W01977

Quanterra
Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
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0048829

CASE NARRATIVE

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

October 23, 1997

Attention: Joan Kessner

Project number	:	550.232
Date Received by Lab	:	October 6, 1997
Number of Samples	:	One (1)
Sample Type	:	Soil
SDG Number	:	W01977
Data Deliverable	:	Summary

I. Introduction

On October 6, 1997, one (1) soil 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
16004-001	B0M233	71008601	Soil	10/06/97

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: TCLP Metals by EPA Method 6010/7470 following TCLP Extraction by EPA Method 1311.

Bechtel Hanford Incorporated
Octoberr 23, 1997
Project Number: 550.232
SDG: W01977

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate analyses were performed per the protocol for the TCLP Metals analysis.

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

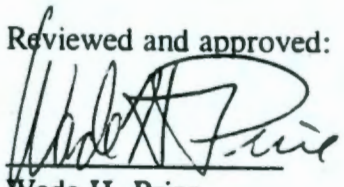
V. Comments

Shipping and Receiving
There were no variances noted during sample receipt.

TCLP Metals
There are no comments or nonconformances associated with this analysis.

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
e:\\price$\hanford\bhi1977.nar

Quanterra October 08, 1997 09:38 am

Account: 10722 Project: 550.232 Quanterra-Richland QAS No. 550.232 Rev. 0

Master Sample Login: 16004

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: S. Lane PM Review:

Sample Header Template:

Sample No. / Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
# Container Type / Comments	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
Data:							
16004-001 BOM233 RICHLAND ID 71008601	Soil	02-OCT-97 09:45	06-OCT-97 14:10	13-OCT-97	AIRBORNE	1	Screening not Required
1 AN - Amber Glass-120ML	EXTMETAL/TCLP/Q4	S	COLD	13-OCT-97	30-OCT-97	S14C	(335651:99)
1	HG/TCLP/Q4	S	COLD	13-OCT-97	30-OCT-97	S14C	(335651:99)
1	ICAP/TCLP/Q4	S	COLD	13-OCT-97	31-MAR-98	S14C	(335651:99)
16004-001MS BOM233 RICHLAND ID 71008601	Soil	02-OCT-97 09:45	06-OCT-97 14:10	13-OCT-97	AIRBORNE	1	Screening not Required
1 AN - Amber Glass-120ML	EXTMETAL/TCLP/Q4	S	COLD	13-OCT-97	30-OCT-97	S14C	(335651:99)
1	HG/TCLP/Q4	S	COLD	13-OCT-97	30-OCT-97	S14C	(335651:99)
1	ICAP/TCLP/Q4	S	COLD	13-OCT-97	31-MAR-98	S14C	(335651:99)
16004-001MSD BOM233 RICHLAND ID 71008601	Soil	02-OCT-97 09:45	06-OCT-97 14:10	13-OCT-97	AIRBORNE	1	Screening not Required
1 AN - Amber Glass-120ML	EXTMETAL/TCLP/Q4	S	COLD	13-OCT-97	30-OCT-97	S14C	(335651:99)
1	HG/TCLP/Q4	S	COLD	13-OCT-97	30-OCT-97	S14C	(335651:99)
1	ICAP/TCLP/Q4	S	COLD	13-OCT-97	31-MAR-98	S14C	(335651:99)

C00005

3*=Sample has not been rad screened.

[redacted] 514C Temp 4°C cuk# 13066

ST LOUIS

Chain of Custody Record

Quanterra

QUA-4124 0797

Client	Project Manager	Date	Chain of Custody Number
Bechtel	Jodie Carnes	10-1-97	00054
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)**
Project Name SAF B97-160	**Carrier/Waybill Number**		**Special Instructions/ Conditions of Receipt**
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	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH
1100801 BOM233	all	bottles									

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 Due 10-13-97

QC Requirements (Specify) SDG WO1977

	Relinquished By	Date	Time	Received By	Date	Time
1.	Heidelberg Quanterra	10-1-97	16:00	2nd Mitchell	10-8-97	0810
2.						
3.						

