W01998

Quanterra
Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
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CASE NARRATIVE

0049079

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

November 17, 1997

Attention: Joan Kessner

NOV 1997 RECEIVED Data Log In

Project number	:	550.230
Date Received by Lab	:	October 16, 1997
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W01998
Data Deliverable	:	Summary

APR 1998 RECEIVED EDMC

I. Introduction

On October 16, 1997, one (1) water sample was received by Quanterra, Richland and was transferred to Quanterra, St. Louis for chemical analysis. Upon receipt, the sample was given the following laboratory ID number to correspond with the specific client ID:

St. Louis ID	BHI ID	Richland ID	Matrix	Date of Receipt
16067-001	B0M675	71028401	Water	10/16/97

II. 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: Volatiles by EPA 8260. Appendix IX Volatiles by EPA 8240. Total Residual Chlorine by EPA Method 330.1. Sulfate by EPA Method 375.4. pH by EPA Method 150.1. ICAP Metals by EPA Method 6010. Arsenic by EPA Method 7060. Acrylamide by EPA Method 8316. Total Suspended Solids by EPA Method 160.1. Total Dissolved Solids by EPA Method 160.2.

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate or Sample Duplicate were performed per the protocol for each analyte in this SDG. Total Residual Chlorine, Total Dissolved Solids, Total Suspended Solids, and pH require only a Sample Duplicate for matrix QC.

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

V. Comments

Shipping and Receiving
There were no variances associated with sample receipt.

Volatiles-8260
There are no comments or nonconformances associated with this analysis.

Appendix IX Volatiles-8240
There are no comments or nonconformances associated with this analysis.

Acrylamide
Sample (and MS & MSD) had to have a 10X dilution due to high matrix interference.

Metals
Both the Calcium matrix spike (78.3%) and matrix spike duplicate (78.9%) recoveries were less than 80%, therefore all associated data was flagged with a "N".

Wet Chemistry
There are no comments or nonconformances associated with these analyses.

Quanterra
Environmental Services

Bechtel Hanford Incorporated
November 17, 1997
Project Number: 550.230
SDG: W01998
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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:

Wade H. Price
Project Manager
c:\price\hanford\hanw1998.nar

W01998

Quanterra November 05, 1997 03:50 pm
Account: [illegible] Project: 550.230 Quanterra-Richland QAS No. 550.23 Rev. 1
Master Sample Login: 16067

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: Sheila Lounier PM Review: [signature]

Sample Header Template:

Sample No. / Comments / #	Container Type	Client ID / Analysis	C Matrix	Date: Collected / Class	Preservative	Received / Anal. Due Date	Due / Hold Date	Shipper / Site	Rad Category / (Container Numbers:% Filled)	Rad Sample No.
16067-001	B0M675		Water	16-OCT-97 08:07		16-OCT-97 08:07	14-NOV-97	AIR BORNE	1	Screening not Required
RICHLAND ID 71028401										
3	VI Vial 40ml	HOLD/ Q4		S	COLD	07-NOV-97	26-OCT-97	109W	(337311:94 337312:93 337313:92)	
2		HPLC/8316 Q4		S	HCL	07-NOV-97	30-OCT-97	109W	(337300:100 337301:99)	
2		VOA/8260/Q4		S	HCL	07-NOV-97	30-OCT-97	109W	(337302:98 337303:97)	
2		VOA APPIX/Q4		S	HCL	07-NOV-97	30-OCT-97	109W	(337304:96 337305:95)	
1	PN Plastic 1L	CL/330.3/Q4		S	COLD	07-NOV-97	18-OCT-97	S14B	(337299:100)	
1	PN Plastic-500ml	AS/7060/Q4		S	HNO3	07-NOV-97	14-APR-98	S14B	(337297:100)	
1		ICAP/6010/Q4		S	HNO3	07-NOV-97	14-APR-98	S14B	(337298:99)	
1		TDS/160.1/Q4		S	COLD	07-NOV-97	23-OCT-97	S14B	(337296:100)	
1		TSS/160.2/Q4		S	COLD	07-NOV-97	23-OCT-97	S14B	(337307:100)	
1	PN Plastic-250ml	SO4/375.4/Q4		S	COLD	07-NOV-97	13-NOV-97	S14B	(337306:95)	
1	PN Plastic 120ml	PH/150.1/Q4		S	COLD	07-NOV-97	17-OCT-97	S14B	(337295:100)	
16067-001DUP	B0M675		Water	16-OCT-97 08:07		16-OCT-97 08:07	14-NOV-97	AIR BORNE	1	Screening not Required
RICHLAND ID 71028401										
1	PN Plastic 1L	CL/330.3/Q4		S	COLD	07-NOV-97	18-OCT-97	S14B	(337299:100)	
1	PN Plastic-500ml	TDS/160.1/Q4		S	COLD	07-NOV-97	23-OCT-97	S14B	(337296:100)	
1		TSS/160.2/Q4		S	COLD	07-NOV-97	23-OCT-97	S14B	(337307:100)	
1	PN Plastic-250ml	SO4/375.4/Q4		S	COLD	07-NOV-97	13-NOV-97	S14B	(337306:95)	
1	PN Plastic-120ml	PH/150.1/Q4		S	COLD	07-NOV-97	17-OCT-97	S14B	(337295:100)	
16067-001MS	B0M675		Water	16-OCT-97 08:07		16-OCT-97 08:07	14-NOV-97	AIR BORNE	1	Screening not Required
RICHLAND ID 71028401										
2	VI Vial 40ml	HPLC/8316/Q4		S	HCL	07-NOV-97	30-OCT-97	109W	(337300:100 337301:99)	
2		VOA/8260/Q4		S	HCL	07-NOV-97	30-OCT-97	109W	(337302:98 337303:97)	
2		VOA/APPIX/Q4		S	HCL	07-NOV-97	30-OCT-97	109W	(337304:96 337305:95)	
1	PN Plastic-1L	CL/330.3/Q4		S	COLD	07-NOV-97	18-OCT-97	S14B	(337299:100)	
1	PN Plastic-500ml	AS/7060/Q4		S	HNO3	07-NOV-97	14-APR-98	S14B	(337297:100)	
1		ICAP/6010/Q4		S	HNO3	07-NOV-97	14-APR-98	S14B	(337298:99)	
1	PN Plastic-250ml	SO4/375.4/Q4		S	COLD	07-NOV-97	13-NOV-97	S14B	(337306:95)	
16067-001MSD	B0M675		Water	16-OCT-97 08:07		16-OCT-97 08:07	14-NOV-97	AIR BORNE	1	Screening not Required
RICHLAND ID 71028401										
2	VI Vial 40ml	HPLC/8316/Q4		S	HCL	07-NOV-97	30-OCT-97	109W	(337300:100 337301:99)	
2		VOA/8260/Q4		S	HCL	07-NOV-97	30-OCT-97	109W	(337302:98 337303:97)	
2		VOA/APPIX/Q4		S	HCL	07-NOV-97	30-OCT-97	109W	(337304:96 337305:95)	
1	PN Plastic-500ml	AS/7060/Q4			HNO3	07-NOV-97	14-APR-98	S14B	(337297:100)	
1		ICAP/6010/Q4			HNO3	07-NOV-97	14-APR-98	S14B	(337298:99)	

