AR TARGET SHEET

The following document was too large to scan as one unit, therefore it has been broken down into sections.

DOCUMENT # W02161-QES

EDMC # 0049195

SECTION 1 **OF** 2

Quanterra Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

W02161

0049195

REVISED CASE NARRATIVE

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

February 24, 1998

Attention: Joan Kessner

RECEIVED EDMC MAY 1998

Project Number	:	550.256
Date Received by Lab	:	January 2 through 8, 1998
Number of Samples	:	Sixteen (16)
Sample Type	:	Soil
SDG Number	:	W02161
Data Deliverable	:	Summary

I. Introduction

Between January 2 and 8, 1998, a total of sixteen (16) Soil samples were received by Quanterra, Richland and was transferred to Quanterra, St. Louis for chemical analyses. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client IDs:

St. Louis ID	BHI ID	Richland ID	Matrix	Date of Receipt
16620-001	B0MJC2	80101509	Soil	02-JAN-98
16620-002	B0MJC5	80101501	Soil	02-JAN-98
16620-003	B0MJD1	80101502	Soil	02-JAN-98
16620-004	B0MJD7	80101503	Soil	02-JAN-98
16620-005	B0MJC8	80101504	Soil	02-JAN-98
16620-006	B0MJF3	80101505	Soil	02-JAN-98
16620-007	B0MJJ1	80101506	Soil	02-JAN-98
16620-008	E0MJJ4	80101507	Soil	02-JAN-98
16620-009	B0MJF0	80101508	Soil	02-JAN-98
16620-010	B0MJD4	80101510	Soil	02-JAN-98
16621-001	B0MJF6	80103201	Soil	05-JAN-98
16621-002	B0MJF9	80103202	Soil	05-JAN-98
16626-001	B0MJK0	80150001	Soil	06-JAN-98
16626-002	B0MJJ7	80150002	Soil	06-JAN-98
16626-003	B0MJK3	80150003	Soil	06-JAN-98
16628-001	B0MJK6	80111601	Soil	08-JAN-98

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
Cyanide by EPA Method 9010, Ammonia by EPA Method 350.1, Anions (Nitrate, Nitrite and Sulfate) by EPA Method 300.0, Nitrite by EPA Method 353.1, pH by EPA 1010, Total Organic Carbon by EPA Method 9060, ICP Metals (TAL plus Bismuth, Boron and Tin), ICP Trace Metals (Arsenic, Lead and Selenium) by EPA Method 6010, Mercury by EPA Method 7471, Semivolatiles by EPA Method 8270, Volatiles by EPA Method 8260 and PCBs by EPA Method 8080.

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. pH, analyses require only a Sample Duplicate for matrix QC.

IV. Definitions

The following codes were 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 are no comments or nonconformances associated with the shipping and receiving of these samples.

Wet Chemistry
There was not sufficient sample left to do the Percent Moisture analysis or Cyanide analysis on 16620-001.

Metals
The recoveries of the matrix spike and/or the matrix spike duplicate for the following list of elements were not within the 80%-120% range, therefore all associated data was flagged with a "N".

	% REC MS	% REC MSD
Cadmium	76.2	79.9
Tin	36.2	47.5
Antimony	70.3	64.9

The recoveries of matrix spikes and/or the matrix spike duplicates for Aluminum, Manganese and Iron were also outside the 80%-120% range but the data did not require flagging because the sample concentration for these elements were greater than 4 X the spiking level.

The percent differences for the Sodium (24.6) and Zinc (10.6) serial dilution were greater than 10 which was indicated on the form ones by the "E" flag.

Semivolatiles
Sample 16620-001 had insufficient volume to perform percent moisture determinations. The sample data is reported assuming one hundred percent solids.

Volatiles 8260
The analyses on sample 16620-001 were performed in order of priority, the sample was consumed before this analysis could be performed.

PCBs
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:

Robert E. White
Robert E. White
Project Manager

WO2161

Quanterra January 22, 1998 10:22 am
Account: 10722 Project: 550.256 Quanterra-Richland QAS No. 550.256 Rev. 0
Master Sample Login: 16620

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: S Lowman PM Review: Robert E. White

Sample Header Template:

Sample No. / # / Data:	Client ID / Comments / Container Type	C-Matrix / Analysis	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No. / (Container Numbers:% Filled)
16620-001	B0MJC2	Soil	29-DEC-97 14:30	02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101509//ICAPT = TAL + BI,B,SN,AS,PB,SE.								
2	AN - Amber Glass-60ML	BNA/8270/Q4	S COLD	18-JAN-98	12-JAN-98	R3C		(349527:99 349528:98)
2		CN/9010/Q4	S COLD	18-JAN-98	12-JAN-98	R3C		(349527:99 349528:98)
2		HG/7471/Q4	S COLD	18-JAN-98	26-JAN-98	R3C		(349527:99 349528:98)
2		ICAPT/6010/Q4	S COLD	18-JAN-98	27-JUN-98	R3C		(349527:99 349528:98)
2		NH3/350.1/Q4	S COLD	18-JAN-98	26-JAN-98	R3C		(349527:99 349528:98)
2		NO2/300.0/Q4	S COLD	18-JAN-98	31-DEC-97	R3C		(349527:99 349528:98)
2		NO3/300.0/Q4	S COLD	18-JAN-98	31-DEC-97	R3C		(349527:99 349528:98)
2		NO3/353.1/Q4	S COLD	18-JAN-98	26-JAN-98	R3C		(349527:99 349528:98)
2		PCB/8080/Q4	S COLD	18-JAN-98	12-JAN-98	R3C		(349527:99 349528:98)
2		PH/9045/Q4	S COLD	18-JAN-98	12-JAN-98	R3C		(349527:99 349528:98)
2		PM/IT/Q4	S COLD	18-JAN-98	27-JUN-98	R3C		(349527:99 349528:98)
2		SO4/300.0/Q4	S COLD	18-JAN-98	26-JAN-98	R3C		(349527:99 349528:98)
2		VOA/8260/Q4	S COLD	18-JAN-98	12-JAN-98	R3C		(349527:99 349528:98)
16620-001MS	B0MJC2	Soil	29-DEC-97 14:30	02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101509//ICAPT = TAL + BI,B,SN,AS,PB,SE.								
2	AN - Amber Glass-60ML	BNA/8270/Q4	S COLD	18-JAN-98	12-JAN-98	R3C		(349527:99 349528:98)
2		HG/7471/Q4	S COLD	18-JAN-98	26-JAN-98	R3C		(349527:99 349528:98)
2		ICAPT/6010/Q4	S COLD	18-JAN-98	27-JUN-98	R3C		(349527:99 349528:98)
2		PCB/8080/Q4	S COLD	18-JAN-98	12-JAN-98	R3C		(349527:99 349528:98)
16620-001MSD	B0MJC2	Soil	29-DEC-97 14:30	02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101509//ICAPT = TAL + BI,B,SN,AS,PB,SE.								
2	AN - Amber Glass-60ML	BNA/8270/Q4	S COLD	18-JAN-98	12-JAN-98	R3C		(349527:99 349528:98)
2		HG/7471/Q4	S COLD	18-JAN-98	26-JAN-98	R3C		(349527:99 349528:98)
2		ICAPT/6010/Q4	S COLD	18-JAN-98	27-JUN-98	R3C		(349527:99 349528:98)
2		PCB/8080/Q4	S COLD	18-JAN-98	12-JAN-98	R3C		(349527:99 349528:98)
16620-002	B0MJC5	Soil	29-DEC-97 16:05	02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101501//ICAPT = TAL + BI,B,SN,AS,PB,SE.								
2	AN - Amber Glass-60ML	BNA/8270/Q4	S COLD	18-JAN-98	12-JAN-98	R3C		(349533:95 349534:94)
4		CN/9010/Q4	S COLD	18-JAN-98	12-JAN-98	R3C		(349531:97 349532:96 349533:95 349534:94)
2		HG/7471/Q4	S COLD	18-JAN-98	26-JAN-98	R3C		(349531:97 349532:96)
2		ICAPT/6010/Q4	S COLD	18-JAN-98	27-JUN-98	R3C		(349531:97 349532:96)
4		NH3/350.1/Q4	S COLD	18-JAN-98	26-JAN-98	R3C		(349531:97 349532:96 349533:95 349534:94)

3*-Sample has not been rad screened.

Quanterra January 22, 1998 10:22 am
Account: 10722 Project: 550.256 Quanterra-Richland QAS No. 550.256 Rev. 0
Master Sample Login: 16620

Project Manager: W. Price

Draft: Final: Entered and Reviewed by:_____ PM Review:_____

Sample Header Template: _____

Sample No. / Comments	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
# Container Type		Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
Data:								
4		NO2/300.0/Q4	S	COLD	18-JAN-98	31-DEC-97	R3C	(349531:97 349532:96 349533:95 349534:94)
4		NO3/300.0/Q4	S	COLD	18-JAN-98	31-DEC-97	R3C	(349531:97 349532:96 349533:95 349534:94)
4		NO3/353.1/Q4	S	COLD	18-JAN-98	26-JAN-98	R3C	(349531:97 349532:96 349533:95 349534:94)
2		PCB/8080/Q4	S	COLD	18-JAN-98	12-JAN-98	R3C	(349533:95 349534:94)
4		PH/9045/Q4	S	COLD	18-JAN-98	12-JAN-98	R3C	(349531:97 349532:96 349533:95 349534:94)
4		PM/IT/Q4	S	COLD	18-JAN-98	27-JUN-98	R3C	(349531:97 349532:96 349533:95 349534:94)
4		SO4/300.0/Q4	S	COLD	18-JAN-98	26-JAN-98	R3C	(349531:97 349532:96 349533:95 349534:94)
2		VOA/8260/Q4	S	COLD	18-JAN-98	12-JAN-98	109D	(349529:99 349530:98)
16620-002MS	B0MJC5	Soil	29-DEC-97 16:05	02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101501//ICAPT - TAL + BI,B,SN,AS,PB,SE.								
2 AN - Amber Glass-60ML		VOA/8260/Q4	S	COLD	18-JAN-98	12-JAN-98	109D	(349529:99 349530:98)
16620-002MSD	B0MJC5	Soil	29-DEC-97 16:05	02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101501//ICAPT - TAL + BI,B,SN,AS,PB,SE.								
2 AN - Amber Glass-60ML		VOA/8260/Q4	S	COLD	18-JAN-98	12-JAN-98	109D	(349529:99 349530:98)
16620-003	B0MJD1	Soil	30-DEC-97 12:40	02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101502//ICAPT - TAL + BI,B,SN,AS,PB,SE.								
2 AN - Amber Glass-60ML		BNA/8270/Q4	S	COLD	18-JAN-98	13-JAN-98	R3C	(349539:95 349540:94)
4		CN/9010/Q4	S	COLD	18-JAN-98	13-JAN-98	R3C	(349537:97 349538:96 349539:95 349540:94)
2		HG/7471/Q4	S	COLD	18-JAN-98	27-JAN-98	R3C	(349537:97 349538:96)
2		ICAPT/6010/Q4	S	COLD	18-JAN-98	28-JUN-98	R3C	(349537:97 349538:96)
4		NH3/350.1/Q4	S	COLD	18-JAN-98	27-JAN-98	R3C	(349537:97 349538:96 349539:95 349540:94)
4		NO2/300.0/Q4	S	COLD	18-JAN-98	01-JAN-98	R3C	(349537:97 349538:96 349539:95 349540:94)
4		NO3/300.0/Q4	S	COLD	18-JAN-98	01-JAN-98	R3C	(349537:97 349538:96 349539:95 349540:94)
4		NO3/353.1/Q4	S	COLD	18-JAN-98	27-JAN-98	R3C	(349537:97 349538:96 349539:95 349540:94)
2		PCB/8080/Q4	S	COLD	18-JAN-98	13-JAN-98	R3C	(349539:95 349540:94)
4		PH/9045/Q4	S	COLD	18-JAN-98	13-JAN-98	R3C	(349537:97 349538:96 349539:95 349540:94)

*-Sample has not been rad screened

Quanterra January 22, 1998 10:22 am
Account: 10722 Project: 550.256 Quanterra-Richland QAS No. 550.256 Rev. 0
Master Sample Login: 16620

Project Manager: W. Price

Draft: Final: Entered and Reviewed by:_____ PM Review:_____

Sample Header Template: _____

Sample No. / # / Comments / Data:	Client ID / Container Type	C-Matrix / Analysis	Date: Collected / Class	Received / Preservative	Due / Anal. Due Date	Shipper / Hold Date	Site	Rad Category	Rad Sample No. (Container Numbers:% Filled)
4		PM/IT/Q4	S	COLD	18-JAN-98	28-JUN-98	R3C		(349537:97 349538:96 349539:95 349540: 94)
4		SO4/300.0/Q4	S	COLD	18-JAN-98	27-JAN-98	R3C		(349537:97 349538:96 349539:95 349540: 94)
2		VOA/8260/Q4	S	COLD	18-JAN-98	13-JAN-98	109D		(349535:99 349536:98)
16620-004	B0MJD7	Soil	31-DEC-97 09:30	02-JAN-98 10:50	22-JAN-98	AIRBORNE		1	Screening not Required
RICHLAND I.D. 80101503//ICAPT = TAL + BI,B,SN,AS,PB,SE.									
2	AN - Amber Glass-60ML	BNA/8270/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C		(349545:95 349546:94)
4		CN/9010/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C		(349543:97 349544:96 349545:95 349546: 94)
2		HG/7471/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C		(349543:97 349544:96)
2		ICAPT/6010/Q4	S	COLD	18-JAN-98	29-JUN-98	R3C		(349543:97 349544:96)
4		NH3/350.1/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C		(349543:97 349544:96 349545:95 349546: 94)
4		NO2/300.0/Q4	S	COLD	18-JAN-98	02-JAN-98	R3C		(349543:97 349544:96 349545:95 349546: 94)
4		NO3/300.0/Q4	S	COLD	18-JAN-98	02-JAN-98	R3C		(349543:97 349544:96 349545:95 349546: 94)
4		NO3/353.1/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C		(349543:97 349544:96 349545:95 349546: 94)
2		PCB/8080/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C		(349545:95 349546:94)
4		PH/9045/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C		(349543:97 349544:96 349545:95 349546: 94)
4		PM/IT/Q4	S	COLD	18-JAN-98	29-JUN-98	R3C		(349543:97 349544:96 349545:95 349546: 94)
4		SO4/300.0/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C		(349543:97 349544:96 349545:95 349546: 94)
2		VOA/8260/Q4	S	COLD	18-JAN-98	14-JAN-98	109D		(349541:99 349542:98)
16620-005	B0MJC8	Soil	30-DEC-97 09:20	02-JAN-98 10:50	22-JAN-98	AIRBORNE		1	Screening not Required
RICHLAND I.D. 80101504//ICAPT = TAL + BI,B,SN,AS,PB,SE.									
2	AN - Amber Glass-60ML	BNA/8270/Q4	S	COLD	18-JAN-98	13-JAN-98	R3C		(349551:95 349552:94)
4		CN/9010/Q4	S	COLD	18-JAN-98	13-JAN-98	R3C		(349549:97 349550:96 349551:95 349552: 94)
2		HG/7471/Q4	S	COLD	18-JAN-98	27-JAN-98	R3C		(349549:97 349550:96)
2		ICAPT/6010/Q4	S	COLD	18-JAN-98	28-JUN-98	R3C		(349549:97 349550:96)
4		NH3/350.1/Q4	S	COLD	18-JAN-98	27-JAN-98	R3C		(349549:97 349550:96 349551:95 349552: 94)
4		NO2/300.0/Q4	S	COLD	18-JAN-98	01-JAN-98	R3C		(349549:97 349550:96 349551:95 349552: 94)
4		NO3/300.0/Q4	S	COLD	18-JAN-98	01-JAN-98	R3C		(349549:97 349550:96 349551:95 349552:

3*-Sample has not been rad screened.

Quanterra January 22, 1998 10:22 am
Account: 10722 Project: 550.256 Quanterra-Richland QAS No. 550.256 Rev. 0
Master Sample Login: 16620

Project Manager: W. Price

Draft: Final: Entered and Reviewed by:_____ PM Review:_____

Sample Header Template:

Sample No. / Comments / # Container Type / Data:	Client ID	C-Matrix / Analysis	Date: Collected / Class	Received / Preservative	Due / Anal. Due Date	Shipper / Hold Date	Rad Category / Site	Rad Sample No. / (Container Numbers:% Filled)
								94)
4		NO3/353.1/Q4	S	COLD	18-JAN-98	27-JAN-98	R3C	(349549:97 349550:96 349551:95 349552: 94)
2		PCB/8080/Q4	S	COLD	18-JAN-98	13-JAN-98	R3C	(349551:95 349552:94)
4		PH/9045/Q4	S	COLD	18-JAN-98	13-JAN-98	R3C	(349549:97 349550:96 349551:95 349552: 94)
4		PM/IT/Q4	S	COLD	18-JAN-98	28-JUN-98	R3C	(349549:97 349550:96 349551:95 349552: 94)
4		SO4/300.0/Q4	S	COLD	18-JAN-98	27-JAN-98	R3C	(349549:97 349550:96 349551:95 349552: 94)
2		VOA/8260/Q4	S	COLD	18-JAN-98	13-JAN-98	109D	(349547:99 349548:98)
16620-006	B0MJF3	Soil	31-DEC-97 11:15	02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101505//ICAPT = TAL + BI,B,SN,AS,PB,SE.								
2 AN - Amber Glass-60ML		BNA/8270/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349557:95 349558:94)
4		CN/9010/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349555:97 349556:96 349557:95 349558: 94)
2		HG/7471/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349555:97 349556:96)
2		ICAPT/6010/Q4	S	COLD	18-JAN-98	29-JUN-98	R3C	(349555:97 349556:96)
4		NH3/350.1/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349555:97 349556:96 349557:95 349558: 94)
4		NO2/300.0/Q4	S	COLD	18-JAN-98	02-JAN-98	R3C	(349555:97 349556:96 349557:95 349558: 94)
4		NO3/300.0/Q4	S	COLD	18-JAN-98	02-JAN-98	R3C	(349555:97 349556:96 349557:95 349558: 94)
4		NO3/353.1/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349555:97 349556:96 349557:95 349558: 94)
2		PCB/8080/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349557:95 349558:94)
4		PH/9045/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349555:97 349556:96 349557:95 349558: 94)
4		PM/IT/Q4	S	COLD	18-JAN-98	29-JUN-98	R3C	(349555:97 349556:96 349557:95 349558: 94)
4		SO4/300.0/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349555:97 349556:96 349557:95 349558: 94)
2		VOA/8260/Q4	S	COLD	18-JAN-98	14-JAN-98	109D	(349553:99 349554:98)
16620-007	B0MJJ1	Soil	31-DEC-97 13:05	02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101506//ICAPT = TAL + BI,B,SN,AS,PB,SE.								
2 AN - Amber Glass-60ML		BNA/8270/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349563:95 349564:94)
4		CN/9010/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349561:97 349562:96 349563:95 349564: 94)
2		HG/7471/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349561:97 349562:96)

3*=Sample has not been rad screened.

Quanterra January 22, 1998 10:22 am
Account: 10722 Project: 550.256 Quanterra-Richland QAS No. 550.256 Rev. 0
Master Sample Login: 16620

Project Manager: W. Price

Draft: Final: Entered and Reviewed by:_____ PM Review:_____

Sample Header Template: _____

Sample No. / # / Data:	Client ID / Container Type / Comments	C-Matrix / Analysis	Date: Collected / Class	Received / Preservative	Due / Anal. Due Date	Shipper / Hold Date	Site	Rad Category / (Container Numbers:% Filled)	Rad Sample No.
2		ICAPT/6010/Q4	S	COLD	18-JAN-98	29-JUN-98	R3C	(349561:97 349562:96)	
4		NH3/350.1/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349561:97 349562:96 349563:95 349564:94)	
4		NO2/300.0/Q4	S	COLD	18-JAN-98	02-JAN-98	R3C	(349561:97 349562:96 349563:95 349564:94)	
4		NO3/300.0/Q4	S	COLD	18-JAN-98	02-JAN-98	R3C	(349561:97 349562:96 349563:95 349564:94)	
4		NO3/353.1/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349561:97 349562:96 349563:95 349564:94)	
2		PCB/8080/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349563:95 349564:94)	
4		PH/9045/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349561:97 349562:96 349563:95 349564:94)	
4		PM/IT/Q4	S	COLD	18-JAN-98	29-JUN-98	R3C	(349561:97 349562:96 349563:95 349564:94)	
4		SO4/300.0/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349561:97 349562:96 349563:95 349564:94)	
4		TOC/9060/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349561:97 349562:96 349563:95 349564:94)	
2		VOA/8260/Q4	S	COLD	18-JAN-98	14-JAN-98	109D	(349559:99 349560:98)	
16620-008	B0MJJ4	Soil	31-DEC-97 14:20		02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101507//ICAPT = TAL + BI,B,SN,AS,PB,SE.									
2	AN - Amber Glass-60ML	BNA/8270/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349569:95 349570:94)	
2		CN/9010/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349567:97 349568:96)	
2		HG/7471/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349567:97 349568:96)	
2		ICAPT/6010/Q4	S	COLD	18-JAN-98	29-JUN-98	R3C	(349567:97 349568:96)	
4		NH3/350.1/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349567:97 349568:96 349569:95 349570:94)	
4		NO2/300.0/Q4	S	COLD	18-JAN-98	02-JAN-98	R3C	(349567:97 349568:96 349569:95 349570:94)	
4		NO3/300.0/Q4	S	COLD	18-JAN-98	02-JAN-98	R3C	(349567:97 349568:96 349569:95 349570:94)	
4		NO3/353.1/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349567:97 349568:96 349569:95 349570:94)	
4		PCB/8080/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349567:97 349568:96 349569:95 349570:94)	
4		PH/9045/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349567:97 349568:96 349569:95 349570:94)	
4		PM/IT/Q4	S	COLD	18-JAN-98	29-JUN-98	R3C	(349567:97 349568:96 349569:95 349570:94)	
4		SO4/300.0/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349567:97 349568:96 349569:95 349570:94)	
2		VOA/8260/Q4	S	COLD	18-JAN-98	14-JAN-98	109D	(349565:99 349566:98)	

3*-Sample has not been rad screened.

000003

Quanterra January 22, 1998 10:22 am
Account: 10722 Project: 550.256 Quanterra-Richland QAS No. 550.256 Rev. 0
Master Sample Login: 16620

Project Manager: W. Price

Draft: Final: Entered and Reviewed by:_____ PM Review:_____

Sample Header Template: _____

Sample No. / # / Data:	Client ID / Container Type	C-Matrix / Analysis	Date: Collected / Class	Received / Preservative	Due / Anal. Due Date	Shipper / Hold Date	Site	Rad Category / (Container Numbers:% Filled)	Rad Sample No. / Comments
16620-009	B0MJF0	Soil	31-DEC-97 09:30		02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101508//ICAPT = TAL + BI,B,SN,AS,PB,SE.									
2	AN - Amber Glass-60ML	BNA/8270/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349575:95 349576:94)	
4		CN/9010/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349573:97 349574:96 349575:95 349576:94)	
2		HG/7471/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349573:97 349574:96)	
2		ICAPT/6010/Q4	S	COLD	18-JAN-98	29-JUN-98	R3C	(349573:97 349574:96)	
4		NH3/350.1/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349573:97 349574:96 349575:95 349576:94)	
4		NO2/300.0/Q4	S	COLD	18-JAN-98	02-JAN-98	R3C	(349573:97 349574:96 349575:95 349576:94)	
4		NO3/300.0/Q4	S	COLD	18-JAN-98	02-JAN-98	R3C	(349573:97 349574:96 349575:95 349576:94)	
4		NO3/353.1/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349573:97 349574:96 349575:95 349576:94)	
4		PCB/8080/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349573:97 349574:96 349575:95 349576:94)	
4		PH/9045/Q4	S	COLD	18-JAN-98	14-JAN-98	R3C	(349573:97 349574:96 349575:95 349576:94)	
2		PM/IT/Q4	S	COLD	18-JAN-98	29-JUN-98	R3C	(349573:97 349574:96)	
4		SO4/300.0/Q4	S	COLD	18-JAN-98	28-JAN-98	R3C	(349573:97 349574:96 349575:95 349576:94)	
2		VOA/8260/Q4	S	COLD	18-JAN-98	14-JAN-98	109D	(349571:99 349572:98)	
16620-010	B0MJD4	Soil	30-DEC-97 14:25		02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101510//ICAPT = TAL + BI,B,SN,AS,PB,SE.									
1	AN - Amber Glass-60ML	PH/9045/Q4	S	COLD	18-JAN-98	13-JAN-98	R3C	(349578:98)	
2		PM/IT/Q4	S	COLD	18-JAN-98	28-JUN-98	R3C	(349577:99 349578:98)	
1		TOC/9060/Q4	S	COLD	18-JAN-98	27-JAN-98	R3C	(349577:99)	
16620-010DUP	B0MJD4	Soil	30-DEC-97 14:25		02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101510//ICAPT = TAL + BI,B,SN,AS,PB,SE.									
1	AN - Amber Glass-60ML	PH/9045/Q4	S	COLD	18-JAN-98	13-JAN-98	R3C	(349578:98)	
1		TOC/9060/Q4	S	COLD	18-JAN-98	27-JAN-98	R3C	(349577:99)	
16620-010MS	B0MJD4	Soil	30-DEC-97 14:25		02-JAN-98 10:50	22-JAN-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80101510//ICAPT = TAL + BI,B,SN,AS,PB,SE.									
1	AN - Amber Glass-60ML	TOC/9060/Q4	S	COLD	18-JAN-98	27-JAN-98	R3C	(349577:99)	

3*-Sample has not been rad screened.

Chain of Custody Record

Temp 3.4 Cont 13708 13668
ST 10.00

Quanterra QC

QUA-4124 0797

Client: Bechtel	Project Manager: A. Koprula	Date: 1-5-98	Chain of Custody Number: 00329
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1
City / State / Zip Code	Site Contact	Lab Contact	
Project Name: SAF B98-004	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed): SEE COC

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH
80101501 BOMJC5✓											
2 JD1✓											
3 JD7✓											
4 JC8✓											
5 JF3✓											
6 JJ1✓											
7 JJ4✓											
8 JF0✓											
9 JC2✓											
10 JD4✓											

Chemical analysis pending

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

QC Requirements (Specify): SDG 1002161

1. Relinquished By: Heidelberg QES	Date: 1-5-98	Time: 16:00	1. Received By: Fred Mitchell	Date: 1-7-98	Time: 0815
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

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

Log in separately from other B98-004

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 1

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quantera Incorporated	Offsite Property No.:		Bill of Lading/Air Bill No.:

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS: ~~< 400 dpm β~~ DAS 12/29/97 ~~< 0.5 mrem/hr on sample matrix~~

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	0	0	0	0	0	0	0	0	1
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See Item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7470 (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrate, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See Item (2) in Special Instructions	VOA - 8260A (ECL), VOA - 8260A (Add On) (1-Butanol, Diethyl ether)
	100g						CCR-5	save		
	1		5	6	5/5	1	20	30	30	5

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJC2	Soil	12-29-97	1430	X		X	X	X	X	X	X	X	X

12/29/97 DAS

12/30/97 DAS

NOTE: Lineout of this analyte is incorrect. Please RUN Semi VOA per Special Inst. #2 Below

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By: R.Fahlberg	Date/Time: 1-2-98 0900	Received By: Doug Bowen
Relinquished By: Doug Bowen	Date/Time: 1-2-98/1030	Received By: Karen A. Hinkley 1-2-98 1030
Relinquished By: Karen A. Hinkley 1-2-98	Date/Time: 1600	Received By: Carol Ann Battelle
Relinquished By:	Date/Time:	Received By:

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (ECL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

NO Radioactivity detected w/ field instruments
Contact Rich Weiss, ERC sample Management for Analytical Priority

Matrix *

S	=	Soil
SG	=	Sediment
SD	=	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

Page 1 of 1

Date Turnaround: 45 days
VERIFY DATA TURNAROUND REQUIREMENTS ON SAF

Collector: R. Fahlberg	Company Contact: C. Wittreich	Telephone: 372-9586
Project Designation: 216-B-2-2 Ditch	Sampling Location: Loc East	SAF No.: B98-004
Chain No.: FRC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered
Shipped To: Quantera	Offsite Property No.	Bill of Lading/Air Bill No.
Possible Sample Hazards/Remarks: No radioactivity detected with field instruments		
Special Handling and/or Storage		

Preservation	none											
Type of Container	P											
No. of Container(s)	1											
Volume	2 ml											
SAMPLE ANALYSIS	See Note											

Sample No.	Matrix*	Date Sampled	Time Sampled										
BOMJC2	Soil	12-29-97	1430	X									
JM													
Recu	2X 60 ml	G-A	Containers	Marked	metals	&	VOA						
+ 3X													

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg	1-2-98 0500	[illegible]	1-2-98 0900
[illegible]	1-2-98 1050	[illegible]	1-2-98 1100
[illegible]	1-2-98 1100		

Sign/Print Names

SPECIAL INSTRUCTIONS: Extra analyte incase needed by laboratory original analysis canceled contact Rich Weiss of sample Mgt for analytical priority

Matrix*: S = Soil; SD = 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 Receipt	Received By	Title	Date/Time
		Will Chris Bottles	

Final Disposition	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC-96-060	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS
≈ 80,000 dpm β, < 0.5 mrem/hr on homogenized split spoon

Special Handling and/or Storage
Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2 ~~1~~ DAS 12/29/97	0	0	0	0	0	0	~~2~~ 1 0 DAS 12/29/97	~~0~~ 2	2 ~~1~~ DAS 12/29/97
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO3/NO2 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJC5	Soil	12-29-97	16:05	X 100 X2		X	X	X	X	X	X	X 100 X2	X 100 X2

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg / R.Fahlberg 1-2-98	0535	Doug Bowen	1-2-98/0810
Doug Bowen	1-2-98/1050	Laura Schlinberg	1-2-98 1050
L. Schlinberg	1-2-98 1600		

SPECIAL INSTRUCTIONS
(1) ICP Metals - 6010A (TAL), ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

Chem Bottles

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	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC96-060	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air B... No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~≈ 12,00~~ DAS 12/30/97
≈ 1,200 dpmA, < 0.5 mrem/hr

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1 2	0	0	0	0	0	0	~~1~~ 0	0 2	1 2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO/NO2 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJD1	Soil	12-30-97	12:40	X	X	X	X	X	X	X	X	X	X
				100X2	NO DAS 12/30/97							100X2	100X2

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg / R.Fahlberg	1-2-98 0910	Doug Bowen	1-2-98/0910
Doug Bowen	1-2-98/1050	Karen Hinling	1-2-98 1050
Karen Hinling	1-2-98		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

Chris Bettin

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	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2 ~~1~~	0	0	0	0	0	0	2 ~~1~~	0	2 ~~1~~
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJD7	Soil	12/31/97	09:30	X		X	X	X	X	X	X	X	X
				2X100								2X100	2X100

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg / R.Fahlberg	1-2-98 0905	Doug Bowers	1-2-98/0905
Doug Bowers	1-2-98/1050	Karen Stettenberg	1-2-98 1050
R. Stettenberg	1-2-98 1600		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL), ICP Metals - 6010A (Add-on) [Bismuth, Boron, Tin]; ICP Metals - 6010A (Supertrace) [Arsenic, Lead, Selenium]
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) [Tributyl phosphate]

Chum Bottles

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	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS
≈ 1,000 dpm β, < 0.5 mrem/hr
DAS 12/30/97

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2 ~~1~~	0	0	0	0	0	0	2 ~~1~~	0	2 ~~1~~
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	HD&HO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJC8	Soil	12-30-97	09:20	X	~~X~~	X	X	X	X	X	X	X	X
				2X100	No DAS 12/30/97							2X100	2X100

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg / R.Fahlberg	1-2-98 0900	Doug Bowers	1-2-98/0900
Doug Bowers	1-2-98/1050	Karen Stirling	1-2-98 1050
R.Stirling	1-2-98 1600		

SPECIAL INSTRUCTIONS
(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

Chem Bottles

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	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quantera Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2	0	0	0	0	0	0	2	0	2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)
BOMJF3	Soil	12/31/97	11:15	X		X	X	X	X	X	X	X	X
				2x100								2x100	2x100

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg	1-2-98 0910	[illegible]	1-2-98/0910
[illegible]	1-2-98/1050	[illegible]	1-2-98 1050
[illegible]	1-2-98 1600		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

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	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: EAC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	~~1~~ 2	0	0	0	0	0	0	~~1~~ 2	0	~~1~~ 2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO3/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJJ1	Soil	12-31-97	1305	X	X	X	X	X	X	X	X	X	X
				2X100								2X100	2X100

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg / R.Fahlberg	1-2-98 0915	D. Bowen	1-2-98/0915
D. Bowen	1-2-98/1050	Karen Fahlberg	1-2-98 1050
K. Fahlberg	1-2-98 1600		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL), ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

Chain Bottles

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	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1 2	0	0	0	0	0	0	1 2	0	1 2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJJ4	Soil	12-31-97	1420	X	~~X~~ 1	X	X	X	X	X	X	X	X
				2X100	12-31-97							2X100	2X100

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg	1-2-98 / R.Fahlberg 0915	Doug Bauer	1-2-98/0915
Doug Bauer	1-2-98/1050	Laura Hetterling	1-2-98 1050
L. Hetterling	1-2-98 1600		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL), ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

Chen Sollter

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	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Date Turnaround: 45 Days			
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: EAC96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG 12/31/97	aG	aG	aG	aG	aG	aG	aG 12/31/97	aG	aG 12/31/97
No. of Container(s)	2X	0	0	0	0	0	0	2X	0	2X
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO3/NO2 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)
BOMJF0	Soil	12/31/97	09:30	X		X	X	X	X	X	X	X	X
				2X100								2X100	2X100

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg / R.Fahlberg	1-2-98 0910	Doug Bowman	1-2-98/0910
Doug Bowman	1-2-98/1050	Kaye Ettenling	1-2-98 1100
Kaye Ettenling	1-2-98 1100		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

Clean bottles

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	B98-004	Page 1 of 2

Collector: R.Fehlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

Date Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

SAMPLE ANALYSIS

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	~~0~~ 1 BN	~~0~~ 1 BN	0	0	0	0	~~0~~ 1 BN	1	0	1
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See Item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See Item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJD4	Soil	12-30-97	1425		X					X			
				2m									
				Rec	2x	60ml	- Cont	ainers	marked		metals		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fehlberg / R. Fehlberg	1-2-98 0900	Bonny Bowen	1-2-98/0900
Bonny Bowen	1-2-98 1050	Bonny Bowen / Bill Stillwing	1050 1-2-98
Bill Stillwing / Bill Stillwing	1-2-98 1050		
FS / LS			

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL), ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

TOC & pH only

No other analysis as marked on Bottle

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
O	=	Other

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

Quantera BomJCZ CCN: 053570

215 pCi/sm

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Activator: N/A
Class CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

REF: The Health Physics and Radiological Health Handbook

The purpose of this memo is to provide direction in determining using field instruments, when samples taken in support of the 216 B 2-2 vadose zone investigations must be shipped as radioactive material as defined in Department of Transportation requirements.

Radioactive material for shipping purposes is defined by the Department of Transportation as any material that has an activity in excess of 2,000 pCi/gm. For the purpose of conservatism, the demarcation point for determining radioactive material for shipping purposes will be 1,500 pCi/gm. Two separate approaches will be used to validate the use of field instruments to determine activity in soil samples.

The first approach is to use a formula for determining beta exposure rate from solutions of radioactive material contained in the *Health Physics and Radiological Health Handbook*. This formula is 2.12 times the average energy of the beta particle in MEV, times the concentration of the isotope in uCi/gm.

$$2.12 \; X \; E \; X \; C = Rads/hr$$

Where; 2.12 is a conversion factor
E is the average energy of the beta particle (Sr90 = 0.195 MEV, Y90 = 0.935 MEV)
C is the concentration of the isotope in uCi/gm

Inserting the values for Sr/Y90 beta energy and the concentration of 1,500 pCi/gm

$$2.12 \; X \; (0.195 + 0.935) \; X \; 1.5 \; X \; 10^{-3} \; uCi/gm = 0.0036 \; Rads/hr$$

0.0036 RADS/hr is equal to 3.6 mRad/hr. The field instrument has a correction factor of 3 for beta radiation, so the RO-20 (beta/gamma dose rate instrument) would read 1.2 mRad/hr. Field readings taken at the 216 B2-2 trench showed for each 1 mRad/hr as read (uncorrected) on the RO-20, the E-600 ratemeter equipped with an SH-380 plastic scintillator, read 100,000 dpm. Therefore, from the above comparison, a sample with an activity of 1,500 pCi/gm would read 1.2 mRad/hr on the RO-20 and 120,000 dpm on the E-600 equipped with a SH-380 probe.

For the second approach, a soil standard with 300 pCi/gm is used. This soil standard was read with an Electra ratemeter equipped with a DP-6 plastic scintillator that had 30% efficiency for Sr90. The 300 pCi/gm source read 16 cpm per pCi/gm. Multiplying this value by 1,500 pCi/gm would result in a reading on the Electra/DP-6 equipment of 80,000 dpm (using an efficiency of 30%). So for this instrument, 1,500 pCi/gm of Sr90 would read 80,000 dpm.

From this we can gather the 1,500 pCi/gm will range between 80,000 dpm and 120,000 dpm. The RCT and sampler/shipper will verify actual readings in the field using the 300-pCi/gm Sr90 source and logged. The 1,500-pCi/gm value will be used.

SKD:dld

Copies:
R. C. Havenor X0-17
V. J. Rohay H9-02
W. S. Thompson L0-19
RadCon Engineering File/LB X0-23
Document and Info Services H0-09

CH2MHILL SUBJECT Quanterra Sample Sets BY D. St. Jones
216-B-2-2 Ditch SHEET NO. 1 of 2 DATE 1/2/98
Boring 8079 PROJECT NO.

Per Dollers Total Act. Calc Letter:

$\left(\frac{\text{cpm soil}}{\text{cpm source}}\right)$ 300 pCi/gm = Sample Activity

Assume all Sr-90

* BOMJC2

$\left(\frac{1000 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 215 pCi/gm

* BOMJC8

$\left(\frac{1500 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 321 pCi/gm

* BOMJD4

$\left(\frac{1000 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 215 pCi/gm

* BOMK85 & BOMK84
No radioactivity

* BOMJD7

$\left(\frac{150 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 32 pCi/gm

* BOMJF3

$\left(\frac{150 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 32 pCi/gm

* BOMJJ1

$\left(\frac{150 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 32 pCi/gm

216-B-2-2 Ditch SHEET NO. 2 of 2 DATE 1/2/98

Burung 8079 PROJECT NO.