Comments

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

C0000

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: 7 day

VERIFY DATA TURNAROUN REQUIREMENTS ON SAF

Collector: Doug Bowers	Company Contact: Jeff Lerch	Telephone: 372-5904
Project Designation: 300 FF-1	Sampling Location: Headworks of trench	SAF No.: B97-160
Ice Chest No.	Field Logbook No.: EL 1395	Method of Shipment: Gov Vehicle
Shipped To: Quanterra	Offsite Property No.	Bill of Lading/Air Bill No.

Possible Sample Hazards/Remarks

SAMPLE ANALYSIS: 71008601 SDG W001977

Preservation	None	None											
Type of Container	aG	aG											
No. of Container(s)	1	1											
Volume	60ml	120ml											
Special Handling and/or Storage	Actinide Scan	TCLP + Hg											
	X	X 10/6/97											

Sample No.	Matrix*	Date Sampled	Time Sampled										
B0M233	S	10-2-97	0945	X	X			B0M035					
					10X								

CHAIN OF POSSESSION

Sign/Print Names			
Relinquished By: Doug Bowers	Date/Time: 10-2-97 1410	Received By: Raven Atkinson	Date/Time: 10-6-97 1410
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: LNOCPM

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

LABORATORY SECTION: Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

Post-it® Fax Note 7671 | Date | # of pages ▶ 1
To Don Bowers | From Al Davis
Co./Dept. | Co.
Phone # | Phone # 372-9751
Fax # 376-8851 | Fax #

GAMMA-RAY ENERGY ANALYSIS REPORT

Thermo Hartsford Inc.
Radiological Counting Facility THI - RCF

BOM233

Project	300-FF-1	
Customer ID	BOM235	Soil
RCF ID	RCF1862	
	Sample time, date	945 10/2/97
	Analysis date	10/2/97

Isotope		Activity pCi/gm		2 s err	Ci/gm	
K40	<	6.2e+00			6.2e-12	
Co60		9.6e-01	+/-	5.2e-01	9.6e-13	
I129	<	1.1e+02			1.1e-10	
Cs137		1.1e+00	+/-	5.4e-01	1.1e-12	
Eu152	<	3.0e+00			3.0e-12	
Eu154	<	2.2e+00			2.2e-12	
Eu155	<	2.8e+00			2.8e-12	
Th32dau	<	8.0e-01			8.0e-13	
U235		1.6e+01	+/-	2.3e+00	1.6e-11	
U238		2.8e+02	+/-	4.9e+01	2.8e-10	
U238dau	<	1.4e+00			1.4e-12	
Np237	<	1.2e+00			1.2e-12	
Am241	<	1.2e+01			1.2e-11	
Tot Act Gam (pCi/gm)		3.0e+02		Ci/gm	3.0e-10	
Y/Sr-90	<	N/R				
Gross Alpha		3.3e+01	+/-	5.1e+00	3.3e-11	
Gross Beta		2.1e+02	+/-	1.8e+01	2.1e-10	Reported as 137-Cs Betas.
AEA total	<	N/R				

Total Activity (pCi/gm) 3.0e+02
(Ci/gm) 3.0e-10

Definitions:

All errors reported at 2 standard deviations
A Assigned as theoretical beta from Gamma/Beta balance

Note! 152-Eu is not a 100% Beta emitter.

For soils and natural samples, the following applies:

The analysis of U236 is based on the activity of Pa234m

The analysis of Np237 is based on the activity of Pa233

U238dau is the activity of Pb214 and Bi214, short lived daughter products of U238. Equilibrium between parent and daughter products probably does not exist in disturbed materials

Th32dau is the activity of Ac228, Pb212, and Tl208, short lived daughter products of 232Th. Equilibrium between parent and daughter products may not exist in disturbed materials.

Other samples, not containing natural materials, may have unapplicable results for the Th, U, transurenics and daughter products. The results must then be balanced for the gross alpha analysis.

NR means no result or analysis not requested.