Sample has not been [illegible]

000003

1 Bwf 4 oc UAR 613096

[redacted]

Chain of Custody Record

5-16 D

ST Louis

QC

Quanterra

QUA 4124 0797

Client: Bechtel	Project Manager: A. Koprivia	Date: 10-17-97	Chain of Custody Number: 00081
Address:	Telephone Number (Area Code)/Fax Number:	Lab Number:	Page 1 of 1
City: / State: / Zip Code:	Site Contact: / Lab Contact:	Analysis (Attach list if more space is needed): SEE COC	Special Instructions/ Conditions of Receipt: 10%
Project Name: SAF B98-009	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No:			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Matrix: Sed	Matrix: Soil	Containers & Preservatives: Unpres	H2SO4	HNOS	HCl	NaOH	ZnAc/NaOH	Analysis	Special Instructions/ Conditions of Receipt
71028401 BOM675	all bottles												10%

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☒ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other DW 11-30-97

QC Requirements (Specify): SDG W01998

	Date	Time		Date	Time
1 Relinquished By: Heidelberg Quanterra	10-17-97	16:00	1 Received By: Jimmie Jackson	10-18-97	9:55
2 Relinquished By:			2 Received By:		
3 Relinquished By:			3 Received By:		

Comments:

DISTRIBUTION: WHITE Stays with the Sample CANARY Returned to Client with Report PINK Field Copy

00008

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-009-01	Page 1 of 2

Collector Doug Bowers	Company Contact Joe Zorie Telephone No. 373-4315	Project Coordinator KOERNER, CC	Data Turnaround **45 Days**
Project Designation 183N Backwash Discharge Pond -- Permit Monitoring 1998	Sampling Location 100N	SAF No. B98-009	
Ice Chest No.	Field Logbook No. FL 1309-1	Method of Shipment Gov Vehicle	
Shipped To Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No. 1.0 1.0	

POSSIBLE SAMPLE HAZARDS/REMARKS

Preservation	None	None	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	None	Cool 4C	HCl Cool 4C
Type of Container	P	P	P	G	G	P	P	P	aG	aGs*
No. of Container(s)	1	1	1	1	1	1	1	1	3	3
Volume	20ml	125ml	250ml	500ml	500ml	500ml	500ml	1000ml	40ml	40ml
	Activity Scan	pH - 150.1	Sulfate -- 375.4	Arsenic - 7060 - (GFAA)	ICP Metals - 6010A (TAL)	TDS - 160.1	TSS - 160.2	Chlorine (Total residual) - 330.3	Acrylamide - 8316	VOA - 8240A (Approved IX)

Special Handling and/or Storage
cool to 4C

SAMPLE ANALYSIS SDG
71028401 W01998

Sample No	Matrix *	Sample Date	Sample Time	[redacted]									
B0M675	Water	10-16-97	0807	X	X	X	X	X	X	X	X	X	X
					100%	1-250ml		100%	1	100%	1 X 1/L		
					100%		100%	100%	100%	1 X 500 mls			
					1 X 125mls					100%	1 X 500 mls		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Doug Bowers	Date/Time: 10-16-97/1003	Received By: [signature]	Date/Time: 10-16-97 1003
Relinquished By:	Date/Time:	Received By: <100cpm	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS
** Close SDG upon receipt of samples
** EPA330.3 - The ERC Contractor acknowledges the specified holding time is not likely achievable

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

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-009-01	Page 2 of 2

Collector Doug Bowers	**Company Contact** Joe Zoric	**Telephone No.** 373-4315	**Project Coordinator** KOERNER, CC	**Data Turnaround** 45 Days
Project Designation 183N Backwash Discharge Pond -- Permit Monitoring 1998	**Sampling Location** 100N		**SAF No.** B98-009	
Ice Chest No.	**Field Logbook No.** FL-1309-1		**Method of Shipment** Gov Vehicle	
Shipped To Quanterra Incorporated	**Offsite Property No.**		**Bill of Lading/Air Bill No.**	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
cool to 4C

