

START

9613453.1428

0044659

W0919
2270



Quanterra Incorporated
2800 George Washington Way
Richland, Washington 99352

509 375-3131 Telephone
509 375-5590 Fax

CERTIFICATE OF ANALYSIS

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

April 8, 1996

Attention: Joan Kessner



SAF Number	:	B96-061
Date SDG Closed	:	March 01, 1996
Number of Samples	:	Six (6)
Sample Type	:	Other
SDG Number	:	W0919
Data Deliverable	:	Summary



I. Introduction

On March 01, 1996, six "other" matrix samples were received by the Quanterra Environmental Services Richland Laboratory (QTESRL) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Bechtel Hanford, Inc. (BHI) specific IDs:

<u>QTESRL ID#</u>	<u>BHI ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
60302201	B0H7H4*	OTHER	03/01/96
60302202	B0H7H5*	OTHER	03/01/96
60302203	B0H7H6*	OTHER	03/01/96
60302204	B0H7H7*	OTHER	03/01/96
60302205	B0H7H2	OTHER	03/01/96
60302206	B0H7H3	OTHER	03/01/96

- * B0H7H4 is a composite of 60301901-60301906, SDG W0918
- * B0H7H5 is a composite of 60301907-60301913, SDG W0918
- * B0H7H6 is a composite of 60302101-60302105, SDG W0920
- * B0H7H7 is a composite of 60302106-60302110, SDG W0920

000002

Bechtel Hanford, Inc.
April 8, 1996
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II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Alpha Spectroscopy

Americium-241 by method RICHRC-5057

Plutonium-238, -239/40 by method RICHRC-5010

Gas Proportional Counting

Strontium-90 by method RICHRC-5006

III. Quality Control

The analytical results for each analysis performed under SDG W0919 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate. Any exceptions have been noted in the "Comments" section.

Quality control sample results are reported in the same units as sample results, pCi/sample.

Modified detection limits are required for this (air filter) matrix, reported as pCi/sample.

IV. Comments

Alpha Spectroscopy

Americium-241 by method RICHRC-5057

A duplicate sample was not analyzed with this batch. The LCS, batch blank, and sample results are within contractual requirements.

Plutonium-238, -239/40 by method RICHRC-5010

A duplicate sample was not analyzed with this batch. The LCS, batch blank, and sample results are within contractual requirements.

Bechtel Hanford, Inc.
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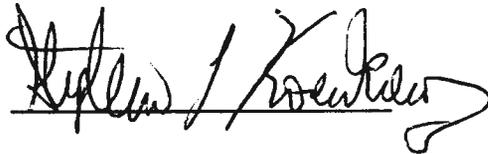
Gas Proportional Counting

Strontium-90 by method RICHRC-5006

A duplicate sample was not analyzed with this batch. The LCS, batch blank, and sample results are within contractual requirements.

I certify that this Certificate of Analysis 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:



Suzanne Gaines
Project Manager

FOR
S.G.
4-8-96

9613453.1431



SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND SDG: W0919
LAB SAMPLE ID: 60302201 MATRIX: OTHER
CLIENT ID: B0H7H4 DATE RECEIVED: 3/1/96 11:00:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
AM-241	1.54E-01	8.1E-02	8.5E-02	5.22E-02	pCi/sa	77.60%	RICHRC5057
PU-238	8.75E-03	2.3E-02	2.3E-02	5.74E-02	pCi/sa	70.50%	RICHRC5010
PU239/40	7.75E-02	6.1E-02	6.2E-02	5.72E-02	pCi/sa	70.50%	RICHRC5010
STRONTIUM	9.34E-01	4.2E-01	5.3E-01	9.69E-01	pCi/sa	94.30%	RICHRC5006

Number of Results:

000005

9613453.1432

**SAMPLE RESULTS**

LAB NAME: ITAS-RICHLAND **SDG:** W0919
LAB SAMPLE ID: 60302202 **MATRIX:** OTHER
CLIENT ID: B0H7H5 **DATE RECEIVED:** 3/1/96 11:00:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
AM-241	1.73E-01	8.8E-02	9.2E-02	5.48E-02	pCi/sa	74.30%	RICHRC5057
PU-238	-5.15E-03	5.2E-03	5.2E-03	8.60E-02	pCi/sa	53.10%	RICHRC5010
PU239/40	-5.14E-03	5.1E-03	5.2E-03	8.58E-02	pCi/sa	53.10%	RICHRC5010
STRONTIUM	2.57E+00	5.6E-01	1.0E+00	9.62E-01	pCi/sa	93.60%	RICHRC5006

Number of Results:

000006

9613453.1433

**SAMPLE RESULTS**

LAB NAME: ITAS-RICHLAND **SDG:** W0919
LAB SAMPLE ID: 60302203 **MATRIX:** OTHER
CLIENT ID: B0H7H6 **DATE RECEIVED:** 3/1/96 11:00:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
AM-241	1.03E-02	2.5E-02	2.5E-02	5.61E-02	pCi/sa	63.50%	RICHRC5057
PU-238	-3.68E-03	4.3E-03	4.3E-03	7.65E-02	pCi/sa	52.60%	RICHRC5010
PU239/40	1.28E-02	3.1E-02	3.1E-02	6.98E-02	pCi/sa	52.60%	RICHRC5010
STRONTIUM	3.36E-01	3.6E-01	3.8E-01	9.51E-01	pCi/sa	93.30%	RICHRC5006

Number of Results:

000007

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND SDG: W0919
LAB SAMPLE ID: 60302204 MATRIX: OTHER
CLIENT ID: B0H7H7 DATE RECEIVED: 3/1/96 11:00:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
AM-241	-7.28E-04	1.5E-03	1.5E-03	3.66E-02	pCi/sa	87.80%	RICHRC5057
PU-238	2.06E-02	3.2E-02	3.2E-02	5.12E-02	pCi/sa	76.40%	RICHRC5010
PU239/40	8.49E-03	2.3E-02	2.3E-02	5.57E-02	pCi/sa	76.40%	RICHRC5010
STRONTIUM	-3.82E-02	2.8E-01	2.8E-01	8.75E-01	pCi/sa	94.20%	RICHRC5006

Number of Results:

9613453.1435



SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND SDG: W0919
LAB SAMPLE ID: 60302205 MATRIX: OTHER
CLIENT ID: B0H7H2 DATE RECEIVED: 3/1/96 11:00:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
STRONTIUM	2.53E-01	3.5E-01	3.6E-01	9.54E-01	pCi/sa	91.80%	RICHRC5006

Number of Results:

000009

9613453.1436



SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND SDG: W0919
LAB SAMPLE ID: 60302206 MATRIX: OTHER
CLIENT ID: B0H7H3 DATE RECEIVED: 3/1/96 11:00:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
STRONTIUM	1.77E+00	5.0E-01	7.8E-01	9.61E-01	pCi/sa	87.50%	RICHRC5006

Number of Results:

000010

9613453.1437

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s):	603022			
Client ID:	BH I			
Due Date:	3/31/96			
Lab Sample Number or SDG:	40919			
Method Test Parameters:	AM			
Matrix:	other			
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			/	/
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?	/			/
2. Were all sample holding times met?	/			/
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	/			/
C. QC Samples				
1. Is the blank yield within acceptance criteria	/			/
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	/			/
3. Is the blank result < 1/2 the Contract Detection Limit?	/			/
4. Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			/	/
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			/	/
6. Is the LCS result within acceptance criteria?	/			/
7. Is the LCS yield within acceptance criteria	/			/
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	/			/
9. MS/MSD results and yield meet acceptance criteria?			/	/
10. Duplicate sample results and yield meet acceptance criteria?			/	/
D. Other				
1. Are all Nonconformances included and noted?			/	/
2. Are all required forms filed out?	/			/
3. Correct methodology used?	/			/
4. Transcription checked? ④ 4/1/96	/			/ JMC
5. Were all calculations checked at a minimum frequency?	/			/
6. Units checked?	/			/