SE Holland 10-6-97
Radiological Analyst Date

Albert I. Davis 10-06-97
Albert I. Davis Date
Radiological Manager

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 10-6-97 1410 SG#: W01977

Work Order Number: 7-10-086 SAF #: B97-160

Shipping Container ID: Hand Del. Chain of Custody # N/A

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 4°C
5. Vermiculite/packing materials is Wet [ ] Dry [✓]
6. Number of samples in shipping container: 2
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 Dettenbury Date: 10-6-97

Telephoned To: _____ On _____ By _____

000009

Client Sample Screening Results

07-Oct-97

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0M156		10/7/1997	QUAD24A	10 7 1997 11:10:26 AM	B0M156	30	20	0.56	85	1.695
	LIQUID		Bkg:	10 7 1997 12:21:23 AM	BKG	600	64	0.10666667	683	1.1383333
Anl Date: 10/7/1997	Tot Sa, Alq: 2.50E+00	, 1.00E+01	Alp; (Dpm/ 1.73E+00	(uCi/ 1.94E-04	(pCi/ 7.78E+01	± 2.9E+01	CAT I	3.2E-01	Lab Alq	
Ppt mg: 1.8	Units: L	, ml	Bet; Alq): 2.98E+00	Sa): 3.35E-04	Lig): 1.34E+02	± 2.7E+01		3.7E-01	Lig	
PGW B0M157		10/7/1997	QUAD24B	10 7 1997 11:10:26 AM	B0M157	30	23	0.69833333	98	2.2683333
	LIQUID		Bkg:	10 7 1997 12:21:23 AM	BKG	600	41	0.06833333	599	0.9983333
Anl Date: 10/7/1997	Tot Sa, Alq: 2.50E+00	, 1.00E+01	Alp; (Dpm/ 2.04E+00	(uCi/ 2.30E-04	(pCi/ 9.19E+01	± 2.7E+01	CAT I	2.7E-01	Lab Alq	
Ppt mg: 1.1	Units: L	, ml	Bet; Alq): 4.00E+00	Sa): 4.50E-04	Lig): 1.80E+02	± 2.8E+01		2.8E-01	Lig	
PGW B0M254		10/7/1997	QUAD22A	10 7 1997 11:10:22 AM	B0M254	30	20	0.59	83	1.745
	LIQUID		Bkg:	10 7 1997 12:21:31 AM	BKG	600	46	0.07666667	613	1.0216667
Anl Date: 10 7 1997	Tot Sa, Alq: 1.00E+01	, 1.00E+01	Alp; (Dpm/ 1.68E+00	(uCi/ 7.57E-04	(pCi/ 7.57E+01	± 2.5E+01	CAT I	3.3E-01	Lab Alq	
Ppt mg: 2	Units: L	, ml	Bet; Alq): 2.90E+00	Sa): 1.31E-03	Lig): 1.31E+02	± 2.5E+01		3.8E-01	Lig	
PGW B0M257		10 7 1997	QUAD22B	10 7 1997 11:10 22 AM	B0M257	30	23	0.69833333	71	1.43
	LIQUID		Bkg:	10 7 1997 12:21:31 AM	BKG	600	41	0.06833333	562	0.9366667
Anl Date: 10/7/1997	Tot Sa, Alq: 1.00E+01	, 1.00E+01	Alp; (Dpm/ 2.15E+00	(uCi/ 9.67E-04	(pCi/ 9.67E+01	± 2.7E+01	CAT I	2.6E-01	Lab Alq	
Ppt mg: 2.9	Units: L	, ml	Bet; Alq): 2.31E+00	Sa): 1.04E-03	Lig): 1.04E+02	± 2.3E+01		4.8E-01	Lig	
PGW B0M263		10/7/1997	QUAD22C	10 7 1997 11:10:22 AM	B0M263	30	34	1.08833333	141	3.7633333
	LIQUID		Bkg:	10 7 1997 12:21:31 AM	BKG	600	27	0.045	562	0.9366667
Anl Date: 10/7/1997	Tot Sa, Alq: 1.00E+01	, 1.00E+01	Alp; (Dpm/ 3.19E+00	(uCi/ 1.44E-03	(pCi/ 1.44E+02	± 2.9E+01	CAT I	1.7E-01	Lab Alq	
Ppt mg: 2.7	Units: L	, ml	Bet; Alq): 6.38E+00	Sa): 2.87E-03	Lig): 2.87E+02	± 3.2E+01		1.7E-01	Lig	
PGW B0M266		10/7/1997	QUAD22D	10 7 1997 11:10:22 AM	B0M266	30	34	1.09	101	2.44
	LIQUID		Bkg:	10/7/1997 12:21:31 AM	BKG	600	26	0.04333333	556	0.9266667
Anl Date: 10/7/1997	Tot Sa, Alq: 1.00E+01	, 1.00E+01	Alp; (Dpm/ 3.28E+00	(uCi/ 1.48E-03	(pCi/ 1.48E+02	± 3.0E+01	CAT I	1.7E-01	Lab Alq	
Ppt mg: 2.6	Units: L	, ml	Bet; Alq): 3.96E+00	Sa): 1.79E-03	Lig): 1.79E+02	± 2.7E+01		2.8E-01	Lig	