SAMPLE ANALYSIS

71028401

Preservation	HCl Cool 4C												
Type of Container	aGs*												
No. of Container(s)	3												
Volume	40ml												
	VOA 8260A (GC)												
Sample No	**Matrix ***	**Sample Date**	**Sample Time**	[redacted]									
B0M675	Water	10-16-97	0807	X1									
				100%	9	X 40mL's							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By: [signature] Date/Time 10-16-97/1003	Received By: [signature] Date/Time 10-16-97 1003	
Relinquished By: Date/Time	Received By: 1004pm Date/Time	
Relinquished By: Date/Time	Received By: Date/Time	
Relinquished By: Date/Time	Received By: Date/Time	

SPECIAL INSTRUCTIONS

** Close SDG upon receipt of samples

** EPA330.3 -- The ERC Contractor acknowledges the specified holding time is not likely achievable

Matrix *

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

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

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 10-16-97/1003 SG#: BHI

Work Order Number: _____ SAF #: B97-009 & B98-011

Shipping Container ID: None Chain of Custody #: B98-009-01 & B98-011-01

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 3°C
5. Vermiculite/packing materials is Wet [ ] Dry [ ] N/A
6. Number of samples in shipping container: 28
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: [signature] Date: 10-16-97

Telephoned To: _____ On _____ By _____

000003

FROM THE DESK OF: ALLEN NELLESEN
ERC TEAM RAD-CON SUPPORT
373-1925/X0-23

TO: R.T.Fahlberg N1-28 DATE: August 15, 1996

SUBJECT: WATER SAMPLES FROM 183N POTABLE WATER PLANT

Water samples are routinely collected and sent off-site for analysis to assure compliance with Washington State Department of Health drinking water requirements. The history of 183-N which provides treated water to support the operation of the N-Reactor shows that a radiological survey of the water samples is not warranted.

If you need further help or have any questions, please call me at the phone number displayed above.

cc: D. D. Blankenship X7-75
T. A. Edwards X0-23
J. E. Parsons X0-23
R. K. Stafford X1-86
J. P. Zoric X5-57

Client Sample Screening Results

17-Oct-97

(B) 10/17/97

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0M675		10/16/1997	QUAD21B	10/16/1997 2:16:08 PM	B0M675	30	6	0.145	48	0.7833333
	LIQUID		Bkg:	0 16/1997 12:27:01 A	BKG	600	33	0.055	490	0.8166667

Anl Date: 10/17/1997 Tot Sa, Alq: 1.00E+00 , 1.00E+01 Alp; (Dpm/ 4.35E-01 (uCi/ 1.96E-05 (pCi/ 1.96E+01 ± 2.1E+01 CAT I 1.3E+00 Lab Alq Lig

Ppt mg: 1.3 Units: L , ml Bet; Alq): 1.43E+00 Sa): 6.44E-05 Lig): 6.44E+01 ± 2.0E+01 7.8E-01

BHI B0M689		10/16/1997	QUAD21C	10/16/1997 2:16:08 PM	B0M689	30	2	0.03333333	36	0.3083333
	LIQUID		Bkg:	0 16/1997 12:27:01 A	BKG	600	20	0.03333333	535	0.8916667

Anl Date: 10/17/1997 Tot Sa, Alq: 1.00E+00 , 1.00E+01 Alp; (Dpm/ 8.95E-02 (uCi/ 4.03E-06 (pCi/ 4.03E+00 ± 1.9E+01 CAT I 6.2E+00 Lab Alq Lig

Ppt mg: 1.4 Units: L , ml Bet; Alq): 5.87E-01 Sa): 2.65E-05 Lig): 2.65E+01 ± 1.8E+01 1.9E+00

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 10-15-97 SG#: _____

Work Order Number: _____ SAF #: Y98-002

Shipping Container ID: SML-497 Chain of Custody # Y98-002-9, Y98-002-10

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 3°C
5. Vermiculite/packing materials is Wet [ ] Dry [✓]
6. Number of samples in shipping container: 18
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [ ]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: [signature] Date: 10-15-97

Telephoned To: _____ On _____ By _____

000012

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 10-15-97 SG#: _____

Work Order Number: _____ SAF #: Y98-002

Shipping Container ID: SML-343 Chain of Custody # Y98-002-8, Y98-002-14

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 3°C
5. Vermiculite/packing materials is Wet [ ] Dry [✓]
6. Number of samples in shipping container: 20
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Karen Schulung Date: 10-15-97

Telephoned To: _____ On _____ By _____

000017

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 10-15-97 SG#: _____

Work Order Number: _____ SAF #: ~~498-002-9~~ 101597

Shipping Container ID: #93 Chain of Custody # 498-002-12
498-002-11

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 2°C
5. Vermiculite/packing materials is Wet [ ] Dry [✓]
6. Number of samples in shipping container: 18
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Karen Rottenberg Date: 10-15-97

Telephoned To: _____ On _____ By _____

000014

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 10-15-97 1430 SG#: PCW

Work Order Number: _____ SAF #: Y98-002

Shipping Container ID: ER-7 Chain of Custody # Y98-002-13

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 3°C
5. Vermiculite/packing materials is Wet [ ] Dry [ ] N/A
6. Number of samples in shipping container: 11
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: RWagar Date: 10-15-97