* BOMJJ4

$$\left(\frac{100 \text{ cpm}}{1400 \text{ cpm}}\right) 300 \text{ pCi/gm} = \underline{22 \text{ pCi/gm}}$$

CCN: 053570

Quanterra BOM JD4

215 pCi/gm

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Woman Assistance Requested: NO
Due Date: N/A
Amount: N/A
Claim CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

REF: The Health Physics and Radiological Health Handbook

The purpose of this memo is to provide direction in determining using field instruments. when samples taken in support of the 216 B 2-2 vadose zone investigations must be shipped as radioactive material as defined in Department of Transportation requirements.

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The first approach is to use a formula for determining beta exposure rate from solutions of radioactive material contained in the *Health Physics and Radiological Health Handbook*. This formula is 2.12 times the average energy of the beta particle in MEV, times the concentration of the isotope in uCi/gm.

$$2.12 \; X \; E \; X \; C = Rads/hr$$

Where; 2.12 is a conversion factor
E is the average energy of the beta particle (Sr90 = 0.195 MEV, Y90 = 0.935 MEV)
C is the concentration of the isotope in uCi/gm

Inserting the values for Sr/Y90 beta energy and the concentration of 1,500 pCi/gm

$$2.12 \; X \; (0.195 + 0.935) \; X \; 1.5 \; X \; 10^{-3} \; uCi/gm = 0.0036 \; Rads/hr$$

0.0036 RADS/hr is equal to 3.6 mRad/hr. The field instrument has a correction factor of 3 for beta radiation, so the RO-20 (beta/gamma dose rate instrument) would read 1.2 mRad/hr. Field readings taken at the 216 B2-2 trench showed for each 1 mRad/hr as read (uncorrected) on the RO-20, the E-600 ratemeter equipped with an SH-380 plastic scintillator, read 100,000 dpm. Therefore, from the above comparison, a sample with an activity of 1,500 pCi/gm would read 1.2 mRad/hr on the RO-20 and 120,000 dpm on the E-600 equipped with a SH-380 probe.

For the second approach, a soil standard with 300 pCi/gm is used. This soil standard was read with an Electra ratemeter equipped with a DP-6 plastic scintillator that had 30% efficiency for Sr90. The 300 pCi/gm source read 16 cpm per pCi/gm. Multiplying this value by 1,500 pCi/gm would result in a reading on the Electra/DP-6 equipment of 80,000 dpm (using an efficiency of 30%). So for this instrument, 1,500 pCi/gm of Sr90 would read 80,000 dpm.

From this we can gather the 1,500 pCi/gm will range between 80,000 dpm and 120,000 dpm. The RCT and sampler/shipper will verify actual readings in the field using the 300-pCi/gm Sr90 source and logged. The 1,500-pCi/gm value will be used.

SKD:dld

Copies:
R. C. Havenor X0-17
V. J. Rohay H9-02
W. S. Thompson L0-19
RadCon Engineering File/LB X0-23
Document and Info Services H0-09

CH2MHILL SUBJECT Quanterra Sample Sets BY D. St. John
216-B-2-2 Ditch SHEET NO. 1 of 2 DATE 1/2/98
Boring 9079 PROJECT NO.

Per Dowlers Total Act. Calc Letter:

$\left(\frac{\text{cpm soil}}{\text{cpm source}}\right)$ 300 pCi/gm = Sample Activity

Assume all Sr-90

* BOMJC2

$\left(\frac{1000 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 215 pCi/gm

* BOMJC8

$\left(\frac{1500 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 321 pCi/gm

* BOMJD4

$\left(\frac{1000 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 215 pCi/gm

* BOMK85 & BOMK84
No radioactivity

* BOMJD7

$\left(\frac{150 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 32 pCi/gm

* BOMJF3

$\left(\frac{150 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 32 pCi/gm

* BOMJJ1

$\left(\frac{150 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 32 pCi/gm

CH2MHILL SUBJECT Quantera Sample Sets BY D. St. John
216-B-2-2 Ditch SHEET NO. 2 of 2 DATE 1/2/98
Burning 8079 PROJECT NO.

* BOMJJ4

$$\left(\frac{100\ cpm}{1400\ cpm}\right) 300\ pCi/gm = \underline{22\ pCi/gm}$$

Quanterra BOMJFO

CCN: 053570

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required NO
Due Date N/A
Amount N/A
Claim CCN N/A
OU 216 B2-2
TSD N/A
ERA N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

REF: The Health Physics and Radiological Health Handbook

The purpose of this memo is to provide direction in determining using field instruments, when samples taken in support of the 216 B 2-2 vadose zone investigations must be shipped as radioactive material as defined in Department of Transportation requirements.

Radioactive material for shipping purposes is defined by the Department of Transportation as any material that has an activity in excess of 2,000 pCi/gm. For the purpose of conservatism, the demarcation point for determining radioactive material for shipping purposes will be 1,500 pCi/gm. Two separate approaches will be used to validate the use of field instruments to determine activity in soil samples.

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$$2.12 \; X \; E \; X \; C = Rads/hr$$

Where; 2.12 is a conversion factor
E is the average energy of the beta particle (Sr90 = 0.195 MEV, Y90 = 0.935 MEV)
C is the concentration of the isotope in uCi/gm

Inserting the values for Sr/Y90 beta energy and the concentration of 1,500 pCi/gm

$$2.12 \; X \; (0.195 + 0.935) \; X \; 1.5 \; X \; 10^{-3} \; uCi/gm = 0.0036 \; Rads/hr$$

0.0036 RADS/hr is equal to 3.6 mRad/hr. The field instrument has a correction factor of 3 for beta radiation, so the RO-20 (beta/gamma dose rate instrument) would read 1.2 mRad/hr. Field readings taken at the 216 B2-2 trench showed for each 1 mRad/hr as read (uncorrected) on the RO-20, the E-600 ratemeter equipped with an SH-380 plastic scintillator, read 100,000 dpm. Therefore, from the above comparison, a sample with an activity of 1,500 pCi/gm would read 1.2 mRad/hr on the RO-20 and 120,000 dpm on the E-600 equipped with a SH-380 probe.

For the second approach, a soil standard with 300 pCi/gm is used. This soil standard was read with an Electra ratemeter equipped with a DP-6 plastic scintillator that had 30% efficiency for Sr90. The 300 pCi/gm source read 16 cpm per pCi/gm. Multiplying this value by 1,500 pCi/gm would result in a reading on the Electra/DP-6 equipment of 80,000 dpm (using an efficiency of 30%). So for this instrument, 1,500 pCi/gm of Sr90 would read 80,000 dpm.

From this we can gather the 1,500 pCi/gm will range between 80,000 dpm and 120,000 dpm. The RCT and sampler/shipper will verify actual readings in the field using the 300-pCi/gm Sr90 source and logged. The 1,500-pCi/gm value will be used.

SKD:dld

Copies:
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V. J. Rohay H9-02
W. S. Thompson L0-19
RadCon Engineering FIle/LB X0-23
Document and Info Services H0-09

CH2MHILL SUBJECT: _____ BY _____

SHEET NO. ____ of ____ DATE _____

PROJECT NO. _____

Per DeMers Total Activity Calc Letter:

$$\left(\frac{\text{cpm Soil}}{\text{cpm Source}}\right) 300\ \text{pCi/gm} = \text{Total Activity sample}$$

BOMJF0

$$\left(\frac{150\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = 32\ \text{pCi/gm}$$

Quantera BOM JJ4

22 pCi/gm

CCN: 053570

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Assessment Required: NO
Due Date: N/A
Assessor: N/A
Claim CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

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X0-23/531-0729

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SKD:dld

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RadCon Engineering File/LB X0-23
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CH2MHILL SUBJECT: Quanterra Sample Sets BY D. St. John
216-B-2-2 Ditch SHEET NO. 1 OF 2 DATE 1/2/98
Boring 9079 PROJECT NO.

Per Dewlers Total Act. Calc Letter:

$$\left(\frac{\text{cpm soil}}{\text{cpm source}}\right) 300\ pCi/gm = \text{Sample Activity}$$

Assume all Sr-90

* BOMJC2

$$\left(\frac{1000\ cpm}{1400\ cpm}\right) 300\ pCi/gm = \underline{215\ pCi/gm}$$

* BOMJC8

$$\left(\frac{1500\ cpm}{1400\ cpm}\right) 300\ pCi/gm = \underline{321\ pCi/gm}$$

* BOMJD4

$$\left(\frac{1000\ cpm}{1400\ cpm}\right) 300\ pCi/gm = \underline{215\ pCi/gm}$$

* BOMK85 & BOMK84
No radioactivity

* BOMJD7

$$\left(\frac{150\ cpm}{1400\ cpm}\right) 300\ pCi/gm = \underline{32\ pCi/gm}$$

* BOMJF3

$$\left(\frac{150\ cpm}{1400\ cpm}\right) 300\ pCi/gm = \underline{32\ pCi/gm}$$

* BOMJJ1

$$\left(\frac{150\ cpm}{1400\ cpm}\right) 300\ pCi/gm = \underline{32\ pCi/gm}$$

CH2MHILL SUBJECT Quanterra Sample Sets BY D. St. John
216-B-2-2 Ditch SHEET NO. 2 of 2 DATE 1/2/98
Burrng 8079 PROJECT NO.

* BOMJJ4

$$\left(\frac{100 \text{ cpm}}{1400 \text{ cpm}}\right) 300 \text{ pCi/gm} = \underline{22 \text{ pCi/gm}}$$

CCN: 053570

Quanterra BOM JJ1

32 pCi/gm

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Requested: NO
Due Date: N/A
Attention: N/A
Claim CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

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Inserting the values for Sr/Y90 beta energy and the concentration of 1,500 pCi/gm

$$2.12 \; X \; (0.195 + 0.935) \; X \; 1.5 \; X \; 10^{-3} \; uCi/gm = 0.0036 \; Rads/hr$$

0.0036 RADS/hr is equal to 3.6 mRad/hr. The field instrument has a correction factor of 3 for beta radiation, so the RO-20 (beta/gamma dose rate instrument) would read 1.2 mRad/hr. Field readings taken at the 216 B2-2 trench showed for each 1 mRad/hr as read (uncorrected) on the RO-20, the E-600 ratemeter equipped with an SH-380 plastic scintillator, read 100,000 dpm. Therefore, from the above comparison, a sample with an activity of 1,500 pCi/gm would read 1.2 mRad/hr on the RO-20 and 120,000 dpm on the E-600 equipped with a SH-380 probe.

For the second approach, a soil standard with 300 pCi/gm is used. This soil standard was read with an Electra ratemeter equipped with a DP-6 plastic scintillator that had 30% efficiency for Sr90. The 300 pCi/gm source read 16 cpm per pCi/gm. Multiplying this value by 1,500 pCi/gm would result in a reading on the Electra/DP-6 equipment of 80,000 dpm (using an efficiency of 30%). So for this instrument, 1,500 pCi/gm of Sr90 would read 80,000 dpm.

From this we can gather the 1,500 pCi/gm will range between 80,000 dpm and 120,000 dpm. The RCT and sampler/shipper will verify actual readings in the field using the 300-pCi/gm Sr90 source and logged. The 1,500-pCi/gm value will be used.

SKD:dld

Copies:
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V. J. Rohay H9-02
W. S. Thompson L0-19
RadCon Engineering File/LB X0-23
Document and Info Services H0-09

CH2MHILL SUBJECT Quanterra Sample Sets BY D. St. John
216-B-2-2 Ditch SHEET NO. 1 of 2 DATE 1/2/98
Boring 8079 PROJECT NO.

Per DeMers Total Act. Calc Letter:

$$\left(\frac{\text{cpm soil}}{\text{cpm source}}\right) 300\ \text{pCi/gm} = \text{Sample Activity}$$

Assume all Sr-90

* BOMJC2

$$\left(\frac{1000\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{215\ \text{pCi/gm}}$$

* BOMJC8

$$\left(\frac{1500\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{321\ \text{pCi/gm}}$$

* BOMJD4

$$\left(\frac{1000\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{215\ \text{pCi/gm}}$$

* BOMK85 & BOMK84
No radioactivity

* BOMJD7

$$\left(\frac{150\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{32\ \text{pCi/gm}}$$

* BOMJF3

$$\left(\frac{150\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{32\ \text{pCi/gm}}$$

* BOMJJ1

$$\left(\frac{150\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{32\ \text{pCi/gm}}$$

CH2M HILL SUBJECT Quanterra Sample Sets BY D. St. [illegible]
216-B-2-2 Ditch SHEET NO. 2 of 2 DATE 1/2/98
Boring 8079 PROJECT NO.

* BOMJJ4

$$\left(\frac{100\ cpm}{1400\ cpm}\right) 300\ pCi/gm = \underline{22\ pCi/gm}$$

CCN: 053570

Quanterra BOMJF3
32 pCi/gm

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Assumes: N/A
Closes CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

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15

For the second approach, a soil standard with 300 pCi/gm is used. This soil standard was read with an Electra ratemeter equipped with a DP-6 plastic scintillator that had 30% efficiency for Sr90. The 300 pCi/gm source read 16 cpm per pCi/gm. Multiplying this value by 1,500 pCi/gm would result in a reading on the Electra/DP-6 equipment of 80,000 dpm (using an efficiency of 30%). So for this instrument, 1,500 pCi/gm of Sr90 would read 80,000 dpm.

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SKD:dld

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W. S. Thompson L0-19
RadCon Engineering File/LB X0-23
Document and Info Services H0-09

CH2MHILL SUBJECT Quantera Sample Sets BY D. St. John
216-B-2-2 Ditch SHEET NO. 1 of 2 DATE 1/2/98
Boring 9079 PROJECT NO.

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Assume all Sr-90

* BOMJC2

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* BOMJC8

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* BOMJD4

$$\left(\frac{1000\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{215\ \text{pCi/gm}}$$

* BOMK85 & BOMK84
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216-B-2-2 Ditch SHEET NO. 2 of 2 DATE 1/2/98

Burning 8079 PROJECT NO.

* BOMJJ4

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Quantera BOM JC8
321 pCi/gm

CCN: 053570

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Weapon Acceptance Approval: NO
Due Date: N/A
Activity: N/A
Class CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

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000046

5

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SKD:dld

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V. J. Rohay H9-02
W. S. Thompson L0-19
RadCon Engineering FIle/LB X0-23
Document and Info Services H0-09

CH2MHILL SUBJECT Quanterra Sample Sets BY D. St. Johns
216-B-2-2 Ditch SHEET NO. 1 of 2 DATE 1/2/98
Boring 8079 PROJECT NO.

Per Dewlers Total Act. Calc letter:

$$\left(\frac{\text{cpm soil}}{\text{cpm source}}\right) 300\ \text{pCi/gm} = \text{Sample Activity}$$

Assume all Sr-90

* BOMJC2

$$\left(\frac{1000\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{215\ \text{pCi/gm}}$$

* BOMJC8

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* BOMJF3

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CH2MHILL SUBJECT Quanterra Sample Sets BY D. St. [illegible]
216-B-2-2 Ditch SHEET NO. 2 of 2 DATE 1/2/98
Boring 8079 PROJECT NO.

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CCN: 053570

Quanterra BOMJD7

32 pCi/gm

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Activities: N/A
Claim CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5830

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

REF: The Health Physics and Radiological Health Handbook

The purpose of this memo is to provide direction in determining using field instruments, when samples taken in support of the 216 B 2-2 vadose zone investigations must be shipped as radioactive material as defined in Department of Transportation requirements.

Radioactive material for shipping purposes is defined by the Department of Transportation as any material that has an activity in excess of 2,000 pCi/gm. For the purpose of conservatism, the demarcation point for determining radioactive material for shipping purposes will be 1,500 pCi/gm. Two separate approaches will be used to validate the use of field instruments to determine activity in soil samples.

The first approach is to use a formula for determining beta exposure rate from solutions of radioactive material contained in the *Health Physics and Radiological Health Handbook*. This formula is 2.12 times the average energy of the beta particle in MEV, times the concentration of the isotope in uCi/gm.

$$2.12 \; X \; E \; X \; C = Rads/hr$$

Where; 2.12 is a conversion factor
E is the average energy of the beta particle (Sr90 = 0.195 MEV, Y90 = 0.935 MEV)
C is the concentration of the isotope in uCi/gm

Inserting the values for Sr/Y90 beta energy and the concentration of 1,500 pCi/gm

$$2.12 \; X \; (0.195 + 0.935) \; X \; 1.5 \; X \; 10^{-3} \; uCi/gm = 0.0036 \; Rads/hr$$

0.0036 RADS/hr is equal to 3.6 mRad/hr. The field instrument has a correction factor of 3 for beta radiation, so the RO-20 (beta/gamma dose rate instrument) would read 1.2 mRad/hr. Field readings taken at the 216 B2-2 trench showed for each 1 mRad/hr as read (uncorrected) on the RO-20, the E-600 ratemeter equipped with an SH-380 plastic scintillator, read 100,000 dpm. Therefore, from the above comparison, a sample with an activity of 1,500 pCi/gm would read 1.2 mRad/hr on the RO-20 and 120,000 dpm on the E-600 equipped with a SH-380 probe.

000050

15

For the second approach, a soil standard with 300 pCi/gm is used. This soil standard was read with an Electra ratemeter equipped with a DP-6 plastic scintillator that had 30% efficiency for Sr90. The 300 pCi/gm source read 16 cpm per pCi/gm. Multiplying this value by 1,500 pCi/gm would result in a reading on the Electra/DP-6 equipment of 80,000 dpm (using an efficiency of 30%). So for this instrument, 1,500 pCi/gm of Sr90 would read 80,000 dpm.

From this we can gather the 1,500 pCi/gm will range between 80,000 dpm and 120,000 dpm. The RCT and sampler/shipper will verify actual readings in the field using the 300-pCi/gm Sr90 source and logged. The 1,500-pCi/gm value will be used.

SKD:dld

Copies:
R. C. Havenor X0-17
V. J. Rohay H9-02
W. S. Thompson L0-19
RadCon Engineering FIle/LB X0-23
Document and Info Services H0-09

CH2MHILL SUBJECT Quanterra Sample Sets 216-B-2-2 Ditch Boring 8079 BY D. St. John SHEET NO. 1 of 2 DATE 1/2/98 PROJECT NO.

Per Denlers Total Act. Calc Letter:

$$\left(\frac{\text{cpm soil}}{\text{cpm source}}\right) 300\ \text{pCi/gm} = \text{Sample Activity}$$

Assume all Sr-90

* BOMJC2

$$\left(\frac{1000\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{215\ \text{pCi/gm}}$$

* BOMJC8

$$\left(\frac{1500\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{321\ \text{pCi/gm}}$$

* BOMJD4

$$\left(\frac{1000\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{215\ \text{pCi/gm}}$$

* BOMK85 & BOMK84
No radioactivity

* BOMJD7

$$\left(\frac{150\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{32\ \text{pCi/gm}}$$

* BOMJF3

$$\left(\frac{150\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{32\ \text{pCi/gm}}$$

* BOMJJ1

$$\left(\frac{150\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{32\ \text{pCi/gm}}$$

CH2MHILL SUBJECT Quanterra Sample 25 [illegible]
216-B-2-2 Ditch SHEET NO. 2 of 2 DATE 1/2/98
Boring 8079 PROJECT NO.

* BOMJJ4

$$\left(\frac{100\ cpm}{1400\ cpm}\right) 300\ pCi/gm = \underline{22\ pCi/gm}$$

POTENTIAL HAZARDS

HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel, and the public during transportation accidents. Packaging durability is related to potential hazards of material.
- Low-level radioactive material; very low radiation hazard to people.
- Quantity of material presents low radiation hazard if released from package during accident.
- Some radioactive materials cannot be detected by commonly available instruments.
- Packages do not have RADIOACTIVE I, II, or III labels. Some may have EMPTY labels or may have the word "Radioactive" in the package marking.
- If any radioactive contamination occurs, it will be extremely low level.

FIRE OR EXPLOSION

- Some of these materials may burn, but most do not ignite readily.
- Radioactivity does not change flammability or other properties of materials.

PUBLIC SAFETY

- CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Priorities for rescue, life-saving, first aid, and control of fire and other hazards are higher than the priority for measuring radiation levels.
- Radiation Authority must be notified of accident conditions, and is usually responsible for radiological decisions.
- Isolate spill or leak area immediately for at least 25 to 50 meters (80 to 160 feet) in all directions.
- Stay upwind.
- Keep unauthorized personnel away.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

PROTECTIVE CLOTHING

- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters protective clothing will provide adequate protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 100 meters (330 feet).

Fire

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

NAERG96 RADIOACTIVE MATERIALS (LOW LEVEL RADIATION) GUIDE 161

EMERGENCY RESPONSE

FIRE

- Presence of radioactive material will not change effectiveness of fire control techniques.
- Move containers from fire area if you can do it without risk.
- Do not move damaged packages; move undamaged packages out of fire zone.

Small Fires

- Dry chemical, CO_2, water spray or regular foam.

Large Fires

- Water spray, fog (flooding amounts).

SPILL OR LEAK

- Do not touch damaged packages or spilled material.

Liquid Spills

- Cover with sand, earth or other noncombustible absorbent material.
- Cover powder spill with plastic sheet or tarp to minimize spreading.

FIRST AID

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Apply artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Injured persons who contacted released material may be a minor contamination problem to contacted persons, equipment and facilities.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

RADIOACTIVE MATERIAL, EXCEPTED PACKAGE-
LIMITED QUANTITY OF MATERIAL, 7, UN 2910

THIS PACKAGE CONFORMS TO THE CONDITIONS
AND LIMITATIONS SPECIFIED IN 49 CFR
173.421 FOR RADIOACTIVE MATERIAL,
EXCEPTED PACKAGE-LIMITED QUANTITY OF
MATERIAL, UN 2910

U.S. DEPARTMENT OF ENERGY, RICHLAND WA.
BY RUST FEDERAL SERVICES HANFORD
P.O. BOX 1970, 2355 STEVENS DRIVE
RICHLAND, WA 99352

CH2MHILL SUBJECT Quanterra Samples 216-B-2-2 Ditch Boring No 8079 BY D. St. John SHEET NO. 1 of 1 DATE 1/2/98 PROJECT NO.

BOMJC5

Activity: $\left(\frac{20,000 \text{ cpm}}{1400 \text{ cpm}}\right) 300 \text{ pCi/gm} = 4285 \text{ pCi/gm}$ for Sample

mass: $\approx (1720 \text{ ml})(1.7 \text{ gm/ml}) = 2924 \text{ gm}$

Have:

Sr-90 @ $4285 \text{ pCi/gm} = 4.285 \times 10^{-9} \text{ Ci/gm} \Rightarrow 1.3 \times 10^{-5} \text{ Ci}$

BOMJD1

Activity: $\left(\frac{37,600 \text{ cpm}}{1,400 \text{ cpm}}\right) 300 \text{ pCi/gm} \Rightarrow 8057 \text{ pCi/gm}$ for Sample

mass: $\approx (1720 \text{ ml})(1.7 \text{ gm/ml}) = 2924 \text{ gm}$

Have:

Sr-90 @ $8057 \text{ pCi/gm} = 8.057 \times 10^{-9} \text{ Ci/gm} \Rightarrow 1.4 \times 10^{-5} \text{ Ci}$

BOMJC5 and BOMJD1

Total Have:

$1.3 \times 10^{-5} \text{ Ci} + 1.4 \times 10^{-5} \text{ Ci} = 2.9 \times 10^{-5} \text{ Ci} = 7.8 \times 10^{-4} \text{ Bq}$.

Allowed:

Isotope	A_2	$A_2 (10^{-3})$
Sr-90	2.70 Ci	2.7×10^{-3} Ci

Have vs Allowed

Have 2.9×10^{-5} Ci < Allowed 2.7×10^{-3} Ci

∴ Limited Quantity

CCN: 053570

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Assignee: N/A
Closure CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

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Document and Info Services H0-09

RADIOACTIVE SHIPMENT RECORD

100903 3.

Page 1 of 2

1. SHIP FROM U.S. DEPT. OF ENERGY C/O

Company: BHI Hanford
Address: 3728 Building 300 Area
City, State, Zip: Richland WA 99301
Contact: David St John
Phone: 509-376-8540

Ship: [X] Prepaid [ ] Collect 4.

Via: [X] Motor [ ] Air Pagr [ ] UPS [ ] Rail [ ] Air Cargo [ ] Site Carrier

SHIPMENT AUTHORIZATION NUMBER

2. SHIP TO

Company: Quanterra Laboratory
Address: 2800 George WA Way
City, State, Zip: Richland WA 99301
Attention: Karen Actenberg
Phone: 509-375-3131

Radioactive - LSA [ ]
Radioactive - SCO [ ]
Type A N/A [ ]
Type B with trefoil [ ]

LSA-I [ ]
LSA-II [ ]
LSA-III [ ]
SCO-I N/A [ ]
SCO-II [ ]

Empty [ ]
Radioactive White - I [ ]
Radioactive Yellow - II [ ]
Radioactive Yellow - III [ ]
Subsidiary Hazard N/A [ ]

7. For Normal Form only

Identify

Physical Form: [ ] Liquid [ ] Gas [X] Solid

Chemical Form: [X] Elemental [ ] Metal [ ] Nitrate [ ] Oxide [ ] Mixture [ ] Other

Telephone: 509-373-3800

Highway Route Controlled Quantity [ ]
Exclusive Use Shipment with instructions [ ]
Placards Applied [ ]
If Rail Specify:
Fissile Excepted, Grams: ≤15 gm [X]
Excepted Package Statement [X]

5. HM Proper Shipping Name: _____ Radioactive Material,

	excepted package - empty packaging	7	UN2910
	excepted package - instruments or articles	7	UN2910
X	excepted package - limited quantity of material	7	UN2910
	excepted package - articles manufactured from natural or depleted uranium or natural thorium	7	UN2910
	Special Form, n.o.s.	7	UN2974
	Low Specific Activity, n.o.s.	7	UN2912
	n.o.s.	7	UN2982
	Fissile, n.o.s.	7	UN2918
	Surface Contaminated Object	7	UN2913

Warning -- Fissile Material Controlled Shipment. Do Not Load More Than N/A Packages Per Vehicle. In Loading and Storage Areas, Keep at Least 20 Feet From Other Packages Bearing Radioactive Labels.

No. Pkg.	Model Package	[illegible]	Seal No.	Seal No.	Isotope	T.I.	[illegible]	Gr. Wt. Kg.
1	Strong tight	N/A	N/A	tape	Sr 90	N/A	7.8×10^{-4} A	
Poly Cooler No. BRC98-060 containing soil samples BOM JC5 and BOM JD1 packed in double poly bags and wet ice.								
(Shipper may describe package in detail on one of the unused lines above)					TOTALS	N/A	7.8×10^{-4} A	

12. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Certifier's Signature On behalf of DOE-RL	Date	Organization	Complete Cost Code (Inc. End Function)
David St John	01/02/98	ERC Anal. Field Svcs.	DB 8200

13.

Surface Dose Rate of Package: [✓] <0.005 or _____ mSv/hr; <0.5 or _____ mrem/hr (N+G γ)

Dose Rate @ 1 Meter from Surface of Package: [✓] <0.005 or _____ mSv/hr; <0.5 or _____ mrem/hr (N+G γ)

Smears of Outer Container: [✓] <0.41 Bq (22 dpm) β γ /cm²; [✓] <0.04 Bq (2.2 dpm) α /cm²; [ ] <Tbl. 2-2 HSRCM Onsite Limits

TRUCK LOAD OR EXCLUSIVE USE: Surface [✓] <2 mSv/hr (200 mrem/hr); @ 2 meters [✓] <0.1 mSv/hr (10 mrem/hr); @ Cab or sleeper [✓] <0.02 mSv/hr (2 mrem/hr) (Using N+G γ)

Additional Data and Instructions (Inc. Readings on Internal Packaging): N/A

Signature - Radiation Monitoring	Bldg.	Survey No.	Date
Diane Doolan	3728	GW-97-0002	1.2.98

14. TRANSPORTER

Vehicle Number	DRIVER SIGNATURE	RECEIVER SIGNATURE	Date
IG-1566	Doug Bowers	Dawn Ashlinling	1-2-98

15. OFFSITE AUTHORIZATION

Shipment has been inspected and verified to be in compliance with DOT regulations

Authorized Signature	Printed Name	Date
Keith R. Smith	Keith R. Smith	1-2-98

16. AUTHORIZATION FOR SHIPMENT PASSENGER AIRCRAFT

AIR TRANSPORT CERTIFICATION: [X] N/A

CARGO AIRCRAFT: [ ] Cargo Aircraft Only Labels Applied; [ ] Ltd Qty; [ ] <3 T.I.; [ ] Research/Medical Diagnosis; [ ] Human Medical Research

Pkg. Dimensions (cm)

17. OFFSITE AUTHORIZATION

Tracking No.	Date Shipped	Routing	ETA
RMBH 2130	1-2-98	Bonded Vehicle	1-2-98
Surveyed By	**Date**	**Approved for Shipment Offsite**	**Date**
			1-2-98

54-0000-006 (08/97)

Quanterra Environmental Services

013696

BW SWP

Login No.: 16620

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Richland

Date: 1-3-98 Time: 1000

Project No: 550.256

Initiated by: [signature]

Shipper/No: A/B 599 9712 412

RFA/COC Numbers: No Rich COC

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4°C ± 2°C
     Record temperature: _____
   - ☐ pH _____
   - ☐ other: _____
3. ☐ Sample received in improper container.
4. ☐ Sample received without proper paperwork. Explain: _____
5. ☐ Paperwork received without sample.
6. ☐ No sample ID on sample container.
7. ☐ Custody tape disturbed/broken/missing.
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: 3°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 designate) [signature] Date: 1-3-98

Project Management Review: Robert E. White Date: 1-27-98

000059

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

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

Quanterra Environmental Services

BWSWP

013668

Login No.: 16620

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Bechtel Hanford

Date: 1-3-98 Time: 1000

Project No: 550.256

Initiated by: [illegible]

Shipper/No: A/B 5999712 412

RFA/COC Number: NO Rich COC B98-004

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 seal disturbed/broken/missing.
8. ☐ Sample ID on container does not match sample ID on paperwork. Explain: _____
9. ☐ All coolers on aircraft not received with shipment.
10. ☐ Other (explain below):

✓ No variances were noted during sample receipt.

Cooler Temperature Upon Receipt: 3°C

Notes:

Corrective Action:

- ☐ Client's Name: _____ Informed verbally on: _____ By: _____
- ☐ Client's Name: _____ Informed in writing on: _____ By: _____
- ☐ Samples processed "as is".
- ☐ Samples on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: [signature] Date: 1-3-98

Project Management Review: Robert E. White Date: 1-27-98

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revision 11/04/95

000060

Quanterra Environmental Services

BWSWP

013708

Login No.: 16620

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Bechtel Hanford

Date: 1-7-98 Time: 0815

Project No: 550256

Initiated by: [illegible]

Shipper No: A/B

RFA/CDC Number: 329

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 seal disturbed/broken/missing.
8. ☐ Sample ID on container does not match sample ID on paperwork. Explain: _____
9. ☐ All coolers on aircill not received with shipment.
10. ☐ Other (explain below):

✓ No variances were noted during sample receipt.

Cooler Temperature Upon Receipt: 3°C

Notes: Samples Recv'd 1-3-98

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____

☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Samples processed "as is".

☐ Samples on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: (or designee) [illegible] Date: 1-7-98

Project Management Review: [illegible] Date: 1-27-98

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

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

W02161

Quanterra January 12, 1998 12:43 pm
Account: 10722 Project: 550.256 Quanterra-Richland QAS No. 550.256 Rev. 0
Master Sample Login: 16621

Project Manager: W. Price

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

Sample Header Template:

Sample No. / #	Comments / Container Type	Client ID / Analysis	C-Matrix / Class	Date: Collected / Preservative	Received / Anal. Due Date	Due / Hold Date	Shipper / Site	Rad Category	Rad Sample No. / (Container Numbers:% Filled)
16621-001		BOMJF6	Soil	02-JAN-98 [illegible]	[illegible]	[illegible]	[illegible]	2	[illegible]
	RICHLAND ID# 80103201 VOA=TCL+1-BUTANOL& DIETHYL ETHER. METALS=TAL+BI,B,SN,AS,PB,SE. [illegible]								
1	AN - Amber Glass-120ML	BNA/8270/Q4	S	COLD	19-JAN-98	16-JAN-98	R3C		(349617:99)
1		PCB/8080/Q4	S	COLD	19-JAN-98	16-JAN-98	R3C		(349616:100)
1	AN - Amber Glass-60ML	CN/9010/Q4	S	COLD	19-JAN-98	16-JAN-98	R3C		(349610:99)
1		HG/7471/Q4	S	COLD	19-JAN-98	30-JAN-98	R3C		(349614:95)
1		ICAPT/6010/Q4	S	COLD	19-JAN-98	01-JUL-98	R3C		(349613:96)
1		NH3/350.1/Q4	S	COLD	19-JAN-98	30-JAN-98	R3C		(349609:98)
1		NO2/300.0/Q4	S	COLD	19-JAN-98	04-JAN-98	R3C		(349612:97)
1		NO3/300.0/Q4	S	COLD	19-JAN-98	04-JAN-98	R3C		(349612:97)
1		NO3/353.1/Q4	S	COLD	19-JAN-98	30-JAN-98	R3C		(349609:98)
1		PH/9045/Q4	S	COLD	19-JAN-98	16-JAN-98	R3C		(349615:94)
1		PM/IT/Q4	S	COLD	19-JAN-98	01-JUL-98	R3C		(349609:98)
1		SO4/300.0/Q4	S	COLD	19-JAN-98	30-JAN-98	R3C		(349612:97)
1		VOA/8260/Q4	S	COLD	19-JAN-98	16-JAN-98	109B		(349611:100)
16621-001DUP		BOMJF6	Soil	02-JAN-98 15:00	05-JAN-98 10:05	23-JAN-98	AIRBORNE	2	R6832-002
	RICHLAND ID# 80103201								
1	AN - Amber Glass-60ML	CN/9010/Q4	S	COLD	19-JAN-98	16-JAN-98	R3C		(349610:99)
1		NH3/350.1/Q4	S	COLD	19-JAN-98	30-JAN-98	R3C		(349609:98)
1		NO2/300.0/Q4	S	COLD	19-JAN-98	04-JAN-98	R3C		(349612:97)
1		NO3/300.0/Q4	S	COLD	19-JAN-98	04-JAN-98	R3C		(349612:97)
1		NO3/353.1/Q4	S	COLD	19-JAN-98	30-JAN-98	R3C		(349609:98)
1		SO4/300.0/Q4	S	COLD	19-JAN-98	30-JAN-98	R3C		(349612:97)
16621-001MS		BOMJF6	Soil	02-JAN-98 15:00	05-JAN-98 10:05	23-JAN-98	AIRBORNE	2	R6832-002
	RICHLAND ID# 80103201								
1	AN - Amber Glass-60ML	CN/9010/Q4	S	COLD	19-JAN-98	16-JAN-98	R3C		(349610:99)
1		NH3/350.1/Q4	S	COLD	19-JAN-98	30-JAN-98	R3C		(349609:98)
1		NO2/300.0/Q4	S	COLD	19-JAN-98	04-JAN-98	R3C		(349612:97)
1		NO3/300.0/Q4	S	COLD	19-JAN-98	04-JAN-98	R3C		(349612:97)
1		NO3/353.1/Q4	S	COLD	19-JAN-98	30-JAN-98	R3C		(349609:98)
1		SO4/300.0/Q4	S	COLD	19-JAN-98	30-JAN-98	R3C		(349612:97)
16621-002		BOMJF9	Soil	03-JAN-98 09:42	05-JAN-98 10:05	23-JAN-98	AIRBORNE	2	R6832-001
	RICHLAND ID# 80103202 VOA=TCL+1-BUTANOL& DIETHYL ETHER. METALS=TAL+BI,B,SN,AS,PB,SE. BNA=8270A(TCL)+TRIBUTYL PHOSPHATE								
1	AN - Amber Glass-120ML	BNA/8270/Q4	S	COLD	19-JAN-98	17-JAN-98	R3C		(349629:99)
1		PCB/8080/Q4	S	COLD	19-JAN-98	17-JAN-98	R3C		(349628:100)
1	AN - Amber Glass-60ML	CN/9010/Q4	S	COLD	19-JAN-98	17-JAN-98	R3C		(349622:99)

3*=Sample has not been rad screened.

000062

Quanterra January 12, 1998 12:43 pm
Account: 10722 Project: 550.256 Quanterra-Richland QAS No. 550.256 Rev. 0
Master Sample Login: 16621

Project Manager: W. Price

Draft: Final: Entered and Reviewed by:_____ PM Review:_____

Sample Header Template: _____

Sample No. Client ID C-Matrix Date: Collected Received Due Shipper Rad Category Rad Sample No.
Comments

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
Data:								
1		HG/7471/Q4	S	COLD	19-JAN-98	31-JAN-98	R3C	(349625:95)
1		ICAPT/6010/Q4	S	COLD	19-JAN-98	02-JUL-98	R3C	(349625:96)
1		NH3/350.1/Q4	S	COLD	19-JAN-98	31-JAN-98	R3C	(349621:98)
1		NO2/300.0/Q4	S	COLD	19-JAN-98	05-JAN-98	R3C	(349624:97)
1		NO3/300.0/Q4	S	COLD	19-JAN-98	05-JAN-98	R3C	(349624:97)
1		NO3/353.1/Q4	S	COLD	19-JAN-98	31-JAN-98	R3C	(349621:98)
1		PH/9045/Q4	S	COLD	19-JAN-98	17-JAN-98	R3C	(349627:94)
1		PH/IT/Q4	S	COLD	19-JAN-98	02-JUL-98	R3C	(349621:98)
1		SO4/300.0/Q4	S	COLD	19-JAN-98	31-JAN-98	R3C	(349624:97)
1		VOA/8260/Q4	S	COLD	19-JAN-98	17-JAN-98	1098	(349623:100)

00003

3*=Sample has not been rad screened.

[redacted] R3C Temp 4°C Cur# 13757 ST LOUIS

Chain of Custody Record

Quanterra QC

QUA-4124 0797

Client	Project Manager	Date	Chain of Custody Number
Bechtel	A. Koprivia	7-6-98	00333
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact

Project Name: SAF B98-004

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed): SEE COC

Special Instructions/ Conditions of Receipt

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	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis	Special Instructions/ Conditions of Receipt
80103201 BOMJF6	Chemical Analysis Bottles												
↓ 02 ↓ JF9													

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 ____

QC Requirements (Specify): SDG W02161

1. Relinquished By	Date	Time	1. Received By	Date	Time
Hudelberg QES	7-6-98	16:00	2nd Matthew	1-7-98	0815
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments:

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004-20	Page 1 of 3

Collector: R. Fahlberg/D. St. John	Company Contact: Curt Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC96-060	Field Logbook No.: EL-1281		Method of Shipment: Fed Ex
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS: Radioactivity <.d with field instruments.