Comments on any "No" response: _____

First Level Review: Paul [Signature]
 Second Level Review: [Signature]
 Form #: LS-038,2 /96, Rev.4

Date: 3-31-4-96
 Date: 4-1-96

000013

9613453.1438

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s): 603022
 Client ID: BHI
 Due Date: 3/31/96
 Lab Sample Number or SDG: W0919
 Method Test Parameters: PU
 Matrix: Air F: Her

Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			/	✓
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?	/			✓
2. Were all sample holding times met?	/			✓
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	/			✓
C. QC Samples				
1. Is the blank yield within acceptance criteria	/			✓
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	/			✓
3. Is the blank result < 1/2 the Contract Detection Limit?	/			✓
4. Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			/	✓
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			/	✓
6. Is the LCS result within acceptance criteria?	/			✓
7. Is the LCS yield within acceptance criteria	/			✓
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	/			✓
9. MS/MSD results and yield meet acceptance criteria?			/	✓
10. Duplicate sample results and yield meet acceptance criteria?			/	✓
D. Other				
1. Are all Nonconformances included and noted?			/	✓
2. Are all required forms filed out?	/			✓
3. Correct methodology used?	/			✓
4. Transcription checked? (3/29/96)	✓			JK
5. Were all calculations checked at a minimum frequency?	/			✓
6. Units checked?	/			✓

Comments on any "No" response: _____

First Level Review: Jack Kuzma
 Second Level Review: Stalin J. Escobedo
 Form #: LS-038,2/96, Rev.4

Date: 7/24-1-96
3-4-1-96
 Date: 4-1-96

000014

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s): <u>603022</u>				
Client ID: <u>BHI</u>				
Due Date: <u>3-31-96</u>				
Lab Sample Number or SDG: <u>W0919 03-022</u>				
Method Test Parameters: <u>TOTAL-SR</u>				
Matrix: <u>ether</u>				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			/	✓
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?	/			✓
2. Were all sample holding times met?	/			✓
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	/			✓
C. QC Samples				
1. Is the blank yield within acceptance criteria	/			✓
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	/			✓
3. Is the blank result < 1/2 the Contract Detection Limit?	/			✓
4. Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			/	✓
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			/	✓
6. Is the LCS result within acceptance criteria?	/			✓
7. Is the LCS yield within acceptance criteria	/			✓
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	/			✓
9. MS/MSD results and yield meet acceptance criteria?			/	✓
10. Duplicate sample results and yield meet acceptance criteria?			/	✓
D. Other				
1. Are all Nonconformances included and noted?			/	✓
2. Are all required forms filed out?			/	✓
3. Correct methodology used?	/			✓
4. Transcription checked? <u>review 3/22/96</u>	✓			✓
5. Were all calculations checked at a minimum frequency?	/			✓
6. Units checked?	/			✓

Comments on any "No" response: NO Duplicate sample

First Level Review: [Signature]
 Second Level Review: [Signature]
 Form #: LS-038,2 /96, Rev.4

Date: 3-22-96
 Date: 3-26-96

9613453.1440

**CHAIN OF
CUSTODY FORMS**

000016

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Data Turnaround

Priority

Normal
3-21-96

Collector <i>Dale Dyekman / Diane Call</i>	Company Contact <i>BHI</i>	Telephone <i>373-4990</i>
Project Designation <i>N - Facility Biotlog Sampling - Air Filter</i>	Sampling Location <i>100 Area</i>	SAF No. <i>B96-061</i>
Ice Chest No.	Field Logbook No.	Method of Shipment

Shipped To <i>Quarterns</i>	Offsite Property No.	Bill of Lading/Air Bill No.
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Possible Sample Hazards/Remarks	Preservation	<i>NA</i>																	
	Type of Container	<i>filter</i>																	
	No. of Container(s)	<i>1</i>																	
Special Handling and/or Storage	Volume	<i>NA</i>																	