Telephoned To: _____ On _____ By _____

000015

Quanterra Environmental Services

B.W + W.P

013093

Login No.: 16067

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Eckland

Date: 10-19-97 Time: 9:55

Project No: 550.230

Initiated by: Jimmie Jackson

Shipper/No: A/B 5999654 010

RFA/COC Numbers: 00081

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4C ± 2C
     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.
8. ☐ Sample ID on container does not match sample ID on paperwork. Explain: _____
9. ☐ All coolers on arrival not received with thermometer.
10. ☐ Other (explain below): _____

☑ No variances were noted during sample receipt. Cooler Temperature Upon Receipt: 4°C

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 designee) [signature] Date: 10-[illegible]-97

Project Management Review: [signature] Date: 10/22/97

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 11/24/95

000016

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: VOA-8240A (Appendix IX)
Method: EPA 8240
Matrix: LIQUID

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/17/97

Client ID: BOM675

Quanterra ID : 16067-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Dichlorodifluoromethane	75-71-8	QCBLK157841-1	10/30/97	10/30/97	10	UG/L	U	10	1
Chloromethane	74-87-3	QCBLK157841-1	10/30/97	10/30/97	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK157841-1	10/30/97	10/30/97	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK157841-1	10/30/97	10/30/97	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK157841-1	10/30/97	10/30/97	10	UG/L	U	10	1
Acrolein	107-02-8	QCBLK157841-1	10/30/97	10/30/97	100	UG/L	U	100	1
Methylene Chloride	75-09-2	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK157841-1	10/30/97	10/30/97	20	UG/L	U	20	1
Trichlorofluoromethane	75-69-4	QCBLK157841-1	10/30/97	10/30/97	10	UG/L	U	10	1
Allyl chloride	107-05-1	QCBLK157841-1	10/30/97	10/30/97	10	UG/L	U	10	1
Carbon Disulfide	75-15-0	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Acetonitrile	75-05-8	QCBLK157841-1	10/30/97	10/30/97	100	UG/L	U	100	1
Acrylonitrile	107-13-1	QCBLK157841-1	10/30/97	10/30/97	100	UG/L	U	100	1
Propionitrile	107-12-0	QCBLK157841-1	10/30/97	10/30/97	20	UG/L	U	20	1
1,1-Dichloroethane	75-34-3	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
trans-1,2-Dichloroethene	156-60-5	QCBLK157841-1	10/30/97	10/30/97	2	UG/L	U	2	1
Iodomethane	74-88-4	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK157841-1	10/30/97	10/30/97	43	UG/L		5	1
1,2-Dichloroethane	107-06-2	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
2-Chloro-1,3-butadiene	126-99-8	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Methacrylonitrile	126-98-7	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK157841-1	10/30/97	10/30/97	20	UG/L	U	20	1
Isobutyl alcohol	78-83-1	QCBLK157841-1	10/30/97	10/30/97	200	UG/L	U	200	1
1,1,1-Trichloroethane	71-55-6	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Vinyl Acetate	108-05-4	QCBLK157841-1	10/30/97	10/30/97	10	UG/L	U	10	1
Bromodichloromethane	75-27-4	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Methyl methacrylate	80-62-6	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Ethyl methacrylate	97-63-2	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Dibromomethane	74-95-3	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
1,2-Dibromoethane	106-93-4	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
1,4-Dioxane	123-91-1	QCBLK157841-1	10/30/97	10/30/97	500	UG/L	U	500	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK157841-1	10/30/97	10/30/97	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK157841-1	10/30/97	10/30/97	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Dibromochloromethane	124-48-1	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
1,1,1,2-Tetrachloroethane	630-20-6	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
trans,1,4-Dichloro-2-butene	110-57-6	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
Pentachloroethane	76-01-7	QCBLK157841-1	10/30/97	10/30/97	10	UG/L	U	10	1
1,2,3-Trichloropropane	96-18-4	QCBLK157841-1	10/30/97	10/30/97	5	UG/L	U	5	1
1,2-Dibromo-3-chloropropane	96-12-8	QCBLK157841-1	10/30/97	10/30/97	10	UG/L	U	10	1
Toluene-d8	2037-26-5	QCBLK157841-1	10/30/97	10/30/97	95	%REC			1
Bromofluorobenzene	460-00-4	QCBLK157841-1	10/30/97	10/30/97	87	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK157841-1	10/30/97	10/30/97	102	%REC			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: VOA-8240A (Appendix IX)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0M675

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/17/97

Quanterra ID : 16067-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK157841-1	10/30/97	10/30/97	126	%REC			1
Trichloroethene	79-01-6	QCBLK157841-1	10/30/97	10/30/97	96	%REC			1
Benzene	71-43-2	QCBLK157841-1	10/30/97	10/30/97	97	%REC			1
Toluene	108-88-3	QCBLK157841-1	10/30/97	10/30/97	95	%REC			1
Chlorobenzene	108-90-7	QCBLK157841-1	10/30/97	10/30/97	94	%REC			1
Toluene-d8	2037-26-5	QCBLK157841-1	10/30/97	10/30/97	102	%REC			1
Bromofluorobenzene	460-00-4	QCBLK157841-1	10/30/97	10/30/97	88	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK157841-1	10/30/97	10/30/97	95	%REC			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: VOA-8240A (Appendix IX)
Method: EPA 8240
Matrix: LIQUID