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	P	P	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1L	1L	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	Iodine-129	NO2/NO3 - 353.1; Ammonia - 350.1	Total Cyanide - 9010	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)	Activity Scan	Gross Alpha; Gross Beta	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	See item (2) in Special Instructions	See item (3) in Special Instructions
801032 SDG W02161		801033					801033			801033

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJF8 01	Soil	1-2-98	1500	X	X	X 100	X 100	X 100	X	X	X 100	X 100	X

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
[illegible] for R Fahlberg	1/5/98 1005	[illegible]	1/5/98 1005
		L100CRM	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Uranium-235)
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(3) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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	B98-004-20	Page 2 of 3

Collector: R. Fahlberg/D. St. John	Company Contact: Curt Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC-96-060	Field Logbook No.: EL-1281		Method of Shipment: Fed Ex
Shipped To: Quanterra Incorporated	Offsite Property No.: ✓		Bill of Lading/Air Bill No.: ✓ ✓

Data Turnaround: **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS: Radio activity < d. with field instruments.

Special Handling and/or Storage:

Preservation	None	None	None	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	120ml	120ml

SAMPLE ANALYSIS: 801032

Sample No.	Matrix *	Sample Date	Sample Time	Isotopic Uranium	Mercury - 7471 - (CV)	Neptunium-237 801032	pH (Soil) - 9045	Selenium-79 801032	Strontium-89,90 -- Sr-90	Technetium-99	Total Uranium	PCBs - 8080	See Item (1) in Special Instructions
B0MJF6 01	Soil	1-2-98	1500		X 100	X	X 100	X	X	X	X	X 100	X 100

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: [illegible] Fahlberg	Date/Time: 1-5-98 1005	Received By: [illegible] Fahlberg	Date/Time: 1-5-98 1005
Relinquished By:	Date/Time:	Received By: [illegible]	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS

(1) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

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	B98-004-21	Page 1 of 2

Collector: R. Fahlberg/D. St. John	Company Contact: Curt Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC96-060	Field Logbook No.: EL-1281		Method of Shipment: Fed Ex
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

Data Turnaround: **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS: Radioactivity < detectable with field Instruments

Special Handling and/or Storage:

SAMPLE ANALYSIS: 801032

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	P	P	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1L	1L	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	Iodine-129 801033	NO2/NO3 - 353.1; Ammonia - 350.1	Total Cyanide - 9010	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)	Activity Scan	Gross Alpha; Gross Beta 801033	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	See item (2) in Special Instructions	See item (3) in Special Instructions 801033

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJF9 02	Soil	1-3-98	0942	X	X	X, 100	X, 100	X, 100	X	X	X, 100	X, 100	X

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
Bruce Nielson & Fahlberg	1/5/98 1005	[illegible]	1-5-98 1005
		400 pm	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy [Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]; Gamma Spec - Add-on [Uranium-235]
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) [Bismuth, Boron, Tin]; ICP Metals - 6010A (Superfund) [Arsenic, Lead, Selenium]
(3) Isotopic Thorium; Isotopic Plutonium, Plutonium-241; Americium-241/Curium-244

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	B98-004-21	Page 2 of 3

Collector: R. Fahlberg/D. St. John	Company Contact: Curt Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC96-060	Field Logbook No.: EL-1281	Method of Shipment: Fed Ex	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS: Radioactivity < detectable with field Instruments

Special Handling and/or Storage:

Preservation	None	None	None	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	120ml	120ml
SAMPLE ANALYSIS	Isotopic Uranium	Mercury - 7471 - (CV)	Neptunium-237	pH (Soil) - 9045	Selenium-79	Strontium-89,90 -- Sr-90	Technetium-99	Total Uranium	PCBs - 8080	See item (1) in Special Instructions
801032			801033		801033					

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJF9 02	Soil	1-3-98	0942		X 100	X	X 100	X	X	X	X	X 100	X 100

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: [signature] R. Fahlberg	Date/Time: 1/5/98 1005	Received By: [signature]	Date/Time: 1-5-98 1005
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

(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) [Tributyl phosphate]

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: 1/5 1000 SG#: W02161

Work Order Number: 801032 +033 SAF #: B98-004 B98-003

Shipping Container ID: 96-060 Chain of Custody #: B98-004-20 +21 B98-003-13 +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 40
5. Vermiculite/packing materials is Wet [ ] Dry [✓] n/a
6. Number of samples in shipping container: 44
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: D. Heidelberg Date: 1-5-98

Telephoned To: _____ On _____ By _____

000069

CCN: 053570

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Assignee: N/A
Class CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5820

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

REF: The Health Physics and Radiological Health Handbook

The purpose of this memo is to provide direction in determining using field instruments, when samples taken in support of the 216 B 2-2 vadose zone investigations must be shipped as radioactive material as defined in Department of Transportation requirements.

Radioactive material for shipping purposes is defined by the Department of Transportation as any material that has an activity in excess of 2,000 pCi/gm. For the purpose of conservatism, the demarcation point for determining radioactive material for shipping purposes will be 1,500 pCi/gm. Two separate approaches will be used to validate the use of field instruments to determine activity in soil samples.

The first approach is to use a formula for determining beta exposure rate from solutions of radioactive material contained in the *Health Physics and Radiological Health Handbook*. This formula is 2.12 times the average energy of the beta particle in MEV, times the concentration of the isotope in uCi/gm.

$$2.12 \; X \; E \; X \; C = Rads/hr$$

Where; 2.12 is a conversion factor
E is the average energy of the beta particle (Sr90 = 0.195 MEV, Y90 = 0.935 MEV)
C is the concentration of the isotope in uCi/gm

Inserting the values for Sr/Y90 beta energy and the concentration of 1,500 pCi/gm

$$2.12 \; X \; (0.195 + 0.935) \; X \; 1.5 \; X \; 10^{-3} \; uCi/gm = 0.0036 \; Rads/hr$$

0.0036 RADS/hr is equal to 3.6 mRad/hr. The field instrument has a correction factor of 3 for beta radiation, so the RO-20 (beta/gamma dose rate instrument) would read 1.2 mRad/hr. Field readings taken at the 216 B2-2 trench showed for each 1 mRad/hr as read (uncorrected) on the RO-20, the E-600 ratemeter equipped with an SH-380 plastic scintillator, read 100,000 dpm. Therefore, from the above comparison, a sample with an activity of 1,500 pCi/gm would read 1.2 mRad/hr on the RO-20 and 120,000 dpm on the E-600 equipped with a SH-380 probe.

For the second approach, a soil standard with 300 pCi/gm is used. This soil standard was read with an Electra ratemeter equipped with a DP-6 plastic scintillator that had 30% efficiency for Sr90. The 300 pCi/gm source read 16 cpm per pCi/gm. Multiplying this value by 1,500 pCi/gm would result in a reading on the Electra/DP-6 equipment of 80,000 dpm (using an efficiency of 30%). So for this instrument, 1,500 pCi/gm of Sr90 would read 80,000 dpm.

From this we can gather the 1,500 pCi/gm will range between 80,000 dpm and 120,000 dpm. The RCT and sampler/shipper will verify actual readings in the field using the 300-pCi/gm Sr90 source and logged. The 1,500-pCi/gm value will be used.

SKD:dld

Copies:
R. C. Havenor X0-17
V. J. Rohay H9-02
W. S. Thompson L0-19
RadCon Engineering File/LB X0-23
Document and Info Services H0-09

Client Sample Screening Results

06-Jan-98

(B) 1/6/98

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0JD11		1/6/1998	QUAD22D	1/6/1998 8:55:54 AM	B0JD11	30	7	0.16476190	344	10.54381
	SOLID		Bkg:	1/6/1998 12:36:31 AM	BKG	700	48	0.06857143	646	0.9228571

Anl Date: 1/6/1998 Tot Sa, Alq: 7.00E+02 , 9.84E+01 Alp: (Dpm/ 3.46E-01 (uCi/ 1.11E-03 (pCi/ 1.58E+00 ± 4.6E+00 CAT I 3.2E+01 Lab Alq
Ppt mg: 98.4 Units: g , mg Bet: Alq): 2.31E+01 Sa): 7.41E-02 Lig): 1.06E+02 ± 6.2E+00 9.4E-01 Lig

BHI B0JD12		1/6/1998	QUAD23A	1/6/1998 8:55:59 AM	B0JD12	30	79	2.56476190	343	10.537619
	SOLID		Bkg:	1/6/1998 12:36:41 AM	BKG	700	48	0.06857143	627	0.8957143

Anl Date: 1/6/1998 Tot Sa, Alq: 7.00E+02 , 1.04E+02 Alp: (Dpm/ 1.71E+01 (uCi/ 5.17E-02 (pCi/ 7.38E+01 ± 8.5E+00 CAT II 6.8E-01 Lab Alq
Ppt mg: 104.4 Units: g , mg Bet: Alq): 2.13E+01 Sa): 6.44E-02 Lig): 9.21E+01 ± 5.6E+00 1.1E+00 Lig

BHI B0MJF6		1/6/1998	QUAD23B	1/6/1998 8:55:59 AM	B0MJF6	30	24	0.75	146	3.9438095
	SOLID		Bkg:	1/6/1998 12:36:41 AM	BKG	700	35	0.05	646	0.9228571

Anl Date: 1/6/1998 Tot Sa, Alq: 2.00E+03 , 9.80E+01 Alp: (Dpm/ 4.85E+00 (uCi/ 4.46E-02 (pCi/ 2.23E+01 ± 6.1E+00 CAT II 2.2E+00 Lab Alq
Ppt mg: 98 Units: g , mg Bet: Alq): 8.19E+00 Sa): 7.53E-02 Lig): 3.77E+01 ± 4.0E+00 2.7E+00 Lig

BHI B0MJF9		1/6/1998	QUAD23C	1/6/1998 8:55:59 AM	B0MJF9	30	39	1.26	186	5.2128571
	SOLID		Bkg:	1/6/1998 12:36:41 AM	BKG	700	28	0.04	691	0.9871429

Anl Date: 1/6/1998 Tot Sa, Alq: 2.00E+03 , 9.77E+01 Alp: (Dpm/ 8.24E+00 (uCi/ 7.60E-02 (pCi/ 3.80E+01 ± 7.1E+00 CAT II 1.3E+00 Lab Alq
Ppt mg: 97.7 Units: g , mg Bet: Alq): 1.06E+01 Sa): 9.74E-02 Lig): 4.87E+01 ± 4.4E+00 2.1E+00 Lig

000072

Quanterra Environmental Services

013757

BW&WP

Login No.: 116621

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: 011398

Project No: ~~550.226~~ 550.256

Shipper/No: Airborne

Date: 1-7-98 Time: 0815

Initiated by: [signature]

RFA/COC Numbers: 937

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4°C ± 2°C
     Record temperature: _____
   - ☐ pH _____
   - ☐ other: _____
3. ☐ Sample received in improper container.
4. ☐ Sample received without proper paperwork. Explain: _____
5. ☐ Paperwork received without sample.
6. ☐ No sample ID on sample container.
7. ☐ Custody tape disturbed/broken/missing.
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°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 designate) [signature] Date: 1-7-98

Project Management Review: [signature] Date: 1/16/98

000073

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

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

W02161

Quanterra January 20, 1998 09:37 am
Account: 10722 Project: 550.256 Quanterra-Richland PGAS No. 550.256 Rev. 0
Master Sample Login: 166261

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: PM Review:

Sample Header Template:

Sample No. # Comments Data:	Client ID / Container Type	C-Matrix / Analysis	Date: Collected / Class	Received / Preservative	Due / Anal. Due Date	Shipper / Hold Date	Site	Rad Category / (Container Numbers:% Filled)	Rad Sample No.
16626-001	BONJK0	Soil	05-JAN-98 15:10	06-JAN-98 11:38	26-JAN-98	AIRBORNE	2		R6831-002
RICHLAND ID# 80105001 ICP METALS=TAL+BI,B,SN,AS,PB,SE. BNA=8270A(TCL)+TRIBUTYL PHOSPHATE. VOA=8260A(TCL)=1-BUTANOL,DIETHYL ETHER.									
2	AN - Amber Glass-60ML	BNA/8270/Q4	S	COLD	22-JAN-98	19-JAN-98	R3C	(349672:99 349673:98)	
4		CN/9010/Q4	S	COLD	22-JAN-98	19-JAN-98	R3C	(349671:100 349672:99 349673:98 349884:95)	
4		HG/7471/Q4	S	COLD	22-JAN-98	02-FEB-98	R3C	(349671:100 349672:99 349673:98 349884:95)	
2		ICAPT/6010/Q4	S	COLD	22-JAN-98	04-JUL-98	R3C	(349671:100 349884:95)	
4		NH3/350.1/Q4	S	COLD	22-JAN-98	02-FEB-98	R3C	(349671:100 349672:99 349673:98 349884:95)	
4		NO2/300.0/Q4	S	COLD	22-JAN-98	07-JAN-98	R3C	(349671:100 349672:99 349673:98 349884:95)	
4		NO3/300.0/Q4	S	COLD	22-JAN-98	07-JAN-98	R3C	(349671:100 349672:99 349673:98 349884:95)	
4		NO3/353.1/Q4	S	COLD	22-JAN-98	02-FEB-98	R3C	(349671:100 349672:99 349673:98 349884:95)	
4		PCB/8080/Q4	S	COLD	22-JAN-98	19-JAN-98	R3C	(349671:100 349672:99 349673:98 349884:95)	
4		PH/9045/Q4	S	COLD	22-JAN-98	19-JAN-98	R3C	(349671:100 349672:99 349673:98 349884:95)	
1		PM/IT/Q4	S	COLD	22-JAN-98	04-JUL-98	R3C	(349671:100)	
4		SO4/300.0/Q4	S	COLD	22-JAN-98	02-FEB-98	R3C	(349671:100 349672:99 349673:98 349884:95)	
4		TOC/9060/Q4	S	COLD	22-JAN-98	02-FEB-98	R3C	(349671:100 349672:99 349673:98 349884:95)	
2		VOA/8260/Q4	S	COLD	22-JAN-98	19-JAN-98	109B	(349674:97 349675:96)	
16626-002	BOMJJ7	Soil	05-JAN-98 10:25	06-JAN-98 11:38	26-JAN-98	AIRBORNE	2		R6831-001
RICHLAND ID# 80105002 ICP METALS=TAL+BI,B,SN,AS,PB,SE. BNA=8270A(TCL)+TRIBUTYL PHOSPHATE. VOA=8260A(TCL)=1-BUTANOL,DIETHYL ETHER.									
2	AN - Amber Glass-60ML	BNA/8270/Q4	S	COLD	22-JAN-98	19-JAN-98	R3C	(349678:99 349679:98)	
4		CN/9010/Q4	S	COLD	22-JAN-98	19-JAN-98	109B	(349677:100 349678:99 349679:98 349680:97)	
4		HG/7471/Q4	S	COLD	22-JAN-98	02-FEB-98	RC3	(349677:100 349678:99 349679:98 349885:95)	
2		ICAPT/6010/Q4	S	COLD	22-JAN-98	04-JUL-98	RC3	(349677:100 349885:95)	
4		NH3/350.1/Q4	S	COLD	22-JAN-98	02-FEB-98	RC3	(349677:100 349678:99 349679:98 349885:95)	
4		NO2/300.0/Q4	S	COLD	22-JAN-98	07-JAN-98	RC3	(349677:100 349678:99 349679:98 349885:95)	
4		NO3/300.0/Q4	S	COLD	22-JAN-98	07-JAN-98	RC3	(349677:100 349678:99 349679:98 349885:95)	

3**Sample has not been rad screened.

000074

Quanterra January 20, 1998 09:37 am
Account: 10722 Project: 550.256 Quanterra-Richland QAS No. 550.256 Rev. 0
Master Sample Login: 16626

Project Manager: W. Price

Draft: Final: Entered and Reviewed by:_____ PM Review:_____

Sample Header Template: _____

Sample No. / #	Client ID / Container Type	C-Matrix / Analysis	Date: Collected / Class	Received / Preservative	Due / Anal. Due Date	Shipper / Hold Date	Site	Rad Category / (Container Numbers:% Filled)	Rad Sample No.
4		NO3/353.1/Q4	S	COLD	22-JAN-98	02-FEB-98	RC3	(349677:100 349678:99 349679:98 349885: 95)	
4		PCB/8080/Q4	S	COLD	22-JAN-98	19-JAN-98	RC3	(349677:100 349678:99 349679:98 349885: 95)	
4		PH/9045/Q4	S	COLD	22-JAN-98	19-JAN-98	RC3	(349677:100 349678:99 349679:98 349885: 95)	
1		PM/IT/Q4	S	COLD	22-JAN-98	04-JUL-98	R3C	(349677:100)	
4		SO4/300.0/Q4	S	COLD	22-JAN-98	02-FEB-98	RC3	(349677:100 349678:99 349679:98 349885: 95)	
2		VOA/8260/Q4	S	COLD	22-JAN-98	19-JAN-98	109B	(349680:97 349681:96)	
16626-003	BOMJK3	Soil	05-JAN-98 15:25	06-JAN-98 11:38	26-JAN-98	AIRBORNE	1	Screening not Required	
RICHLAND ID#B0105003									
1	AN - Amber Glass-60ML	PH/9045/Q4	S	COLD	22-JAN-98	19-JAN-98	R3C	(349694:94)	
1		PM/IT/Q4	S	COLD	22-JAN-98	04-JUL-98	R3C	(349693:95)	
1		TOC/9060/Q4	S	COLD	22-JAN-98	02-FEB-98	R3C	(349693:95)	

Comments
Data:

3*=Sample has not been rad screened.

000095

R3C

Temp 3°C cuxA 13794
13765

Chain of Custody Record

Quanterra

QUA 4124 0797

Client	Project Manager	Date	Chain of Custody Number
Bechtel	A. Kopriwa	1-7-98	00341

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact

Project Name	Carrier/Waybill Number
SAF B98-004	

Contract/Purchase Order/Quote No.

Analysis (Attach list if more space is needed): SEE WC

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNOS	HCl	NaOH	ZnAc/NaOH	Analysis	Special Instructions/ Conditions of Receipt
80105001 BOMJK0													
↓ 02 ↓ JJ7													
↓ 03 ↓ JK3													

Chemical analysis 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

QC Requirements (Specify): SDG W02161

	Date	Time		Date	Time
1. Relinquished By: Heidelberg QES	1-7-98	16:00	1. Received By: [signature]	1-8-98	0845
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: SAmples Rec'd 1-7-98

DISTRIBUTION: WHITE - [illegible] CANARY - [illegible] PINK - [illegible]

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Data Turnaround: 45 Days			
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC 96-060	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

SAMPLE ANALYSIS: 80105001 SDC W02161

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1 RS	0	0	0	0	0	0	RS 1 2	0	RS 1 2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See Item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See Item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time	[redacted]									
BOMJK0	Soil	1-5-98	1510	X	X	X	X	X	X	X	X	X	X
												2x100	2x100
				2x100								1-7	1-7
				1-7-99									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Per R. Fahlberg / Doug Bowers	1-6-98/1138	Hudelson	1-6-98 11-38
		L100CPM	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Superfuce) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

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	B98-004	Page 1 of 1

Collector: R Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-060	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	RG 1 2	RG 1 2	RG 1 2	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 – Sr-90	Technetium-99	Total Uranium

80105101

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJKO	Soil	1-5-98	1510	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
For R. Fahlberg Doug Bowman	1-6-98/1138	Heidelberg	1-6-98 1138
		Lloodberg	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC96-060	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2	0	0	0	0	0	0	2	0	2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	[illegible] - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

SAMPLE ANALYSIS

80105002

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJJ7	Soil	1-5-98	1025	X	X DLB	X	X	X	X	X	X	X	X
				2x10 1-7								2x10 1-7	2x10 1-7

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
For R Fahlberg Doug Bowers	1-6-98/1138	D Heidelberg	1-6-98 1138
		L100cpm	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

Matrix *
- S - Soil
- SE - Sediment
- SD - 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	B98-004	Page 2 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-060	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2	2	2	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 – Sr-90	Technetium-99	Total Uranium

80105102

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJJ7	Soil	1-5-98	1025	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: For R. Fahlberg Doug Bowers	Date/Time: 1-6-98/1138	Received By: [signature]	Date/Time: 1-6-98 1138
Relinquished By	Date/Time	Received By: 400 CPM	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-060	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	~~0~~ 1	0	0	0	0	~~0~~ 1	1	0	1
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

80105003

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJK3	Soil	1-5-98	1525		X 100					X 100			

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: For R.Fahlberg Doug Bowers	Date/Time: 1-6-98/1138	Received By: [signature]	Date/Time: 1138 1-6-98
Relinquished By	Date/Time	Received By: C100LPM	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL), ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

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

Quanterra Sample Sets R. Fahkerg
216 B-2-2 Ditch 1-6-98
Boring 8079

Per Demers total activity Calc. Letter

$\left(\frac{\text{cpm soil}}{\text{cpm source}}\right)$ 300 pCi/gm = Sample Activ

assume all Sr-90

BOMJJ7 $\left(\frac{100 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 22 pCi/gm

BOMJKO $\left(\frac{100 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 22 pCi/gm

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 1/6 1140 SG#: W02161 B98-003

Work Order Number: 801050 + 051 SAF #: B98-023 B98-004

Shipping Container ID: 96-060 Chain of Custody #: B98-023-12 B98-004 B98-003-20 + 21

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 5° C
5. Vermiculite/packing materials is Wet [ ] Dry [✓] na
6. Number of samples in shipping container: 39
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: Heidelberg Date: 1-6-98

Telephoned To: _____ On _____ By _____

000083

Client Sample Screening Results

06-Jan-98

Cx 1/6/98

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0MJJ7		1/6/1998 11:00:00 AM	QUAD24A	1/6/1998 1:47:20 PM	B0MJJ7	30	20	0.57809524	109	2.6704762
	SOLID		Bkg:	1/6/1998 12:36:25 AM	BKG	700	62	0.08857143	674	0.9628571

Anl Date: 1/6/1998 Tot Sa, Alq: 1.00E+03 , 1.08E+02 Alp; (Dpm/ 4.15E+00 (uCi/ 1.73E-02 (pCi/ 1.73E+01 ± 5.9E+00 CAT II 2.9E+00 Lab
Ppt mg: 107.7 Units: g , mg Bet; Alq): 5.75E+00 Sa): 2.40E-02 Lig): 2.40E+01 ± 3.3E+00 4.2E+00 Alq Lig

BHI B0MJK0		1/6/1998 11:00:00 AM	QUAD24B	1/6/1998 1:47:20 PM	B0MJK0	30	13	0.36904762	112	2.7719048
	SOLID		Bkg:	1/6/1998 12:36:25 AM	BKG	700	45	0.06428571	673	0.9614286

Anl Date: 1/6/1998 Tot Sa, Alq: 1.00E+03 , 1.05E+02 Alp; (Dpm/ 2.48E+00 (uCi/ 1.06E-02 (pCi/ 1.06E+01 ± 5.3E+00 CAT II 4.7E+00 Lab
Ppt mg: 105.4 Units: g , mg Bet; Alq): 6.03E+00 Sa): 2.58E-02 Lig): 2.58E+01 ± 3.4E+00 3.9E+00 Alq Lig

BHI B0MJK3		1/6/1998 11:00:00 AM	QUAD24C	1/6/1998 1:47:20 PM	B0MJK3	30	23	0.69095238	117	2.9442857
	SOLID		Bkg:	1/6/1998 12:36:25 AM	BKG	700	53	0.07571429	669	0.9557143

Anl Date: 1/6/1998 Tot Sa, Alq: 6.00E+01 , 9.49E+01 Alp; (Dpm/ 4.44E+00 (uCi/ 1.27E-03 (pCi/ 2.11E+01 ± 6.2E+00 CAT I 2.4E+00 Lab
Ppt mg: 94.9 Units: g , mg Bet; Alq): 6.03E+00 Sa): 1.72E-03 Lig): 2.86E+01 ± 3.7E+00 3.5E+00 Alq Lig

BHI B0MLW5		1/6/1998 11:00:00 AM	QUAD24D	1/6/1998 1:47:20 PM	B0MLW5	30	155	5.0952381	450	13.965714
	SOLID		Bkg:	1/6/1998 12:36:25 AM	BKG	700	50	0.07142857	724	1.0342857

Anl Date: 1/6/1998 Tot Sa, Alq: 1.00E+03 , 9.86E+01 Alp; (Dpm/ 3.32E+01 (uCi/ 1.52E-01 (pCi/ 1.52E+02 ± 1.2E+01 CAT III 3.3E-01 Lab
Ppt mg: 98.6 Units: g , mg Bet; Alq): 2.81E+01 Sa): 1.28E-01 Lig): 1.28E+02 ± 6.8E+00 7.8E-01 Alq Lig

000084

Quanterra
Environmental Services

BWJWP

013794

Login No.: 166626

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: _____

Project No: 550.256

Shipper/No: Airborne

Date: 1-8-98 Time: 0845

Initiated by: 2nd Mitchell

RFA/COC Numbers: 341

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4°C ± 2°C
     Record temperature: _____
   - ☐ pH: _____
   - ☐ other: _____
3. ☐ Sample received in improper container.
4. ☐ Sample received without proper paperwork. Explain: _____
5. ☐ Paperwork received without sample.
6. ☐ No sample ID on sample container.
7. ☐ Custody tape disturbed/broken/missing.
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: 3°C

Notes: SAmples Rec'd 1-7-98

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____

☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Sample(s) processed "as is": _____

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

Sample Control Supervisor Review: or designate 2nd Mitchell Date: 1-8-98

Project Management Review: [signature] Date: 1/16/98

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004 Revised 11/24/95

000085

W02161

Quanterra January 20, 1998 10:03 am
Account: 10722 Project: 550.256 Quanterra-Richland QAS No. 550.256 Rev. 0
Master Sample Login: 16628

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: S. Lounier PM Review: W. Price

Sample Header Template:

Sample No. / #	Comments / Container Type	Client ID / Analysis	C-Matrix / Class	Date: Collected / Preservative	Received / Anal. Due Date	Due / Hold Date	Shipper / Site	Rad Category	Rad Sample No. / (Container Numbers:% Filled)
16628-001		B0MJK6	Soil	07-JAN-98 16:00	08-JAN-98 12:55	28-JAN-98	AIRBORNE	1	Screening not Required
	Richland ID 80111601 VOA plus 1-Butanol, Diethyl ether//Tributylphosphate//TAL + Bi, B, Sn, As, Pb, Se								
2	AN Amber Glass-60ML	BNA/8270/Q4	S	COLD	24-JAN-98	21-JAN-98	R3C		(349695:99 349697:98)
2		CN/9010/Q4	S	COLD	24-JAN-98	21-JAN-98	R3C		(349702:95 349703:94)
2		HG/7471/Q4	S	COLD	24-JAN-98	04-FEB-98	R3C		(349702:95 349703:94)
2		ICAPT/6010/Q4	S	COLD	24-JAN-98	06-JUL-98	R3C		(349702:95 349703:94)
2		NH3/350.1/Q4	S	COLD	24-JAN-98	04-FEB-98	R3C		(349702:95 349703:94)
2		NO2/300.0/Q4	S	COLD	24-JAN-98	09-JAN-98	R3C		(349702:95 349703:94)
2		NO3/300.0/Q4	S	COLD	24-JAN-98	09-JAN-98	R3C		(349702:95 349703:94)
2		NO3/353.1/Q4	S	COLD	24-JAN-98	04-FEB-98	R3C		(349702:95 349703:94)
2		PCB/8080/Q4	S	COLD	24-JAN-98	21-JAN-98	R3C		(349695:99 349697:98)
2		PH/9045/Q4	S	COLD	24-JAN-98	21-JAN-98	R3C		(349702:95 349703:94)
1		PM/IT/Q4	S	COLD	24-JAN-98	06-JUL-98	R3C		(349695:99)
2		SO4/300.0/Q4	S	COLD	24-JAN-98	04-FEB-98	R3C		(349702:95 349703:94)
2		VOA/8260/Q4	S	COLD	24-JAN-98	21-JAN-98	109B		(349699:97 349701:96)

3*=Sample has not been rad screened.

000086

R3C Temp 4°C Cur# 13822

SI 11115

Chain of Custody Record

Quanterra

NO QC

QUA-4124 0797

Client	Project Manager	Date	Chain of Custody Number
Bechtel	A Koprivo	1-9-98	06355
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1
City / State / Zip Code	Site Contact / Lab Contact		
Project Name: SDT B98 004	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed): SEE QC

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	HNO3	HCl	NaOH	ZnAc/NaOH	Special Instructions/ Conditions of Receipt
SCH1601 BOMJKG	Chemical Analysis 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 ____

QC Requirements (Specify): SDC-W02161

	Date	Time		Date	Time
1. Relinquished By: [signature] QCS	1-9-98	16:00	1. Received By: [signature]	1-10-98	10:00
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

0013

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Data Turnaround: 45 Days			
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

SAMPLE ANALYSIS: 80111601 SDL W02161

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2	0	0	0	0	0	0	2	0	2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	ND3/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJK6	Soil	1-7-98	1600	X		X	X	X	X	X	X	X	X
				2x100								2x100	2x10

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
[signature]	1-8-98 1255	[signature]	1-8-98 1255
[signature]		[signature]	1100pm

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

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

8

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 2 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Date Turnaround: 45 Days			
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS

80111701

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	12	12	12	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 – Sr-90	Technetium-99	Total Uranium

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJK6	Soil	1-7-98	1600	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
[signature]	1-8-98 1255	[signature]	1-8-98 DSS
		4:00pm	

Sign/Print Names

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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: 1-8-98 1255 SG#: W02161

Work Order Number: 801116 + 117 SAF #: B98-004 + B98-003

Shipping Container ID: 96-085 Chain of Custody # B98-004 + B98-003-2

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: 15
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: R Wagon Date: 1-8-98

Telephoned To: _____ On _____ By _____

000090

Client Sample Screening Results

09-Jan-98

(B) 1/9/97

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
FGW B0MJK6		1/9/1998	QUAD21A	1/9/1998 9:26:11 AM	B0MJK6	30	11	0.27166667	72	1.465
	SOLID		Bkg:	1/9/1998 12:16:42 AM	BKG	600	57	0.095	561	0.935

Anl Date: 1/9/1998 Tot Sa, Alq: 1.00E+03 , 9.76E+01 Alp; (Dpm/ 1.78E+00 (uCi/ 8.22E-03 (pCi/ 8.22E+00 ± 5.6E+00 CAT I 6.1E+00 Lab Alq
Ppt mg: 97.6 Units: g , mg Bet; Alq): 3.23E+00 Sa): 1.49E-02 Lig): 1.49E+01 ± 3.0E+00 6.7E+00 Lig

FGW B0MN96		1/9/1998	QUAD21B	1/9/1998 9:26:11 AM	B0MN96	30	15	0.42166667	52	0.7766667
	LIQUID		Bkg:	1/9/1998 12:16:42 AM	BKG	600	47	0.07833333	574	0.9566667

Anl Date: 1/9/1998 Tot Sa, Alq: 2.00E+00 , 1.00E+01 Alp; (Dpm/ 1.34E+00 (uCi/ 1.21E-04 (pCi/ 6.04E+01 ± 2.6E+01 CAT I 4.1E-01 Lab Alq
Ppt mg: 2.9 Units: L , ml Bet; Alq): 1.26E+00 Sa): 1.13E-04 Lig): 5.66E+01 ± 2.1E+01 8.8E-01 Lig

FGW B0MNB6		1/9/1998	QUAD21C	1/9/1998 9:26:11 AM	B0MNB6	30	11	0.31833333	57	1.0733333
	LIQUID		Bkg:	1/9/1998 12:16:42 AM	BKG	600	29	0.04833333	496	0.8266667

Anl Date: 1/9/1998 Tot Sa, Alq: 2.00E+00 , 1.00E+01 Alp; (Dpm/ 9.39E-01 (uCi/ 8.46E-05 (pCi/ 4.23E+01 ± 2.2E+01 CAT I 5.9E-01 Lab Alq
Ppt mg: 3.3 Units: L , ml Bet; Alq): 1.94E+00 Sa): 1.75E-04 Lig): 8.73E+01 ± 2.2E+01 5.7E-01 Lig

FGW B0MNB8		1/9/1998	QUAD21D	1/9/1998 9:26:11 AM	B0MNB8	30	14	0.4	110	2.6433333
	LIQUID		Bkg:	1/9/1998 12:16:42 AM	BKG	600	40	0.06666667	614	1.0233333

Anl Date: 1/9/1998 Tot Sa, Alq: 6.00E+00 , 1.00E+01 Alp; (Dpm/ 1.21E+00 (uCi/ 3.26E-04 (pCi/ 5.43E+01 ± 2.6E+01 CAT I 4.6E-01 Lab Alq
Ppt mg: 3.7 Units: L , ml Bet; Alq): 5.00E+00 Sa): 1.35E-03 Lig): 2.25E+02 ± 3.1E+01 2.2E-01 Lig

FGW B0MNC1		1/9/1998	QUAD22A	1/9/1998 9:26:17 AM	B0MNC1	30	17	0.50833333	108	2.6333333
	LIQUID		Bkg:	1/9/1998 12:16:49 AM	BKG	600	35	0.05833333	580	0.9666667

Anl Date: 1/9/1998 Tot Sa, Alq: 6.00E+00 , 1.00E+01 Alp; (Dpm/ 1.44E+00 (uCi/ 3.89E-04 (pCi/ 6.48E+01 ± 2.4E+01 CAT I 3.9E-01 Lab Alq
Ppt mg: 3 Units: L , ml Bet; Alq): 4.62E+00 Sa): 1.25E-03 Lig): 2.08E+02 ± 2.[illegible]E+01 2.4E-01 Lig

FGW B0MNC4		1/9/1998	QUAD22B	1/9/1998 9:26:17 AM	B0MNC4	30	14	0.37833333	67	1.2366667
	LIQUID		Bkg:	1/9/1998 12:16:49 AM	BKG	600	53	0.08833333	598	0.9966667

Anl Date: 1/9/1998 Tot Sa, Alq: 6.00E+00 , 1.00E+01 Alp; (Dpm/ 1.13E+00 (uCi/ 3.06E-04 (pCi/ 5.11E+01 ± 2.4E+01 CAT I 4.9E-01 Lab Alq
Ppt mg: 1.9 Units: L , ml Bet; Alq): 2.13E+00 Sa): 5.75E-04 Lig): 9.58E+01 ± 2.3E+01 5.2E-01 Lig

000091

Quanterra
Environmental Services

Blount

013822

Login No.: 1628

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Rechland

Date: 1-10-98 Time: 1000

Project No: 550.256

Initiated by: [signature]

Shipper/No: A/B 5999715912

RFA/COC Numbers: 355

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4°C ± 2°C
     Record temperature: _____
   - ☐ pH: _____
   - ☐ other: _____
3. ☐ Sample received in improper container.
4. ☐ Sample received without proper paperwork. Explain: _____
5. ☐ Paperwork received without sample.
6. ☐ No sample ID on sample container.
7. ☐ Custody tape disturbed/broken/missing.
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°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: [signature] Date: 1-10-98

Project Management Review: [signature] Date: 1/6/98

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

000092

SL-ADMIN-0004 Revised 11/24/95

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: PCB's
Method: EPA 8080
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/06/98

Client ID: 80MJC2

Quanterra ID : 16620-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aroclor-1016	12674-11-2	QCBLK162120-1	01/12/98	01/22/98	33	UG/KG	U	33	1
Aroclor-1221	11104-28-2	QCBLK162120-1	01/12/98	01/22/98	33	UG/KG	U	33	1
Aroclor-1232	11141-16-5	QCBLK162120-1	01/12/98	01/22/98	33	UG/KG	U	33	1
Aroclor-1242	53469-21-9	QCBLK162120-1	01/12/98	01/22/98	33	UG/KG	U	33	1
Aroclor-1248	12672-29-6	QCBLK162120-1	01/12/98	01/22/98	33	UG/KG	U	33	1
Aroclor-1254	11097-69-1	QCBLK162120-1	01/12/98	01/22/98	33	UG/KG	U	33	1
Aroclor-1260	11096-82-5	QCBLK162120-1	01/12/98	01/22/98	33	UG/KG	U	33	1
DCB	2051-24-3	QCBLK162120-1	01/12/98	01/22/98	117	%REC			1
TCMX	877-09-8	QCBLK162120-1	01/12/98	01/22/98	102	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: PCB's
Method: EPA 8080
Matrix: SOLID

Client ID: BOMJC2

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/06/98

Quanterra ID : 16620-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aroclor-1016	12674-11-2	QCBLK162120-1	01/12/98	01/22/98	107	%REC			.5
Aroclor-1260	11096-82-5	QCBLK162120-1	01/12/98	01/22/98	110	%REC			.5
DCB	2051-24-3	QCBLK162120-1	01/12/98	01/22/98	111	%REC			.5
TCMX	877-09-8	QCBLK162120-1	01/12/98	01/22/98	97	%REC			.5

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: PCB's
Method: EPA 8080
Matrix: SOLID

Client ID: BOMJC2

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/06/98

Quanterra ID : 16620-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aroclor-1016	12674-11-2	QCBLK162120-1	01/12/98	01/22/98	128	%REC			.5
Aroclor-1260	11096-82-5	QCBLK162120-1	01/12/98	01/22/98	128	%REC			.5
DCB	2051-24-3	QCBLK162120-1	01/12/98	01/22/98	127	%REC			.5
TCMX	877-09-8	QCBLK162120-1	01/12/98	01/22/98	108	%REC			.5

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: PCB's
Method: EPA 8080
Matrix: SOLID

Client ID: BOMJF6

Sample Date : 01/02/98
Receipt Date : 01/05/98
Report Date : 02/06/98

Quanterra ID : 16621-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aroclor-1016	12674-11-2	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1221	11104-28-2	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1232	11141-16-5	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1242	53469-21-9	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1248	12672-29-6	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1254	11097-69-1	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1260	11096-82-5	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
DCB	2051-24-3	QCBLK162683-1	01/16/98	01/20/98	127	%REC			1
TCMX	877-09-8	QCBLK162683-1	01/16/98	01/20/98	89	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: PCB's
Method: EPA 8080
Matrix: SOLID

Client ID: BOMJF9

Sample Date : 01/03/98
Receipt Date : 01/05/98
Report Date : 02/06/98

Quanterra ID : 16621-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aroclor-1016	12674-11-2	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1221	11104-28-2	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1232	11141-16-5	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1242	53469-21-9	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1248	12672-29-6	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1254	11097-69-1	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
Aroclor-1260	11096-82-5	QCBLK162683-1	01/16/98	01/20/98	34	UG/KG	U	34	1
DCB	2051-24-3	QCBLK162683-1	01/16/98	01/20/98	123	%REC			1
TCMX	877-09-8	QCBLK162683-1	01/16/98	01/20/98	85	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: PCB's
Method: EPA 8080
Matrix: SOLID

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/06/98

Client ID: BOMJKO

Quanterra ID : 16626-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aroclor-1016	12674-11-2	QCBLK162764-1	01/19/98	01/23/98	35	UG/KG	U	35	1
Aroclor-1221	11104-28-2	QCBLK162764-1	01/19/98	01/23/98	35	UG/KG	U	35	1
Aroclor-1232	11141-16-5	QCBLK162764-1	01/19/98	01/23/98	35	UG/KG	U	35	1
Aroclor-1242	53469-21-9	QCBLK162764-1	01/19/98	01/23/98	35	UG/KG	U	35	1
Aroclor-1248	12672-29-6	QCBLK162764-1	01/19/98	01/23/98	35	UG/KG	U	35	1
Aroclor-1254	11097-69-1	QCBLK162764-1	01/19/98	01/23/98	35	UG/KG	U	35	1
Aroclor-1260	11096-82-5	QCBLK162764-1	01/19/98	01/23/98	35	UG/KG	U	35	1
DCB	2051-24-3	QCBLK162764-1	01/19/98	01/23/98	156	%REC	*		1
TCMX	877-09-8	QCBLK162764-1	01/19/98	01/23/98	119	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: PCB's
Method: EPA 8080
Matrix: SOLID

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/06/98

Client ID: B0MJJ7

Quanterra ID : 16626-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aroclor-1016	12674-11-2	QCBLK162764-1	01/19/98	01/23/98	34	UG/KG	U	34	1
Aroclor-1221	11104-28-2	QCBLK162764-1	01/19/98	01/23/98	34	UG/KG	U	34	1
Aroclor-1232	11141-16-5	QCBLK162764-1	01/19/98	01/23/98	34	UG/KG	U	34	1
Aroclor-1242	53469-21-9	QCBLK162764-1	01/19/98	01/23/98	34	UG/KG	U	34	1
Aroclor-1248	12672-29-6	QCBLK162764-1	01/19/98	01/23/98	34	UG/KG	U	34	1
Aroclor-1254	11097-69-1	QCBLK162764-1	01/19/98	01/23/98	34	UG/KG	U	34	1
Aroclor-1260	11096-82-5	QCBLK162764-1	01/19/98	01/23/98	34	UG/KG	U	34	1
DCB	2051-24-3	QCBLK162764-1	01/19/98	01/23/98	153	%REC	*		1
TCMX	877-09-8	QCBLK162764-1	01/19/98	01/23/98	119	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: PCB's
Method: EPA 8080
Matrix: SOLID

Client ID: 80NJK6

Sample Date : 01/07/98
Receipt Date : 01/08/98
Report Date : 02/06/98

Quanterra ID : 16628-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aroclor-1016	12674-11-2	QCBLK162764-1	01/19/98	01/23/98	36	UG/KG	U	36	1
Aroclor-1221	11104-28-2	QCBLK162764-1	01/19/98	01/23/98	36	UG/KG	U	36	1
Aroclor-1232	11141-16-5	QCBLK162764-1	01/19/98	01/23/98	36	UG/KG	U	36	1
Aroclor-1242	53469-21-9	QCBLK162764-1	01/19/98	01/23/98	36	UG/KG	U	36	1
Aroclor-1248	12672-29-6	QCBLK162764-1	01/19/98	01/23/98	36	UG/KG	U	36	1
Aroclor-1254	11097-69-1	QCBLK162764-1	01/19/98	01/23/98	36	UG/KG	U	36	1
Aroclor-1260	11096-82-5	QCBLK162764-1	01/19/98	01/23/98	36	UG/KG	U	36	1
DCB	2051-24-3	QCBLK162764-1	01/19/98	01/23/98	148	%REC			1
TCMX	877-09-8	QCBLK162764-1	01/19/98	01/23/98	115	%REC			1

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF6

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-001

Sample wt/vol: 30.0 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 01-02-98

% Moisture: not dec. 3 dec. _____ Date Extracted: 01-16-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 01-20-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	34	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF9

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-002

Sample wt/vol: 30.0 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 01-03-98

% Moisture: not dec. 3 dec. _____ Date Extracted: 01-16-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 01-20-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	34	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC2

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-001

Sample wt/vol: 30.0 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 12-29-97

% Moisture: not dec. * dec. _____ Date Extracted: 01-12-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 01-22-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

U: Concentration of analyte is less than the value given.
*: Insufficient sample for percent moisture determination.