SAMPLE ANALYSIS <i>603019</i>		<i>SDG</i>	<i>W0918</i>	Gross alpha, gross beta	<i>8-60302001</i>														
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Sample No.	Matrix*	Date Sampled	Time Sampled																
<i>B0H7D9</i>	<i>1 Filter</i>	<i>8-2-95</i>	<i>0750</i>	<i>X</i>															
<i>B0H7F0</i>	<i>2 F</i>	<i>8-9-95</i>	<i>12:30</i>	<i>X</i>															
<i>B0H7F1</i>	<i>3 F</i>	<i>9-6-95</i>	<i>1430</i>	<i>X</i>															
<i>B0H7F2</i>	<i>4 F</i>	<i>9-13-95</i>	<i>1110</i>	<i>X</i>															
<i>B0H7F3</i>	<i>5 F</i>	<i>9-20-95</i>	<i>0855</i>	<i>X</i>															
<i>B0H7F4</i>	<i>6 F</i>	<i>10-4-95</i>	<i>1226</i>	<i>X</i>															

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix*	
Relinquished By <i>Diane Call</i>	Date/Time <i>259-96/14:00</i>	Received By <i>Bill White</i>	Date/Time <i>1400</i>	Composite following groups: <i>1-6 SDG</i> <i>7-13 W0919</i> <i>14-18</i> <i>19-23</i> Analyses: GEA (Pu-238, -235/240, Am-241, Sr-90) <i>60302201</i>				HEIS number <i>1 B0H7H4</i> <i>2 B0H7H5</i> <i>3 B0H7H6</i> <i>4 B0H7H7</i>	
Relinquished By <i>Bill White</i>	Date/Time <i>1100</i>	Received By <i>Quarterns</i>	Date/Time <i>1100</i>						
Relinquished By <i>Bill White</i>	Date/Time <i>3-1-96</i>	Received By <i>Karen Schlenker</i>	Date/Time <i>3-1-96</i>						
Relinquished By	Date/Time	Received By	Date/Time						

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

000017

9613453.1441

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Data Turnaround
 Priority
 Normal

Collector <i>Dale Dyckman / Diane Call</i>	Company Contact <i>BITT</i>	Telephone <i>373-4990</i>
Project Designation <i>N-Facility Backlog/Compliance</i>	Sampling Location <i>15D Area</i>	SAIP No. <i>896-061</i>
Ice Chest No.	Field Logbook No.	Method of Shipment
Shipped To <i>Quarters</i>	Offsite Property No.	Bill of Lading/Air Bill No.

Possible Sample Hazards/Remarks	Preservation	<i>NA</i>											
	Type of Container	<i>Filter</i>											
	No. of Container(s)	<i>1</i>											
	Special Handling and/or Storage	Volume	<i>NA</i>										

SAMPLE ANALYSIS
603019 *SDA* *W0918* *8.251 alpha, 5mic hole* *γ* *60302002*

Sample No.	Matrix*	Date Sampled	Time Sampled										
<i>B0H7F57</i>	<i>F</i>	<i>10-18-95</i>	<i>1040</i>	<i>X</i>									
<i>B0H7F68</i>	<i>F</i>	<i>11-1-95</i>	<i>1025</i>	<i>X</i>									
<i>B0H7F79</i>	<i>F</i>	<i>11-15-95</i>	<i>1310</i>	<i>X</i>									
<i>B0H7F810</i>	<i>F</i>	<i>11-29-95</i>	<i>0940</i>	<i>X</i>									
<i>B0H7F911</i>	<i>F</i>	<i>12-14-95</i>	<i>1310</i>	<i>X</i>									
<i>B0H7G012</i>	<i>F</i>	<i>12-27-95</i>	<i>1430</i>	<i>X</i>									

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By <i>Diane Call</i>	Date/Time <i>2-29-96/14:00</i>	Received By <i>Karl White</i>	Date/Time <i>1400</i>
Relinquished By <i>Karl White</i>	Date/Time <i>3-1-96</i>	Received By <i>Quanta</i>	Date/Time <i>1100</i>
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
SDA W0919
Pu Am SR
60302002
B0H7H5