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/17/97

Client ID: B0M675

Quanterra ID : 16067-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK157841-1	10/30/97	10/30/97	118	%REC			1
Trichloroethene	79-01-6	QCBLK157841-1	10/30/97	10/30/97	94	%REC			1
Benzene	71-43-2	QCBLK157841-1	10/30/97	10/30/97	97	%REC			1
Toluene	108-88-3	QCBLK157841-1	10/30/97	10/30/97	92	%REC			1
Chlorobenzene	108-90-7	QCBLK157841-1	10/30/97	10/30/97	93	%REC			1
Toluene-d8	2037-26-5	QCBLK157841-1	10/30/97	10/30/97	99	%REC			1
Bromofluorobenzene	460-00-4	QCBLK157841-1	10/30/97	10/30/97	92	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK157841-1	10/30/97	10/30/97	107	%REC			1

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0M675

Lab Name: QUANTERRA MO Contract: 550-230

Lab Code: ITMO Case No.: V06701 SAS No.: SDG No.: W01998

Matrix: (soil/water) WATER Lab Sample ID: 16067-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: G9682

Level: (low/med) LOW Date Received: 10/16/97

% Moisture: not dec. Date Analyzed: 10/30/97

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
107-02-8	Acrolein	100	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	20	U
75-69-4	Trichlorofluoromethane	10	U
107-05-1	Allyl chloride	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	[illegible]	U
75-05-8	Acetonitrile	10[illegible]	U
107-13-1	Acrylonitrile	10[illegible]	U
107-12-0	Propionitrile	2[illegible]	U
75-34-3	1,1-Dichloroethane	[illegible]	U
156-60-5	Trans-1,2-Dichloroethene	[illegible]	U
74-88-4	Iodomethane	[illegible]	U
67-66-3	Chloroform	43	
107-06-2	1,2-Dichloroethane	5	U
126-99-8	2-Chlor-1,3-Butadiene	[illegible]	U
126-98-7	Methacrylonitrile	5	U
78-93-3	2-Butanone	20	U
78-83-1	Isobutyl alcohol	200	U
71-55-6	1,1,1-Trichloroethane	[illegible]	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	1[illegible]	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0M675

Lab Name: QUANTERRA MO Contract: 550-230

Lab Code: ITMO Case No.: V06701 SAS No.: SDG No.: W01998

Matrix: (soil/water) WATER Lab Sample ID: 16067-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: G9682

Level: (low/med) LOW Date Received: 10/16/97

% Moisture: not dec. Date Analyzed: 10/30/97

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	5	U
80-62-6	Methyl methacrylate	5	U
79-01-6	Trichloroethene	5	U
97-63-2	Ethyl methacrylate	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
106-93-4	1,2-Dibromoethane	5	U
123-91-1	1,4-Dioxane	500	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
124-48-1	Dibromochloromethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
110-57-6	trans-1,4-Dichloro-2-butene	5	U
1330-20-7	Xylene (total)	5	U
76-01-7	Pentachloroethane	10	U
96-18-4	1,2,3-Trichloropropane	5	U
96-12-8	1,2-Dibromo-3-Chloropropane	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0M675

Lab Name: QUANTERRA MO Contract: 550-230

Lab Code: ITMO Case No.: V06701 SAS No.: SDG No.: W01998

Matrix: (soil/water) WATER Lab Sample ID: 16067-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: G9682

Level: (low/med) LOW Date Received: 10/16/97

% Moisture: not dec. Date Analyzed: 10/30/97

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: Volatiles 8260 (TCL)
Method: EPA 8260
Matrix: LIQUID

Client ID: 80M675

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/14/97

Quanterra ID : 16067-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK157564-1	10/28/97	10/28/97	10	UG/L	U	10	5
Bromomethane	74-83-9	QCBLK157564-1	10/28/97	10/28/97	10	UG/L	U	10	5
Vinyl Chloride	75-01-4	QCBLK157564-1	10/28/97	10/28/97	10	UG/L	U	10	5
Chloroethane	75-00-3	QCBLK157564-1	10/28/97	10/28/97	10	UG/L	U	10	5
Methylene Chloride	75-09-2	QCBLK157564-1	10/28/97	10/28/97	3	UG/L	J	5	5
Acetone	67-64-1	QCBLK157564-1	10/28/97	10/28/97	20	UG/L	U	20	5
Carbon Disulfide	75-15-0	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
1,1-Dichloroethene	75-35-4	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
1,1-Dichloroethane	75-34-3	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
1,2-Dichloroethene (total)	540-59-0	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Chloroform	67-66-3	QCBLK157564-1	10/28/97	10/28/97	47	UG/L		5	5
1,2-Dichloroethane	107-06-2	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
2-Butanone (MEK)	78-93-3	QCBLK157564-1	10/28/97	10/28/97	20	UG/L	U	20	5
1,1,1-Trichloroethane	71-55-6	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Carbon Tetrachloride	56-23-5	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Bromodichloromethane	75-27-4	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
1,2-Dichloropropane	78-87-5	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
cis-1,3-Dichloropropene	10061-01-5	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Trichloroethene	79-01-6	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Dibromochloromethane	124-48-1	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
1,1,2-Trichloroethane	79-00-5	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Benzene	71-43-2	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
trans-1,3-Dichloropropene	10061-02-6	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Bromoform	75-25-2	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK157564-1	10/28/97	10/28/97	20	UG/L	U	20	5
2-Hexanone	591-78-6	QCBLK157564-1	10/28/97	10/28/97	20	UG/L	U	20	5
Tetrachloroethene	127-18-4	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Toluene	108-88-3	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Chlorobenzene	108-90-7	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
EthylBenzene	100-41-4	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Styrene	100-42-5	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Xylene (total)	1330-20-7	QCBLK157564-1	10/28/97	10/28/97	5	UG/L	U	5	5
Toluene-d8	2037-26-5	QCBLK157564-1	10/28/97	10/28/97	98	%REC			5
Bromofluorobenzene	460-00-4	QCBLK157564-1	10/28/97	10/28/97	89	%REC			5
Dibromofluoromethane	1868-53-7	QCBLK157564-1	10/28/97	10/28/97	110	%REC			5