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJK6

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16628-001

Sample wt/vol: 30.0 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 01-07-98

% Moisture: not dec. 7 dec. _____ Date Extracted: 01-19-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 01-23-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJK0

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-001

Sample wt/vol: 30.1 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 01-05-98

% Moisture: not dec. 6 dec. _____ Date Extracted: 01-19-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 01-23-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ7

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-002

Sample wt/vol: 30.1 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 01-05-98

% Moisture: not dec. 2 dec. _____ Date Extracted: 01-19-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 01-23-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

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

CAS NO.	Compound		Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	34	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC5

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-002

Sample wt/vol: 30.0 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 12-29-97

% Moisture: not dec. 9 dec. _____ Date Extracted: 01-12-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 02-05-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

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

CAS NO.	Compound		Q
12674-11-2------	Aroclor-1016	36	U
11104-28-2------	Aroclor-1221	36	U
11141-16-5------	Aroclor-1232	36	U
53469-21-9------	Aroclor-1242	36	U
12672-29-6------	Aroclor-1248	36	U
11097-69-1------	Aroclor-1254	36	U
11096-82-5------	Aroclor-1260	9200	

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJD1

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-003

Sample wt/vol: 30.1 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 12-30-97

% Moisture: not dec. 5 dec. _____ Date Extracted: 01-12-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 02-05-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

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

CAS NO.	Compound		Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	1100	

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJD7

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-004

Sample wt/vol: 30.1 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 12-30-97

% Moisture: not dec. 3 dec. _____ Date Extracted: 01-12-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 02-05-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	34	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC8

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-005

Sample wt/vol: 30.0 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 12-31-97

% Moisture: not dec. 15 dec. _____ Date Extracted: 01-12-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 02-05-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	150	

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF3

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-006

Sample wt/vol: 30.0 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 12-31-97

% Moisture: not dec. 7 dec. _____ Date Extracted: 01-12-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 02-05-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ1

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-007

Sample wt/vol: 30.1 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 12-31-97

% Moisture: not dec. 3 dec. _____ Date Extracted: 01-12-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 02-05-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	34	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ4

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-008

Sample wt/vol: 30.1 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 12-31-97

% Moisture: not dec. 2 dec. _____ Date Extracted: 01-12-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 02-05-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	34	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

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

FORM I PEST

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF0

Lab Name: QUANTERRA,MO Contract: 550.256

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-009

Sample wt/vol: 30.1 (g/ml) G Lab File ID: _____

Level: (low/med) LOW Date Sampled: 12-31-97

% Moisture: not dec. 4 dec. _____ Date Extracted: 01-12-98

Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 02-05-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	34	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

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

FORM I PEST

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/23/98

Client ID: BOMJC2

Quanterra ID : 16620-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162341-1	01/14/98	01/15/98	5710	MG/KG		20.0	1
Antimony	7440-36-0	QCBLK162341-1	01/14/98	01/15/98	5.0	MG/KG	BN	6.0	1
Arsenic	7440-38-2	QCBLK162341-1	01/14/98	01/14/98	2.6	MG/KG		1.0	1
Barium	7440-39-3	QCBLK162341-1	01/14/98	01/15/98	58.1	MG/KG		20.0	1
Beryllium	7440-41-7	QCBLK162341-1	01/14/98	01/15/98	0.54	MG/KG		0.50	1
Cadmium	7440-43-9	QCBLK162341-1	01/14/98	01/14/98	0.33	MG/KG	UN	0.50	1
Calcium	7440-70-2	QCBLK162341-1	01/14/98	01/15/98	5430	MG/KG		500	1
Chromium	7440-47-3	QCBLK162341-1	01/14/98	01/15/98	9.7	MG/KG		1.0	1
Cobalt	7440-48-4	QCBLK162341-1	01/14/98	01/15/98	8.7	MG/KG		5.0	1
Copper	7440-50-8	QCBLK162341-1	01/14/98	01/15/98	13.0	MG/KG		2.5	1
Iron	7439-89-6	QCBLK162341-1	01/14/98	01/15/98	20000	MG/KG		10.0	1
Lead	7439-92-1	QCBLK162341-1	01/14/98	01/14/98	4.7	MG/KG		0.30	1
Magnesium	7439-95-4	QCBLK162341-1	01/14/98	01/15/98	3780	MG/KG		500	1
Manganese	7439-96-5	QCBLK162341-1	01/14/98	01/15/98	277	MG/KG		1.5	1
Nickel	7440-02-0	QCBLK162341-1	01/14/98	01/15/98	9.6	MG/KG		4.0	1
Potassium	7440-09-7	QCBLK162341-1	01/14/98	01/15/98	1210	MG/KG		500	1
Selenium	7782-49-2	QCBLK162341-1	01/14/98	01/14/98	0.45	MG/KG	B	0.50	1
Silver	7440-22-4	QCBLK162341-1	01/14/98	01/15/98	0.73	MG/KG	B	1.0	1
Sodium	7440-23-5	QCBLK162341-1	01/14/98	01/15/98	302	MG/KG	BE	500	1
Vanadium	7440-62-2	QCBLK162341-1	01/14/98	01/15/98	47.3	MG/KG		5.0	1
Zinc	7440-66-6	QCBLK162341-1	01/14/98	01/15/98	36.8	MG/KG	E	2.0	1
Bismuth	7440-69-9	QCBLK162341-1	01/14/98	01/15/98	27.5	MG/KG		20.0	1
Boron	7440-42-8	QCBLK162341-1	01/14/98	01/15/98	5.1	MG/KG	B	20.0	1
Tin	7440-31-5	QCBLK162341-1	01/14/98	01/15/98	3.5	MG/KG	UN	10.0	1

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Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: Soil

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/23/98

Client ID: BOMJC2

Quanterra ID : 16620-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162341-1	01/14/98	01/15/98	968	%REC			1
Antimony	7440-36-0	QCBLK162341-1	01/14/98	01/15/98	70	%REC	N		1
Arsenic	7440-38-2	QCBLK162341-1	01/14/98	01/15/98	99	%REC			1
Barium	7440-39-3	QCBLK162341-1	01/14/98	01/15/98	98	%REC			1
Beryllium	7440-41-7	QCBLK162341-1	01/14/98	01/15/98	97	%REC			1
Cadmium	7440-43-9	QCBLK162341-1	01/14/98	01/15/98	76	%REC	N		1
Calcium	7440-70-2	QCBLK162341-1	01/14/98	01/15/98	112	%REC			1
Chromium	7440-47-3	QCBLK162341-1	01/14/98	01/15/98	85	%REC			1
Cobalt	7440-48-4	QCBLK162341-1	01/14/98	01/15/98	94	%REC			1
Copper	7440-50-8	QCBLK162341-1	01/14/98	01/15/98	100	%REC			1
Iron	7439-89-6	QCBLK162341-1	01/14/98	01/15/98	1928	%REC			1
Lead	7439-92-1	QCBLK162341-1	01/14/98	01/15/98	95	%REC			1
Magnesium	7439-95-4	QCBLK162341-1	01/14/98	01/15/98	110	%REC			1
Manganese	7439-96-5	QCBLK162341-1	01/14/98	01/15/98	192	%REC			1
Nickel	7440-02-0	QCBLK162341-1	01/14/98	01/15/98	94	%REC			1
Potassium	7440-09-7	QCBLK162341-1	01/14/98	01/15/98	99	%REC			1
Selenium	7782-49-2	QCBLK162341-1	01/14/98	01/15/98	91	%REC			1
Silver	7440-22-4	QCBLK162341-1	01/14/98	01/15/98	84	%REC			1
Sodium	7440-23-5	QCBLK162341-1	01/14/98	01/15/98	99	%REC			1
Vanadium	7440-62-2	QCBLK162341-1	01/14/98	01/15/98	104	%REC			1
Zinc	7440-66-6	QCBLK162341-1	01/14/98	01/15/98	104	%REC			1
Bismuth	7440-69-9	QCBLK162341-1	01/14/98	01/15/98	105	%REC			1
Boron	7440-42-8	QCBLK162341-1	01/14/98	01/15/98	94	%REC			1
Tin	7440-31-5	QCBLK162341-1	01/14/98	01/15/98	36	%REC	N		1

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Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: Soil

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/23/98

Client ID: 80MJC2

Quanterra ID : 16620-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162341-1	01/14/98	01/15/98	500	%REC			1
Antimony	7440-36-0	QCBLK162341-1	01/14/98	01/15/98	65	%REC	N		1
Arsenic	7440-38-2	QCBLK162341-1	01/14/98	01/15/98	100	%REC			1
Barium	7440-39-3	QCBLK162341-1	01/14/98	01/15/98	93	%REC			1
Beryllium	7440-41-7	QCBLK162341-1	01/14/98	01/15/98	96	%REC			1
Cadmium	7440-43-9	QCBLK162341-1	01/14/98	01/15/98	80	%REC	N		1
Calcium	7440-70-2	QCBLK162341-1	01/14/98	01/15/98	96	%REC			1
Chromium	7440-47-3	QCBLK162341-1	01/14/98	01/15/98	81	%REC			1
Cobalt	7440-48-4	QCBLK162341-1	01/14/98	01/15/98	92	%REC			1
Copper	7440-50-8	QCBLK162341-1	01/14/98	01/15/98	93	%REC			1
Iron	7439-89-6	QCBLK162341-1	01/14/98	01/15/98	-1378	%REC			1
Lead	7439-92-1	QCBLK162341-1	01/14/98	01/15/98	95	%REC			1
Magnesium	7439-95-4	QCBLK162341-1	01/14/98	01/15/98	98	%REC			1
Manganese	7439-96-5	QCBLK162341-1	01/14/98	01/15/98	88	%REC			1
Nickel	7440-02-0	QCBLK162341-1	01/14/98	01/15/98	91	%REC			1
Potassium	7440-09-7	QCBLK162341-1	01/14/98	01/15/98	95	%REC			1
Selenium	7782-49-2	QCBLK162341-1	01/14/98	01/15/98	93	%REC			1
Silver	7440-22-4	QCBLK162341-1	01/14/98	01/15/98	88	%REC			1
Sodium	7440-23-5	QCBLK162341-1	01/14/98	01/15/98	101	%REC			1
Vanadium	7440-62-2	QCBLK162341-1	01/14/98	01/15/98	92	%REC			1
Zinc	7440-66-6	QCBLK162341-1	01/14/98	01/15/98	102	%REC			1
Bismuth	7440-69-9	QCBLK162341-1	01/14/98	01/15/98	102	%REC			1
Boron	7440-42-8	QCBLK162341-1	01/14/98	01/15/98	102	%REC			1
Tin	7440-31-5	QCBLK162341-1	01/14/98	01/15/98	48	%REC	N		1

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Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Client ID: BOMJC5

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Quanterra ID : 16620-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162341-1	01/14/98	01/15/98	6320	MG/KG		21.9	1
Antimony	7440-36-0	QCBLK162341-1	01/14/98	01/15/98	4.7	MG/KG	UN	6.6	1
Arsenic	7440-38-2	QCBLK162341-1	01/14/98	01/14/98	3.0	MG/KG		1.1	1
Barium	7440-39-3	QCBLK162341-1	01/14/98	01/15/98	89.4	MG/KG		21.9	1
Beryllium	7440-41-7	QCBLK162341-1	01/14/98	01/15/98	0.70	MG/KG		0.55	1
Cadmium	7440-43-9	QCBLK162341-1	01/14/98	01/14/98	0.36	MG/KG	UN	0.55	1
Calcium	7440-70-2	QCBLK162341-1	01/14/98	01/15/98	8760	MG/KG		548	1
Chromium	7440-47-3	QCBLK162341-1	01/14/98	01/15/98	8.5	MG/KG		1.1	1
Cobalt	7440-48-4	QCBLK162341-1	01/14/98	01/15/98	11.4	MG/KG		5.5	1
Copper	7440-50-8	QCBLK162341-1	01/14/98	01/15/98	14.6	MG/KG		2.7	1
Iron	7439-89-6	QCBLK162341-1	01/14/98	01/15/98	25000	MG/KG		11.0	1
Lead	7439-92-1	QCBLK162341-1	01/14/98	01/14/98	7.5	MG/KG		0.33	1
Magnesium	7439-95-4	QCBLK162341-1	01/14/98	01/15/98	4390	MG/KG		548	1
Manganese	7439-96-5	QCBLK162341-1	01/14/98	01/15/98	356	MG/KG		1.6	1
Nickel	7440-02-0	QCBLK162341-1	01/14/98	01/15/98	10.2	MG/KG		4.4	1
Potassium	7440-09-7	QCBLK162341-1	01/14/98	01/15/98	1090	MG/KG		548	1
Selenium	7782-49-2	QCBLK162341-1	01/14/98	01/14/98	0.32	MG/KG	B	0.55	1
Silver	7440-22-4	QCBLK162341-1	01/14/98	01/15/98	0.86	MG/KG	B	1.1	1
Sodium	7440-23-5	QCBLK162341-1	01/14/98	01/15/98	494	MG/KG	BE	548	1
Vanadium	7440-62-2	QCBLK162341-1	01/14/98	01/15/98	70.2	MG/KG		5.5	1
Zinc	7440-66-6	QCBLK162341-1	01/14/98	01/15/98	58.1	MG/KG	E	2.2	1
Bismuth	7440-69-9	QCBLK162341-1	01/14/98	01/15/98	37.1	MG/KG		21.9	1
Boron	7440-42-8	QCBLK162341-1	01/14/98	01/15/98	6.3	MG/KG	B	21.9	1
Tin	7440-31-5	QCBLK162341-1	01/14/98	01/15/98	3.8	MG/KG	UN	11.0	1

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Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJD1

Quanterra ID : 16620-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162341-1	01/14/98	01/15/98	5510	MG/KG		21.1	1
Antimony	7440-36-0	QCBLK162341-1	01/14/98	01/15/98	4.5	MG/KG	UN	6.3	1
Arsenic	7440-38-2	QCBLK162341-1	01/14/98	01/14/98	2.0	MG/KG		1.1	1
Barium	7440-39-3	QCBLK162341-1	01/14/98	01/15/98	73.1	MG/KG		21.1	1
Beryllium	7440-41-7	QCBLK162341-1	01/14/98	01/15/98	0.56	MG/KG		0.53	1
Cadmium	7440-43-9	QCBLK162341-1	01/14/98	01/14/98	0.35	MG/KG	UN	0.53	1
Calcium	7440-70-2	QCBLK162341-1	01/14/98	01/15/98	5850	MG/KG		528	1
Chromium	7440-47-3	QCBLK162341-1	01/14/98	01/15/98	9.6	MG/KG		1.1	1
Cobalt	7440-48-4	QCBLK162341-1	01/14/98	01/15/98	9.8	MG/KG		5.3	1
Copper	7440-50-8	QCBLK162341-1	01/14/98	01/15/98	14.9	MG/KG		2.6	1
Iron	7439-89-6	QCBLK162341-1	01/14/98	01/15/98	22000	MG/KG		10.6	1
Lead	7439-92-1	QCBLK162341-1	01/14/98	01/14/98	6.9	MG/KG		0.32	1
Magnesium	7439-95-4	QCBLK162341-1	01/14/98	01/15/98	3730	MG/KG		528	1
Manganese	7439-96-5	QCBLK162341-1	01/14/98	01/15/98	315	MG/KG		1.6	1
Nickel	7440-02-0	QCBLK162341-1	01/14/98	01/15/98	10.2	MG/KG		4.2	1
Potassium	7440-09-7	QCBLK162341-1	01/14/98	01/15/98	950	MG/KG		528	1
Selenium	7782-49-2	QCBLK162341-1	01/14/98	01/14/98	0.23	MG/KG	U	0.53	1
Silver	7440-22-4	QCBLK162341-1	01/14/98	01/15/98	0.63	MG/KG	U	1.1	1
Sodium	7440-23-5	QCBLK162341-1	01/14/98	01/15/98	374	MG/KG	BE	528	1
Vanadium	7440-62-2	QCBLK162341-1	01/14/98	01/15/98	60.4	MG/KG		5.3	1
Zinc	7440-66-6	QCBLK162341-1	01/14/98	01/15/98	52.0	MG/KG	E	2.1	1
Bismuth	7440-69-9	QCBLK162341-1	01/14/98	01/15/98	31.0	MG/KG		21.1	1
Boron	7440-42-8	QCBLK162341-1	01/14/98	01/15/98	5.4	MG/KG	B	21.1	1
Tin	7440-31-5	QCBLK162341-1	01/14/98	01/15/98	3.7	MG/KG	UN	10.6	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJD7

Quanterra ID : 16620-004

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162341-1	01/14/98	01/15/98	4420	MG/KG		20.7	1
Antimony	7440-36-0	QCBLK162341-1	01/14/98	01/15/98	4.4	MG/KG	UN	6.2	1
Arsenic	7440-38-2	QCBLK162341-1	01/14/98	01/14/98	1.4	MG/KG		1.0	1
Barium	7440-39-3	QCBLK162341-1	01/14/98	01/15/98	58.9	MG/KG		20.7	1
Beryllium	7440-41-7	QCBLK162341-1	01/14/98	01/15/98	0.36	MG/KG	B	0.52	1
Cadmium	7440-43-9	QCBLK162341-1	01/14/98	01/14/98	0.34	MG/KG	UN	0.52	1
Calcium	7440-70-2	QCBLK162341-1	01/14/98	01/15/98	6510	MG/KG		518	1
Chromium	7440-47-3	QCBLK162341-1	01/14/98	01/15/98	7.5	MG/KG		1.0	1
Cobalt	7440-48-4	QCBLK162341-1	01/14/98	01/15/98	5.7	MG/KG		5.2	1
Copper	7440-50-8	QCBLK162341-1	01/14/98	01/15/98	8.9	MG/KG		2.6	1
Iron	7439-89-6	QCBLK162341-1	01/14/98	01/15/98	13400	MG/KG		10.4	1
Lead	7439-92-1	QCBLK162341-1	01/14/98	01/14/98	2.5	MG/KG		0.31	1
Magnesium	7439-95-4	QCBLK162341-1	01/14/98	01/15/98	3160	MG/KG		518	1
Manganese	7439-96-5	QCBLK162341-1	01/14/98	01/15/98	208	MG/KG		1.6	1
Nickel	7440-02-0	QCBLK162341-1	01/14/98	01/15/98	7.5	MG/KG		4.1	1
Potassium	7440-09-7	QCBLK162341-1	01/14/98	01/15/98	773	MG/KG		518	1
Selenium	7782-49-2	QCBLK162341-1	01/14/98	01/14/98	0.23	MG/KG	U	0.52	1
Silver	7440-22-4	QCBLK162341-1	01/14/98	01/15/98	0.62	MG/KG	U	1.0	1
Sodium	7440-23-5	QCBLK162341-1	01/14/98	01/15/98	281	MG/KG	BE	518	1
Vanadium	7440-62-2	QCBLK162341-1	01/14/98	01/15/98	30.0	MG/KG		5.2	1
Zinc	7440-66-6	QCBLK162341-1	01/14/98	01/15/98	26.9	MG/KG	E	2.1	1
Bismuth	7440-69-9	QCBLK162341-1	01/14/98	01/15/98	21.9	MG/KG		20.7	1
Boron	7440-42-8	QCBLK162341-1	01/14/98	01/15/98	3.4	MG/KG	B	20.7	1
Tin	7440-31-5	QCBLK162341-1	01/14/98	01/15/98	3.6	MG/KG	UN	10.4	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJC8

Quanterra ID : 16620-005

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162341-1	01/14/98	01/15/98	7090	MG/KG		23.7	1
Antimony	7440-36-0	QCBLK162341-1	01/14/98	01/15/98	5.0	MG/KG	UN	7.1	1
Arsenic	7440-38-2	QCBLK162341-1	01/14/98	01/14/98	1.9	MG/KG		1.2	1
Barium	7440-39-3	QCBLK162341-1	01/14/98	01/15/98	72.6	MG/KG		23.7	1
Beryllium	7440-41-7	QCBLK162341-1	01/14/98	01/15/98	0.57	MG/KG	B	0.59	1
Cadmium	7440-43-9	QCBLK162341-1	01/14/98	01/14/98	0.39	MG/KG	UN	0.59	1
Calcium	7440-70-2	QCBLK162341-1	01/14/98	01/15/98	5220	MG/KG		591	1
Chromium	7440-47-3	QCBLK162341-1	01/14/98	01/15/98	9.4	MG/KG		1.2	1
Cobalt	7440-48-4	QCBLK162341-1	01/14/98	01/15/98	9.4	MG/KG		5.9	1
Copper	7440-50-8	QCBLK162341-1	01/14/98	01/15/98	13.1	MG/KG		3.0	1
Iron	7439-89-6	QCBLK162341-1	01/14/98	01/15/98	21900	MG/KG		11.8	1
Lead	7439-92-1	QCBLK162341-1	01/14/98	01/14/98	3.9	MG/KG		0.35	1
Magnesium	7439-95-4	QCBLK162341-1	01/14/98	01/15/98	4600	MG/KG		591	1
Manganese	7439-96-5	QCBLK162341-1	01/14/98	01/15/98	320	MG/KG		1.8	1
Nickel	7440-02-0	QCBLK162341-1	01/14/98	01/15/98	12.8	MG/KG		4.7	1
Potassium	7440-09-7	QCBLK162341-1	01/14/98	01/15/98	1110	MG/KG		591	1
Selenium	7782-49-2	QCBLK162341-1	01/14/98	01/14/98	0.45	MG/KG	B	0.59	1
Silver	7440-22-4	QCBLK162341-1	01/14/98	01/15/98	0.71	MG/KG	U	1.2	1
Sodium	7440-23-5	QCBLK162341-1	01/14/98	01/15/98	671	MG/KG	E	591	1
Vanadium	7440-62-2	QCBLK162341-1	01/14/98	01/15/98	51.5	MG/KG		5.9	1
Zinc	7440-66-6	QCBLK162341-1	01/14/98	01/15/98	41.2	MG/KG	E	2.4	1
Bismuth	7440-69-9	QCBLK162341-1	01/14/98	01/15/98	36.5	MG/KG		23.7	1
Boron	7440-42-8	QCBLK162341-1	01/14/98	01/15/98	5.5	MG/KG	B	23.7	1
Tin	7440-31-5	QCBLK162341-1	01/14/98	01/15/98	4.1	MG/KG	UN	11.8	1

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3350 George Washington Way
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Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BONJF3

Quanterra ID : 16620-006

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162341-1	01/14/98	01/15/98	6290	MG/KG		21.6	1
Antimony	7440-36-0	QCBLK162341-1	01/14/98	01/15/98	4.6	MG/KG	UN	6.5	1
Arsenic	7440-38-2	QCBLK162341-1	01/14/98	01/14/98	3.5	MG/KG		1.1	1
Barium	7440-39-3	QCBLK162341-1	01/14/98	01/15/98	61.2	MG/KG		21.6	1
Beryllium	7440-41-7	QCBLK162341-1	01/14/98	01/15/98	0.42	MG/KG	B	0.54	1
Cadmium	7440-43-9	QCBLK162341-1	01/14/98	01/14/98	0.36	MG/KG	UN	0.54	1
Calcium	7440-70-2	QCBLK162341-1	01/14/98	01/15/98	8110	MG/KG		539	1
Chromium	7440-47-3	QCBLK162341-1	01/14/98	01/15/98	11.2	MG/KG		1.1	1
Cobalt	7440-48-4	QCBLK162341-1	01/14/98	01/15/98	5.9	MG/KG		5.4	1
Copper	7440-50-8	QCBLK162341-1	01/14/98	01/15/98	10.1	MG/KG		2.7	1
Iron	7439-89-6	QCBLK162341-1	01/14/98	01/15/98	14800	MG/KG		10.8	1
Lead	7439-92-1	QCBLK162341-1	01/14/98	01/14/98	4.8	MG/KG		0.32	1
Magnesium	7439-95-4	QCBLK162341-1	01/14/98	01/15/98	4690	MG/KG		539	1
Manganese	7439-96-5	QCBLK162341-1	01/14/98	01/15/98	330	MG/KG		1.6	1
Nickel	7440-02-0	QCBLK162341-1	01/14/98	01/15/98	12.9	MG/KG		4.3	1
Potassium	7440-09-7	QCBLK162341-1	01/14/98	01/15/98	1380	MG/KG		539	1
Selenium	7782-49-2	QCBLK162341-1	01/14/98	01/14/98	0.24	MG/KG	U	0.54	1
Silver	7440-22-4	QCBLK162341-1	01/14/98	01/15/98	0.65	MG/KG	U	1.1	1
Sodium	7440-23-5	QCBLK162341-1	01/14/98	01/15/98	231	MG/KG	BE	539	1
Vanadium	7440-62-2	QCBLK162341-1	01/14/98	01/15/98	27.5	MG/KG		5.4	1
Zinc	7440-66-6	QCBLK162341-1	01/14/98	01/15/98	33.4	MG/KG	E	2.2	1
Bismuth	7440-69-9	QCBLK162341-1	01/14/98	01/15/98	23.0	MG/KG		21.6	1
Boron	7440-42-8	QCBLK162341-1	01/14/98	01/15/98	4.9	MG/KG	B	21.6	1
Tin	7440-31-5	QCBLK162341-1	01/14/98	01/15/98	3.8	MG/KG	UN	10.8	1

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Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJJ1

Quanterra ID : 16620-007

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162341-1	01/14/98	01/15/98	5660	MG/KG		20.7	1
Antimony	7440-36-0	QCBLK162341-1	01/14/98	01/15/98	4.4	MG/KG	UN	6.2	1
Arsenic	7440-38-2	QCBLK162341-1	01/14/98	01/14/98	3.4	MG/KG		1.0	1
Barium	7440-39-3	QCBLK162341-1	01/14/98	01/15/98	47.3	MG/KG		20.7	1
Beryllium	7440-41-7	QCBLK162341-1	01/14/98	01/15/98	0.40	MG/KG	B	0.52	1
Cadmium	7440-43-9	QCBLK162341-1	01/14/98	01/14/98	0.34	MG/KG	UN	0.52	1
Calcium	7440-70-2	QCBLK162341-1	01/14/98	01/15/98	16100	MG/KG		517	1
Chromium	7440-47-3	QCBLK162341-1	01/14/98	01/15/98	10.2	MG/KG		1.0	1
Cobalt	7440-48-4	QCBLK162341-1	01/14/98	01/15/98	5.1	MG/KG	B	5.2	1
Copper	7440-50-8	QCBLK162341-1	01/14/98	01/15/98	11.2	MG/KG		2.6	1
Iron	7439-89-6	QCBLK162341-1	01/14/98	01/15/98	13900	MG/KG		10.3	1
Lead	7439-92-1	QCBLK162341-1	01/14/98	01/14/98	2.9	MG/KG		0.31	1
Magnesium	7439-95-4	QCBLK162341-1	01/14/98	01/15/98	4820	MG/KG		517	1
Manganese	7439-96-5	QCBLK162341-1	01/14/98	01/15/98	229	MG/KG		1.6	1
Nickel	7440-02-0	QCBLK162341-1	01/14/98	01/15/98	13.0	MG/KG		4.1	1
Potassium	7440-09-7	QCBLK162341-1	01/14/98	01/15/98	972	MG/KG		517	1
Selenium	7782-49-2	QCBLK162341-1	01/14/98	01/14/98	0.26	MG/KG	B	0.52	1
Silver	7440-22-4	QCBLK162341-1	01/14/98	01/15/98	0.62	MG/KG	B	1.0	1
Sodium	7440-23-5	QCBLK162341-1	01/14/98	01/15/98	252	MG/KG	BE	517	1
Vanadium	7440-62-2	QCBLK162341-1	01/14/98	01/15/98	26.5	MG/KG		5.2	1
Zinc	7440-66-6	QCBLK162341-1	01/14/98	01/15/98	28.3	MG/KG	E	2.1	1
Bismuth	7440-69-9	QCBLK162341-1	01/14/98	01/15/98	22.3	MG/KG		20.7	1
Boron	7440-42-8	QCBLK162341-1	01/14/98	01/15/98	3.6	MG/KG	B	20.7	1
Tin	7440-31-5	QCBLK162341-1	01/14/98	01/15/98	3.6	MG/KG	UN	10.3	1

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Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJJ4

Quanterra ID : 16620-008

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162341-1	01/14/98	01/15/98	4520	MG/KG		20.5	1
Antimony	7440-36-0	QCBLK162341-1	01/14/98	01/15/98	4.4	MG/KG	UN	6.2	1
Arsenic	7440-38-2	QCBLK162341-1	01/14/98	01/14/98	2.7	MG/KG		1.0	1
Barium	7440-39-3	QCBLK162341-1	01/14/98	01/15/98	33.7	MG/KG		20.5	1
Beryllium	7440-41-7	QCBLK162341-1	01/14/98	01/15/98	0.34	MG/KG	B	0.51	1
Cadmium	7440-43-9	QCBLK162341-1	01/14/98	01/14/98	0.34	MG/KG	UN	0.51	1
Calcium	7440-70-2	QCBLK162341-1	01/14/98	01/15/98	7410	MG/KG		513	1
Chromium	7440-47-3	QCBLK162341-1	01/14/98	01/15/98	8.1	MG/KG		1.0	1
Cobalt	7440-48-4	QCBLK162341-1	01/14/98	01/15/98	4.1	MG/KG	B	5.1	1
Copper	7440-50-8	QCBLK162341-1	01/14/98	01/15/98	7.3	MG/KG		2.6	1
Iron	7439-89-6	QCBLK162341-1	01/14/98	01/15/98	12400	MG/KG		10.3	1
Lead	7439-92-1	QCBLK162341-1	01/14/98	01/14/98	3.0	MG/KG		0.31	1
Magnesium	7439-95-4	QCBLK162341-1	01/14/98	01/15/98	3890	MG/KG		513	1
Manganese	7439-96-5	QCBLK162341-1	01/14/98	01/15/98	191	MG/KG		1.5	1
Nickel	7440-02-0	QCBLK162341-1	01/14/98	01/15/98	7.9	MG/KG		4.1	1
Potassium	7440-09-7	QCBLK162341-1	01/14/98	01/15/98	1010	MG/KG		513	1
Selenium	7782-49-2	QCBLK162341-1	01/14/98	01/14/98	0.23	MG/KG	U	0.51	1
Silver	7440-22-4	QCBLK162341-1	01/14/98	01/15/98	0.61	MG/KG	U	1.0	1
Sodium	7440-23-5	QCBLK162341-1	01/14/98	01/15/98	229	MG/KG	BE	513	1
Vanadium	7440-62-2	QCBLK162341-1	01/14/98	01/15/98	23.7	MG/KG		5.1	1
Zinc	7440-66-6	QCBLK162341-1	01/14/98	01/15/98	28.5	MG/KG	E	2.1	1
Bismuth	7440-69-9	QCBLK162341-1	01/14/98	01/15/98	19.1	MG/KG	B	20.5	1
Boron	7440-42-8	QCBLK162341-1	01/14/98	01/15/98	3.5	MG/KG	B	20.5	1
Tin	7440-31-5	QCBLK162341-1	01/14/98	01/15/98	3.6	MG/KG	UN	10.3	1

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Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJF0

Quanterra ID : 16620-009

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162341-1	01/14/98	01/15/98	4300	MG/KG		20.7	1
Antimony	7440-36-0	QCBLK162341-1	01/14/98	01/15/98	4.4	MG/KG	UN	6.2	1
Arsenic	7440-38-2	QCBLK162341-1	01/14/98	01/14/98	1.6	MG/KG		1.0	1
Barium	7440-39-3	QCBLK162341-1	01/14/98	01/15/98	40.4	MG/KG		20.7	1
Beryllium	7440-41-7	QCBLK162341-1	01/14/98	01/15/98	0.34	MG/KG	B	0.52	1
Cadmium	7440-43-9	QCBLK162341-1	01/14/98	01/14/98	0.34	MG/KG	UN	0.52	1
Calcium	7440-70-2	QCBLK162341-1	01/14/98	01/15/98	5840	MG/KG		518	1
Chromium	7440-47-3	QCBLK162341-1	01/14/98	01/15/98	6.2	MG/KG		1.0	1
Cobalt	7440-48-4	QCBLK162341-1	01/14/98	01/15/98	5.4	MG/KG		5.2	1
Copper	7440-50-8	QCBLK162341-1	01/14/98	01/15/98	13.9	MG/KG		2.6	1
Iron	7439-89-6	QCBLK162341-1	01/14/98	01/15/98	12500	MG/KG		10.4	1
Lead	7439-92-1	QCBLK162341-1	01/14/98	01/14/98	2.7	MG/KG		0.31	1
Magnesium	7439-95-4	QCBLK162341-1	01/14/98	01/15/98	2920	MG/KG		518	1
Manganese	7439-96-5	QCBLK162341-1	01/14/98	01/15/98	183	MG/KG		1.6	1
Nickel	7440-02-0	QCBLK162341-1	01/14/98	01/15/98	6.3	MG/KG		4.1	1
Potassium	7440-09-7	QCBLK162341-1	01/14/98	01/15/98	668	MG/KG		518	1
Selenium	7782-49-2	QCBLK162341-1	01/14/98	01/14/98	0.36	MG/KG	B	0.52	1
Silver	7440-22-4	QCBLK162341-1	01/14/98	01/15/98	0.62	MG/KG	U	1.0	1
Sodium	7440-23-5	QCBLK162341-1	01/14/98	01/15/98	271	MG/KG	BE	518	1
Vanadium	7440-62-2	QCBLK162341-1	01/14/98	01/15/98	31.0	MG/KG		5.2	1
Zinc	7440-66-6	QCBLK162341-1	01/14/98	01/15/98	29.2	MG/KG	E	2.1	1
Bismuth	7440-69-9	QCBLK162341-1	01/14/98	01/15/98	22.3	MG/KG		20.7	1
Boron	7440-42-8	QCBLK162341-1	01/14/98	01/15/98	2.8	MG/KG	B	20.7	1
Tin	7440-31-5	QCBLK162341-1	01/14/98	01/15/98	3.6	MG/KG	UN	10.4	1

Bechtel Hanford Incorporated
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Richland, WA 99352