- 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

000018

9613453.1442

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Data Turnaround

Priority

Normal

Collector <i>Dale Dyckman / Diane Call</i>	Company Contact <i>BHI</i>	Telephone <i>373-4990</i>
Project Designation <i>N-Facility Backlog / Compliance - Air Filters</i>	Sampling Location <i>150 Area 2</i>	SAF No. <i>B96-061</i>
Ice Chest No.	Field Logbook No.	Method of Shipment

Shipped To <i>Quarterra</i>	Offsite Property No.	Bill of Lading/Air Bill No.
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Possible Sample Hazards/Remarks	Preservation	<i>NA</i>																	
	Type of Container	<i>Filter</i>																	
	No. of Container(s)	<i>1</i>																	
Special Handling and/or Storage	Volume	<i>NA</i>																	

SAMPLE ANALYSIS
603019 *SDG W0918* *gross alpha, gross beta* *8-60302003*

Sample No.	Matrix*	Date Sampled	Time Sampled																
<i>BOH 7G1 13</i>	<i>F</i>	<i>1-10-96</i>	<i>14:30</i>	<i>X</i>	<i>3</i>														
<i>BOH 7G2 14</i>	<i>F</i>	<i>9-6-95</i>	<i>1330</i>	<i>X</i>	<i>60302101</i>	<i>2B</i>													
<i>BOH 7G3 15</i>	<i>F</i>	<i>10-3-95</i>	<i>1425</i>	<i>X</i>	<i>2/3/196 2</i>														
<i>BOH 7G4 16</i>	<i>F</i>	<i>11-7-95</i>	<i>1455</i>	<i>X</i>	<i>3</i>														
<i>BOH 7G5 17</i>	<i>F</i>	<i>12-5-95</i>	<i>1400</i>	<i>X</i>	<i>4</i>														
<i>BOH 7G6 18</i>	<i>F</i>	<i>1-3-96</i>	<i>1300</i>	<i>X</i>	<i>5</i>														

SDG W0920

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix*	
Relinquished By <i>Diane Call</i>	Date/Time <i>3-29-96/14:00</i>	Received By <i>B. White</i>	Date/Time <i>2-29-96</i>	<i>SDG W0919</i> <i>Pu Am SR</i> <i>BOH 7H6</i> <i>60302203</i>		<ul style="list-style-type: none"> S - Soil SB - 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 	
Relinquished By <i>B. White</i>	Date/Time <i>1100</i>	Received By <i>B. White</i>	Date/Time <i>3-1-96</i>				
Relinquished By	Date/Time	Received By	Date/Time				

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

000019

9613453.1443

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Data Turnaround

Priority
 Normal *BC 2-20-96*

Collector <i>DALE DYKMAN / Diane Call</i>	Company Contact <i>BHI</i>	Telephone <i>373-4490</i>
Project Designation <i>DOH PART REQUIREMENT</i>	Sampling Location <i>100-N</i>	SAI No. <i>B96-061</i>
Ice Chest No.	Field Logbook No.	Method of Shipment
Shipped To <i>QUANTARA</i>	Offsite Property No.	Bill of Lading/Air Bill No.

Possible Sample Hazards/Remarks	Preservation	<i>N/A</i>	<i>N/A</i>							
	Type of Container	<i>Filter</i>	<i>Filter</i>							
	No. of Container(s)	<i>1</i>	<i>1</i>	<i>8-</i>						
	Special Handling and/or Storage	Volume	<i>N/A</i>	<i>N/A</i>						