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: Volatiles 8260 (TCL)
Method: EPA 8260
Matrix: LIQUID

Client ID: 80M675

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/14/97

Quanterra ID : 16067-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK157564-1	10/28/97	10/28/97	130	%REC			5
Trichloroethene	79-01-6	QCBLK157564-1	10/28/97	10/28/97	94	%REC			5
Benzene	71-43-2	QCBLK157564-1	10/28/97	10/28/97	95	%REC			5
Toluene	108-88-3	QCBLK157564-1	10/28/97	10/28/97	91	%REC			5
Chlorobenzene	108-90-7	QCBLK157564-1	10/28/97	10/28/97	93	%REC			5
Toluene-d8	2037-26-5	QCBLK157564-1	10/28/97	10/28/97	97	%REC			5
Bromofluorobenzene	460-00-4	QCBLK157564-1	10/28/97	10/28/97	87	%REC			5
Dibromofluoromethane	1868-53-7	QCBLK157564-1	10/28/97	10/28/97	109	%REC			5

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Richland, WA 99352

Project: 550.230

Category: Volatiles 8260 (TCL)
Method: EPA 8260
Matrix: LIQUID

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/17/97

Client ID: BOM675

Quanterra ID : 16067-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK157568-1	10/29/97	10/29/97	117	%REC			5
Trichloroethene	79-01-6	QCBLK157568-1	10/29/97	10/29/97	106	%REC			5
Benzene	71-43-2	QCBLK157568-1	10/29/97	10/29/97	104	%REC			5
Toluene	108-88-3	QCBLK157568-1	10/29/97	10/29/97	99	%REC			5
Chlorobenzene	108-90-7	QCBLK157568-1	10/29/97	10/29/97	99	%REC			5
Toluene-d8	2037-26-5	QCBLK157568-1	10/29/97	10/29/97	95	%REC			5
Bromofluorobenzene	460-00-4	QCBLK157568-1	10/29/97	10/29/97	90	%REC			5
Dibromofluoromethane	1868-53-7	QCBLK157568-1	10/29/97	10/29/97	107	%REC			5

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0M675

Lab Name: QUANTERRA MO Contract: 550-230

Lab Code: ITMO Case No.: V06701 SAS No.: SDG No.: W01998

Matrix: (soil/water) WATER Lab Sample ID: 16067-001

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: G9636

Level: (low/med) LOW Date Received: 10/16/97

% Moisture: not dec. Date Analyzed: 10/28/97

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	47	
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0M67E

Lab Name: QUANTERRA MO Contract: 550-230

Lab Code: ITMO Case No.: V06701 SAS No.: SDG No.: WC1998

Matrix: (soil/water) WATER Lab Sample ID: 16067-01

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: G9636

Level: (low/med) LOW Date Received: 10/16/97

% Moisture: not dec. Date Analyzed: 10/28/97

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: Acrylamide
Method: SW-846 8316
Matrix: LIQUID

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 10/31/97

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0M675	16067-001	Acrylamide	79-06-1	QCBLK156686-1	10/28/97	10/28/97	1000	UG/L	U	1000	10
B0M675	16067-001MS	Acrylamide	79-06-1	QCBLK156686-1	10/28/97	10/28/97	106	%REC			10
B0M675	16067-001MSD	Acrylamide	79-06-1	QCBLK156686-1	10/28/97	10/28/97	110	%REC			10
NA	QCBLK156686-1	Acrylamide	79-06-1	QCBLK156686-1	10/28/97	10/28/97	100	UG/L	U	100	1
NA	QCSPK156686-1	Acrylamide	79-06-1	QCBLK156686-1	10/28/97	10/28/97	94	%REC			1

1D
ACRYLAMIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.
BOM675

Lab Name: QUANTERRA MO Contract: 550.230

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W01998

Matrix : (soil/water) WATER Lab Sample ID: 16067-001

Sample wt/vol: 1000 (g/ml) ML Lab File ID: _____

Level: (low/med) LOW Date Sampled: 10-16-97

% Moisture: not dec._____ dec._____ Date Extracted: _____

Extraction:(SepF/Cont/Sonc/Shak)_____ Date Analyzed: 10-28-97

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 10

CAS NO.	Compound	CONCENTRATION UNITS: (mg/L or mg/Kg) UG/L	Q
79-06-1	ACRYLAMIDE	1000	U

U: Concentration of analyte is less than the value given.