Project: 550.256

Category: Mercury
Method: SW846 7471
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/23/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMJC2	16620-001	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	0.02	MG/KG	U	0.033	1
BOMJC2	16620-001MS	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	95	%REC			1
BOMJC2	16620-001MSD	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	95	%REC			1
BOMJC5	16620-002	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	0.14	MG/KG		0.036	1
BOMJD1	16620-003	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	0.15	MG/KG		0.035	1
BOMJD7	16620-004	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	0.02	MG/KG	U	0.034	1
BOMJC8	16620-005	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	0.02	MG/KG	U	0.039	1
BOMJF3	16620-006	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	0.02	MG/KG	U	0.036	1
BOMJJ1	16620-007	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	0.02	MG/KG	U	0.034	1
BOMJJ4	16620-008	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	0.02	MG/KG	U	0.034	1
BOMJF0	16620-009	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	0.02	MG/KG	U	0.034	1
BOMJF6	16621-001	Mercury	7439-97-6	QCBLK163191-1	01/22/98	01/22/98	0.02	MG/KG	U	0.034	1
BOMJF9	16621-002	Mercury	7439-97-6	QCBLK163191-1	01/22/98	01/22/98	0.02	MG/KG	U	0.034	1
BOMJK0	16626-001	Mercury	7439-97-6	QCBLK163191-1	01/22/98	01/22/98	0.02	MG/KG	U	0.035	1
BOMJJ7	16626-002	Mercury	7439-97-6	QCBLK163191-1	01/22/98	01/22/98	0.02	MG/KG	U	0.034	1
BOMJK6	16628-001	Mercury	7439-97-6	QCBLK163191-1	01/22/98	01/22/98	0.02	MG/KG	U	0.036	1
NA	QCLCS162226-1	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	93	%REC			10
NA	QCLCS163191-1	Mercury	7439-97-6	QCBLK163191-1	01/22/98	01/22/98	104	%REC			10
NA	QCBLK162226-1	Mercury	7439-97-6	QCBLK162226-1	01/13/98	01/13/98	0.017	MG/KG	U	0.033	1
NA	QCBLK163191-1	Mercury	7439-97-6	QCBLK163191-1	01/22/98	01/22/98	0.017	MG/KG	U	0.033	1

Bechtel Hanford Incorporated
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Richland, WA 99352

Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 01/02/98
Receipt Date : 01/05/98
Report Date : 02/04/98

Client ID: BOMJF6

Quanterra ID : 16621-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK163930-1	01/30/98	01/30/98	6090	MG/KG		20.7	1
Antimony	7440-36-0	QCBLK163930-1	01/30/98	01/30/98	4.4	MG/KG	UN	6.2	1
Arsenic	7440-38-2	QCBLK163930-1	01/30/98	01/30/98	3.7	MG/KG		1.0	1
Barium	7440-39-3	QCBLK163930-1	01/30/98	01/30/98	55.5	MG/KG		20.7	1
Beryllium	7440-41-7	QCBLK163930-1	01/30/98	01/30/98	0.37	MG/KG	B	0.52	1
Cadmium	7440-43-9	QCBLK163930-1	01/30/98	01/30/98	0.34	MG/KG	UN	0.52	1
Calcium	7440-70-2	QCBLK163930-1	01/30/98	01/30/98	9130	MG/KG		518	1
Chromium	7440-47-3	QCBLK163930-1	01/30/98	01/30/98	9.5	MG/KG		1.0	1
Cobalt	7440-48-4	QCBLK163930-1	01/30/98	01/30/98	5.1	MG/KG	B	5.2	1
Copper	7440-50-8	QCBLK163930-1	01/30/98	01/30/98	8.9	MG/KG		2.6	1
Iron	7439-89-6	QCBLK163930-1	01/30/98	01/30/98	13500	MG/KG		10.4	1
Lead	7439-92-1	QCBLK163930-1	01/30/98	01/30/98	4.1	MG/KG		0.31	1
Magnesium	7439-95-4	QCBLK163930-1	01/30/98	01/30/98	5110	MG/KG		518	1
Manganese	7439-96-5	QCBLK163930-1	01/30/98	01/30/98	254	MG/KG		1.6	1
Nickel	7440-02-0	QCBLK163930-1	01/30/98	01/30/98	9.0	MG/KG		4.1	1
Potassium	7440-09-7	QCBLK163930-1	01/30/98	01/30/98	1320	MG/KG		518	1
Selenium	7782-49-2	QCBLK163930-1	01/30/98	01/30/98	0.50	MG/KG	B	0.52	1
Silver	7440-22-4	QCBLK163930-1	01/30/98	01/30/98	0.79	MG/KG	B	1.0	1
Sodium	7440-23-5	QCBLK163930-1	01/30/98	01/30/98	122	MG/KG	BE	518	1
Vanadium	7440-62-2	QCBLK163930-1	01/30/98	01/30/98	22.7	MG/KG		5.2	1
Zinc	7440-66-6	QCBLK163930-1	01/30/98	01/30/98	29.0	MG/KG	E	2.1	1
Bismuth	7440-69-9	QCBLK163930-1	01/30/98	01/30/98	20.1	MG/KG	B	20.7	1
Boron	7440-42-8	QCBLK163930-1	01/30/98	01/30/98	5.0	MG/KG	B	20.7	1
Tin	7440-31-5	QCBLK163930-1	01/30/98	01/30/98	3.6	MG/KG	UN	10.4	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 01/03/98
Receipt Date : 01/05/98
Report Date : 02/04/98

Client ID: BOMJF9

Quanterra ID : 16621-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK163930-1	01/30/98	01/30/98	6980	MG/KG		20.6	1
Antimony	7440-36-0	QCBLK163930-1	01/30/98	01/30/98	4.4	MG/KG	UN	6.2	1
Arsenic	7440-38-2	QCBLK163930-1	01/30/98	01/30/98	3.7	MG/KG		1.0	1
Barium	7440-39-3	QCBLK163930-1	01/30/98	01/30/98	52.0	MG/KG		20.6	1
Beryllium	7440-41-7	QCBLK163930-1	01/30/98	01/30/98	0.38	MG/KG	B	0.51	1
Cadmium	7440-43-9	QCBLK163930-1	01/30/98	01/30/98	0.34	MG/KG	UN	0.51	1
Calcium	7440-70-2	QCBLK163930-1	01/30/98	01/30/98	7850	MG/KG		514	1
Chromium	7440-47-3	QCBLK163930-1	01/30/98	01/30/98	14.0	MG/KG		1.0	1
Cobalt	7440-48-4	QCBLK163930-1	01/30/98	01/30/98	6.8	MG/KG		5.1	1
Copper	7440-50-8	QCBLK163930-1	01/30/98	01/30/98	10.5	MG/KG		2.6	1
Iron	7439-89-6	QCBLK163930-1	01/30/98	01/30/98	15800	MG/KG		10.3	1
Lead	7439-92-1	QCBLK163930-1	01/30/98	01/30/98	3.3	MG/KG		0.31	1
Magnesium	7439-95-4	QCBLK163930-1	01/30/98	01/30/98	5600	MG/KG		514	1
Manganese	7439-96-5	QCBLK163930-1	01/30/98	01/30/98	233	MG/KG		1.5	1
Nickel	7440-02-0	QCBLK163930-1	01/30/98	01/30/98	14.6	MG/KG		4.1	1
Potassium	7440-09-7	QCBLK163930-1	01/30/98	01/30/98	1050	MG/KG		514	1
Selenium	7782-49-2	QCBLK163930-1	01/30/98	01/30/98	0.26	MG/KG	B	0.51	1
Silver	7440-22-4	QCBLK163930-1	01/30/98	01/30/98	0.62	MG/KG	U	1.0	1
Sodium	7440-23-5	QCBLK163930-1	01/30/98	01/30/98	151	MG/KG	BE	514	1
Vanadium	7440-62-2	QCBLK163930-1	01/30/98	01/30/98	32.1	MG/KG		5.1	1
Zinc	7440-66-6	QCBLK163930-1	01/30/98	01/30/98	33.0	MG/KG	E	2.1	1
Bismuth	7440-69-9	QCBLK163930-1	01/30/98	01/30/98	26.2	MG/KG		20.6	1
Boron	7440-42-8	QCBLK163930-1	01/30/98	01/30/98	4.7	MG/KG	B	20.6	1
Tin	7440-31-5	QCBLK163930-1	01/30/98	01/30/98	3.6	MG/KG	UN	10.3	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/04/98

Client ID: BOMJK0

Quanterra ID : 16626-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK163930-1	01/30/98	01/30/98	6850	MG/KG		21.2	1
Antimony	7440-36-0	QCBLK163930-1	01/30/98	01/30/98	4.5	MG/KG	UN	6.4	1
Arsenic	7440-38-2	QCBLK163930-1	01/30/98	01/30/98	3.3	MG/KG		1.1	1
Barium	7440-39-3	QCBLK163930-1	01/30/98	01/30/98	61.7	MG/KG		21.2	1
Beryllium	7440-41-7	QCBLK163930-1	01/30/98	01/30/98	0.42	MG/KG	B	0.53	1
Cadmium	7440-43-9	QCBLK163930-1	01/30/98	01/30/98	0.35	MG/KG	UN	0.53	1
Calcium	7440-70-2	QCBLK163930-1	01/30/98	01/30/98	7810	MG/KG		530	1
Chromium	7440-47-3	QCBLK163930-1	01/30/98	01/30/98	15.7	MG/KG		1.1	1
Cobalt	7440-48-4	QCBLK163930-1	01/30/98	01/30/98	7.2	MG/KG		5.3	1
Copper	7440-50-8	QCBLK163930-1	01/30/98	01/30/98	14.8	MG/KG		2.7	1
Iron	7439-89-6	QCBLK163930-1	01/30/98	01/30/98	16700	MG/KG		10.6	1
Lead	7439-92-1	QCBLK163930-1	01/30/98	01/30/98	3.3	MG/KG		0.32	1
Magnesium	7439-95-4	QCBLK163930-1	01/30/98	01/30/98	5250	MG/KG		530	1
Manganese	7439-96-5	QCBLK163930-1	01/30/98	01/30/98	274	MG/KG		1.6	1
Nickel	7440-02-0	QCBLK163930-1	01/30/98	01/30/98	15.0	MG/KG		4.2	1
Potassium	7440-09-7	QCBLK163930-1	01/30/98	01/30/98	1490	MG/KG		530	1
Selenium	7782-49-2	QCBLK163930-1	01/30/98	01/30/98	0.42	MG/KG	B	0.53	1
Silver	7440-22-4	QCBLK163930-1	01/30/98	01/30/98	0.64	MG/KG	U	1.1	1
Sodium	7440-23-5	QCBLK163930-1	01/30/98	01/30/98	226	MG/KG	BE	530	1
Vanadium	7440-62-2	QCBLK163930-1	01/30/98	01/30/98	37.7	MG/KG		5.3	1
Zinc	7440-66-6	QCBLK163930-1	01/30/98	01/30/98	33.2	MG/KG	E	2.1	1
Bismuth	7440-69-9	QCBLK163930-1	01/30/98	01/30/98	23.5	MG/KG		21.2	1
Boron	7440-42-8	QCBLK163930-1	01/30/98	01/30/98	4.9	MG/KG	B	21.2	1
Tin	7440-31-5	QCBLK163930-1	01/30/98	01/30/98	3.7	MG/KG	UN	10.6	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/04/98

Client ID: BOMJJ7

Quanterra ID : 16626-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analysis Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK163930-1	01/30/98	01/30/98	4930	MG/KG		20.5	1
Antimony	7440-36-0	QCBLK163930-1	01/30/98	01/30/98	4.3	MG/KG	UN	6.1	1
Arsenic	7440-38-2	QCBLK163930-1	01/30/98	01/30/98	2.6	MG/KG		1.0	1
Barium	7440-39-3	QCBLK163930-1	01/30/98	01/30/98	43.1	MG/KG		28.5	1
Beryllium	7440-41-7	QCBLK163930-1	01/30/98	01/30/98	0.30	MG/KG	B	0.51	1
Cadmium	7440-43-9	QCBLK163930-1	01/30/98	01/30/98	0.34	MG/KG	UN	0.51	1
Calcium	7440-70-2	QCBLK163930-1	01/30/98	01/30/98	5260	MG/KG		511	1
Chromium	7440-47-3	QCBLK163930-1	01/30/98	01/30/98	9.1	MG/KG		1.0	1
Cobalt	7440-48-4	QCBLK163930-1	01/30/98	01/30/98	5.5	MG/KG		5.1	1
Copper	7440-50-8	QCBLK163930-1	01/30/98	01/30/98	10.5	MG/KG		2.6	1
Iron	7439-89-6	QCBLK163930-1	01/30/98	01/30/98	12900	MG/KG		10.2	1
Lead	7439-92-1	QCBLK163930-1	01/30/98	01/30/98	2.4	MG/KG		0.31	1
Magnesium	7439-95-4	QCBLK163930-1	01/30/98	01/30/98	3970	MG/KG		511	1
Manganese	7439-96-5	QCBLK163930-1	01/30/98	01/30/98	199	MG/KG		1.5	1
Nickel	7440-02-0	QCBLK163930-1	01/30/98	01/30/98	13.9	MG/KG		4.1	1
Potassium	7440-09-7	QCBLK163930-1	01/30/98	01/30/98	870	MG/KG		511	1
Selenium	7782-49-2	QCBLK163930-1	01/30/98	01/30/98	0.32	MG/KG	B	0.51	1
Silver	7440-22-4	QCBLK163930-1	01/30/98	01/30/98	0.61	MG/KG	U	1.0	1
Sodium	7440-23-5	QCBLK163930-1	01/30/98	01/30/98	151	MG/KG	BE	511	1
Vanadium	7440-62-2	QCBLK163930-1	01/30/98	01/30/98	28.1	MG/KG		5.1	1
Zinc	7440-66-6	QCBLK163930-1	01/30/98	01/30/98	24.7	MG/KG	E	2.0	1
Bismuth	7440-69-9	QCBLK163930-1	01/30/98	01/30/98	19.3	MG/KG	B	20.5	1
Boron	7440-42-8	QCBLK163930-1	01/30/98	01/30/98	2.9	MG/KG	B	20.5	1
Tin	7440-31-5	QCBLK163930-1	01/30/98	01/30/98	3.6	MG/KG	UN	10.2	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 01/07/98
Receipt Date : 01/08/98
Report Date : 02/04/98

Client ID: BOMJK6

Quanterra ID : 16628-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK163930-1	01/30/98	01/30/98	3530	MG/KG		21.6	1
Antimony	7440-36-0	QCBLK163930-1	01/30/98	01/30/98	4.6	MG/KG	UN	6.5	1
Arsenic	7440-38-2	QCBLK163930-1	01/30/98	01/30/98	0.72	MG/KG	B	1.1	1
Barium	7440-39-3	QCBLK163930-1	01/30/98	01/30/98	31.3	MG/KG		21.6	1
Beryllium	7440-41-7	QCBLK163930-1	01/30/98	01/30/98	0.23	MG/KG	B	0.54	1
Cadmium	7440-43-9	QCBLK163930-1	01/30/98	01/30/98	0.36	MG/KG	UN	0.54	1
Calcium	7440-70-2	QCBLK163930-1	01/30/98	01/30/98	2920	MG/KG		539	1
Chromium	7440-47-3	QCBLK163930-1	01/30/98	01/30/98	7.8	MG/KG		1.1	1
Cobalt	7440-48-4	QCBLK163930-1	01/30/98	01/30/98	4.6	MG/KG	B	5.4	1
Copper	7440-50-8	QCBLK163930-1	01/30/98	01/30/98	6.7	MG/KG		2.7	1
Iron	7439-89-6	QCBLK163930-1	01/30/98	01/30/98	8930	MG/KG		10.8	1
Lead	7439-92-1	QCBLK163930-1	01/30/98	01/30/98	1.4	MG/KG		0.32	1
Magnesium	7439-95-4	QCBLK163930-1	01/30/98	01/30/98	2300	MG/KG		539	1
Manganese	7439-96-5	QCBLK163930-1	01/30/98	01/30/98	147	MG/KG		1.6	1
Nickel	7440-02-0	QCBLK163930-1	01/30/98	01/30/98	7.0	MG/KG		4.3	1
Potassium	7440-09-7	QCBLK163930-1	01/30/98	01/30/98	579	MG/KG		539	1
Selenium	7782-49-2	QCBLK163930-1	01/30/98	01/30/98	0.24	MG/KG	U	0.54	1
Silver	7440-22-4	QCBLK163930-1	01/30/98	01/30/98	0.65	MG/KG	U	1.1	1
Sodium	7440-23-5	QCBLK163930-1	01/30/98	01/30/98	265	MG/KG	BE	539	1
Vanadium	7440-62-2	QCBLK163930-1	01/30/98	01/30/98	22.9	MG/KG		5.4	1
Zinc	7440-66-6	QCBLK163930-1	01/30/98	01/30/98	18.5	MG/KG	E	2.2	1
Bismuth	7440-69-9	QCBLK163930-1	01/30/98	01/30/98	12.4	MG/KG	B	21.6	1
Boron	7440-42-8	QCBLK163930-1	01/30/98	01/30/98	3.0	MG/KG	B	21.6	1
Tin	7440-31-5	QCBLK163930-1	01/30/98	01/30/98	3.8	MG/KG	UN	10.8	1

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: QUANTERRA_MO_____ Contract: 550.256___

Lab Code: ITMO__ Case No.: _____ SAS No.: _____ SDG No.: W02161_____

SOW No.: SW846

EPA Sample No.	Lab Sample ID
B0MJC2	16620-001
B0MJC2SD	16620-001SD
B0MJC2S	16620-001S
B0MJC5	16620-002
B0MJC8	16620-005
B0MJD1	16620-003
B0MJD7	16620-004
B0MJF0	16620-009
B0MJF3	16620-006
B0MJF6	16621-001
B0MJF9	16621-002
B0MJJ1	16620-007
B0MJJ4	16620-008
B0MJJ7	16626-002
B0MJK0	16626-001
B0MJK6	16628-001

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: _____ Title: _____

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJC2

Lab Name: QUANTERRA_MO Contract: 550.256
Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161
Matrix (soil/water): SOIL Lab Sample ID: 16620-001
Level (low/med): LOW Date Received: 01/02/98
% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5710			P
7440-36-0	Antimony	5.0	B	N	P
7440-38-2	Arsenic	2.6			P
7440-39-3	Barium	58.1			P
7440-41-7	Beryllium	0.54			P
7440-43-9	Cadmium	0.33	U	N	P
7440-70-2	Calcium	5430			P
7440-47-3	Chromium	9.7			P
7440-48-4	Cobalt	8.7			P
7440-50-8	Copper	13.0			P
7439-89-6	Iron	20000			P
7439-92-1	Lead	4.7			P
7439-95-4	Magnesium	3780			P
7439-96-5	Manganese	277			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	9.6			P
7440-09-7	Potassium	1210			P
7782-49-2	Selenium	0.45	B		P
7440-22-4	Silver	0.73	B		P
7440-23-5	Sodium	302	B	E	P
7440-62-2	Vanadium	47.3			P
7440-66-6	Zinc	36.8		E	P
7440-69-9	Bismuth	27.5			P
7440-42-8	Boron	5.1	B		P
7440-31-5	Tin	3.5	U	N	P

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJC5

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16620-002

Level (low/med): LOW Date Received: 01/02/98

% Solids: 91.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6320			P
7440-36-0	Antimony	4.7	U	N	P
7440-38-2	Arsenic	3.0			P
7440-39-3	Barium	89.4			P
7440-41-7	Beryllium	0.70			P
7440-43-9	Cadmium	0.36	U	N	P
7440-70-2	Calcium	8760			P
7440-47-3	Chromium	8.5			P
7440-48-4	Cobalt	11.4			P
7440-50-8	Copper	14.6			P
7439-89-6	Iron	25000			P
7439-92-1	Lead	7.5			P
7439-95-4	Magnesium	4390			P
7439-96-5	Manganese	356			P
7439-97-6	Mercury	0.14			CV
7440-02-0	Nickel	10.2			P
7440-09-7	Potassium	1090			P
7782-49-2	Selenium	0.32	B		P
7440-22-4	Silver	0.86	B		P
7440-23-5	Sodium	494	B	E	P
7440-62-2	Vanadium	70.2			P
7440-66-6	Zinc	58.1		E	P
7440-69-9	Bismuth	37.1			P
7440-42-8	Boron	6.3	B		P
7440-31-5	Tin	3.8	U	N	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJC8

Lab Name: QUANTERRA_MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16620-005

Level (low/med): LOW Date Received: 01/02/98

% Solids: 84.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7090			P
7440-36-0	Antimony	5.0	U	N	P
7440-38-2	Arsenic	1.9			P
7440-39-3	Barium	72.6			P
7440-41-7	Beryllium	0.57	B		P
7440-43-9	Cadmium	0.39	U	N	P
7440-70-2	Calcium	5220			P
7440-47-3	Chromium	9.4			P
7440-48-4	Cobalt	9.4			P
7440-50-8	Copper	13.1			P
7439-89-6	Iron	21900			P
7439-92-1	Lead	3.9			P
7439-95-4	Magnesium	4600			P
7439-96-5	Manganese	320			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	12.8			P
7440-09-7	Potassium	1110			P
7782-49-2	Selenium	0.45	B		P
7440-22-4	Silver	0.71	U		P
7440-23-5	Sodium	671		E	P
7440-62-2	Vanadium	51.5			P
7440-66-6	Zinc	41.2		E	P
7440-69-9	Bismuth	36.5			P
7440-42-8	Boron	5.5	B		P
7440-31-5	Tin	4.1	U	N	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJD1

Lab Name: QUANTERRA_MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16620-003

Level (low/med): LOW Date Received: 01/02/98

% Solids: 94.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5510			P
7440-36-0	Antimony	4.5	U	N	P
7440-38-2	Arsenic	2.0			P
7440-39-3	Barium	73.1			P
7440-41-7	Beryllium	0.56			P
7440-43-9	Cadmium	0.35	U	N	P
7440-70-2	Calcium	5850			P
7440-47-3	Chromium	9.6			P
7440-48-4	Cobalt	9.8			P
7440-50-8	Copper	14.9			P
7439-89-6	Iron	22000			P
7439-92-1	Lead	6.9			P
7439-95-4	Magnesium	3730			P
7439-96-5	Manganese	315			P
7439-97-6	Mercury	0.15			CV
7440-02-0	Nickel	10.2			P
7440-09-7	Potassium	950			P
7782-49-2	Selenium	0.23	U		P
7440-22-4	Silver	0.63	U		P
7440-23-5	Sodium	374	B	E	P
7440-62-2	Vanadium	60.4			P
7440-66-6	Zinc	52.0		E	P
7440-69-9	Bismuth	31.0			P
7440-42-8	Boron	5.4	B		P
7440-31-5	Tin	3.7	U	N	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJD7

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16620-004

Level (low/med): LOW Date Received: 01/02/98

% Solids: 96.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4420			P
7440-36-0	Antimony	4.4	U	N	P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	58.9			P
7440-41-7	Beryllium	0.36	B		P
7440-43-9	Cadmium	0.34	U	N	P
7440-70-2	Calcium	6510			P
7440-47-3	Chromium	7.5			P
7440-48-4	Cobalt	5.7			P
7440-50-8	Copper	8.9			P
7439-89-6	Iron	13400			P
7439-92-1	Lead	2.5			P
7439-95-4	Magnesium	3160			P
7439-96-5	Manganese	208			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	7.5			P
7440-09-7	Potassium	773			P
7782-49-2	Selenium	0.23	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	281	B	E	P
7440-62-2	Vanadium	30.0			P
7440-66-6	Zinc	26.9		E	P
7440-69-9	Bismuth	21.9			P
7440-42-8	Boron	3.4	B		P
7440-31-5	Tin	3.6	U	N	P

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJF0

Lab Name: QUANTERRA_MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16620-009

Level (low/med): LOW Date Received: 01/02/98

% Solids: 96.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4300			P
7440-36-0	Antimony	4.4	U	N	P
7440-38-2	Arsenic	1.6			P
7440-39-3	Barium	40.4			P
7440-41-7	Beryllium	0.34	B		P
7440-43-9	Cadmium	0.34	U	N	P
7440-70-2	Calcium	5840			P
7440-47-3	Chromium	6.2			P
7440-48-4	Cobalt	5.4			P
7440-50-8	Copper	13.9			P
7439-89-6	Iron	12500			P
7439-92-1	Lead	2.7			P
7439-95-4	Magnesium	2920			P
7439-96-5	Manganese	183			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	6.3			P
7440-09-7	Potassium	668			P
7782-49-2	Selenium	0.36	B		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	271	B	E	P
7440-62-2	Vanadium	31.0			P
7440-66-6	Zinc	25.2		E	P
7440-69-9	Bismuth	22.3			P
7440-42-8	Boron	2.8	B		P
7440-31-5	Tin	3.6	U	N	P

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJF3

Lab Name: QUANTERRA_MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16620-006

Level (low/med): LOW Date Received: 01/02/98

% Solids: 92.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6290			P
7440-36-0	Antimony	4.6	U	N	P
7440-38-2	Arsenic	3.5			P
7440-39-3	Barium	61.2			P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	0.36	U	N	P
7440-70-2	Calcium	8110			P
7440-47-3	Chromium	11.2			P
7440-48-4	Cobalt	5.9			P
7440-50-8	Copper	10.1			P
7439-89-6	Iron	14800			P
7439-92-1	Lead	4.8			P
7439-95-4	Magnesium	4690			P
7439-96-5	Manganese	330			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	12.9			P
7440-09-7	Potassium	1380			P
7782-49-2	Selenium	0.24	U		P
7440-22-4	Silver	0.65	U		P
7440-23-5	Sodium	231	B	E	P
7440-62-2	Vanadium	27.5			P
7440-66-6	Zinc	33.4		E	P
7440-69-9	Bismuth	23.0			P
7440-42-8	Boron	4.9	B		P
7440-31-5	Tin	3.8	U	N	P

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJF6

Lab Name: QUANTERRA_MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16621-001

Level (low/med): LOW Date Received: 01/05/98

% Solids: 96.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6090			P
7440-36-0	Antimony	4.4	U	N	P
7440-38-2	Arsenic	3.7			P
7440-39-3	Barium	55.5			P
7440-41-7	Beryllium	0.37	B		P
7440-43-9	Cadmium	0.34	U	N	P
7440-70-2	Calcium	9130			P
7440-47-3	Chromium	9.5			P
7440-48-4	Cobalt	5.1	B		P
7440-50-8	Copper	8.9			P
7439-89-6	Iron	13500			P
7439-92-1	Lead	4.1			P
7439-95-4	Magnesium	5110			P
7439-96-5	Manganese	254			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	9.0			P
7440-09-7	Potassium	1320			P
7782-49-2	Selenium	0.50	B		P
7440-22-4	Silver	0.79	B		P
7440-23-5	Sodium	122	B	E	P
7440-62-2	Vanadium	22.7			P
7440-66-6	Zinc	29.0		E	P
7440-69-9	Bismuth	20.1	B		P
7440-42-8	Boron	5.0	B		P
7440-31-5	Tin	3.6	U	N	P

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJF9

Lab Name: QUANTERRA MO Contract: 550.256
Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161
Matrix (soil/water): SOIL Lab Sample ID: 16621-002
Level (low/med): LOW Date Received: 01/05/98
% Solids: 97.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6980			P
7440-36-0	Antimony	4.4	U	N	P
7440-38-2	Arsenic	3.7			P
7440-39-3	Barium	52.0			P
7440-41-7	Beryllium	0.38	B		P
7440-43-9	Cadmium	0.34	U	N	P
7440-70-2	Calcium	7830			P
7440-47-3	Chromium	14.0			P
7440-48-4	Cobalt	6.8			P
7440-50-8	Copper	10.5			P
7439-89-6	Iron	15800			P
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium	5600			P
7439-96-5	Manganese	233			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	14.6			P
7440-09-7	Potassium	1050			P
7782-49-2	Selenium	0.26	B		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	151	B	E	P
7440-62-2	Vanadium	32.1			P
7440-66-6	Zinc	33.0		E	P
7440-69-9	Bismuth	26.2			P
7440-42-8	Boron	4.7	B		P
7440-31-5	Tin	3.6	U	N	P

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJJ1

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16620-007

Level (low/med): LOW Date Received: 01/02/98

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5660			P
7440-36-0	Antimony	4.4	U	N	P
7440-38-2	Arsenic	3.4			P
7440-39-3	Barium	47.3			P
7440-41-7	Beryllium	0.40	B		P
7440-43-9	Cadmium	0.34	U	N	P
7440-70-2	Calcium	16100			P
7440-47-3	Chromium	10.2			P
7440-48-4	Cobalt	5.1	B		P
7440-50-8	Copper	11.2			P
7439-89-6	Iron	13900			P
7439-92-1	Lead	2.9			P
7439-95-4	Magnesium	4820			P
7439-96-5	Manganese	229			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	13.0			P
7440-09-7	Potassium	972			P
7782-49-2	Selenium	0.26	B		P
7440-22-4	Silver	0.62	B		P
7440-23-5	Sodium	252	B	E	P
7440-62-2	Vanadium	26.5			P
7440-66-6	Zinc	28.3		E	P
7440-69-9	Bismuth	22.3			P
7440-42-8	Boron	3.6	B		P
7440-31-5	Tin	3.6	U	N	P

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJJ4

Lab Name: QUANTERRA_MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16620-008

Level (low/med): LOW Date Received: 01/02/98

% Solids: 97.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4520			P
7440-36-0	Antimony	4.4	U	N	P
7440-38-2	Arsenic	2.7			P
7440-39-3	Barium	33.7			P
7440-41-7	Beryllium	0.34	B		P
7440-43-9	Cadmium	0.34	U	N	P
7440-70-2	Calcium	7410			P
7440-47-3	Chromium	8.1			P
7440-48-4	Cobalt	4.1	B		P
7440-50-8	Copper	7.3			P
7439-89-6	Iron	12400			P
7439-92-1	Lead	3.0			P
7439-95-4	Magnesium	3890			P
7439-96-5	Manganese	191			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	7.9			P
7440-09-7	Potassium	1010			P
7782-49-2	Selenium	0.23	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	229	B	E	P
7440-62-2	Vanadium	23.7			P
7440-66-6	Zinc	28.5		E	P
7440-69-9	Bismuth	19.1	B		P
7440-42-8	Boron	3.5	B		P
7440-31-5	Tin	3.6	U	N	P

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJJ7

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16626-002

Level (low/med): LOW Date Received: 01/06/98

% Solids: 97.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4930			P
7440-36-0	Antimony	4.3	U	N	P
7440-38-2	Arsenic	2.6			P
7440-39-3	Barium	43.1			P
7440-41-7	Beryllium	0.30	B		P
7440-43-9	Cadmium	0.34	U	N	P
7440-70-2	Calcium	5260			P
7440-47-3	Chromium	9.1			P
7440-48-4	Cobalt	5.5			P
7440-50-8	Copper	10.5			P
7439-89-6	Iron	12900			P
7439-92-1	Lead	2.4			P
7439-95-4	Magnesium	3970			P
7439-96-5	Manganese	199			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	13.9			P
7440-09-7	Potassium	870			P
7782-49-2	Selenium	0.32	B		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	151	B	E	P
7440-62-2	Vanadium	28.1			P
7440-66-6	Zinc	24.7		E	P
7440-69-9	Bismuth	19.3	B		P
7440-42-8	Boron	2.9	B		P
7440-31-5	Tin	3.6	U	N	P

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJK0

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16626-001

Level (low/med): LOW Date Received: 01/06/98

% Solids: 94.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6850			P
7440-36-0	Antimony	4.5	U	N	P
7440-38-2	Arsenic	3.3			P
7440-39-3	Barium	61.7			P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	0.35	U	N	P
7440-70-2	Calcium	7810			P
7440-47-3	Chromium	15.7			P
7440-48-4	Cobalt	7.2			P
7440-50-8	Copper	14.8			P
7439-89-6	Iron	16700			P
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium	5230			P
7439-96-5	Manganese	274			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	15.0			P
7440-09-7	Potassium	1490			P
7782-49-2	Selenium	0.42	B		P
7440-22-4	Silver	0.64	U		P
7440-23-5	Sodium	226	B	E	P
7440-62-2	Vanadium	37.7			P
7440-66-6	Zinc	33.2		E	P
7440-69-9	Bismuth	23.5			P
7440-42-8	Boron	4.9	B		P
7440-31-5	Tin	3.7	U	N	P

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MJK6

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix (soil/water): SOIL Lab Sample ID: 16628-001

Level (low/med): LOW Date Received: 01/08/98

% Solids: 92.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3530			P
7440-36-0	Antimony	4.6	U	N	P
7440-38-2	Arsenic	0.72	B		P
7440-39-3	Barium	31.3			P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	0.36	U	N	P
7440-70-2	Calcium	2920			P
7440-47-3	Chromium	7.8			P
7440-48-4	Cobalt	4.6	B		P
7440-50-8	Copper	6.7			P
7439-89-6	Iron	8930			P
7439-92-1	Lead	1.4			P
7439-95-4	Magnesium	2300			P
7439-96-5	Manganese	147			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	7.0			P
7440-09-7	Potassium	579			P
7782-49-2	Selenium	0.24	U		P
7440-22-4	Silver	0.65	U		P
7440-23-5	Sodium	265	B	E	P
7440-62-2	Vanadium	22.9			P
7440-66-6	Zinc	18.5		E	P
7440-69-9	Bismuth	12.4	B		P
7440-42-8	Boron	3.0	B		P
7440-31-5	Tin	3.8	U	N	P

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Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJC2

Quanterra ID : 16620-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2-Chlorophenol	95-57-8	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
1,3-Dichlorobenzene	541-73-1	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
1,4-Dichlorobenzene	106-46-7	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
1,2-Dichlorobenzene	95-50-1	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2-Methylphenol	95-48-7	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
4-Methylphenol	106-44-5	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Hexachloroethane	67-72-1	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Nitrobenzene	98-95-3	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Isophorone	78-59-1	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2-Nitrophenol	88-75-5	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2,4-Dimethylphenol	105-67-9	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2,4-Dichlorophenol	120-83-2	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Naphthalene	91-20-3	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
4-Chloroaniline	106-47-8	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Hexachlorobutadiene	87-68-3	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2-Methylnaphthalene	91-57-6	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162118-1	01/12/98	01/17/98	1600	UG/KG	U	1600	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2-Chloronaphthalene	91-58-7	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2-Nitroaniline	88-74-4	QCBLK162118-1	01/12/98	01/17/98	1600	UG/KG	U	1600	1
DimethylPhthalate	131-11-3	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Acenaphthylene	208-96-8	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2,6-Dinitrotoluene	606-20-2	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
3-Nitroaniline	99-09-2	QCBLK162118-1	01/12/98	01/17/98	1600	UG/KG	U	1600	1
Acenaphthene	83-32-9	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2,4-Dinitrophenol	51-28-5	QCBLK162118-1	01/12/98	01/17/98	1600	UG/KG	U	1600	1
4-Nitrophenol	100-02-7	QCBLK162118-1	01/12/98	01/17/98	1600	UG/KG	U	1600	1
Dibenzofuran	132-64-9	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
2,4-Dinitrotoluene	121-14-2	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Diethylphthalate	84-66-2	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Fluorene	86-73-7	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
4-Nitroaniline	100-01-6	QCBLK162118-1	01/12/98	01/17/98	1600	UG/KG	U	1600	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162118-1	01/12/98	01/17/98	1600	UG/KG	U	1600	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Hexachlorobenzene	118-74-1	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Pentachlorophenol	87-86-5	QCBLK162118-1	01/12/98	01/17/98	1600	UG/KG	U	1600	1
Phenanthrene	85-01-8	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Anthracene	120-12-7	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Carbazole	86-74-8	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Di-N-Butylphthalate	84-74-2	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Fluoranthene	206-44-0	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Pyrene	129-00-0	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
ButylBenzylPhthalate	85-68-7	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162118-1	01/12/98	01/17/98	1600	UG/KG	U	1600	1
Benzo(a)Anthracene	56-55-3	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Chrysene	218-01-9	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162118-1	01/12/98	01/17/98	73	UG/KG	BJ	330	1
di-N-OctylPhthalate	117-84-0	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Benzo(a)Pyrene	50-32-8	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1

Bechtel Hanford Incorporated
3350 George Washington Way
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Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: B0MJC2

Quanterra ID : 16620-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162118-1	01/12/98	01/17/98	330	UG/KG	U	330	1
Tri-n-butyl phosphate	126-73-8	QCBLK162118-1	01/12/98	01/22/98	660	UG/KG	U	660	1
Aldol Condensation	TIC-4	QCBLK162118-1	01/12/98	01/17/98	42000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162118-1	01/12/98	01/17/98	850	UG/KG	J		1
Nitrobenzene-d5	4165-60-0	QCBLK162118-1	01/12/98	01/17/98	57	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162118-1	01/12/98	01/17/98	56	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162118-1	01/12/98	01/17/98	60	%REC			1
Phenol-d5	4165-62-2	QCBLK162118-1	01/12/98	01/17/98	75	%REC			1
2-Fluorophenol	367-12-4	QCBLK162118-1	01/12/98	01/17/98	65	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162118-1	01/12/98	01/17/98	70	%REC			1

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Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJC2

Quanterra ID : 16620-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162118-1	01/12/98	01/17/98	66	%REC			1
2-Chlorophenol	95-57-8	QCBLK162118-1	01/12/98	01/17/98	64	%REC			1
1,4-Dichlorobenzene	106-46-7	QCBLK162118-1	01/12/98	01/17/98	59	%REC			1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162118-1	01/12/98	01/17/98	73	%REC			1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162118-1	01/12/98	01/17/98	64	%REC			1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162118-1	01/12/98	01/17/98	75	%REC			1
Acenaphthene	83-32-9	QCBLK162118-1	01/12/98	01/17/98	62	%REC			1
4-Nitrophenol	100-02-7	QCBLK162118-1	01/12/98	01/17/98	64	%REC			1
2,4-Dinitrotoluene	121-14-2	QCBLK162118-1	01/12/98	01/17/98	64	%REC			1
Pentachlorophenol	87-86-5	QCBLK162118-1	01/12/98	01/17/98	58	%REC			1
Pyrene	129-00-0	QCBLK162118-1	01/12/98	01/17/98	55	%REC			1
Nitrobenzene-d5	4165-60-0	QCBLK162118-1	01/12/98	01/17/98	64	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162118-1	01/12/98	01/17/98	60	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162118-1	01/12/98	01/17/98	55	%REC			1
Phenol-d5	4165-62-2	QCBLK162118-1	01/12/98	01/17/98	70	%REC			1
2-Fluorophenol	367-12-4	QCBLK162118-1	01/12/98	01/17/98	67	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162118-1	01/12/98	01/17/98	64	%REC			1

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Project: 550.256

Category: Semivolatile
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Client ID: BOMJC2