SAMPLE ANALYSIS
603021
SDG W0920
GROSS ALPHA GROSS BETA
GEA-SR-9 GROSS-BETA

Sample No.	Matrix*	Date Sampled	Time Sampled							
<i>BOH767 06</i>	<i>F</i>	<i>9-6-95</i>	<i>1100</i>	<i>X</i>						<i>60302004-X</i>
<i>BOH768 07</i>	<i>F</i>	<i>10-3-95</i>	<i>1520</i>	<i>X</i>						
<i>BOH769 08</i>	<i>F</i>	<i>11-7-95</i>	<i>1500</i>	<i>X</i>						
<i>BOH7H0 09</i>	<i>F</i>	<i>12-5-95</i>	<i>1100</i>	<i>X</i>						
<i>BOH7H1 10</i>	<i>F</i>	<i>1-3-96</i>	<i>1241</i>	<i>X</i>						
<i>BOH7H2 11</i>	<i>F</i>	<i>1-24-96</i>	<i>1430</i>	<i>X</i>						<i>60302005 X</i>

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By <i>Diane Call</i>	Date/Time <i>2-29-96/14:00</i>	Received By <i>[Signature]</i>	Date/Time <i>1400</i>
Relinquished By <i>[Signature]</i>	Date/Time <i>1100</i>	Received By <i>[Signature]</i>	Date/Time <i>1100</i>
Relinquished By <i>[Signature]</i>	Date/Time <i>3-1-96</i>	Received By <i>[Signature]</i>	Date/Time <i>3-1-96</i>
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
SDG W0919
Pu Am SR
BOH7H7
60302204
60302205 - BOH7H2 - SR

- Matrix*
- S - Soil
 - SB - 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

000020

9613453.1444

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Data Turnaround

Priority

Normal *BW 2-29-96*

Collector <i>DALE DYERMAN / Dime Call</i>	Company Contact <i>BHI</i>	Telephone <i>373-4490</i>
Project Designation <i>DOH PRMT REQUIREMENT</i>	Sampling Location <i>100-N</i>	SAF No. <i>B96-061</i>
Ice Chest No.	Field Logbook No.	Method of Shipment

Shipped To <i>Quateera</i>	Offsite Property No.	Bill of Lading/Air Bill No.
-------------------------------	----------------------	-----------------------------

Possible Sample Hazards/Remarks	Preservation	Type of Container	No. of Container(s)	Special Handling and/or Storage	Volume
	<i>N/A</i>	<i>N/A</i>			
	<i>Filter</i>	<i>Filter</i>			
	<i>1</i>	<i>1</i>			
	<i>N/A</i>	<i>N/A</i>			

<i>3</i> SAMPLE ANALYSIS <i>602021</i>	<i>SDG</i> <i>W0920</i>	<i>GROSS ALPHA</i> <i>GROSS BETA</i>	<i>GER-90</i> <i>Gross-Beta</i>
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Sample No.	Matrix*	Date Sampled	Time Sampled										
<i>BOH7H3 12</i>	<i>F</i>	<i>1-24-96</i>	<i>1623</i>		<i>X</i>								

CHAIN OF POSSESSION	Sign/Print Names			SPECIAL INSTRUCTIONS <i>8-60302006</i> <i>SDG-W0919</i> <i>60302206-BOH7H3-82</i>	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	
	Relinquished By <i>SG Call</i>	Date/Time <i>2-29-96/14:00</i>	Received By <i>Eric</i>			Date/Time <i>1400</i>
	Relinquished By <i>Dime Call</i>	Date/Time <i>2-29-96/14:00</i>	Received By <i>B. Walter</i>			Date/Time <i>2-29-96</i>
	Relinquished By <i>B. Walter</i>	Date/Time <i>3-1-96</i>	Received By <i>Kevin B. Walter</i>			Date/Time <i>3-1-96</i>
Relinquished By	Date/Time	Received By	Date/Time			

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

9613453.1445

000021

SDG
W0919

Figure 1

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3-1-96 1100 Client Name BHT
 Project/Client # B96-061 Batch or Case # _____
 - Cooler ID (if noted on outside of cooler) Hand Delivered