Renewed 10/7/97 mf

000010

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0M1275		10 7/1997	QUAD23A	10 7 1997 11:10:31 AM	B0M1275	30	17	0.51333333	69	1.4033333
	LIQUID		Bkg:	10 7 1997 12:21:37 AM	BKG	600	32	0.05333333	538	0.8966667
Anl Date: 10/7/1997	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp; (Dpm/ 1.46E+00	(uCi/ 6.59E-04	(pCi/ 6.59E+01	± 2.3E+01	CAT I	3.8E-01	Lab Alq Lig	
Ppt mg: 1.4	Units: L	, ml	Bet; Alq): 2.35E+00	Sa): 1.06E-03	Lig): 1.06E+02	± 2.3E+01		4.7E-01		
PGW B0M1278		10 7/1997	QUAD23D	10 7/1997 11:10:31 AM	B0M1278	30	8	0.21	41	0.4066667
	LIQUID		Bkg:	10 7 1997 12:21:37 AM	BKG	600	34	0.05666667	576	0.96
Anl Date: 10 7/1997	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp; (Dpm/ 6.27E-01	(uCi/ 2.83E-05	(pCi/ 2.83E+01	± 2.2E+01	CAT I	8.8E-01	Lab Alq Lig	
Ppt mg: 1.7	Units: L	, ml	Bet; Alq): 6.43E-01	Sa): 2.90E-05	Lig): 2.90E+01	± 1.8E+01		1.7E+00		
PGW B0M1279		10 7 1997	QUAD23B	10 7 1997 11:10:31 AM	B0M1279	30	27	0.85	108	2.7233333
	LIQUID		Bkg:	10 7 1997 12:21:37 AM	BKG	600	30	0.05	526	0.8766667
Anl Date: 10 7/1997	Tot Sa, Alq: 1.10E+01	, 1.00E+01	Alp; (Dpm/ 2.54E+00	(uCi/ 1.26E-03	(pCi/ 1.14E+02	± 2.7E+01	CAT I	2.2E-01	Lab Alq Lig	
Ppt mg: 1.6	Units: L	, ml	Bet; Alq): 4.65E+00	Sa): 2.30E-03	Lig): 2.09E+02	± 2.9E+01		2.4E-01		
PGW TEDF1006971		10 7 1997	QUAD23C	10 7 1997 11:10:31 AM	TEDF1006971	30	17	0.49833333	70	1.29
	LIQUID		Bkg:	10 7 1997 12:21:37 AM	BKG	600	41	0.06833333	626	1.0433333
Anl Date: 10 7 1997	Tot Sa, Alq: 5.00E-01	, 1.00E+01	Alp; (Dpm/ 1.45E+00	(uCi/ 3.26E-05	(pCi/ 6.53E+01	± 2.5E+01	CAT I	3.8E-01	Lab Alq Lig	
Ppt mg: 2.6	Units: L	, ml	Bet; Alq): 2.21E+00	Sa): 4.97E-05	Lig): 9.94E-01	± 2.4E+01		5.0E-01		