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Quanterra ID : 16620-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162118-1	01/12/98	01/18/98	71	%REC			1
2-Chlorophenol	95-57-8	QCBLK162118-1	01/12/98	01/18/98	70	%REC			1
1,4-Dichlorobenzene	106-46-7	QCBLK162118-1	01/12/98	01/18/98	64	%REC			1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162118-1	01/12/98	01/18/98	80	%REC			1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162118-1	01/12/98	01/18/98	67	%REC			1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162118-1	01/12/98	01/18/98	80	%REC			1
Acenaphthene	83-32-9	QCBLK162118-1	01/12/98	01/18/98	71	%REC			1
4-Nitrophenol	100-02-7	QCBLK162118-1	01/12/98	01/18/98	69	%REC			1
2,4-Dinitrotoluene	121-14-2	QCBLK162118-1	01/12/98	01/18/98	72	%REC			1
Pentachlorophenol	87-86-5	QCBLK162118-1	01/12/98	01/18/98	45	%REC			1
Pyrene	129-00-0	QCBLK162118-1	01/12/98	01/18/98	63	%REC			1
Nitrobenzene-d5	4165-60-0	QCBLK162118-1	01/12/98	01/18/98	66	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162118-1	01/12/98	01/18/98	65	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162118-1	01/12/98	01/18/98	61	%REC			1
Phenol-d5	4165-62-2	QCBLK162118-1	01/12/98	01/18/98	75	%REC			1
2-Fluorophenol	367-12-4	QCBLK162118-1	01/12/98	01/18/98	72	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162118-1	01/12/98	01/18/98	66	%REC			1

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Project: 550.256

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Matrix: SOLID

Sample Date : 12/29/97
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Report Date : 02/04/98

Client ID: BOMJC5

Quanterra ID : 16620-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2-Chlorophenol	95-57-8	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
1,3-Dichlorobenzene	541-73-1	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
1,4-Dichlorobenzene	106-46-7	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
1,2-Dichlorobenzene	95-50-1	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2-Methylphenol	95-48-7	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
4-Methylphenol	106-44-5	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Hexachloroethane	67-72-1	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Nitrobenzene	98-95-3	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Isophorone	78-59-1	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2-Nitrophenol	88-75-5	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2,4-Dimethylphenol	105-67-9	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2,4-Dichlorophenol	120-83-2	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Naphthalene	91-20-3	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
4-Chloroaniline	106-47-8	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Hexachlorobutadiene	87-68-3	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2-Methylnaphthalene	91-57-6	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162118-1	01/12/98	01/18/98	1800	UG/KG	U	1800	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2-Chloronaphthalene	91-58-7	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2-Nitroaniline	88-74-4	QCBLK162118-1	01/12/98	01/18/98	1800	UG/KG	U	1800	1
DimethylPhthalate	131-11-3	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Acenaphthylene	208-96-8	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2,6-Dinitrotoluene	606-20-2	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
3-Nitroaniline	99-09-2	QCBLK162118-1	01/12/98	01/18/98	1800	UG/KG	U	1800	1
Acenaphthene	83-32-9	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2,4-Dinitrophenol	51-28-5	QCBLK162118-1	01/12/98	01/18/98	1800	UG/KG	U	1800	1
4-Nitrophenol	100-02-7	QCBLK162118-1	01/12/98	01/18/98	1800	UG/KG	U	1800	1
Dibenzofuran	132-64-9	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
2,4-Dinitrotoluene	121-14-2	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Diethylphthalate	84-66-2	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Fluorene	86-73-7	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
4-Nitroaniline	100-01-6	QCBLK162118-1	01/12/98	01/18/98	1800	UG/KG	U	1800	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162118-1	01/12/98	01/18/98	1800	UG/KG	U	1800	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Hexachlorobenzene	118-74-1	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Pentachlorophenol	87-86-5	QCBLK162118-1	01/12/98	01/18/98	1800	UG/KG	U	1800	1
Phenanthrene	85-01-8	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Anthracene	120-12-7	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Carbazole	86-74-8	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Di-N-Butylphthalate	84-74-2	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Fluoranthene	206-44-0	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Pyrene	129-00-0	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
ButylBenzylPhthalate	85-68-7	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162118-1	01/12/98	01/18/98	1800	UG/KG	U	1800	1
Benzo(a)Anthracene	56-55-3	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Chrysene	218-01-9	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162118-1	01/12/98	01/18/98	190	UG/KG	BJ	360	1
di-N-OctylPhthalate	117-84-0	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Benzo(a)Pyrene	50-32-8	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1

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Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJC5

Quanterra ID : 16620-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162118-1	01/12/98	01/18/98	360	UG/KG	U	360	1
Tri-n-butyl phosphate	126-73-8	QCBLK162118-1	01/12/98	01/22/98	720	UG/KG	U	720	1
Aldol Condensation	TIC-4	QCBLK162118-1	01/12/98	01/18/98	34000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162118-1	01/12/98	01/18/98	730	UG/KG	J		1
Unknown PCB-1	TIC-4082	QCBLK162118-1	01/12/98	01/18/98	240	UG/KG	J		1
Unknown-2	TIC-33	QCBLK162118-1	01/12/98	01/18/98	370	UG/KG	J		1
Unknown PCB-2	TIC-4083	QCBLK162118-1	01/12/98	01/18/98	380	UG/KG	J		1
Unknown-3	TIC-34	QCBLK162118-1	01/12/98	01/18/98	260	UG/KG	J		1
Unknown-4	TIC-35	QCBLK162118-1	01/12/98	01/18/98	280	UG/KG	J		1
Unknown-5	TIC-36	QCBLK162118-1	01/12/98	01/18/98	190	UG/KG	J		1
Unknown-6	TIC-37	QCBLK162118-1	01/12/98	01/18/98	180	UG/KG	J		1
Unknown-7	TIC-7	QCBLK162118-1	01/12/98	01/18/98	220	UG/KG	J		1
Unknown-8	TIC-8	QCBLK162118-1	01/12/98	01/18/98	160	UG/KG	J		1
Unknown-9	TIC-9	QCBLK162118-1	01/12/98	01/18/98	190	UG/KG	J		1
Unknown-10	TIC-10	QCBLK162118-1	01/12/98	01/18/98	270	UG/KG	J		1
Unknown-11	TIC-11	QCBLK162118-1	01/12/98	01/18/98	380	UG/KG	J		1
Unknown-12	TIC-12	QCBLK162118-1	01/12/98	01/18/98	240	UG/KG	J		1
Unknown-13	TIC-13	QCBLK162118-1	01/12/98	01/18/98	230	UG/KG	J		1
Unknown-14	TIC-14	QCBLK162118-1	01/12/98	01/18/98	320	UG/KG	J		1
Unknown-15	TIC-15	QCBLK162118-1	01/12/98	01/18/98	220	UG/KG	J		1
Unknown-16	TIC-16	QCBLK162118-1	01/12/98	01/18/98	510	UG/KG	J		1
Unknown-17	TIC-17	QCBLK162118-1	01/12/98	01/18/98	240	UG/KG	J		1
Unknown-18	TIC-18	QCBLK162118-1	01/12/98	01/18/98	240	UG/KG	J		1
Unknown-19	TIC-19	QCBLK162118-1	01/12/98	01/18/98	270	UG/KG	J		1
Nitrobenzene-d5	4165-60-0	QCBLK162118-1	01/12/98	01/18/98	37	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162118-1	01/12/98	01/18/98	49	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162118-1	01/12/98	01/18/98	74	%REC			1
Phenol-d5	4165-62-2	QCBLK162118-1	01/12/98	01/18/98	68	%REC			1
2-Fluorophenol	367-12-4	QCBLK162118-1	01/12/98	01/18/98	52	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162118-1	01/12/98	01/18/98	83	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJD1

Quanterra ID : 16620-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Chlorophenol	95-57-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
1,3-Dichlorobenzene	541-73-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
1,4-Dichlorobenzene	106-46-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
1,2-Dichlorobenzene	95-50-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Methylphenol	95-48-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
4-Methylphenol	106-44-5	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Hexachloroethane	67-72-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Nitrobenzene	98-95-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Isophorone	78-59-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Nitrophenol	88-75-5	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,4-Dimethylphenol	105-67-9	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,4-Dichlorophenol	120-83-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Naphthalene	91-20-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
4-Chloroaniline	106-47-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Hexachlorobutadiene	87-68-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Methylnaphthalene	91-57-6	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Chloronaphthalene	91-58-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Nitroaniline	88-74-4	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
DimethylPhthalate	131-11-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Acenaphthylene	208-96-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,6-Dinitrotoluene	606-20-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
3-Nitroaniline	99-09-2	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Acenaphthene	83-32-9	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,4-Dinitrophenol	51-28-5	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
4-Nitrophenol	100-02-7	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Dibenzofuran	132-64-9	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,4-Dinitrotoluene	121-14-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Diethylphthalate	84-66-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Fluorene	86-73-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	330	1
4-Nitroaniline	100-01-6	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Hexachlorobenzene	118-74-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Pentachlorophenol	87-86-5	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Phenanthrene	85-01-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Anthracene	120-12-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Carbazole	86-74-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Di-N-Butylphthalate	84-74-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Fluoranthene	206-44-0	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Pyrene	129-00-0	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
ButylBenzylPhthalate	85-68-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Benzo(a)Anthracene	56-55-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Chrysene	218-01-9	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162118-1	01/12/98	01/18/98	150	UG/KG	BJ	350	1
di-N-OctylPhthalate	117-84-0	QCBLK162118-1	01/12/98	01/18/98	52	UG/KG	J	350	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Benzo(a)Pyrene	50-32-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJD1

Quanterra ID : 16620-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Tri-n-butyl phosphate	126-73-8	QCBLK162118-1	01/12/98	01/22/98	690	UG/KG	U	690	1
Aldol Condensation	TIC-4	QCBLK162118-1	01/12/98	01/18/98	43000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162118-1	01/12/98	01/18/98	920	UG/KG	J		1
Unknown-2	TIC-33	QCBLK162118-1	01/12/98	01/18/98	240	UG/KG	J		1
Unknown-3	TIC-34	QCBLK162118-1	01/12/98	01/18/98	110	UG/KG	J		1
Unknown-4	TIC-35	QCBLK162118-1	01/12/98	01/18/98	160	UG/KG	J		1
Unknown-5	TIC-36	QCBLK162118-1	01/12/98	01/18/98	100	UG/KG	J		1
Unknown-6	TIC-37	QCBLK162118-1	01/12/98	01/18/98	99	UG/KG	J		1
Unknown-7	TIC-7	QCBLK162118-1	01/12/98	01/18/98	81	UG/KG	J		1
Unknown-8	TIC-8	QCBLK162118-1	01/12/98	01/18/98	110	UG/KG	J		1
Unknown-9	TIC-9	QCBLK162118-1	01/12/98	01/18/98	140	UG/KG	J		1
Nitrobenzene-d5	4165-60-0	QCBLK162118-1	01/12/98	01/18/98	48	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162118-1	01/12/98	01/18/98	52	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162118-1	01/12/98	01/18/98	65	%REC			1
Phenol-d5	4165-62-2	QCBLK162118-1	01/12/98	01/18/98	71	%REC			1
2-Fluorophenol	367-12-4	QCBLK162118-1	01/12/98	01/18/98	60	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162118-1	01/12/98	01/18/98	63	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJD7

Quanterra ID : 16620-004

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Chlorophenol	95-57-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,3-Dichlorobenzene	541-73-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,4-Dichlorobenzene	106-46-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,2-Dichlorobenzene	95-50-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Methylphenol	95-48-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Methylphenol	106-44-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachloroethane	67-72-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Nitrobenzene	98-95-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Isophorone	78-59-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Nitrophenol	88-75-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dimethylphenol	105-67-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dichlorophenol	120-83-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Naphthalene	91-20-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chloroaniline	106-47-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorobutadiene	87-68-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Methylnaphthalene	91-57-6	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Chloronaphthalene	91-58-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Nitroaniline	88-74-4	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
DimethylPhthalate	131-11-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Acenaphthylene	208-96-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,6-Dinitrotoluene	606-20-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
3-Nitroaniline	99-09-2	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Acenaphthene	83-32-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dinitrophenol	51-28-5	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
4-Nitrophenol	100-02-7	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Dibenzofuran	132-64-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dinitrotoluene	121-14-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Diethylphthalate	84-66-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Fluorene	86-73-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Nitroaniline	100-01-6	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorobenzene	118-74-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Pentachlorophenol	87-86-5	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Phenanthrene	85-01-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Anthracene	120-12-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Carbazole	86-74-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Di-N-Butylphthalate	84-74-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Fluoranthene	206-44-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Pyrene	129-00-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
ButylBenzylPhthalate	85-68-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Benzo(a)Anthracene	56-55-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Chrysene	218-01-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
di-N-OctylPhthalate	117-84-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(a)Pyrene	50-32-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJD7

Quanterra ID : 16620-004

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Tri-n-butyl phosphate	126-73-8	QCBLK162118-1	01/12/98	01/22/98	680	UG/KG	U	680	1
Aldol Condensation	TIC-4	QCBLK162118-1	01/12/98	01/18/98	55000	UG/KG	BJN	330	1
Unknown-1	TIC-32	QCBLK162118-1	01/12/98	01/18/98	1200	UG/KG	J	330	1
Unknown-2	TIC-33	QCBLK162118-1	01/12/98	01/18/98	85	UG/KG	J	330	1
Unknown-3	TIC-34	QCBLK162118-1	01/12/98	01/18/98	120	UG/KG	J	330	1
Nitrobenzene-d5	4165-60-0	QCBLK162118-1	01/12/98	01/18/98	41	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162118-1	01/12/98	01/18/98	40	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162118-1	01/12/98	01/18/98	72	%REC			1
Phenol-d5	4165-62-2	QCBLK162118-1	01/12/98	01/18/98	66	%REC			1
2-Fluorophenol	367-12-4	QCBLK162118-1	01/12/98	01/18/98	52	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162118-1	01/12/98	01/18/98	44	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJC8

Quanterra ID : 16620-005

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2-Chlorophenol	95-57-8	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
1,3-Dichlorobenzene	541-73-1	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
1,4-Dichlorobenzene	106-46-7	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
1,2-Dichlorobenzene	95-50-1	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2-Methylphenol	95-48-7	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
4-Methylphenol	106-44-5	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Hexachloroethane	67-72-1	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Nitrobenzene	98-95-3	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Isophorone	78-59-1	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2-Nitrophenol	88-75-5	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2,4-Dimethylphenol	105-67-9	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2,4-Dichlorophenol	120-83-2	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Naphthalene	91-20-3	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
4-Chloroaniline	106-47-8	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Hexachlorobutadiene	87-68-3	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2-Methylnaphthalene	91-57-6	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162118-1	01/12/98	01/18/98	1900	UG/KG	U	1900	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2-Chloronaphthalene	91-58-7	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2-Nitroaniline	88-74-4	QCBLK162118-1	01/12/98	01/18/98	1900	UG/KG	U	1900	1
DimethylPhthalate	131-11-3	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Acenaphthylene	208-96-8	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2,6-Dinitrotoluene	606-20-2	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
3-Nitroaniline	99-09-2	QCBLK162118-1	01/12/98	01/18/98	1900	UG/KG	U	1900	1
Acenaphthene	83-32-9	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2,4-Dinitrophenol	51-28-5	QCBLK162118-1	01/12/98	01/18/98	1900	UG/KG	U	1900	1
4-Nitrophenol	100-02-7	QCBLK162118-1	01/12/98	01/18/98	1900	UG/KG	U	1900	1
Dibenzofuran	132-64-9	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
2,4-Dinitrotoluene	121-14-2	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Diethylphthalate	84-66-2	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Fluorene	86-73-7	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
4-Nitroaniline	100-01-6	QCBLK162118-1	01/12/98	01/18/98	1900	UG/KG	U	1900	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162118-1	01/12/98	01/18/98	1900	UG/KG	U	1900	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Hexachlorobenzene	118-74-1	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Pentachlorophenol	87-86-5	QCBLK162118-1	01/12/98	01/18/98	1900	UG/KG	U	1900	1
Phenanthrene	85-01-8	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Anthracene	120-12-7	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Carbazole	86-74-8	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Di-N-Butylphthalate	84-74-2	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Fluoranthene	206-44-0	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Pyrene	129-00-0	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
ButylBenzylPhthalate	85-68-7	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	330	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162118-1	01/12/98	01/18/98	1900	UG/KG	U	1900	1
Benzo(a)Anthracene	56-55-3	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Chrysene	218-01-9	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162118-1	01/12/98	01/18/98	130	UG/KG	BJ	390	1
di-N-OctylPhthalate	117-84-0	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Benzo(a)Pyrene	50-32-8	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJC8

Quanterra ID : 16620-005

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162118-1	01/12/98	01/18/98	390	UG/KG	U	390	1
Tri-n-butyl phosphate	126-73-8	QCBLK162118-1	01/12/98	01/22/98	770	UG/KG	U	770	1
Aldol Condensation	TIC-4	QCBLK162118-1	01/12/98	01/18/98	56000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162118-1	01/12/98	01/18/98	1200	UG/KG	J		1
Nitrobenzene-d5	4165-60-0	QCBLK162118-1	01/12/98	01/18/98	42	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162118-1	01/12/98	01/18/98	41	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162118-1	01/12/98	01/18/98	66	%REC			1
Phenol-d5	4165-62-2	QCBLK162118-1	01/12/98	01/18/98	66	%REC			1
2-Fluorophenol	367-12-4	QCBLK162118-1	01/12/98	01/18/98	56	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162118-1	01/12/98	01/18/98	47	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJF3

Quanterra ID : 16620-006

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Chlorophenol	95-57-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
1,3-Dichlorobenzene	541-73-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
1,4-Dichlorobenzene	106-46-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
1,2-Dichlorobenzene	95-50-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Methylphenol	95-48-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
4-Methylphenol	106-44-5	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Hexachloroethane	67-72-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Nitrobenzene	98-95-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Isophorone	78-59-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Nitrophenol	88-75-5	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,4-Dimethylphenol	105-67-9	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,4-Dichlorophenol	120-83-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Naphthalene	91-20-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
4-Chloroaniline	106-47-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Hexachlorobutadiene	87-68-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Methylnaphthalene	91-57-6	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Chloronaphthalene	91-58-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2-Nitroaniline	88-74-4	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
DimethylPhthalate	131-11-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Acenaphthylene	208-96-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,6-Dinitrotoluene	606-20-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
3-Nitroaniline	99-09-2	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Acenaphthene	83-32-9	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,4-Dinitrophenol	51-28-5	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
4-Nitrophenol	100-02-7	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Dibenzofuran	132-64-9	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
2,4-Dinitrotoluene	121-14-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Diethylphthalate	84-66-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Fluorene	86-73-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
4-Nitroaniline	100-01-6	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Hexachlorobenzene	118-74-1	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Pentachlorophenol	87-86-5	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Phenanthrene	85-01-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Anthracene	120-12-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Carbazole	86-74-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Di-N-Butylphthalate	84-74-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Fluoranthene	206-44-0	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Pyrene	129-00-0	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
ButylBenzylPhthalate	85-68-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Benzo(a)Anthracene	56-55-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Chrysene	218-01-9	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
di-N-OctylPhthalate	117-84-0	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Benzo(a)Pyrene	50-32-8	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Client ID: BOMJF3

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Quanterra ID : 16620-006

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162118-1	01/12/98	01/18/98	350	UG/KG	U	350	1
Tri-n-butyl phosphate	126-73-8	QCBLK162118-1	01/12/98	01/22/98	710	UG/KG	U	710	1
Aldol Condensation	TIC-4	QCBLK162118-1	01/12/98	01/18/98	53000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162118-1	01/12/98	01/18/98	1200	UG/KG	J		1
Unknown-2	TIC-33	QCBLK162118-1	01/12/98	01/18/98	170	UG/KG	J		1
Nitrobenzene-d5	4165-60-0	QCBLK162118-1	01/12/98	01/18/98	42	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162118-1	01/12/98	01/18/98	37	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162118-1	01/12/98	01/18/98	70	%REC			1
Phenol-d5	4165-62-2	QCBLK162118-1	01/12/98	01/18/98	74	%REC			1
2-Fluorophenol	367-12-4	QCBLK162118-1	01/12/98	01/18/98	60	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162118-1	01/12/98	01/18/98	46	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Client ID: BOMJJ1

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Quanterra ID : 16620-007

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Chlorophenol	95-57-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,3-Dichlorobenzene	541-73-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,4-Dichlorobenzene	106-46-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,2-Dichlorobenzene	95-50-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Methylphenol	95-48-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Methylphenol	106-44-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachloroethane	67-72-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Nitrobenzene	98-95-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Isophorone	78-59-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Nitrophenol	88-75-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dimethylphenol	105-67-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dichlorophenol	120-83-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Naphthalene	91-20-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chloroaniline	106-47-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorobutadiene	87-68-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Methylnaphthalene	91-57-6	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Chloronaphthalene	91-58-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Nitroaniline	88-74-4	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
DimethylPhthalate	131-11-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Acenaphthylene	208-96-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,6-Dinitrotoluene	606-20-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
3-Nitroaniline	99-09-2	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Acenaphthene	83-32-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dinitrophenol	51-28-5	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
4-Nitrophenol	100-02-7	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Dibenzofuran	132-64-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dinitrotoluene	121-14-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Diethylphthalate	84-66-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Fluorene	86-73-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Nitroaniline	100-01-6	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorobenzene	118-74-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Pentachlorophenol	87-86-5	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Phenanthrene	85-01-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Anthracene	120-12-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Carbazole	86-74-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Di-N-Butylphthalate	84-74-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Fluoranthene	206-44-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Pyrene	129-00-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
ButylBenzylPhthalate	85-68-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Benzo(a)Anthracene	56-55-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Chrysene	218-01-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
di-N-OctylPhthalate	117-84-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(a)Pyrene	50-32-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Client ID: BOMJJ1

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Quanterra ID : 16620-007

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Tri-n-butyl phosphate	126-73-8	QCBLK162118-1	01/12/98	01/22/98	680	UG/KG	U	680	1
Aldol Condensation	TIC-4	QCBLK162118-1	01/12/98	01/18/98	51000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162118-1	01/12/98	01/18/98	1100	UG/KG	J		1
Unknown-2	TIC-33	QCBLK162118-1	01/12/98	01/18/98	100	UG/KG	J		1
Nitrobenzene-d5	4165-60-0	QCBLK162118-1	01/12/98	01/18/98	38	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162118-1	01/12/98	01/18/98	39	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162118-1	01/12/98	01/18/98	69	%REC			1
Phenol-d5	4165-62-2	QCBLK162118-1	01/12/98	01/18/98	63	%REC			1
2-Fluorophenol	367-12-4	QCBLK162118-1	01/12/98	01/18/98	50	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162118-1	01/12/98	01/18/98	35	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: 80MJJ4

Quanterra ID : 16620-008

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Chlorophenol	95-57-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,3-Dichlorobenzene	541-73-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,4-Dichlorobenzene	106-46-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,2-Dichlorobenzene	95-50-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Methylphenol	95-48-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Methylphenol	106-44-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachloroethane	67-72-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Nitrobenzene	98-95-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Isophorone	78-59-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Nitrophenol	88-75-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dimethylphenol	105-67-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dichlorophenol	120-83-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Naphthalene	91-20-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chloroaniline	106-47-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorobutadiene	87-68-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Methylnaphthalene	91-57-6	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Chloronaphthalene	91-58-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Nitroaniline	88-74-4	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
DimethylPhthalate	131-11-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Acenaphthylene	208-96-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,6-Dinitrotoluene	606-20-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
3-Nitroaniline	99-09-2	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Acenaphthene	83-32-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dinitrophenol	51-28-5	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
4-Nitrophenol	100-02-7	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Dibenzofuran	132-64-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dinitrotoluene	121-14-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Diethylphthalate	84-66-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Fluorene	86-73-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Nitroaniline	100-01-6	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorobenzene	118-74-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Pentachlorophenol	87-86-5	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Phenanthrene	85-01-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Anthracene	120-12-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Carbazole	86-74-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Di-N-Butylphthalate	84-74-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Fluoranthene	206-44-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Pyrene	129-00-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
ButylBenzylPhthalate	85-68-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162118-1	01/12/98	01/18/98	1600	UG/KG	U	1600	1
Benzo(a)Anthracene	56-55-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Chrysene	218-01-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
di-N-OctylPhthalate	117-84-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(a)Pyrene	50-32-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Client ID: BOMJJ4

Quanterra ID : 16620-008

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Tri-n-butyl phosphate	126-73-8	QCBLK162118-1	01/12/98	01/22/98	670	UG/KG	U	670	1
Aldol Condensation	TIC-4	QCBLK162118-1	01/12/98	01/18/98	48000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162118-1	01/12/98	01/18/98	1000	UG/KG	J		1
Unknown-2	TIC-33	QCBLK162118-1	01/12/98	01/18/98	89	UG/KG	J		1
Nitrobenzene-d5	4165-60-0	QCBLK162118-1	01/12/98	01/18/98	35	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162118-1	01/12/98	01/18/98	35	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162118-1	01/12/98	01/18/98	70	%REC			1
Phenol-d5	4165-62-2	QCBLK162118-1	01/12/98	01/18/98	61	%REC			1
2-Fluorophenol	367-12-4	QCBLK162118-1	01/12/98	01/18/98	48	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162118-1	01/12/98	01/18/98	36	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Client ID: BOMJF0

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Quanterra ID : 16620-009

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Chlorophenol	95-57-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,3-Dichlorobenzene	541-73-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,4-Dichlorobenzene	106-46-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,2-Dichlorobenzene	95-50-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Methylphenol	95-48-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Methylphenol	106-44-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachloroethane	67-72-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Nitrobenzene	98-95-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Isophorone	78-59-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Nitrophenol	88-75-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dimethylphenol	105-67-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dichlorophenol	120-83-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Naphthalene	91-20-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chloroaniline	106-47-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorobutadiene	87-68-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Methylnaphthalene	91-57-6	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Chloronaphthalene	91-58-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2-Nitroaniline	88-74-4	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
DimethylPhthalate	131-11-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Acenaphthylene	208-96-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,6-Dinitrotoluene	606-20-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
3-Nitroaniline	99-09-2	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Acenaphthene	83-32-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dinitrophenol	51-28-5	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
4-Nitrophenol	100-02-7	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Dibenzofuran	132-64-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
2,4-Dinitrotoluene	121-14-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Diethylphthalate	84-66-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Fluorene	86-73-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Nitroaniline	100-01-6	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Hexachlorobenzene	118-74-1	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Pentachlorophenol	87-86-5	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Phenanthrene	85-01-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Anthracene	120-12-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Carbazole	86-74-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Di-N-Butylphthalate	84-74-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Fluoranthene	206-44-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Pyrene	129-00-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
ButylBenzylPhthalate	85-68-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162118-1	01/12/98	01/18/98	1700	UG/KG	U	1700	1
Benzo(a)Anthracene	56-55-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Chrysene	218-01-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
di-N-OctylPhthalate	117-84-0	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1
Benzo(a)Pyrene	50-32-8	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	340	1

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Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Client ID: BOMJF0

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/04/98

Quanterra ID : 16620-009

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	330	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	330	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162118-1	01/12/98	01/18/98	340	UG/KG	U	330	1
Tri-n-butyl phosphate	126-73-8	QCBLK162118-1	01/12/98	01/22/98	690	UG/KG	U	690	1
Aldol Condensation	TIC-4	QCBLK162118-1	01/12/98	01/18/98	47000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162118-1	01/12/98	01/18/98	1000	UG/KG	J		1
Nitrobenzene-d5	4165-60-0	QCBLK162118-1	01/12/98	01/18/98	38	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162118-1	01/12/98	01/18/98	37	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162118-1	01/12/98	01/18/98	75	%REC			1
Phenol-d5	4165-62-2	QCBLK162118-1	01/12/98	01/18/98	65	%REC			1
2-Fluorophenol	367-12-4	QCBLK162118-1	01/12/98	01/18/98	51	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162118-1	01/12/98	01/18/98	37	%REC			1

Bechtel Hanford Incorporated
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Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Client ID: BOMJF6

Sample Date : 01/02/98
Receipt Date : 01/05/98
Report Date : 02/23/98

Quanterra ID : 16621-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Chlorophenol	95-57-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,3-Dichlorobenzene	541-73-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,4-Dichlorobenzene	106-46-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,2-Dichlorobenzene	95-50-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Methylphenol	95-48-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Methylphenol	106-44-5	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachloroethane	67-72-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Nitrobenzene	98-95-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Isophorone	78-59-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Nitrophenol	88-75-5	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dimethylphenol	105-67-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dichlorophenol	120-83-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Naphthalene	91-20-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Chloroaniline	106-47-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachlorobutadiene	87-68-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Methylnaphthalene	91-57-6	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Chloronaphthalene	91-58-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Nitroaniline	88-74-4	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
DimethylPhthalate	131-11-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Acenaphthylene	208-96-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,6-Dinitrotoluene	606-20-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
3-Nitroaniline	99-09-2	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Acenaphthene	83-32-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dinitrophenol	51-28-5	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
4-Nitrophenol	100-02-7	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Dibenzofuran	132-64-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dinitrotoluene	121-14-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Diethylphthalate	84-66-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Fluorene	86-73-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Nitroaniline	100-01-6	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachlorobenzene	118-74-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Pentachlorophenol	87-86-5	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Phenanthrene	85-01-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Anthracene	120-12-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Carbazole	86-74-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Di-N-Butylphthalate	84-74-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Fluoranthene	206-44-0	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Pyrene	129-00-0	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
ButylBenzylPhthalate	85-68-7	QCBLK162680-1	01/16/98	01/21/98	230	UG/KG	J	340	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Benzo(a)Anthracene	56-55-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Chrysene	218-01-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162680-1	01/16/98	01/21/98	220	UG/KG	BJ	340	1
di-N-OctylPhthalate	117-84-0	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(a)Pyrene	50-32-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1

Bechtel Hanford Incorporated
3350 George Washington Way
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Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 01/02/98
Receipt Date : 01/05/98
Report Date : 02/04/98

Client ID: BOMJF6

Quanterra ID : 16621-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Tri-n-butyl phosphate	126-73-8	QCBLK162680-1	01/16/98	01/22/98	680	UG/KG	U	680	1
Aldol Condensation	TIC-4	QCBLK162680-1	01/16/98	01/21/98	39000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162680-1	01/16/98	01/21/98	120	UG/KG	J		1
Unknown-2	TIC-33	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	BJ		1
Unknown-3	TIC-34	QCBLK162680-1	01/16/98	01/21/98	140	UG/KG	BJ		1
Hexadecanoic acid	57-10-3	QCBLK162680-1	01/16/98	01/21/98	560	UG/KG	BJN		1
Octadecanoic acid	57-11-4	QCBLK162680-1	01/16/98	01/21/98	91	UG/KG	JN		1
Unknown-4	TIC-35	QCBLK162680-1	01/16/98	01/21/98	74	UG/KG	J		1
Unknown-5	TIC-36	QCBLK162680-1	01/16/98	01/21/98	100	UG/KG	J		1
Unknown-6	TIC-37	QCBLK162680-1	01/16/98	01/21/98	77	UG/KG	J		1
Nitrobenzene-d5	4165-60-0	QCBLK162680-1	01/16/98	01/21/98	74	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162680-1	01/16/98	01/21/98	76	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162680-1	01/16/98	01/21/98	77	%REC			1
Phenol-d5	4165-62-2	QCBLK162680-1	01/16/98	01/21/98	96	%REC			1
2-Fluorophenol	367-12-4	QCBLK162680-1	01/16/98	01/21/98	99	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162680-1	01/16/98	01/21/98	82	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 01/03/98
Receipt Date : 01/05/98
Report Date : 02/04/98

Client ID: BONJF9

Quanterra ID : 16621-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Chlorophenol	95-57-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,3-Dichlorobenzene	541-73-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,4-Dichlorobenzene	106-46-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,2-Dichlorobenzene	95-50-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Methylphenol	95-48-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Methylphenol	106-44-5	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachloroethane	67-72-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Nitrobenzene	98-95-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Isophorone	78-59-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Nitrophenol	88-75-5	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dimethylphenol	105-67-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dichlorophenol	120-83-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Naphthalene	91-20-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Chloroaniline	106-47-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachlorobutadiene	87-68-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Methylnaphthalene	91-57-6	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Chloronaphthalene	91-58-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Nitroaniline	88-74-4	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
DimethylPhthalate	131-11-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Acenaphthylene	208-96-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,6-Dinitrotoluene	606-20-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
3-Nitroaniline	99-09-2	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Acenaphthene	83-32-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dinitrophenol	51-28-5	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
4-Nitrophenol	100-02-7	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Dibenzofuran	132-64-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dinitrotoluene	121-14-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Diethylphthalate	84-66-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Fluorene	86-73-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Nitroaniline	100-01-6	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachlorobenzene	118-74-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Pentachlorophenol	87-86-5	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Phenanthrene	85-01-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Anthracene	120-12-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Carbazole	86-74-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Di-N-Butylphthalate	84-74-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Fluoranthene	206-44-0	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Pyrene	129-00-0	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
ButylBenzylPhthalate	85-68-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Benzo(a)Anthracene	56-55-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Chrysene	218-01-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162680-1	01/16/98	01/21/98	210	UG/KG	BJ	340	1
di-N-OctylPhthalate	117-84-0	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(a)Pyrene	50-32-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 01/03/98
Receipt Date : 01/05/98
Report Date : 02/04/98

Client ID: BOMJF9

Quanterra ID : 16621-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Tri-n-butyl phosphate	126-73-8	QCBLK162680-1	01/16/98	01/22/98	680	UG/KG	U	680	1
Aldol Condensation	TIC-4	QCBLK162680-1	01/16/98	01/21/98	40000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162680-1	01/16/98	01/21/98	120	UG/KG	J		1
Unknown-2	TIC-33	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	BJ		1
Unknown-3	TIC-34	QCBLK162680-1	01/16/98	01/21/98	130	UG/KG	BJ		1
Hexadecanoic acid	57-10-3	QCBLK162680-1	01/16/98	01/21/98	450	UG/KG	BJN		1
Unknown-4	TIC-35	QCBLK162680-1	01/16/98	01/21/98	84	UG/KG	J		1
Nitrobenzene-d5	4165-60-0	QCBLK162680-1	01/16/98	01/21/98	74	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162680-1	01/16/98	01/21/98	74	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162680-1	01/16/98	01/21/98	81	%REC			1
Phenol-d5	4165-62-2	QCBLK162680-1	01/16/98	01/21/98	93	%REC			1
2-Fluorophenol	367-12-4	QCBLK162680-1	01/16/98	01/21/98	98	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162680-1	01/16/98	01/21/98	80	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/23/98

Client ID: BOMJKO

Quanterra ID : 16626-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Chlorophenol	95-57-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
1,3-Dichlorobenzene	541-73-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
1,4-Dichlorobenzene	106-46-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
1,2-Dichlorobenzene	95-50-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Methylphenol	95-48-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Methylphenol	106-44-5	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Hexachloroethane	67-72-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Nitrobenzene	98-95-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Isophorone	78-59-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Nitrophenol	88-75-5	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,4-Dimethylphenol	105-67-9	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,4-Dichlorophenol	120-83-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Naphthalene	91-20-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Chloroaniline	106-47-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Hexachlorobutadiene	87-68-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Methylnaphthalene	91-57-6	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Chloronaphthalene	91-58-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Nitroaniline	88-74-4	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
DimethylPhthalate	131-11-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Acenaphthylene	208-96-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,6-Dinitrotoluene	606-20-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
3-Nitroaniline	99-09-2	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
Acenaphthene	83-32-9	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,4-Dinitrophenol	51-28-5	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
4-Nitrophenol	100-02-7	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
Dibenzofuran	132-64-9	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,4-Dinitrotoluene	121-14-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Diethylphthalate	84-66-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Fluorene	86-73-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Nitroaniline	100-01-6	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Hexachlorobenzene	118-74-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Pentachlorophenol	87-86-5	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
Phenanthrene	85-01-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Anthracene	120-12-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Carbazole	86-74-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Di-N-Butylphthalate	84-74-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Fluoranthene	206-44-0	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Pyrene	129-00-0	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
ButylBenzylPhthalate	85-68-7	QCBLK162680-1	01/16/98	01/21/98	230	UG/KG	J	350	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
Benzo(a)Anthracene	56-55-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Chrysene	218-01-9	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162680-1	01/16/98	01/21/98	250	UG/KG	BJ	350	1
di-N-OctylPhthalate	117-84-0	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Benzo(a)Pyrene	50-32-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/04/98

Client ID: BOMJK0

Quanterra ID : 16626-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Tri-n-butyl phosphate	126-73-8	QCBLK162680-1	01/16/98	01/22/98	680	UG/KG	U	680	1
Aldol Condensation	TIC-4	QCBLK162680-1	01/16/98	01/21/98	35000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162680-1	01/16/98	01/21/98	96	UG/KG	J		1
Unknown-2	TIC-33	QCBLK162680-1	01/16/98	01/21/98	1500	UG/KG	BJ		1
Unknown-3	TIC-34	QCBLK162680-1	01/16/98	01/21/98	120	UG/KG	BJ		1
Hexadecanoic acid	57-10-3	QCBLK162680-1	01/16/98	01/21/98	560	UG/KG	BJN		1
Octadecanoic acid	57-11-4	QCBLK162680-1	01/16/98	01/21/98	86	UG/KG	JN		1
Nitrobenzene-d5	4165-60-0	QCBLK162680-1	01/16/98	01/21/98	67	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162680-1	01/16/98	01/21/98	67	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162680-1	01/16/98	01/21/98	72	%REC			1
Phenol-d5	4165-62-2	QCBLK162680-1	01/16/98	01/21/98	83	%REC			1
2-Fluorophenol	367-12-4	QCBLK162680-1	01/16/98	01/21/98	85	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162680-1	01/16/98	01/21/98	74	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Client ID: BOMJJ7

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/04/98

Quanterra ID : 16626-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Chlorophenol	95-57-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,3-Dichlorobenzene	541-73-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,4-Dichlorobenzene	106-46-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,2-Dichlorobenzene	95-50-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Methylphenol	95-48-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Methylphenol	106-44-5	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachloroethane	67-72-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Nitrobenzene	98-95-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Isophorone	78-59-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Nitrophenol	88-75-5	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dimethylphenol	105-67-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dichlorophenol	120-83-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Naphthalene	91-20-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Chloroaniline	106-47-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachlorobutadiene	87-68-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Methylnaphthalene	91-57-6	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Chloronaphthalene	91-58-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2-Nitroaniline	88-74-4	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
DimethylPhthalate	131-11-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Acenaphthylene	208-96-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,6-Dinitrotoluene	606-20-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
3-Nitroaniline	99-09-2	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Acenaphthene	83-32-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dinitrophenol	51-28-5	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
4-Nitrophenol	100-02-7	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Dibenzofuran	132-64-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
2,4-Dinitrotoluene	121-14-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Diethylphthalate	84-66-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Fluorene	86-73-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Nitroaniline	100-01-6	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Hexachlorobenzene	118-74-1	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Pentachlorophenol	87-86-5	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Phenanthrene	85-01-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Anthracene	120-12-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Carbazole	86-74-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Di-N-Butylphthalate	84-74-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Fluoranthene	206-44-0	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Pyrene	129-00-0	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
ButylBenzylPhthalate	85-68-7	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	U	1600	1
Benzo(a)Anthracene	56-55-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Chrysene	218-01-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162680-1	01/16/98	01/21/98	210	UG/KG	BJ	340	1
di-N-OctylPhthalate	117-84-0	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(a)Pyrene	50-32-8	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Client ID: BOMJJ7