FORM I HBH

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: ICP Metals-6010A (TAL)
Method: EPA 6010
Matrix: LIQUID

Client ID: BOM675

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/06/97

Quanterra ID : 16067-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK157648-1	10/29/97	10/30/97	67.4	UG/L	B	200	1
Antimony	7440-36-0	QCBLK157648-1	10/29/97	10/30/97	36.1	UG/L	U	60.0	1
Barium	7440-39-3	QCBLK157648-1	10/29/97	10/30/97	29.6	UG/L	B	200	1
Beryllium	7440-41-7	QCBLK157648-1	10/29/97	10/30/97	0.56	UG/L	B	5.0	1
Cadmium	7440-43-9	QCBLK157648-1	10/29/97	10/30/97	3.0	UG/L	UN	5.0	1
Calcium	7440-70-2	QCBLK157648-1	10/29/97	10/30/97	29200	UG/L		5000	1
Chromium	7440-47-3	QCBLK157648-1	10/29/97	10/30/97	3.5	UG/L	U	10.0	1
Cobalt	7440-48-4	QCBLK157648-1	10/29/97	10/30/97	4.2	UG/L	U	50.0	1
Copper	7440-50-8	QCBLK157648-1	10/29/97	10/30/97	3.8	UG/L	U	25.0	1
Iron	7439-89-6	QCBLK157648-1	10/29/97	10/30/97	147	UG/L		100	1
Magnesium	7439-95-4	QCBLK157648-1	10/29/97	10/30/97	4800	UG/L	B	5000	1
Manganese	7439-96-5	QCBLK157648-1	10/29/97	10/30/97	6.4	UG/L	B	15.0	1
Nickel	7440-02-0	QCBLK157648-1	10/29/97	10/30/97	9.9	UG/L	U	40.0	1
Potassium	7440-09-7	QCBLK157648-1	10/29/97	10/30/97	2640	UG/L	U	5000	1
Silver	7440-22-4	QCBLK157648-1	10/29/97	10/30/97	5.3	UG/L	U	10.0	1
Sodium	7440-23-5	QCBLK157648-1	10/29/97	10/30/97	6180	UG/L		5000	1
Vanadium	7440-62-2	QCBLK157648-1	10/29/97	10/30/97	15.2	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK157648-1	10/29/97	10/30/97	15.3	UG/L	B	20.0	1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: ICP Metals-6010A (TAL)
Method: EPA 6010
Matrix: LIQUID

Client ID: B0M675

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/06/97

Quanterra ID : 16067-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK157648-1	10/29/97	10/30/97	94	%REC			1
Antimony	7440-36-0	QCBLK157648-1	10/29/97	10/30/97	94	%REC			1
Barium	7440-39-3	QCBLK157648-1	10/29/97	10/30/97	90	%REC			1
Beryllium	7440-41-7	QCBLK157648-1	10/29/97	10/30/97	97	%REC			1
Cadmium	7440-43-9	QCBLK157648-1	10/29/97	10/30/97	78	%REC	N		1
Calcium	7440-70-2	QCBLK157648-1	10/29/97	10/30/97	100	%REC			1
Chromium	7440-47-3	QCBLK157648-1	10/29/97	10/30/97	93	%REC			1
Cobalt	7440-48-4	QCBLK157648-1	10/29/97	10/30/97	95	%REC			1
Copper	7440-50-8	QCBLK157648-1	10/29/97	10/30/97	98	%REC			1
Iron	7439-89-6	QCBLK157648-1	10/29/97	10/30/97	98	%REC			1
Magnesium	7439-95-4	QCBLK157648-1	10/29/97	10/30/97	99	%REC			1
Manganese	7439-96-5	QCBLK157648-1	10/29/97	10/30/97	93	%REC			1
Nickel	7440-02-0	QCBLK157648-1	10/29/97	10/30/97	97	%REC			1
Potassium	7440-09-7	QCBLK157648-1	10/29/97	10/30/97	96	%REC			1
Silver	7440-22-4	QCBLK157648-1	10/29/97	10/30/97	93	%REC			1
Sodium	7440-23-5	QCBLK157648-1	10/29/97	10/30/97	92	%REC			1
Vanadium	7440-62-2	QCBLK157648-1	10/29/97	10/30/97	96	%REC			1
Zinc	7440-66-6	QCBLK157648-1	10/29/97	10/30/97	96	%REC			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: ICP Metals-6010A (TAL)
Method: EPA 6010
Matrix: LIQUID

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/06/97

Client ID: B0M675

Quanterra ID : 16067-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK157648-1	10/29/97	10/30/97	93	%REC			1
Antimony	7440-36-0	QCBLK157648-1	10/29/97	10/30/97	94	%REC			1
Barium	7440-39-3	QCBLK157648-1	10/29/97	10/30/97	92	%REC			1
Beryllium	7440-41-7	QCBLK157648-1	10/29/97	10/30/97	99	%REC			1
Cadmium	7440-43-9	QCBLK157648-1	10/29/97	10/30/97	79	%REC	N		1
Calcium	7440-70-2	QCBLK157648-1	10/29/97	10/30/97	99	%REC			1
Chromium	7440-47-3	QCBLK157648-1	10/29/97	10/30/97	93	%REC			1
Cobalt	7440-48-4	QCBLK157648-1	10/29/97	10/30/97	95	%REC			1
Copper	7440-50-8	QCBLK157648-1	10/29/97	10/30/97	99	%REC			1
Iron	7439-89-6	QCBLK157648-1	10/29/97	10/30/97	98	%REC			1
Magnesium	7439-95-4	QCBLK157648-1	10/29/97	10/30/97	100	%REC			1
Manganese	7439-96-5	QCBLK157648-1	10/29/97	10/30/97	94	%REC			1
Nickel	7440-02-0	QCBLK157648-1	10/29/97	10/30/97	98	%REC			1
Potassium	7440-09-7	QCBLK157648-1	10/29/97	10/30/97	95	%REC			1
Silver	7440-22-4	QCBLK157648-1	10/29/97	10/30/97	84	%REC			1
Sodium	7440-23-5	QCBLK157648-1	10/29/97	10/30/97	93	%REC			1
Vanadium	7440-62-2	QCBLK157648-1	10/29/97	10/30/97	96	%REC			1
Zinc	7440-66-6	QCBLK157648-1	10/29/97	10/30/97	97	%REC			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: Arsenic-7060-(GFAA)
Method: EPA 7000 Series
Matrix: LIQUID