1. Condition of shipping container? OK

2. Custody Seals on cooler intact? Yes [] No []

3. Custody Seals dated and signed? Yes [] No []

4. Chain of Custody record is taped on inside of cooler lid? Yes [] No []

5. Vermiculite/packing material is: Wet [] Dry [] _____

6. Each sample is in a plastic bag? Yes [] No [] _____

7. Number of sample containers in cooler: 25

8. Samples have: tape _____ hazard labels

custody seals _____ appropriate sample labels

9. } Samples are: in good condition _____ leaking

_____ broken _____ have air bubbles

_____ other

10. Coolant Present? Yes [] No [] Sample Temperature n/a

11. The following paperwork should be accounted for (N/A if not applicable):

Chain of Custody #(s) n/a

Request for Analysis #(s) n/a

Airbill # _____ Carrier n/a

12. Have any anomalies been identified above? Yes [] No []

13. Memos have been initiated for all anomalies identified above? Yes []

Printed Name/Signature Louis Cottrell Date/Time 3-1-96 1100

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

4-Mar-1996
Page 1

Dul
3-31-96

CUSTOMER: BHI

SAMPLE DELIVERY GROUP

W0919

MATRIX : OTHER

BATCH NUMBER

03-022

ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
=====				
		<i>P0302213</i>		
		<i>15</i>		
1)		60302201	BHI BOH7H4	
2)		60302202	BHI BOH7H5	
3)		60302203	BHI BOH7H6	
4)		60302204	BHI BOH7H7	
=====				

ACTIONS (Initial & Date)

- 1) INITIATED *R02800 JH 3/4/96*
- 2) PREP LAB RECEIVED *TLW 3/18/96*
- 3) SAMPLE REMAINDER STORED *N/A*
- 4) SEPARATION LAB RECEIVED *3-25-96 LM RIC#RC 5057 Rev-0*
Cppt 3/29/96 M.V. Rick Re 5003
- 5) COUNTING/MEASUREMENT LAB *AS 3-29-96* *DD4610*
- 6) DATA REVIEWED AND ANALYTICAL PREP STORED *7/24-1-96* *RIC#RC 4-1-96* *RW*

PRIORITY

DW
3-31-96

9613453.1448

*** PUISO ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

4-Mar-1996
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP

W0919

MATRIX : OTHER

BATCH NUMBER

03-022

ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
=====				
PO302208 15				
1)	60302201	BHI	BOH7H4	
2)	60302202	BHI	BOH7H5	
3)	60302203	BHI	BOH7H6	
4)	60302204	BHI	BOH7H7	
=====				

ACTIONS (Initial & Date)

- 1) INITIATED RD2800 JH 3/4/96
 - 2) PREP LAB RECEIVED TW 3/18/96
 - 3) SAMPLE REMAINDER STORED N/A
 - 4) SEPARATION LAB RECEIVED 3-25-96 LM
 - 5) COUNTING/MEASUREMENT LAB f 3/25/96 R04610/0
 - 6) DATA REVIEWED AND ANALYTICAL PREP STORED 4/24-1-96
- ED: Rich RC 5039 3/28/96 M.V.
- RICH RC 5057 Rev. 0 3-25-96 LM
- RICH RC 5010 Rev. 1 3-27-96 LM

PRIORITY

000024

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

DW
3-31-96

CUSTOMER: BHI

SAMPLE DELIVERY GROUP

W0919

MATRIX : OTHER

BATCH NUMBER

03-022

ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
=====				
1)				<i>PO302213</i> <i>IS</i> <i>EOGF101 36.248 ± .52767 pct/SA</i>
1)		BHI	BOH7H4	
2)		BHI	BOH7H5	
3)		BHI	BOH7H6	
4)		BHI	BOH7H7	
5)		BHI	BOH7H2	
6)		BHI	BOH7H3	
=====				

ACTIONS (Initial & Date)

- 1) INITIATED *RD2800 JH 3/4/96*
- 2) PREP LAB RECEIVED *RW 3/18/96*
- 3) SAMPLE REMAINDER STORED *N/A*
- 4) SEPARATION LAB RECEIVED *3/19/96*
RichRC5006
- 5) COUNTING/MEASUREMENT LAB *RD 3/20/96*
- 6) DATA REVIEWED AND ANALYTICAL PREP STORED *RD4007 Rev 1*
JRC3-22-96
RICHRC0002 Rev 1

PRIORITY