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/04/98

Quanterra ID : 16626-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162680-1	01/16/98	01/21/98	340	UG/KG	U	340	1
Tri-n-butyl phosphate	126-73-8	QCBLK162680-1	01/16/98	01/22/98	680	UG/KG	U	680	1
Aldol Condensation	TIC-4	QCBLK162680-1	01/16/98	01/21/98	38000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162680-1	01/16/98	01/21/98	110	UG/KG	J		1
Unknown-2	TIC-33	QCBLK162680-1	01/16/98	01/21/98	1600	UG/KG	BJ		1
Unknown-3	TIC-34	QCBLK162680-1	01/16/98	01/21/98	130	UG/KG	BJ		1
Hexadecanoic acid	57-10-3	QCBLK162680-1	01/16/98	01/21/98	380	UG/KG	BJN		1
Nitrobenzene-d5	4165-60-0	QCBLK162680-1	01/16/98	01/21/98	70	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162680-1	01/16/98	01/21/98	73	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162680-1	01/16/98	01/21/98	79	%REC			1
Phenol-d5	4165-62-2	QCBLK162680-1	01/16/98	01/21/98	93	%REC			1
2-Fluorophenol	367-12-4	QCBLK162680-1	01/16/98	01/21/98	96	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162680-1	01/16/98	01/21/98	78	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 01/07/98
Receipt Date : 01/08/98
Report Date : 02/04/98

Client ID: BOMJK6

Quanterra ID : 16628-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
bis(2-Chloroethyl)Ether	111-44-4	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Chlorophenol	95-57-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
1,3-Dichlorobenzene	541-73-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
1,4-Dichlorobenzene	106-46-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
1,2-Dichlorobenzene	95-50-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Methylphenol	95-48-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Methylphenol	106-44-5	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
N-nitroso-di-n-propylamine	621-64-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Hexachloroethane	67-72-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Nitrobenzene	98-95-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Isophorone	78-59-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Nitrophenol	88-75-5	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,4-Dimethylphenol	105-67-9	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,4-Dichlorophenol	120-83-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
1,2,4-Trichlorobenzene	120-82-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Naphthalene	91-20-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Chloroaniline	106-47-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Hexachlorobutadiene	87-68-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Chloro-3-Methylphenol	59-50-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Methylnaphthalene	91-57-6	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Hexachlorocyclopentadiene	77-47-4	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
2,4,6-Trichlorophenol	88-06-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,4,5-Trichlorophenol	95-95-4	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Chloronaphthalene	91-58-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2-Nitroaniline	88-74-4	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
DimethylPhthalate	131-11-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Acenaphthylene	208-96-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,6-Dinitrotoluene	606-20-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
3-Nitroaniline	99-09-2	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
Acenaphthene	83-32-9	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,4-Dinitrophenol	51-28-5	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
4-Nitrophenol	100-02-7	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
Dibenzofuran	132-64-9	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
2,4-Dinitrotoluene	121-14-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Diethylphthalate	84-66-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Fluorene	86-73-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Nitroaniline	100-01-6	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
n-Nitrosodiphenylamine	86-30-6	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Hexachlorobenzene	118-74-1	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Pentachlorophenol	87-86-5	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
Phenanthrene	85-01-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Anthracene	120-12-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Carbazole	86-74-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Di-N-Butylphthalate	84-74-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Fluoranthene	206-44-0	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Pyrene	129-00-0	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
ButylBenzylPhthalate	85-68-7	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
3,3'-Dichlorobenzidine	91-94-1	QCBLK162680-1	01/16/98	01/21/98	1700	UG/KG	U	1700	1
Benzo(a)Anthracene	56-55-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Chrysene	218-01-9	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK162680-1	01/16/98	01/21/98	240	UG/KG	BJ	350	1
di-N-OctylPhthalate	117-84-0	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Benzo(b)Fluoranthene	205-99-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Benzo(k)Fluoranthene	207-08-9	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Benzo(a)Pyrene	50-32-8	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Semivolatile
Method: EPA 8270
Matrix: SOLID

Sample Date : 01/07/98
Receipt Date : 01/08/98
Report Date : 02/23/98

Client ID: BOMJK6

Quanterra ID : 16628-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Dibenz(a,h)Anthracene	53-70-3	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Benzo(g,h,i)Perylene	191-24-2	QCBLK162680-1	01/16/98	01/21/98	350	UG/KG	U	350	1
Tri-n-butyl phosphate	126-73-8	QCBLK162680-1	01/16/98	01/22/98	710	UG/KG	U	710	1
Aldol Condensation	TIC-4	QCBLK162680-1	01/16/98	01/21/98	36000	UG/KG	BJN		1
Unknown-1	TIC-32	QCBLK162680-1	01/16/98	01/21/98	1400	UG/KG	BJ		1
1-Hexanol, 2-ethyl-	104-76-7	QCBLK162680-1	01/16/98	01/21/98	240	UG/KG	JN		1
Unknown-2	TIC-33	QCBLK162680-1	01/16/98	01/21/98	210	UG/KG	J		1
Hexadecanoic acid	57-10-3	QCBLK162680-1	01/16/98	01/21/98	740	UG/KG	BJN		1
Octadecanoic acid	57-11-4	QCBLK162680-1	01/16/98	01/21/98	140	UG/KG	JN		1
Unknown-3	TIC-34	QCBLK162680-1	01/16/98	01/21/98	720	UG/KG	J		1
Unknown-4	TIC-35	QCBLK162680-1	01/16/98	01/21/98	110	UG/KG	J		1
Unknown-5	TIC-36	QCBLK162680-1	01/16/98	01/21/98	430	UG/KG	J		1
Unknown-6	TIC-37	QCBLK162680-1	01/16/98	01/21/98	400	UG/KG	J		1
Unknown-7	TIC-7	QCBLK162680-1	01/16/98	01/21/98	93	UG/KG	J		1
Unknown-8	TIC-8	QCBLK162680-1	01/16/98	01/21/98	150	UG/KG	J		1
Unknown-9	TIC-9	QCBLK162680-1	01/16/98	01/21/98	97	UG/KG	J		1
Unknown-10	TIC-10	QCBLK162680-1	01/16/98	01/21/98	180	UG/KG	J		1
Unknown-11	TIC-11	QCBLK162680-1	01/16/98	01/21/98	1000	UG/KG	J		1
Unknown-12	TIC-12	QCBLK162680-1	01/16/98	01/21/98	330	UG/KG	J		1
Unknown-13	TIC-13	QCBLK162680-1	01/16/98	01/21/98	1300	UG/KG	J		1
Unknown-14	TIC-14	QCBLK162680-1	01/16/98	01/21/98	230	UG/KG	J		1
Unknown-15	TIC-15	QCBLK162680-1	01/16/98	01/21/98	230	UG/KG	J		1
Unknown-16	TIC-16	QCBLK162680-1	01/16/98	01/21/98	190	UG/KG	J		1
Unknown-17	TIC-17	QCBLK162680-1	01/16/98	01/21/98	280	UG/KG	J		1
Unknown-18	TIC-18	QCBLK162680-1	01/16/98	01/21/98	700	UG/KG	J		1
Nitrobenzene-d5	4165-60-0	QCBLK162680-1	01/16/98	01/21/98	65	%REC			1
2-Fluorobiphenyl	321-60-8	QCBLK162680-1	01/16/98	01/21/98	78	%REC			1
Terphenyl-d14	1718-51-0	QCBLK162680-1	01/16/98	01/21/98	79	%REC			1
Phenol-d5	4165-62-2	QCBLK162680-1	01/16/98	01/21/98	98	%REC			1
2-Fluorophenol	367-12-4	QCBLK162680-1	01/16/98	01/21/98	91	%REC			1
2,4,6-Tribromophenol	118-79-6	QCBLK162680-1	01/16/98	01/21/98	83	%REC			1

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC2

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-001

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1188

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/17/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	1600	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC2

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-001

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1188

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/17/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	73	BJ
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJC2

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-001

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1188

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/17/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Aldol Condensation	4.67	42000	ABJN
2.	UNKNOWN	6.19	850	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC5

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1191

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 9 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-Propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)Methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	1800	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	360	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethyl Phthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	360	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC5

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1191

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 9 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-Methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-Butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	1800	U
56-55-3	Benzo(a)Anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)Phthalate	190	BJ
117-84-0	Di-n-Octyl Phthalate	360	U
205-99-2	Benzo(b)Fluoranthene	360	U
207-08-9	Benzo(k)Fluoranthene	360	U
50-32-8	Benzo(a)Pyrene	360	U
193-39-5	Indeno(1,2,3-cd)Pyrene	360	U
53-70-3	Dibenz(a,h)Anthracene	360	U
191-24-2	Benzo(g,h,i)Perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJC5

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1191

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 9 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 22

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Aldol Condensation	4.60	34000	ABJN
2.	UNKNOWN	6.16	730	J
3.	Unknown PCB	25.11	240	J
4.	UNKNOWN	26.81	370	J
5.	Unknown PCB	26.93	380	J
6.	UNKNOWN	29.77	260	J
7.	UNKNOWN	30.22	280	J
8.	UNKNOWN	30.30	190	J
9.	UNKNOWN	30.41	180	J
10.	UNKNOWN	30.51	220	J
11.	UNKNOWN	30.59	160	J
12.	UNKNOWN	30.65	190	J
13.	UNKNOWN	30.71	270	J
14.	UNKNOWN	30.82	380	J
15.	UNKNOWN	30.88	240	J
16.	UNKNOWN	30.97	230	J
17.	UNKNOWN	31.12	320	J
18.	UNKNOWN	31.17	220	J
19.	UNKNOWN	31.30	510	J
20.	UNKNOWN	31.42	240	J
21.	UNKNOWN	31.54	240	J
22.	UNKNOWN	31.91	270	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJD1

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-003

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1192

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 5 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	1700	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	350	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethyl Phthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	350	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJD1

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-003

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1192

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 5 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-Methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	150	BJ
117-84-0	Di-n-Octyl Phthalate	52	J
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJD1

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-003

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1192

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 5 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 10

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Aldol Condensation	4.66	43000	ABJN
2.	UNKNOWN	6.18	920	J
3.	UNKNOWN	26.79	240	J
4.	UNKNOWN	29.51	110	J
5.	UNKNOWN	29.78	160	J
6.	UNKNOWN	30.11	100	J
7.	UNKNOWN	31.28	99	J
8.	UNKNOWN	31.40	81	J
9.	UNKNOWN	31.49	110	J
10.	UNKNOWN	31.91	140	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJD7

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-004

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1193

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	1600	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	340	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJD7

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-004

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1193

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJD7

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-004

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1193

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Aldol Condensation	4.72	55000	ABJN
2.	UNKNOWN	6.21	1200	J
3.	UNKNOWN	8.24	85	J
4.	UNKNOWN	26.75	120	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC8

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-005

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1194

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 15 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	1900	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC8

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-005

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1194

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 15 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	1900	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	130	BJ
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJC8

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-005

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1194

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 15 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 0	Aldol Condensation.	4.69	56000	ABJN
2.	UNKNOWN	6.19	1200	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF3

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-006

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1195

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 7 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	1700	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	350	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethyl Phthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	350	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF3

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-006

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1195

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 7 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-Methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJF3

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-006

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1195

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 7 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Aldol Condensation	4.68	53000	ABJN
2.	UNKNOWN	6.19	1200	J
3.	UNKNOWN	26.75	170	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ1

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-007

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1196

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	1600	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	340	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ1

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-007

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1196

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

000255

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJJ1

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-007

Sample wt/vol: 30.10 (g/mL) G Lab File ID: A1196

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Aldol Condensation	4.69	51000	ABJN
2.	UNKNOWN	6.19	1100	J
3.	UNKNOWN	26.75	100	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ4

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-008

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1197

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 2 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	1600	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	340	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ4

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-008

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1197

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 2 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJJ4

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-008

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1197

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 2 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Aldol Condensation	4.68	48000	ABJN
2.	UNKNOWN	6.19	1000	J
3.	UNKNOWN	26.75	89	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF0

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-009

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1198

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 4 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	1700	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	340	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethyl Phthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF0

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-009

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1198

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 4 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-Methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJF0

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-009

Sample wt/vol: 30.00 (g/mL) G Lab File ID: A1198

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 4 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/18/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Aldol Condensation	4.67	47000	ABJN
2.	UNKNOWN	6.19	1000	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC2

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-001

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5390

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	660	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC5

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5393

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 9 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	720	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJD1

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-003

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5394

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 5 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	690	U

000271

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJD7

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-004

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5395

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	680	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJC8

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-005

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5396

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 15 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	770	U

000273

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF3

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-006

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5397

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 7 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	710	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ1

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-007

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5398

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	680	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ4

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-008

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5399

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 2 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	670	U

000276

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF0

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-009

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5400

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: 4 decanted: (Y/N) N Date Extracted: 01/12/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	690	U

000277

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF6

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5378

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	1600	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	340	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF6

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5378

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	230	J
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	220	BJ
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJF6

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5378

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 9

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 0	Aldol Condensation	4.43	39000	ABJN
2.	UNKNOWN	4.98	120	J
3. 0	UNKNOWN	5.53	1700	BJ
4. 0	UNKNOWN	7.12	140	BJ
5. 57103	Hexadecanoic acid	20.23	560	BJN
6. 57114	Octadecanoic acid	22.24	91	JN
7.	UNKNOWN	26.75	74	J
8.	UNKNOWN	26.92	100	J
9.	UNKNOWN	29.94	77	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF9

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5379

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	1600	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	340	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF9

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5379

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	220	J
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	210	BJ
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJF9

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5379

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 0	Aldol Condensation	4.40	40000	ABJN
2.	UNKNOWN	4.97	120	J
3. 0	UNKNOWN	5.52	1600	BJ
4. 0	UNKNOWN	7.11	130	BJ
5. 57103	Hexadecanoic acid	20.22	450	BJN
6.	UNKNOWN	27.24	84	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJK0

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5380

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: 6 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	1700	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	350	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethyl Phthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	350	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJK0

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5380

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: 6 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-Methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	230	J
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	250	BJ
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJK0

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5380

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: 6 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 0	Aldol Condensation	4.42	35000	ABJN
2.	UNKNOWN	4.98	96	J
3. 0	UNKNOWN	5.52	1500	BJ
4. 0	UNKNOWN	7.12	120	BJ
5. 57103	Hexadecanoic acid	20.22	560	BJN
6. 57114	Octadecanoic acid	22.23	86	JN

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ7

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5381

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: 2 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	1600	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	340	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	340	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ7

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5381

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: 2 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	210	BJ
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

000290

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJJ7

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5381

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: 2 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 0	Aldol Condensation	4.46	38000	ABJN
2.	UNKNOWN	4.98	110	J
3. 0	UNKNOWN	5.52	1600	BJ
4. 0	UNKNOWN	7.11	130	BJ
5. 57103	Hexadecanoic acid	20.21	380	BJN

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJK6

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16628-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5382

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: 7 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	1700	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	350	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethyl Phthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	350	U

000292

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJK6

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16628-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5382

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: 7 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-Methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	240	J
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	240	BJ
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MJK6

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16628-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5382

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: 7 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/21/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 22

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 0	Aldol Condensation	4.42	36000	ABJN
2. 0	UNKNOWN	5.52	1400	BJ
3. 104767	1-Hexanol, 2-ethyl-	7.50	240	JN
4.	UNKNOWN	9.45	210	J
5. 57103	Hexadecanoic acid	20.24	740	BJN
6. 57114	Octadecanoic acid	22.24	140	JN
7.	UNKNOWN	23.86	720	J
8.	UNKNOWN	25.89	110	J
9.	UNKNOWN	26.30	430	J
10.	UNKNOWN	26.41	400	J
11.	UNKNOWN	26.46	93	J
12.	UNKNOWN	26.51	150	J
13.	UNKNOWN	26.62	97	J
14.	UNKNOWN	26.69	180	J
15.	UNKNOWN	26.76	1000	J
16.	UNKNOWN	26.87	330	J
17.	UNKNOWN	26.93	1300	J
18.	UNKNOWN	27.10	230	J
19.	UNKNOWN	27.47	230	J
20.	UNKNOWN	28.29	190	J
21.	UNKNOWN	28.44	280	J
22.	UNKNOWN	29.56	700	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF6

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5403

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	680	U

000299

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJF9

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5404

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	680	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJK0

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5405

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	680	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJJ7

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-002

Sample wt/vol: 30.10 (g/mL) G Lab File ID: H5406

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: 3 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	680	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MJK6

Lab Name: QUANTERRA MO Contract: 550-256

Lab Code: ITMO Case No.: S62001 SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16628-001

Sample wt/vol: 30.00 (g/mL) G Lab File ID: H5407

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: 7 decanted: (Y/N) N Date Extracted: 01/16/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/22/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
126-73-8	Tri-n-butyl phosphate	710	U

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/03/98

Client ID: BONJC5

Quanterra ID : 16620-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162220-1	01/12/98	01/12/98	11	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK162220-1	01/12/98	01/12/98	11	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK162220-1	01/12/98	01/12/98	11	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK162220-1	01/12/98	01/12/98	11	UG/KG	U	10	1
Ethyl Ether	60-29-7	QCBLK162220-1	01/12/98	01/12/98	11	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK162220-1	01/12/98	01/12/98	2	UG/KG	BJ	5	1
Acetone	67-64-1	QCBLK162220-1	01/12/98	01/12/98	12	UG/KG	BJ	22	1
Carbon Disulfide	75-15-0	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162220-1	01/12/98	01/12/98	22	UG/KG	U	22	1
1,1,1-Trichloroethane	71-55-6	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162220-1	01/12/98	01/12/98	22	UG/KG	U	22	1
2-Hexanone	591-78-6	QCBLK162220-1	01/12/98	01/12/98	22	UG/KG	U	22	1
Tetrachloroethene	127-18-4	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162220-1	01/12/98	01/12/98	5	UG/KG	U	5	1
1-Butanol	71-36-3	QCBLK162220-1	01/12/98	01/12/98	220	UG/KG	U	220	1
Toluene-d8	2037-26-5	QCBLK162220-1	01/12/98	01/12/98	101	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162220-1	01/12/98	01/12/98	91	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162220-1	01/12/98	01/12/98	100	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Client ID: BOMJC5

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/03/98

Quanterra ID : 16620-002MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK162220-1	01/12/98	01/12/98	107	%REC			1
Trichloroethene	79-01-6	QCBLK162220-1	01/12/98	01/12/98	100	%REC			1
Benzene	71-43-2	QCBLK162220-1	01/12/98	01/12/98	111	%REC			1
Toluene	108-88-3	QCBLK162220-1	01/12/98	01/12/98	106	%REC			1
Chlorobenzene	108-90-7	QCBLK162220-1	01/12/98	01/12/98	104	%REC			1
Toluene-d8	2037-26-5	QCBLK162220-1	01/12/98	01/12/98	100	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162220-1	01/12/98	01/12/98	90	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162220-1	01/12/98	01/12/98	99	%REC			1

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3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/03/98

Client ID: BOMJC5

Quanterra ID : 16620-002MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK162220-1	01/12/98	01/12/98	108	%REC			1
Trichloroethene	79-01-6	QCBLK162220-1	01/12/98	01/12/98	105	%REC			1
Benzene	71-43-2	QCBLK162220-1	01/12/98	01/12/98	116	%REC			1
Toluene	108-88-3	QCBLK162220-1	01/12/98	01/12/98	112	%REC			1
Chlorobenzene	108-90-7	QCBLK162220-1	01/12/98	01/12/98	109	%REC			1
Toluene-d8	2037-26-5	QCBLK162220-1	01/12/98	01/12/98	105	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162220-1	01/12/98	01/12/98	96	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162220-1	01/12/98	01/12/98	101	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Client ID: BONJD1

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/03/98

Quanterra ID : 16620-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162220-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK162220-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK162220-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK162220-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Ethyl Ether	60-29-7	QCBLK162220-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Acetone	67-64-1	QCBLK162220-1	01/13/98	01/13/98	21	UG/KG	U	21	1
Carbon Disulfide	75-15-0	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162220-1	01/13/98	01/13/98	21	UG/KG	U	21	1
1,1,1-Trichloroethane	71-55-6	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162220-1	01/13/98	01/13/98	21	UG/KG	U	21	1
2-Hexanone	591-78-6	QCBLK162220-1	01/13/98	01/13/98	21	UG/KG	U	21	1
Tetrachloroethene	127-18-4	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162220-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1-Butanol	71-36-3	QCBLK162220-1	01/13/98	01/13/98	210	UG/KG	U	210	1
1-Hexanol, 2-ethyl-	104-76-7	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	JN		1
Toluene-d8	2037-26-5	QCBLK162220-1	01/13/98	01/13/98	105	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162220-1	01/13/98	01/13/98	91	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162220-1	01/13/98	01/13/98	111	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/03/98

Client ID: BOMJC8

Quanterra ID : 16620-005

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162220-1	01/13/98	01/13/98	12	UG/KG	U	12	1
Bromomethane	74-83-9	QCBLK162220-1	01/13/98	01/13/98	12	UG/KG	U	12	1
Vinyl Chloride	75-01-4	QCBLK162220-1	01/13/98	01/13/98	12	UG/KG	U	12	1
Chloroethane	75-00-3	QCBLK162220-1	01/13/98	01/13/98	12	UG/KG	U	12	1
Ethyl Ether	60-29-7	QCBLK162220-1	01/13/98	01/13/98	12	UG/KG	U	12	1
Methylene Chloride	75-09-2	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Acetone	67-64-1	QCBLK162220-1	01/13/98	01/13/98	24	UG/KG	U	24	1
Carbon Disulfide	75-15-0	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
1,1-Dichloroethene	75-35-4	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
1,1-Dichloroethane	75-34-3	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Chloroform	67-66-3	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
1,2-Dichloroethane	107-06-2	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
2-Butanone (MEK)	78-93-3	QCBLK162220-1	01/13/98	01/13/98	24	UG/KG	U	24	1
1,1,1-Trichloroethane	71-55-6	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Carbon Tetrachloride	56-23-5	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Bromodichloromethane	75-27-4	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
1,2-Dichloropropane	78-87-5	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Trichloroethene	79-01-6	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Dibromochloromethane	124-48-1	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
1,1,2-Trichloroethane	79-00-5	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Benzene	71-43-2	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Bromoform	75-25-2	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162220-1	01/13/98	01/13/98	24	UG/KG	U	24	1
2-Hexanone	591-78-6	QCBLK162220-1	01/13/98	01/13/98	24	UG/KG	U	24	1
Tetrachloroethene	127-18-4	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Toluene	108-88-3	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Chlorobenzene	108-90-7	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
EthylBenzene	100-41-4	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Styrene	100-42-5	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
Xylene (total)	1330-20-7	QCBLK162220-1	01/13/98	01/13/98	6	UG/KG	U	6	1
1-Butanol	71-36-3	QCBLK162220-1	01/13/98	01/13/98	240	UG/KG	U	240	1
Toluene-d8	2037-26-5	QCBLK162220-1	01/13/98	01/13/98	102	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162220-1	01/13/98	01/13/98	90	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162220-1	01/13/98	01/13/98	105	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/03/98

Client ID: B0MJD7

Quanterra ID : 16620-004

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Ethyl Ether	60-29-7	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK162334-1	01/13/98	01/13/98	2	UG/KG	J	5	1
Acetone	67-64-1	QCBLK162334-1	01/13/98	01/13/98	24	UG/KG	B	21	1
Carbon Disulfide	75-15-0	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162334-1	01/13/98	01/13/98	21	UG/KG	U	21	1
1,1,1-Trichloroethane	71-55-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162334-1	01/13/98	01/13/98	21	UG/KG	U	21	1
2-Hexanone	591-78-6	QCBLK162334-1	01/13/98	01/13/98	21	UG/KG	U	21	1
Tetrachloroethene	127-18-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1-Butanol	71-36-3	QCBLK162334-1	01/13/98	01/13/98	210	UG/KG	U	210	1
Unknown-1	TIC-32	QCBLK162334-1	01/13/98	01/13/98	14	UG/KG	J		1
Toluene-d8	2037-26-5	QCBLK162334-1	01/13/98	01/13/98	101	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162334-1	01/13/98	01/13/98	87	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162334-1	01/13/98	01/13/98	106	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
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Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 12/31/97
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Report Date : 02/03/98

Client ID: BOMJF3

Quanterra ID : 16620-006

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162334-1	01/13/98	01/13/98	11	UG/KG	U	11	1
Bromomethane	74-83-9	QCBLK162334-1	01/13/98	01/13/98	11	UG/KG	U	11	1
Vinyl Chloride	75-01-4	QCBLK162334-1	01/13/98	01/13/98	11	UG/KG	U	11	1
Chloroethane	75-00-3	QCBLK162334-1	01/13/98	01/13/98	11	UG/KG	U	11	1
Ethyl Ether	60-29-7	QCBLK162334-1	01/13/98	01/13/98	11	UG/KG	U	11	1
Methylene Chloride	75-09-2	QCBLK162334-1	01/13/98	01/13/98	2	UG/KG	J	5	1
Acetone	67-64-1	QCBLK162334-1	01/13/98	01/13/98	40	UG/KG	B	22	1
Carbon Disulfide	75-15-0	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162334-1	01/13/98	01/13/98	22	UG/KG	U	22	1
1,1,1-Trichloroethane	71-55-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162334-1	01/13/98	01/13/98	22	UG/KG	U	22	1
2-Hexanone	591-78-6	QCBLK162334-1	01/13/98	01/13/98	22	UG/KG	U	22	1
Tetrachloroethene	127-18-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1-Butanol	71-36-3	QCBLK162334-1	01/13/98	01/13/98	220	UG/KG	U	220	1
Unknown-1	TIC-32	QCBLK162334-1	01/13/98	01/13/98	18	UG/KG	J		1
1-Hexanol, 2-ethyl-	104-76-7	QCBLK162334-1	01/13/98	01/13/98	6	UG/KG	JN		1
Toluene-d8	2037-26-5	QCBLK162334-1	01/13/98	01/13/98	99	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162334-1	01/13/98	01/13/98	88	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162334-1	01/13/98	01/13/98	107	%REC			1

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Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
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Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/03/98

Client ID: BOMJJ1

Quanterra ID : 16620-007

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Ethyl Ether	60-29-7	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK162334-1	01/13/98	01/13/98	2	UG/KG	J	5	1
Acetone	67-64-1	QCBLK162334-1	01/13/98	01/13/98	14	UG/KG	BJ	21	1
Carbon Disulfide	75-15-0	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162334-1	01/13/98	01/13/98	21	UG/KG	U	21	1
1,1,1-Trichloroethane	71-55-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162334-1	01/13/98	01/13/98	21	UG/KG	U	21	1
2-Hexanone	591-78-6	QCBLK162334-1	01/13/98	01/13/98	21	UG/KG	U	21	1
Tetrachloroethene	127-18-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1-Butanol	71-36-3	QCBLK162334-1	01/13/98	01/13/98	210	UG/KG	U	210	1
Toluene-d8	2037-26-5	QCBLK162334-1	01/13/98	01/13/98	100	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162334-1	01/13/98	01/13/98	91	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162334-1	01/13/98	01/13/98	110	%REC			1

Bechtel Hanford Incorporated
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Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/03/98

Client ID: BOMJJ4

Quanterra ID : 16620-008

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Ethyl Ether	60-29-7	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK162334-1	01/13/98	01/13/98	3	UG/KG	J	5	1
Acetone	67-64-1	QCBLK162334-1	01/13/98	01/13/98	25	UG/KG	B	20	1
Carbon Disulfide	75-15-0	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162334-1	01/13/98	01/13/98	20	UG/KG	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162334-1	01/13/98	01/13/98	20	UG/KG	U	20	1
2-Hexanone	591-78-6	QCBLK162334-1	01/13/98	01/13/98	20	UG/KG	U	20	1
Tetrachloroethene	127-18-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1-Butanol	71-36-3	QCBLK162334-1	01/13/98	01/13/98	200	UG/KG	U	200	1
Unknown-1	TIC-32	QCBLK162334-1	01/13/98	01/13/98	14	UG/KG	J		1
Toluene-d8	2037-26-5	QCBLK162334-1	01/13/98	01/13/98	94	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162334-1	01/13/98	01/13/98	86	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162334-1	01/13/98	01/13/98	104	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 12/31/97
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Report Date : 02/03/98

Client ID: BOMJFO

Quanterra ID : 16620-009

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Ethyl Ether	60-29-7	QCBLK162334-1	01/13/98	01/13/98	10	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK162334-1	01/13/98	01/13/98	2	UG/KG	J	5	1
Acetone	67-64-1	QCBLK162334-1	01/13/98	01/13/98	36	UG/KG	B	21	1
Carbon Disulfide	75-15-0	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162334-1	01/13/98	01/13/98	21	UG/KG	U	21	1
1,1,1-Trichloroethane	71-55-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162334-1	01/13/98	01/13/98	21	UG/KG	U	21	1
2-Hexanone	591-78-6	QCBLK162334-1	01/13/98	01/13/98	21	UG/KG	U	21	1
Tetrachloroethene	127-18-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162334-1	01/13/98	01/13/98	5	UG/KG	U	5	1
1-Butanol	71-36-3	QCBLK162334-1	01/13/98	01/13/98	210	UG/KG	U	210	1
Unknown-1	TIC-32	QCBLK162334-1	01/13/98	01/13/98	16	UG/KG	J		1
Toluene-d8	2037-26-5	QCBLK162334-1	01/13/98	01/13/98	99	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162334-1	01/13/98	01/13/98	89	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162334-1	01/13/98	01/13/98	108	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 01/02/98
Receipt Date : 01/05/98
Report Date : 02/03/98

Client ID: BOMJF6

Quanterra ID : 16621-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162632-1	01/14/98	01/14/98	10	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK162632-1	01/14/98	01/14/98	10	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK162632-1	01/14/98	01/14/98	10	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK162632-1	01/14/98	01/14/98	10	UG/KG	U	10	1
Ethyl Ether	60-29-7	QCBLK162632-1	01/14/98	01/14/98	10	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Acetone	67-64-1	QCBLK162632-1	01/14/98	01/14/98	17	UG/KG	BJ	21	1
Carbon Disulfide	75-15-0	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162632-1	01/14/98	01/14/98	21	UG/KG	U	21	1
1,1,1-Trichloroethane	71-55-6	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162632-1	01/14/98	01/14/98	21	UG/KG	U	21	1
2-Hexanone	591-78-6	QCBLK162632-1	01/14/98	01/14/98	21	UG/KG	U	21	1
Tetrachloroethene	127-18-4	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162632-1	01/14/98	01/14/98	5	UG/KG	U	5	1
1-Butanol	71-36-3	QCBLK162632-1	01/14/98	01/14/98	210	UG/KG	U	210	1
Unknown-1	TIC-32	QCBLK162632-1	01/14/98	01/14/98	7	UG/KG	J		1
Toluene-d8	2037-26-5	QCBLK162632-1	01/14/98	01/14/98	101	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162632-1	01/14/98	01/14/98	89	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162632-1	01/14/98	01/14/98	110	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 01/03/98
Receipt Date : 01/05/98
Report Date : 02/03/98

Client ID: BOMJF9

Quanterra ID : 16621-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162632-1	01/15/98	01/15/98	10	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK162632-1	01/15/98	01/15/98	10	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK162632-1	01/15/98	01/15/98	10	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK162632-1	01/15/98	01/15/98	10	UG/KG	U	10	1
Ethyl Ether	60-29-7	QCBLK162632-1	01/15/98	01/15/98	10	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Acetone	67-64-1	QCBLK162632-1	01/15/98	01/15/98	17	UG/KG	BJ	21	1
Carbon Disulfide	75-15-0	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162632-1	01/15/98	01/15/98	21	UG/KG	U	21	1
1,1,1-Trichloroethane	71-55-6	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162632-1	01/15/98	01/15/98	21	UG/KG	U	21	1
2-Hexanone	591-78-6	QCBLK162632-1	01/15/98	01/15/98	21	UG/KG	U	21	1
Tetrachloroethene	127-18-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1-Butanol	71-36-3	QCBLK162632-1	01/15/98	01/15/98	210	UG/KG	U	210	1
Unknown-1	TIC-32	QCBLK162632-1	01/15/98	01/15/98	9	UG/KG	J		1
Toluene-d8	2037-26-5	QCBLK162632-1	01/15/98	01/15/98	96	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162632-1	01/15/98	01/15/98	86	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162632-1	01/15/98	01/15/98	104	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/03/98

Client ID: BOMJJ7

Quanterra ID : 16626-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162632-1	01/15/98	01/15/98	10	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK162632-1	01/15/98	01/15/98	10	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK162632-1	01/15/98	01/15/98	10	UG/KG	U	10	1
Ethyl Ether	60-29-7	QCBLK162632-1	01/15/98	01/15/98	10	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK162632-1	01/15/98	01/15/98	10	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Acetone	67-64-1	QCBLK162632-1	01/15/98	01/15/98	20	UG/KG	U	20	1
Carbon Disulfide	75-15-0	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162632-1	01/15/98	01/15/98	20	UG/KG	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162632-1	01/15/98	01/15/98	20	UG/KG	U	20	1
2-Hexanone	591-78-6	QCBLK162632-1	01/15/98	01/15/98	20	UG/KG	U	20	1
Tetrachloroethene	127-18-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162632-1	01/15/98	01/15/98	2	UG/KG	J	5	1
Toluene	108-88-3	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162632-1	01/15/98	01/15/98	8	UG/KG		5	1
1-Butanol	71-36-3	QCBLK162632-1	01/15/98	01/15/98	200	UG/KG	U	200	1
1,2,4-Trimethylbenzene	95-63-6	QCBLK162632-1	01/15/98	01/15/98	10	UG/KG	JN		1
Toluene-d8	2037-26-5	QCBLK162632-1	01/15/98	01/15/98	94	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162632-1	01/15/98	01/15/98	84	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162632-1	01/15/98	01/15/98	98	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 01/07/98
Receipt Date : 01/08/98
Report Date : 02/03/98

Client ID: BOMJK6

Quanterra ID : 16628-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162632-1	01/15/98	01/15/98	11	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK162632-1	01/15/98	01/15/98	11	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK162632-1	01/15/98	01/15/98	11	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK162632-1	01/15/98	01/15/98	11	UG/KG	U	10	1
Ethyl Ether	60-29-7	QCBLK162632-1	01/15/98	01/15/98	11	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Acetone	67-64-1	QCBLK162632-1	01/15/98	01/15/98	22	UG/KG	B	22	1
Carbon Disulfide	75-15-0	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162632-1	01/15/98	01/15/98	22	UG/KG	U	22	1
1,1,1-Trichloroethane	71-55-6	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162632-1	01/15/98	01/15/98	22	UG/KG	U	22	1
2-Hexanone	591-78-6	QCBLK162632-1	01/15/98	01/15/98	22	UG/KG	U	22	1
Tetrachloroethene	127-18-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162632-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1-Butanol	71-36-3	QCBLK162632-1	01/15/98	01/15/98	220	UG/KG	U	220	1
1-Hexanol, 2-ethyl-	104-76-7	QCBLK162632-1	01/15/98	01/15/98	12	UG/KG	JN		1
Toluene-d8	2037-26-5	QCBLK162632-1	01/15/98	01/15/98	97	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162632-1	01/15/98	01/15/98	96	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162632-1	01/15/98	01/15/98	103	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Volatiles 8260
Method: EPA 8260
Matrix: SOLID

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/03/98

Client ID: BONJKO

Quanterra ID : 16626-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162755-1	01/15/98	01/15/98	11	UG/KG	U	11	1
Bromomethane	74-83-9	QCBLK162755-1	01/15/98	01/15/98	11	UG/KG	U	11	1
Vinyl Chloride	75-01-4	QCBLK162755-1	01/15/98	01/15/98	11	UG/KG	U	11	1
Chloroethane	75-00-3	QCBLK162755-1	01/15/98	01/15/98	11	UG/KG	U	11	1
Ethyl Ether	60-29-7	QCBLK162755-1	01/15/98	01/15/98	11	UG/KG	U	11	1
Methylene Chloride	75-09-2	QCBLK162755-1	01/15/98	01/15/98	2	UG/KG	BJ	5	1
Acetone	67-64-1	QCBLK162755-1	01/15/98	01/15/98	18	UG/KG	BJ	21	1
Carbon Disulfide	75-15-0	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162755-1	01/15/98	01/15/98	21	UG/KG	U	21	1
1,1,1-Trichloroethane	71-55-6	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162755-1	01/15/98	01/15/98	21	UG/KG	U	21	1
2-Hexanone	591-78-6	QCBLK162755-1	01/15/98	01/15/98	21	UG/KG	U	21	1
Tetrachloroethene	127-18-4	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK162755-1	01/15/98	01/15/98	5	UG/KG	U	5	1
1-Butanol	71-36-3	QCBLK162755-1	01/15/98	01/15/98	210	UG/KG	U	210	1
Unknown-1	TIC-32	QCBLK162755-1	01/15/98	01/15/98	9	UG/KG	J		1
Toluene-d8	2037-26-5	QCBLK162755-1	01/15/98	01/15/98	99	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162755-1	01/15/98	01/15/98	91	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162755-1	01/15/98	01/15/98	104	%REC			1

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJC5

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0507

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 9 Date Analyzed: 01/12/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
60-29-7	Diethyl ether	11	U
75-09-2	Methylene Chloride	2	BJ
67-64-1	Acetone	12	BJ
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	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	22	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	Chlorodibromomethane	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	22	U
591-78-6	2-Hexanone	22	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJC5

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0507

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 9 Date Analyzed: 01/12/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	220	U

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJC5

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0507

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 9 Date Analyzed: 01/12/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJD1

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0520

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 5 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	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
60-29-7	Diethyl ether	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	21	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	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	21	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	Chlorodibromomethane	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	21	U
591-78-6	2-Hexanone	21	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJD1

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0520

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 5 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	210	U

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJD1

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0520

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 5 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 104-76-7	1-Hexanol, 2-ethyl-	22.130	6	NJ
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJC8

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-005

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0521

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 15 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
60-29-7	Diethyl ether	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	24	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	24	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Chlorodibromomethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-pentanone	24	U
591-78-6	2-Hexanone	24	U
127-18-4	Tetrachloroethene	6	U
108-88-3	Toluene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes (total)	6	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJC8

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-005

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0521

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 15 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	240	U

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJC8

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-005

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0521

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 15 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJD7

