: 05/24/00
Analysis Date..: 05/24/00 **Prep Batch #...:** 0146173
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Chloromethane	ND	10	ug/L	SW846 8260A
Vinyl chloride	ND	10	ug/L	SW846 8260A
Bromomethane	ND	10	ug/L	SW846 8260A
Chloroethane	ND	10	ug/L	SW846 8260A
Acetone	ND	20	ug/L	SW846 8260A
1,1-Dichloroethene	ND	5.0	ug/L	SW846 8260A
Methylene chloride	ND	5.0	ug/L	SW846 8260A
Carbon disulfide	ND	5.0	ug/L	SW846 8260A
1,1-Dichloroethane	ND	5.0	ug/L	SW846 8260A
2-Butanone	ND	20	ug/L	SW846 8260A
1,2-Dichloroethene (total)	ND	5.0	ug/L	SW846 8260A
Chloroform	ND	5.0	ug/L	SW846 8260A
1,1,1-Trichloroethane	ND	5.0	ug/L	SW846 8260A
Carbon tetrachloride	ND	5.0	ug/L	SW846 8260A
1,2-Dichloroethane	ND	5.0	ug/L	SW846 8260A
Benzene	ND	5.0	ug/L	SW846 8260A
Trichloroethene	ND	5.0	ug/L	SW846 8260A
1,2-Dichloropropane	ND	5.0	ug/L	SW846 8260A
Bromodichloromethane	ND	5.0	ug/L	SW846 8260A
4-Methyl-2-pentanone	ND	20	ug/L	SW846 8260A
cis-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8260A
Toluene	ND	5.0	ug/L	SW846 8260A
trans-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8260A
1,1,2-Trichloroethane	ND	5.0	ug/L	SW846 8260A
2-Hexanone	ND	20	ug/L	SW846 8260A
Tetrachloroethene	ND	5.0	ug/L	SW846 8260A
Dibromochloromethane	ND	5.0	ug/L	SW846 8260A
Chlorobenzene	ND	5.0	ug/L	SW846 8260A
Ethylbenzene	ND	5.0	ug/L	SW846 8260A
Xylenes (total)	ND	10	ug/L	SW846 8260A
Styrene	ND	5.0	ug/L	SW846 8260A
Bromoform	ND	5.0	ug/L	SW846 8260A
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	SW846 8260A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	108	(71 - 118)
Toluene-d8	101	(78 - 124)
Dibromofluoromethane	108	(77 - 138)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0E180331 Work Order #...: DDNN8101 Matrix.....: WATER

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

BECHTEL HANFORD, INC.

Method Blank Report

GC/MS Volatiles

Lot-Sample #: F0E250000-173 B **Work Order #:** DDNN8101 **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: F0E180331 **Work Order #...:** DDNN8102 **Matrix.....:** WATER
LCS Lot-Sample#: F0E250000-173
Prep Date.....: 05/24/00 **Analysis Date..:** 05/24/00
Prep Batch #...: 0146173
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
1,1-Dichloroethene	**50.0**	**52.0**	**ug/L**	**104**	**SW846 8260A**
Benzene	**50.0**	**63.9**	**ug/L**	**128**	**SW846 8260A**
Trichloroethene	**50.0**	**54.9**	**ug/L**	**110**	**SW846 8260A**
Toluene	**50.0**	**53.4**	**ug/L**	**107**	**SW846 8260A**
Chlorobenzene	**50.0**	**49.9**	**ug/L**	**100**	**SW846 8260A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	108	(71 - 118)
Toluene-d8	100	(78 - 124)
Dibromofluoromethane	110	(77 - 138)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

BECHTEL HANFORD, INC.

Client Sample ID: B0Y673

General Chemistry

Lot-Sample #...: F0E180331-001 **Work Order #...:** DDE2D **Matrix.....:** WATER
Date Sampled...: 05/17/00 **Date Received..:** 05/17/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.6		No Units	MCAWW 150.1	05/22/00	0143486
		Dilution Factor: 1		MDL.....: 0.010		
Sulfate	29.6	5.0	mg/L	MCAWW 375.4	05/31/00	0153134
		Dilution Factor: 1		MDL.....: 0.90		
Total Residual Chlorine	0.26	0.10	mg/L	MCAWW 330.3	06/09/00	0161385
		Dilution Factor: 1		MDL.....: 0.089		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F0E180331 **Work Order #...:** DDE2D-SMP DDE2D-DUP **Matrix.....:** WATER

Date Sampled...: 05/17/00 **Date Received..:** 05/17/00

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)						SD Lot-Sample #:	F0E180331-001	
	7.6	7.6	No Units	0.0	(0-20)	MCAWW 150.1	05/22/00	0143486
			Dilution Factor: 1					
Total Residual Chlorine						SD Lot-Sample #:	F0E180331-001	
	0.26	0.29	mg/L	11	(0-20)	MCAWW 330.3	06/09/00	0161385
			Dilution Factor: 1					
Sulfate						SD Lot-Sample #:	F0E180331-001	
	29.6	29.0	mg/L	1.9	(0-20)	MCAWW 375.4	05/31/00	0153134
			Dilution Factor: 1					

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F0E180331 **Matrix.....:** WATER
Date Sampled...: 05/17/00 **Date Received..:** 05/17/00

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate			Work Order #...:		DDE2D10C	MS Lot-Sample #:		F0E180331-001
	29.6	25.0	53.2	mg/L	94	MCAWW 375.4	05/31/00	0153134
			Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F0E180331 **Matrix.....: WATER**

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)		Work Order #: DDJ50101		MB Lot-Sample #:	F0E220000-486	
	5.4		No Units	MCAWW 150.1	05/22/00	0143486
		Dilution Factor: 1				
Sulfate		Work Order #: DE1L2101		MB Lot-Sample #:	F0F010000-134	
	ND	5.0	mg/L	MCAWW 375.4	05/31/00	0153134
		Dilution Factor: 1				
Total Residual Chlorine		Work Order #: DEGND101		MB Lot-Sample #:	F0F090000-385	
	ND	0.10	mg/L	MCAWW 330.3	06/09/00	0161385
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F0E180331 **Matrix.....: WATER**

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate			Work Order #: DE1L2102		LCS Lot-Sample#:	F0F010000-134	
	30.0	27.8	mg/L	93	MCAWW 375.4	05/31/00	0153134
			Dilution Factor: 1				
Total Residual Chlorine			Work Order #: DEGND102		LCS Lot-Sample#:	F0F090000-385	
	7.13	6.91	mg/L	97	MCAWW 330.3	06/09/00	0161385
			Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.