Reviewed 10/7/97

000011

Post-it® Fax Note 7671 | Date | # of pages ▶ 1
To Doug Bowers | From Al Davis
Co./Dept. | Co.
Phone # | Phone # 373-9751
Fax # 376-8851 | Fax #

GAMMA-RAY ENERGY ANALYSIS REPORT
Thermo Hanford Inc.
Radiological Counting Facility THI - RCF

BOM233

Project	300-FF-1	
Customer ID	BOM235	Soil
RCF ID	RCF1862	
Sample time, date	945	10/2/97
Analysis date		10/2/97

100g

Isotope		Activity pCi/gm		2 s err	Ci/gm
K40	<	6.2e+00			6.2e-12
Co60		9.6e-01	+/-	5.2e-01	9.6e-13
I129	<	1.1e+02			1.1e-10
Cs137		1.1e+00	+/-	5.4e-01	1.1e-12
Eu152	<	3.0e+00			3.0e-12
Eu154	<	2.2e+00			2.2e-12
Eu155	<	2.8e+00			2.8e-12
Th32dau	<	8.0e-01			8.0e-13
U235		1.6e+01	+/-	2.3e+00	1.6e-11
U238		2.8e+02	+/-	4.9e+01	2.8e-10
U238dau	<	1.4e+00			1.4e-12
Np237	<	1.2e+00			1.2e-12
Am241	<	1.2e+01			1.2e-11
Tot Act Gam (pCi/gm)		3.0e+02		Ci/gm	3.0e-10
Y/Sr-90	<	N/R			
Gross Alpha		3.3e+01	+/-	5.1e+00	3.3e-11
Gross Beta		2.1e+02	+/-	1.8e+01	2.1e-10
AEA total	<	N/R			

CAT I CC
10/7/97

< 10K pCi
Reported as 137-Cs Betas. < 100K pCi
< 2K pC./g

Total Activity (pCi/gm) 3.0e+02
(Ci/gm) 3.0e-10

Definitions:

All errors reported at 2 standard deviations
A Assigned as residue beta from Gamma/Beta balance
For soils and natural samples, the following applies
The analysis of U238 is based on the activity of Pa234m

The analysis of Np237 is based on the activity of Pa233

U238dau is the activity of Pb214 and Bi214, short lived daughter products of U238. Equilibrium between parent and daughter products probably does not exist in disturbed materials

Th32dau is the activity of Ac228, Pb212, and Tl208, short lived daughter products of 232Th. Equilibrium between parent and daughter products may not exist in disturbed materials.

Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis

N/R means no result or analysis not requested.

Note! 152-Eu is not a 100% Beta emitter.

S E Huffhines 10-6-97
Radiological analyst Date

Albert I. Davis 10-06-97
Albert I. Davis Date
Radiological Manager

Quanterra
Environmental Services

BWa-WP

013066

Login No.: 16004

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: _____ Date: 10-8-97 Time: 08:10

Project No: 1550.232 Initiated by: Brad Mitchell

Shipper/No: AB RFA/COC Numbers: 54

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 airbill not received with shipment.
10. ☐ Other (explain below): _____

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

Notes:

Corrective Actions:

- ☐ Client's Name: _____ Client notified verbally on: _____ By: _____
- ☐ Client's Name: _____ Client notified in writing on: _____ By: _____
- ☐ Sample(s) processed "as is"
- ☐ Sample(s) on hold until: _____ If released, by whom: _____