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/06/97

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0M675	16067-001	Arsenic	7440-38-2	QCBLK157599-1	10/29/97	10/30/97	1.6	UG/L	U	10.0	1
B0M675	16067-001MS	Arsenic	7440-38-2	QCBLK157599-1	10/29/97	10/30/97	96	%REC			1
B0M675	16067-001MSD	Arsenic	7440-38-2	QCBLK157599-1	10/29/97	10/30/97	95	%REC			1
NA	QCLCS157599-1	Arsenic	7440-38-2	QCBLK157599-1	10/29/97	10/30/97	93	%REC			1
NA	QCBLK157599-1	Arsenic	7440-38-2	QCBLK157599-1	10/29/97	10/30/97	1.6	UG/L	U	10.0	1

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0M675

Lab Name: QUANTERRA_MO Contract: 550.230

Lab Code: ITMO Case No.: SAS No.: SDG No.: W01998

Matrix (soil/water): WATER Lab Sample ID: 16067-001

Level (low/med): LOW Date Received: 10/16/97

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	67.4	B		P
7440-36-0	Antimony	36.1	U		P
7440-38-2	Arsenic	1.6	U		F
7440-39-3	Barium	29.6	B		P
7440-41-7	Beryllium	0.56	B		P
7440-43-9	Cadmium	3.0	U	N	P
7440-70-2	Calcium	29200			P
7440-47-3	Chromium	3.5	U		P
7440-48-4	Cobalt	4.2	U		P
7440-50-8	Copper	3.8	U		P
7439-89-6	Iron	147			P
7439-95-4	Magnesium	4800	B		P
7439-96-5	Manganese	6.4	B		P
7440-02-0	Nickel	9.9	U		P
7440-09-7	Potassium	2640	U		P
7440-22-4	Silver	5.3	U		P
7440-23-5	Sodium	6180			P
7440-62-2	Vanadium	15.2	B		P
7440-66-6	Zinc	15.3	B		P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: Total Residual Chlorine
Method: EPA 330.3
Matrix: LIQUID

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/10/97

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0M675	16067-001	Residual Chlori	7782-50-5	QCBLK157175-1	10/23/97	10/23/97	0.1	MG/L	U	0.1	1
B0M675	16067-001DUP	Residual Chlori	7782-50-5	QCBLK157175-1	10/23/97	10/23/97	0.1	MG/L	U	0.1	1
NA	QCBLK157175-1	Residual Chlori	7782-50-5	QCBLK157175-1	10/23/97	10/23/97	0.1	MG/L	U	0.1	1
NA	QCLCS157175-1	Residual Chlori	7782-50-5	QCBLK157175-1	10/23/97	10/23/97	97	%REC			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: TDS
Method: EPA 160.1
Matrix: LIQUID

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/10/97

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0M675	16067-001	Total Dissolved	TDS	QCBLK157177-1	10/23/97	10/24/97	133	MG/L		5.0	1
B0M675	16067-001DUP	Total Dissolved	TDS	QCBLK157177-1	10/23/97	10/24/97	125	MG/L		5.0	1
NA	QCBLK157177-1	Total Dissolved	TDS	QCBLK157177-1	10/23/97	10/24/97	5.0	MG/L	U	5.0	1
NA	QCLCS157177-1	Total Dissolved	TDS	QCBLK157177-1	10/23/97	10/24/97	97	%REC			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: pH EPA 150.1
Method: EPA 150.1
Matrix: LIQUID

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/17/97

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0M675	16067-001	pH	PH	QCBLK157174-1	10/23/97	10/23/97	6.68	PH			1
B0M675	16067-001DUP	pH	PH	QCBLK157174-1	10/23/97	10/23/97	6.73	PH			1
NA	QCBLK157174-1	pH	PH	QCBLK157174-1	10/23/97	10/23/97	5.13	PH			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: Sulfate
Method: EPA 375.4
Matrix: LIQUID

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 11/17/97

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0M675	16067-001	Sulfate	14808-79-8	QCBLK158622-1	11/12/97	11/12/97	34.9	MG/L		5.0	1
B0M675	16067-001DUP	Sulfate	14808-79-8	QCBLK158622-1	11/12/97	11/12/97	35.2	MG/L		5.0	1
B0M675	16067-001MS	Sulfate	14808-79-8	QCBLK158622-1	11/12/97	11/12/97	92	%REC			1
NA	QCBLK158622-1	Sulfate	14808-79-8	QCBLK158622-1	11/12/97	11/12/97	5.0	MG/L	U	5.0	1
NA	QCLCS158622-1	Sulfate	14808-79-8	QCBLK158622-1	11/12/97	11/12/97	81	%REC			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: Total Suspended Solids (160.2)
Method: EPA 160.2
Matrix: LIQUID

Sample Date : 10/16/97
Receipt Date : 10/16/97
Report Date : 10/29/97

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0M675	16067-001	Total Suspended	TSS	QCBLK157176-1	10/23/97	10/23/97	7.0	MG/L		1.0	1
B0M675	16067-001DUP	Total Suspended	TSS	QCBLK157176-1	10/23/97	10/23/97	4.0	MG/L		1.0	1
NA	QCBLK157176-1	Total Suspended	TSS	QCBLK157176-1	10/23/97	10/23/97	1.0	MG/L	U	1.0	1
NA	QCLCS157176-1	Total Suspended	TSS	QCBLK157176-1	10/23/97	10/23/97	100	%REC			1