Sample Control Supervisor Review: [signature] Date: 10-8-97

Project Management Review: [signature] Date: 10/8/97

SIGNED ORIGINAL MUST BE CONTAINED IN THE PROJECT FILE

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

000013

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.232

Category : TCLP Metals
Matrix : SOLID

Sample Date : 10/02/97
Receipt Date : 10/06/97
Report Date : 10/15/97

Client ID: BOM233

Quanterra ID : 16004-001

Analyte	Method	Extract Date	Prep Date	Analyses Date	Result	Units	Qual.	Detection Limit	Regulatory Level	Dilution
Mercury	EPA 7470	10/13/97	10/13/97	10/13/97	0.0001	MG/L	U	0.0002	0.2	1
Arsenic	EPA 6010	10/13/97	10/13/97	10/13/97	0.056	MG/L	U	0.30	5.0	1
Barium	EPA 6010	10/13/97	10/13/97	10/13/97	1.5	MG/L		0.20	100	1
Cadmium	EPA 6010	10/13/97	10/13/97	10/13/97	0.14	MG/L		0.005	1.0	1
Chromium	EPA 6010	10/13/97	10/13/97	10/13/97	0.14	MG/L		0.010	5.0	1
Lead	EPA 6010	10/13/97	10/13/97	10/13/97	0.67	MG/L		0.10	5.0	1
Selenium	EPA 6010	10/13/97	10/13/97	10/13/97	0.033	MG/L	U	0.25	1.0	1
Silver	EPA 6010	10/13/97	10/13/97	10/13/97	0.0053	MG/L	U	0.010	5.0	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.232

Category : TCLP Metals
Matrix : SOLID

Sample Date : 10/02/97
Receipt Date : 10/06/97
Report Date : 10/15/97

Client ID: B0M233

Quanterra ID : 16004-001MS

Analyte	Method	Extract Date	Prep Date	Analyses Date	Result	Units	Qual.	Detection Limit	Regulatory Level	Dilution
Mercury	EPA 7470	10/13/97	10/13/97	10/13/97	104	%REC				1
Arsenic	EPA 6010	10/13/97	10/13/97	10/13/97	100	%REC				1
Barium	EPA 6010	10/13/97	10/13/97	10/13/97	101	%REC				1
Cadmium	EPA 6010	10/13/97	10/13/97	10/13/97	100	%REC				1
Chromium	EPA 6010	10/13/97	10/13/97	10/13/97	98	%REC				1
Lead	EPA 6010	10/13/97	10/13/97	10/13/97	97	%REC				1
Selenium	EPA 6010	10/13/97	10/13/97	10/13/97	110	%REC				1
Silver	EPA 6010	10/13/97	10/13/97	10/13/97	106	%REC				1

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Richland, WA 99352

Project: 550.232

Category : TCLP Metals
Matrix : SOLID

Sample Date : 10/02/97
Receipt Date : 10/06/97
Report Date : 10/15/97

Client ID: B0H233

Quanterra ID : 16004-001MSD

Analyte	Method	Extract Date	Prep Date	Analyses Date	Result	Units	Qual.	Detection Limit	Regulatory Level	Dilution
Mercury	EPA 7470	10/13/97	10/13/97	10/13/97	98	%REC				1
Arsenic	EPA 6010	10/13/97	10/13/97	10/13/97	98	%REC				1
Barium	EPA 6010	10/13/97	10/13/97	10/13/97	100	%REC				1
Cadmium	EPA 6010	10/13/97	10/13/97	10/13/97	100	%REC				1
Chromium	EPA 6010	10/13/97	10/13/97	10/13/97	98	%REC				1
Lead	EPA 6010	10/13/97	10/13/97	10/13/97	97	%REC				1
Selenium	EPA 6010	10/13/97	10/13/97	10/13/97	111	%REC				1
Silver	EPA 6010	10/13/97	10/13/97	10/13/97	105	%REC				1

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0M233

Lab Name: QUANTERRA_MO Contract: 550.232

Lab Code: ITMO Case No.: SAS No.: SDG No.: W01977

Matrix (soil/water): WATER Lab Sample ID: P16004-001

Level (low/med): LOW Date Received: 10/06/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	55.9	U		P
7440-39-3	Barium	1500			P
7440-43-9	Cadmium	140			P
7440-47-3	Chromium	139			P
7439-92-1	Lead	674			P
7439-97-6	Mercury	0.10	U		CV
7782-49-2	Selenium	33.3	U		P
7440-22-4	Silver	5.3	U		P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

TCLP