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0530

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 3 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	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
60-29-7	Diethyl ether	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	24	B
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	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	21	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	Chlorodibromomethane	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	21	U
591-78-6	2-Hexanone	21	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJD7

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0530

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 3 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	210	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJD7

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0530

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 3 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	2.118	14	J
2.					
3.					
4.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJF3

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-006

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0531

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 7 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
60-29-7	Diethyl ether	11	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	40	B
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	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	22	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	Chlorodibromomethane	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	22	U
591-78-6	2-Hexanone	22	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJF3

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-006

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0531

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 7 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	220	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJF3

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-006

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0531

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 7 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	2.137	18	J
2. 104-76-7	1-Hexanol, 2-ethyl-	22.166	6	NJ
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJJ1

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-007

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0532

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 3 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	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
60-29-7	Diethyl ether	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	14	BJ
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	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	21	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	Chlorodibromomethane	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	21	U
591-78-6	2-Hexanone	21	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJJ1

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-007

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0532

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 3 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	210	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJJ1

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-007

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0532

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 3 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJJ4

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-008

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0533

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 2 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	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
60-29-7	Diethyl ether	10	U
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	25	B
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	5	U
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	Chlorodibromomethane	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
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJJ4

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-008

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0533

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 2 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	200	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJJ4

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-008

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0533

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 2 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	2.067	14	J
2.				
3.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJF0

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-009

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0534

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 4 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	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
60-29-7	Diethyl ether	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	36	B
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	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	21	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	Chlorodibromomethane	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	21	U
591-78-6	2-Hexanone	21	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJF0

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-009

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0534

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 4 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	210	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJF0

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16620-009

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ELCS0534

Level: (low/med) LOW Date Received: 01/02/98

% Moisture: not dec. 4 Date Analyzed: 01/13/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	2.141	16	J
2.				
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJF6

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0560

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: not dec. 3 Date Analyzed: 01/14/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	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
60-29-7	Diethyl ether	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	17	BJ
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	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	21	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	Chlorodibromomethane	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	21	U
591-78-6	2-Hexanone	21	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJF6

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0560

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: not dec. 3 Date Analyzed: 01/14/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	210	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJF6

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0560

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: not dec. 3 Date Analyzed: 01/14/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	1.844	7	J
2.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJF9

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0561

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: not dec. 3 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	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
60-29-7	Diethyl ether	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	17	BJ
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	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	21	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	Chlorodibromomethane	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	21	U
591-78-6	2-Hexanone	21	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJF9

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0561

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: not dec. 3 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	210	U

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJF9

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16621-002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0561

Level: (low/med) LOW Date Received: 01/05/98

% Moisture: not dec. 3 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	1.873	9	J
2.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJJ7

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0563

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: not dec. 2 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	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
60-29-7	Diethyl ether	10	U
75-09-2	Methylene Chloride	5	U
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	5	U
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	Chlorodibromomethane	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
108-88-3	Toluene	2	J
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	8	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJJ7

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0563

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: not dec. 2 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	200	U

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJJ7

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0563

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: not dec. 2 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 95-36-3	1,2,4-Trimethylbenzene	21.501	10	NJ
2.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJK6

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16628-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0565

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: not dec. 7 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
60-29-7	Diethyl ether	11	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	22	B
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	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	22	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	Chlorodibromomethane	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	22	U
591-78-6	2-Hexanone	22	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJK6

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16628-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0565

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: not dec. 7 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	220	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJK6

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16628-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0565

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: not dec. 7 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 104-76-7	1-Hexanol, 2-ethyl-	21.995	12	NJ
2.				
3.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJK0

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0574

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: not dec. 6 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
60-29-7	Diethyl ether	11	U
75-09-2	Methylene Chloride	2	BJ
67-64-1	Acetone	18	BJ
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	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	21	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	Chlorodibromomethane	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	21	U
591-78-6	2-Hexanone	21	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMJK0

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0574

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: not dec. 6 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
71-36-3	n-Butanol	210	U

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOMJK0

Lab Name: QUANTERRA MO Contract: 550.256

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02161

Matrix: (soil/water) SOIL Lab Sample ID: 16626-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0574

Level: (low/med) LOW Date Received: 01/06/98

% Moisture: not dec. 6 Date Analyzed: 01/15/98

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	1.945	9	J
2.				
3.				
4.				
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Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: AMMONIA
Method: EPA 350.1
Matrix: SOLID

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BONJK0	16626-001	Ammonia	NH3-N	QCBLK164035-1	01/31/98	01/31/98	0.530	UG/G	U	0.530	1
BONJJ7	16626-002	Ammonia	NH3-N	QCBLK164035-1	01/31/98	01/31/98	0.509	UG/G	U	0.509	1
BONJK6	16628-001	Ammonia	NH3-N	QCBLK164035-1	01/31/98	01/31/98	0.538	UG/G	U	0.538	1
NA	QCBLK164035-1	Ammonia	NH3-N	QCBLK164035-1	01/31/98	01/31/98	0.500	UG/G	U	0.500	1
NA	QCLCS164035-1	Ammonia	NH3-N	QCBLK164035-1	01/31/98	01/31/98	99	%REC			1

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3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: AMMONIA
Method: EPA 350.1
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMJC2	16620-001	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.533	UG/G		0.533	1
BOMJC5	16620-002	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.547	UG/G	U	0.547	1
BOMJD1	16620-003	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.523	UG/G	U	0.523	1
BOMJD7	16620-004	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.518	UG/G	U	0.518	1
BOMJC8	16620-005	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.587	UG/G	U	0.587	1
BOMJF3	16620-006	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.536	UG/G	U	0.536	1
BOMJJ1	16620-007	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.514	UG/G	U	0.514	1
BOMJJ4	16620-008	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.512	UG/G	U	0.512	1
BOMJF0	16620-009	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.517	UG/G	U	0.517	1
BOMJF6	16621-001	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.517	UG/G	U	0.517	1
BOMJF6	16621-001DUP	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.514	UG/G	U	0.514	1
BOMJF6	16621-001MS	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	103	%REC			1
BOMJF9	16621-002	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.510	UG/G	U	0.510	1
NA	QCBLK163194-1	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	0.500	UG/G	U	0.500	1
NA	QCLCS163194-1	Ammonia	NH3-N	QCBLK163194-1	01/22/98	01/22/98	97	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: NO3-NO2
Method: EPA 353.1
Matrix: SOLID

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMJK0	16626-001	Nitrate/Nitrite	NO2+NO3-N	QCBLK163237-1	01/22/98	01/22/98	0.529	UG/G	U	0.529	1
BOMJJ7	16626-002	Nitrate/Nitrite	NO2+NO3-N	QCBLK163237-1	01/22/98	01/22/98	0.509	UG/G	U	0.509	1
BOMJK6	16628-001	Nitrate/Nitrite	NO2+NO3-N	QCBLK163237-1	01/22/98	01/22/98	0.539	UG/G	U	0.539	1
NA	QCBLK163237-1	Nitrate/Nitrite	NO2+NO3-N	QCBLK163237-1	01/22/98	01/22/98	0.500	UG/G	U	0.500	1
NA	QCLCS163237-1	Nitrate/Nitrite	NO2+NO3-N	QCBLK163237-1	01/22/98	01/22/98	102	%REC			1

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3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Client ID: BOMJC2

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/09/98

Quanterra ID : 16620-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.380	UG/G		0.724	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	32.2	UG/G		18.1	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/09/98

Client ID: BOMJC5

Quanterra ID : 16620-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.214	UG/G	U	0.214	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	43.3	UG/G		5.34	1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/09/98

Client ID: BOMJD1

Quanterra ID : 16620-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.209	UG/G	U	0.209	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	26.0	UG/G		5.22	1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/09/98

Client ID: BOMJD7

Quanterra ID : 16620-004

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.206	UG/G	U	0.206	1
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/21/98	4.07	UG/G		0.206	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	8.88	UG/G		5.14	1

Bechtel Hanford Incorporated
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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Client ID: BOMJC8

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/09/98

Quanterra ID : 16620-005

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.231	UG/G	U	0.231	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	18.8	UG/G		5.76	1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Client ID: BOMJF3

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/09/98

Quanterra ID : 16620-006

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.214	UG/G	U	0.214	1
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/21/98	6.02	UG/G		0.214	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	13.6	UG/G		5.34	1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/09/98

Client ID: BOMJJ1

Quanterra ID : 16620-007

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.200	UG/G	U	0.200	1
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/21/98	0.341	UG/G		0.200	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	5.01	UG/G	U	5.01	1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/09/98

Client ID: BOMJJ4

Quanterra ID : 16620-008

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.196	UG/G	U	0.196	1
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/21/98	0.196	UG/G	U	0.196	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	4.91	UG/G	U	4.91	1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/09/98

Client ID: BOMJF0

Quanterra ID : 16620-009

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.191	UG/G	U	0.191	1
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/21/98	4.16	UG/G		0.191	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	9.11	UG/G		4.78	1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/09/98

Client ID: BOMJKO

Quanterra ID : 16626-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.206	UG/G	U	0.206	1
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/21/98	0.206	UG/G	U	0.206	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	10.1	UG/G		5.14	1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Client ID: BOMJJ7

Sample Date : 01/05/98
Receipt Date : 01/06/98
Report Date : 02/09/98

Quanterra ID : 16626-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.204	UG/G	U	0.206	1
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/21/98	0.204	UG/G	U	0.206	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	5.10	UG/G	U	5.14	1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Client ID: BOMJK6

Sample Date : 01/07/98
Receipt Date : 01/08/98
Report Date : 02/09/98

Quanterra ID : 16628-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK163217-1	01/21/98	01/21/98	0.214	UG/G	U	0.214	1
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/21/98	0.256	UG/G		0.214	1
Sulfate	14808-79-8	QCBLK163217-1	01/21/98	01/21/98	18.4	UG/G		5.34	1

Bechtel Hanford Incorporated
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Project: 550.256

Category: Nitrate
Method: EPA 300.0
Matrix: SOLID

Client ID: 80MJC2

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/23/98

Quanterra ID : 16620-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/22/98	35.8	UG/G		3.62	5

Bechtel Hanford Incorporated
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Project: 550.256

Category: Nitrate
Method: EPA 300.0
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/23/98

Client ID: BOMJC5

Quanterra ID : 16620-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/22/98	31.1	UG/G		1.07	5

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Project: 550.256

Category: Nitrate
Method: EPA 300.0
Matrix: SOLID

Client ID: BOMJ01

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/23/98

Quanterra ID : 16620-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/22/98	13.5	UG/G		0.417	2

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Project: 550.256

Category: Nitrate
Method: EPA 300.0
Matrix: SOLID

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/23/98

Client ID: BOMJC8

Quanterra ID : 16620-005

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrate	NO3-N	QCBLK163217-1	01/21/98	01/22/98	13.0	UG/G		0.461	2

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Sample Date : 01/02/98
Receipt Date : 01/05/98
Report Date : 02/23/98

Client ID: BOMJF6

Quanterra ID : 16621-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK162532-1	01/14/98	01/14/98	0.207	UG/G	U	0.207	1
Nitrate	NO3-N	QCBLK162532-1	01/14/98	01/14/98	0.207	UG/G	U	0.207	1
Sulfate	14808-79-8	QCBLK162532-1	01/14/98	01/14/98	5.17	UG/G	U	5.17	1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Sample Date : 01/02/98
Receipt Date : 01/05/98
Report Date : 02/23/98

Client ID: BOMJF6

Quanterra ID : 16621-001DUP

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK162532-1	01/14/98	01/14/98	0.206	UG/G	U	0.206	1
Nitrate	NO3-N	QCBLK162532-1	01/14/98	01/14/98	0.206	UG/G	U	0.206	1
Sulfate	14808-79-8	QCBLK162532-1	01/14/98	01/14/98	5.16	UG/G	U	5.16	1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Client ID: BOMJF6

Sample Date : 01/02/98
Receipt Date : 01/05/98
Report Date : 02/09/98

Quanterra ID : 16621-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK162532-1	01/14/98	01/14/98	99	%REC			1
Nitrate	NO3-N	QCBLK162532-1	01/14/98	01/14/98	100	%REC			1
Sulfate	14808-79-8	QCBLK162532-1	01/14/98	01/14/98	99	%REC			1

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Project: 550.256

Category: Nitrite
Method: EPA 300.0
Matrix: SOLID

Sample Date : 01/03/98
Receipt Date : 01/05/98
Report Date : 02/23/98

Client ID: BOMJF9

Quanterra ID : 16621-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Nitrite	NO2-N	QCBLK162532-1	01/14/98	01/14/98	0.203	UG/G	U	0.203	1
Nitrate	NO3-N	QCBLK162532-1	01/14/98	01/14/98	0.203	UG/G	U	0.203	1
Sulfate	14808-79-8	QCBLK162532-1	01/14/98	01/14/98	5.07	UG/G	U	5.07	1

Bechtel Hanford Incorporated
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Project: 550.256

Category: CYANIDE
Method: EPA 9010
Matrix: SOLID

Sample Date : 01/07/98
Receipt Date : 01/08/98
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil
B0MJK6	16628-001	Cyanide	57-12-5	QCBLK162957-1	01/20/98	01/21/98	0.538	UG/G	U	0.538	1
NA	QCBLK162957-1	Cyanide	57-12-5	QCBLK162957-1	01/20/98	01/21/98	0.500	UG/G	U	0.500	1
NA	QCLCS162957-1	Cyanide	57-12-5	QCBLK162957-1	01/20/98	01/21/98	94	%REC			1

Bechtel Hanford Incorporated
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Project: 550.256

Category: CYANIDE
Method: EPA 9010
Matrix: SOLID

Sample Date : 01/02/98
Receipt Date : 01/05/98
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMJF6	16621-001	Cyanide	57-12-5	QCBLK162321-1	01/13/98	01/14/98	0.517	UG/G	U	0.517	1
BOMJF6	16621-001DUP	Cyanide	57-12-5	QCBLK162321-1	01/13/98	01/14/98	0.517	UG/G	U	0.517	1
BOMJF6	16621-001MS	Cyanide	57-12-5	QCBLK162321-1	01/13/98	01/14/98	93	%REC			1
BOMJF9	16621-002	Cyanide	57-12-5	QCBLK162321-1	01/13/98	01/14/98	0.514	UG/G	U	0.514	1
NA	QCBLK162321-1	Cyanide	57-12-5	QCBLK162321-1	01/13/98	01/14/98	0.500	UG/G	U	0.500	1
NA	QCLCS162321-1	Cyanide	57-12-5	QCBLK162321-1	01/13/98	01/14/98	101	%REC			1

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Project: 550.256

Category: CYANIDE
Method: EPA 9010
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/23/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMJC5	16620-002	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	0.548	UG/G	U	0.548	1
BOMJD1	16620-003	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	0.527	UG/G	U	0.527	1
BOMJD7	16620-004	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	0.517	UG/G	U	0.517	1
BOMJC8	16620-005	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	0.588	UG/G	U	0.588	1
BOMJF3	16620-006	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	0.539	UG/G	U	0.539	1
BOMJJ1	16620-007	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	0.517	UG/G	U	0.517	1
BOMJJ4	16620-008	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	0.512	UG/G	U	0.512	1
BOMJF0	16620-009	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	0.517	UG/G	U	0.517	1
BOMJK0	16626-001	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	0.529	UG/G	U	0.529	1
BOMJJ7	16626-002	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	0.510	UG/G	U	0.510	1
NA	QCBLK163263-1	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	0.500	UG/G	U	0.500	1
NA	QCLCS163263-1	Cyanide	57-12-5	QCBLK163263-1	01/22/98	01/24/98	88	%REC			1

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Project: 550.256

Category: NO3-NO2
Method: EPA 353.1
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/23/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMJC2	16620-001	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	32.4	UG/G		10.0	20
BOMJC5	16620-002	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	26.7	UG/G		11.0	20
BOMJD1	16620-003	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	11.8	UG/G		2.64	2
BOMJD7	16620-004	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	3.48	UG/G		0.518	1
BOMJC8	16620-005	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	11.7	UG/G		1.18	2
BOMJF3	16620-006	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	4.98	UG/G		0.536	1
BOMJJ1	16620-007	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	0.514	UG/G	U	0.514	1
BOMJJ4	16620-008	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	0.512	UG/G	U	0.512	1
BOMJF0	16620-009	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	3.34	UG/G		0.517	1
BOMJF6	16621-001	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	0.517	UG/G	U	0.517	1
BOMJF6	16621-001DUP	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	0.514	UG/G	U	0.514	1
BOMJF6	16621-001MS	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	73	%REC			1
BOMJF9	16621-002	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	0.510	UG/G	U	0.510	1
NA	QCBLK163195-1	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	0.500	UG/G	U	0.500	1
NA	QCLCS163195-1	Nitrate/Nitrite	NO2+NO3-N	QCBLK163195-1	01/22/98	01/22/98	104	%REC			1

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Project: 550.256

Category: pH
Method: EPA 9045
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BQMJC2	16620-001	pH	PH	QCBLK162420-1	01/14/98	01/14/98	8.17	PH			1
BQMJD4	16620-010	pH	PH	QCBLK162420-1	01/14/98	01/14/98	8.40	PH			1
BQMJD4	16620-010DUP	pH	PH	QCBLK162420-1	01/14/98	01/14/98	8.45	PH			1
BQMJF6	16621-001	pH	PH	QCBLK162420-1	01/14/98	01/14/98	8.46	PH			1
BQMJF9	16621-002	pH	PH	QCBLK162420-1	01/14/98	01/14/98	8.52	PH			1
BQMJK3	16626-003	pH	PH	QCBLK162420-1	01/14/98	01/14/98	8.43	PH			1
NA	QCBLK162420-1	pH	PH	QCBLK162420-1	01/14/98	01/14/98	4.62	PH			1

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Project: 550.256

Category: pH
Method: EPA 9045
Matrix: SOLID

Sample Date : 12/29/97
Receipt Date : 01/02/98
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMJC5	16620-002	pH	PH	QCBLK163521-1	01/26/98	01/26/98	8.27	PH			1
BOMJD1	16620-003	pH	PH	QCBLK163521-1	01/26/98	01/26/98	8.44	PH			1
BOMJD7	16620-004	pH	PH	QCBLK163521-1	01/26/98	01/26/98	8.32	PH			1
BOMJC8	16620-005	pH	PH	QCBLK163521-1	01/26/98	01/26/98	8.74	PH			1
BOMJF3	16620-006	pH	PH	QCBLK163521-1	01/26/98	01/26/98	8.18	PH			1
BOMJJ1	16620-007	pH	PH	QCBLK163521-1	01/26/98	01/26/98	8.19	PH			1
BOMJJ4	16620-008	pH	PH	QCBLK163521-1	01/26/98	01/26/98	8.19	PH			1
BOMJF0	16620-009	pH	PH	QCBLK163521-1	01/26/98	01/26/98	8.45	PH			1
BOMJK0	16626-001	pH	PH	QCBLK163521-1	01/26/98	01/26/98	8.42	PH			1
BOMJJ7	16626-002	pH	PH	QCBLK163521-1	01/26/98	01/26/98	8.48	PH			1
BOMJK6	16628-001	pH	PH	QCBLK163521-1	01/26/98	01/26/98	8.36	PH			1
NA	QCBLK163521-1	pH	PH	QCBLK163521-1	01/26/98	01/26/98	4.68	PH			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Total Organic Carbon
Method: EPA 9060
Matrix: SOLID

Sample Date : 12/31/97
Receipt Date : 01/02/98
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMJJ1	16620-007	Total Organic C	TOC	QCBLK163063-1	01/21/98	01/21/98	342	UG/G		25.9	1
BOMJK0	16626-001	Total Organic C	TOC	QCBLK163063-1	01/21/98	01/21/98	297	UG/G		26.8	1
NA	QCBLK163063-1	Total Organic C	TOC	QCBLK163063-1	01/21/98	01/21/98	25.0	UG/G	U	25.0	1
NA	QCLCS163063-1	Total Organic C	TOC	QCBLK163063-1	01/21/98	01/21/98	97	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.256

Category: Total Organic Carbon
Method: EPA 9060
Matrix: SOLID

Sample Date : 12/30/97
Receipt Date : 01/02/98
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BONJD4	16620-010	Total Organic C	TOC	QCBLK162992-1	01/20/98	01/20/98	206	UG/G		25.7	1
BONJD4	16620-010DUP	Total Organic C	TOC	QCBLK162992-1	01/20/98	01/20/98	249	UG/G		25.5	1
BONJD4	16620-010MS	Total Organic C	TOC	QCBLK162992-1	01/20/98	01/20/98	99	%REC			1
BONJK3	16626-003	Total Organic C	TOC	QCBLK162992-1	01/20/98	01/20/98	367	UG/G		27.5	1
NA	QCBLK162992-1	Total Organic C	TOC	QCBLK162992-1	01/20/98	01/20/98	25.0	UG/G	U	25.0	1
NA	QCLCS162992-1	Total Organic C	TOC	QCBLK162992-1	01/20/98	01/20/98	101	%REC			1

W02161

Quanterra Environmental Services

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CERTIFICATE OF ANALYSIS

FEB 1998 RECEIVED Data Log In

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

February 23, 1998

Attention: Joan Kessner

SAF Number	:	B98-004
Date SDG Closed	:	January 16, 1998
Number of Samples	:	Fourteen (14)
Sample Type	:	Soil
SDG Number	:	W02161
Data Deliverable	:	Summary

I. Introduction

Between January 2, and January 8, 1998, 14 soil samples were received by the Quanterra Environmental Services Richland Laboratory (QESRL) for radiochemical and chemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Bechtel Hanford, Inc. (BHI) specific ID:

QESRL ID#	BHI ID#	MATRIX	DATE OF RECEIPT
80101601	B0MJC5	Soil	1/2/98
80101602	B0MJD1	Soil	1/2/98
80101603	B0MJD7	Soil	1/2/98
80101604	B0MJC8	Soil	1/2/98
80101605	B0MJF3	Soil	1/2/98
80101606	B0MJJ1	Soil	1/2/98
80101607	B0MJJ4	Soil	1/2/98
80101608	B0MJF0	Soil	1/2/98
80101609	B0MJC2	Soil	1/2/98
80103301	B0MJF6	Soil	1/5/98
80103302	B0MJF9	Soil	1/5/98
80105101	B0MJK0	Soil	1/6/98
80105102	B0MJJ7	Soil	1/6/98
80111701	B0MJK6	Soil	1/8/98

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, Curium-244 by method RICH-RC-5072
Neptunium-237 by method RC-3208
Uranium-234, -235, -238 by method RICH-RC-
Thorium-228, -230, -232 by method RICH-RC-5003
Uranium-234, -235, -238 by method RICH-RC-5030
Gamma Spectroscopy
Low level Iodine-129 by method RICH-RC-5025
Gamma Scan by method RICH-RC-5017
Gas Proportional Counting
Gross Alpha by method RICH-RC-5014
Gross Beta by method RICH-RC-5014
Strontium-90 by method RICH-RC-5071
Liquid Scintillation Counting
Plutonium-241 by method RICH-RC-5010
Selenium-79 by method RD-3253
Technetium-99 by method RICH-RC-5029
Total Uranium
Total Uranium by method RICH-RC-5058

III. Quality Control

The analytical results for each analysis performed under SDG W02161 include a minimum of two Laboratory Control Samples (LCS) and one method (reagent) blank. Any exceptions have been noted in the "Comments" section.

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

IV. Comments

Alpha Spectroscopy

Americium-241, Curium-244 by method RICH-RC-5072
The batch blank, sample duplicates (B0MJD7 and B0MJF3) and sample results are within contractual requirements. The LCS for this sample batch was elevated at 110.6%. The LCS was recounted and the recount result verified the original LCS result. BHI was notified and gave approval to report the results in this batch. The volume for samples B0MJC5, B0MJD1 and B0MJC8 was reduced based on the elevated activity observed from sample screening. The contractual MDA value for these three samples with reduced volumes was met.

Neptunium-237 by method RC-3208
The LCS and MS from the original analysis failed to meet the contractual requirements, therefore, the entire sample batch was reanalyzed. The LCS, batch blank, sample duplicate (B0MJF3) and sample results are within contractual requirements.

Plutonium-238, -239/40 by method RICH-RC-5010
The LCS, batch blank, sample duplicates (B0MJD7 and B0MJF3) and sample results are within contractual requirements. The volume for samples B0MJC5, B0MJD1 and B0MJC8 was reduced based on the elevated activity observed from sample screening, subsequently, the contractual MDA value for samples B0MJC5 and B0MJD1 was not met.

Thorium-228, -230, -232 by method RICH-RC-5003
The LCS, matrix spike, batch blank, sample duplicates (B0MJD7 and B0MJF3) and sample results are within contractual requirements. The volume for samples B0MJC5, B0MJD1 and B0MJC8 was reduced based on the elevated activity observed from sample screening.

Uranium-234, -235, -238 by method RICH-RC-5030
The LCS, batch blank, sample duplicate (B0MJD1) and sample results are within contractual requirements. The volume for sample B0MJD1 was reduced based on the elevated activity observed from sample screening, subsequently, the contractual MDA value for this sample was not met.

Gamma Spectroscopy

Low level Iodine-129 by method RICH-RC-5025
The LCS, batch blank, sample duplicates (B0MJD7 and B0MJF3) and sample results are within contractual requirements. There was high activity in samples B0MJC5 and B0MJD1 that increased the compton background, therefore, the contractual MDA value for these two samples was not met.

Gamma Scan by method RICH-RC-5017
The LCS, batch blank, sample duplicates (B0MJD7 and B0MJF3) and sample results are within contractual requirements. There was high activity in samples B0MJC5 and B0MJD1 that increased the compton background, therefore, the contractual MDA values for these two samples were not met.

Gas Proportional Counting

Gross Alpha by method RICH-RC-5014
The LCS, batch blank, sample duplicates (B0MJD7 and B0MJF3) and sample results are within contractual requirements.

Gross Beta by method RICH-RC-5014
The LCS, batch blank, sample duplicates (B0MJD7 and B0MJF3) and sample results are within contractual requirements.

Strontium-90 by method RICH-RC-5071
The LCS, batch blank, sample duplicates (B0MJD7) and sample results are within contractual requirements. The contractual MDA value was not met for sample B0MJC5 and B0MJD1 due to a reduced volume used based on the elevated activity observed from sample screening.

Liquid Scintillation Counting

Plutonium-241 by method RICH-RC-5010
The LCS, matrix spike, batch blank, sample duplicates (B0MJD7 and B0MJF3) and sample results are within contractual requirements. The volume for samples B0MJC5, B0MJD1 and B0MJC8 was reduced based on the elevated activity observed from sample screening. The contractual MDA value for these three samples with reduced volumes was met.

Selenium-79 by method RD-3253
The LCS, MS, batch blank, sample duplicate (B0MJD7 and B0MJF3) and sample results are within contractual requirements. The LCS used for the analysis of these samples for selenium-79 was selenium-75 and was counted by Gammma Spectroscopy. The chemical yield monitor used for this analysis was selenium metal and was determined by ICP.

Technetium-99 by method RICH-RC-5029
The LCS, batch blank, sample duplicates (B0MJF6, B0MJK0, B0MJK6 and B0MJJ1) and sample results are within contractual requirements. The volume for samples B0MJC5 and B0MJD1 was reduced based on the elevated activity observed from sample screening

Total Uranium

Total Uranium by method RICH-RC-5058
The LCS, matrix spike, batch blank, sample duplicates (B0MJD7 and B0MJF3) and sample results are within contractual requirements. The volume for samples B0MJC5 and B0MJD1 was reduced based on the elevated activity observed from sample screening

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:

Andy Kopriva
Project Manager

Quanterra Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02161 / 4544
LAB SAMPLE ID:	80101601	**MATRIX:**	SOIL
CLIENT ID:	B0MJC5	**DATE RECEIVED:**	1/2/1998 10:50:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	3.78E+03		1.2E+02	6.6E+02	2.18E+01	pCi/g	75.60%	RICHRC5071
AM-241	1.66E+00	U	1.7E+00	1.7E+00	1.97E+00	pCi/g	86.30%	RICHRC5057-A
CM-242	-4.18E-02	U	8.4E-02	8.4E-02	2.10E+00	pCi/g	86.30%	RICHRC5057
CM-244	4.33E-01	U	8.7E-01	8.7E-01	1.17E+00	pCi/g	86.30%	RICHRC5072-C
NP-237	2.56E-01	U	6.8E-01	6.8E-01	1.68E+00	pCi/g	100.00%	RICHRC5064
TH-228	1.24E+00	U	2.3E+00	2.3E+00	4.92E+00	pCi/g	95.50%	RICHRC5011
TH-230	2.67E+00	J	2.4E+00	2.4E+00	1.44E+00	pCi/g	95.50%	RICHRC5011
TH-232	0.00E+00	U	0.0E+00	1.6E+00	1.44E+00	pCi/g	95.50%	RICHRC5011
PU-238	-1.21E-01	U	1.2E-01	1.2E-01	2.02E+00	pCi/g	81.90%	RICHRC5010
PU-241	3.22E+01		4.6E+01	9.9E+01	1.99E+01	pCi/g	81.90%	ICHRC5010-LS
PU239/40	3.48E-01	U	7.6E-01	7.6E-01	1.52E+00	pCi/g	81.90%	RICHRC5010
AM-241	5.89E-01		2.1E-01	2.1E-01	N/A	pCi/g	N/A	RICHRC5017
CO-60	-2.07E-03	U	1.4E-02	1.4E-02	2.34E-02	pCi/g	N/A	RICHRC5017
CS-137DA	7.14E+01		2.4E-01	7.1E+00	N/A	pCi/g	N/A	RICHRC5017
EU-152	-8.27E-02	U	1.6E-01	1.6E-01	2.49E-01	pCi/g	N/A	RICHRC5017
EU-154	1.29E+00		1.1E-01	1.7E-01	N/A	pCi/g	N/A	RICHRC5017
EU-155	9.87E-01	U	2.4E-01	2.6E-01	3.85E-01	pCi/g	N/A	RICHRC5017
I129	-3.38E-01	U	3.6E+00	3.6E+00	5.95E+00	pCi/g	N/A	RICHRC5017
K-40	1.20E+01		4.7E-01	1.3E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	6.40E-01		1.3E-01	1.4E-01	N/A	pCi/g	N/A	RICHRC5017
RA-226	5.52E-01		1.1E-01	1.2E-01	N/A	pCi/g	N/A	RICHRC5017
RA-228	6.96E-01		1.2E-01	1.4E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	1.21E+01		4.9E+00	5.1E+00	4.15E+00	pCi/g	100.00%	RD3222
BETA	1.00E+04		8.2E+01	9.1E+02	6.07E+00	pCi/g	100.00%	RD3222-B
TC-99	-2.82E+01	U	3.0E+01	1.0E+02	7.27E+01	pCi/g	100.00%	RICHRC5029
SE-79	-2.37E+01	U	3.3E+01	1.1E+02	8.05E+01	pCi/g	100.00%	RD3253
TOTAL-URANIUM	2.31E+00		N/A	5.1E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 27

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02161 / 4544
LAB SAMPLE ID:	80101602	**MATRIX:**	SOIL
CLIENT ID:	B0MJD1	**DATE RECEIVED:**	1/2/1998 10:50:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	4.71E+03		1.6E+02	8.5E+02	3.15E+01	pCi/g	63.30%	RICHRC5071
AM-241	1.49E+00	U	1.6E+00	1.6E+00	2.16E+00	pCi/g	93.20%	RICHRC5057-A
CM-242	-3.91E-02	U	7.8E-02	7.8E-02	1.96E+00	pCi/g	93.20%	RICHRC5057
CM-244	-3.26E-02	U	6.5E-02	6.5E-02	1.64E+00	pCi/g	93.20%	RICHRC5072-C
NP-237	0.00E+00	U	0.0E+00	0.0E+00	9.96E-01	pCi/g	100.00%	RICHRC5064
TH-228	2.17E+00	U	2.9E+00	2.9E+00	5.77E+00	pCi/g	90.00%	RICHRC5011
TH-230	-4.54E-02	U	9.1E-02	9.1E-02	2.28E+00	pCi/g	90.00%	RICHRC5011
TH-232	1.14E+00	U	1.6E+00	1.6E+00	1.54E+00	pCi/g	90.00%	RICHRC5011
U-234	3.88E-01	U	9.3E-01	9.3E-01	2.11E+00	pCi/g	90.70%	RICHRC5030
U-235	-1.48E-01	U	1.5E-01	1.5E-01	2.46E+00	pCi/g	90.70%	RICHRC5030
U-238	1.81E+00	U	1.8E+00	1.9E+00	1.86E+00	pCi/g	90.70%	RICHRC5030
PU-238	4.31E-01	U	1.3E+00	1.3E+00	3.38E+00	pCi/g	48.30%	RICHRC5010
PU-241	6.16E+01	U	8.0E+01	1.7E+02	1.99E+02	pCi/g	48.30%	ICHRC5010-LS
PU239/40	4.97E+00		3.6E+00	3.7E+00	2.89E+00	pCi/g	48.30%	RICHRC5010
CO-60	-1.59E-03	U	1.3E-02	1.3E-02	2.12E-02	pCi/g	N/A	RICHRC5017
CS-137DA	1.00E+02		1.0E+01	1.0E+01	N/A	pCi/g	N/A	RICHRC5017
EU-152	-9.69E-02	U	1.5E-01	1.5E-01	2.43E-01	pCi/g	N/A	RICHRC5017
EU-154	7.74E-01		7.9E-02	1.1E-01	N/A	pCi/g	N/A	RICHRC5017
EU-155	6.72E-01	U	2.5E-01	2.6E-01	3.76E-01	pCi/g	N/A	RICHRC5017
I129	6.88E-01	U	3.8E+00	3.8E+00	6.24E+00	pCi/g	N/A	RICHRC5017
K-40	1.13E+01		4.6E-01	1.2E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	6.26E-01		1.2E-01	1.3E-01	N/A	pCi/g	N/A	RICHRC5017
RA-226	4.31E-01	U	7.5E-02	8.6E-02	1.30E-01	pCi/g	N/A	RICHRC5017
RA-228	6.29E-01		1.2E-01	1.3E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	9.76E+00		4.5E+00	4.7E+00	4.94E+00	pCi/g	100.00%	RD3222
BETA	1.39E+04		9.7E+01	1.1E+03	5.61E+00	pCi/g	100.00%	RD3222-B
TC-99	-1.53E+01	U	3.0E+01	1.0E+02	7.27E+01	pCi/g	100.00%	RICHRC5029
SE-79	-1.77E+01	U	3.1E+01	1.0E+02	7.56E+01	pCi/g	100.00%	RD3253
TOTAL-URANIUM	2.38E+00		N/A	5.3E-01	1.95E-04	ug/g	N/A	RICHRC5058

C008

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
rptChemRadSample; v3.41

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02161 / 4544
LAB SAMPLE ID:	80101602	MATRIX:	SOIL
CLIENT ID:	B0MJD1	DATE RECEIVED:	1/2/1998 10:50:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER

Number of Results: 29

0009

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
rpt\ChemRadSample; v3.41

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	**QUANTERRA, Richland**	**SDG: /RPT GRP:**	**W02161 / 4544**
LAB SAMPLE ID:	**80101603**	**MATRIX:**	**SOIL**
CLIENT ID:	**B0MJD7**	**DATE RECEIVED:**	**1/2/1998 10:50:00 AM**

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	9.37E-02	U	5.9E-02	6.1E-02	1.02E-01	pCi/g	67.40%	RICHRC5071
AM-241	2.95E-02	J	2.2E-02	2.3E-02	1.14E-02	pCi/g	90.00%	RICHRC5057-A
CM-242	5.07E-03	U	1.0E-02	1.0E-02	1.37E-02	pCi/g	90.00%	RICHRC5057
CM-244	-3.39E-04	U	6.8E-04	6.8E-04	1.70E-02	pCi/g	90.00%	RICHRC5072-C
NP-237	4.47E-02		5.2E-02	5.3E-02	4.03E-02	pCi/g	100.00%	RICHRC5064
TH-228	5.28E-01		1.3E-01	1.5E-01	8.87E-02	pCi/g	71.80%	RICHRC5011
TH-230	4.89E-01	J	1.2E-01	1.4E-01	3.45E-02	pCi/g	71.80%	RICHRC5011
TH-232	5.35E-01	J	1.3E-01	1.5E-01	3.03E-02	pCi/g	71.80%	RICHRC5011
PU-238	2.13E-02		2.1E-02	2.2E-02	1.44E-02	pCi/g	55.90%	RICHRC5010
PU-241	4.65E-01	U	7.2E-01	1.5E+00	1.81E+00	pCi/g	55.90%	ICHRC5010-LS
PU239/40	-4.25E-04	U	8.5E-04	8.5E-04	2.14E-02	pCi/g	55.90%	RICHRC5010
CO-60	1.07E-02	U	9.5E-03	9.5E-03	1.72E-02	pCi/g	N/A	RICHRC5017
CS-137DA	-1.06E-03	U	1.0E-02	1.0E-02	1.66E-02	pCi/g	N/A	RICHRC5017
EU-152	-1.95E-02	U	2.3E-02	2.3E-02	3.75E-02	pCi/g	N/A	RICHRC5017
EU-154	5.00E-03	U	3.2E-02	3.2E-02	5.29E-02	pCi/g	N/A	RICHRC5017
EU-155	2.12E-02	U	2.5E-02	2.5E-02	4.00E-02	pCi/g	N/A	RICHRC5017
I129	3.28E-01	U	2.7E-01	2.7E-01	5.38E-01	pCi/g	N/A	RICHRC5017
K-40	1.40E+01		4.8E-01	1.5E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	5.20E-01		2.7E-02	5.9E-02	N/A	pCi/g	N/A	RICHRC5017
RA-226	4.44E-01		4.2E-02	6.1E-02	N/A	pCi/g	N/A	RICHRC5017
RA-228	4.87E-01		7.6E-02	9.0E-02	N/A	pCi/g	N/A	RICHRC5017
U-238	6.09E-01		3.8E-01	3.8E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	2.06E+00	U	2.6E+00	2.6E+00	5.05E+00	pCi/g	100.00%	RD3222
BETA	2.20E+01		4.4E+00	4.8E+00	5.58E+00	pCi/g	100.00%	RD3222-B
TC-99	-1.11E-01	U	3.0E-01	1.0E+00	7.27E-01	pCi/g	100.00%	RICHRC5029
SE-79	1.78E-01	U	6.5E-01	2.1E+00	1.52E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	1.54E+00		N/A	2.1E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 27

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02161 / 4544
LAB SAMPLE ID:	80101604	**MATRIX:**	SOIL
CLIENT ID:	B0MJC8	**DATE RECEIVED:**	1/2/1998 10:50:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	8.67E+01		3.6E+00	1.6E+01	9.06E-01	pCi/g	66.60%	RICHRC5071
AM-241	6.15E-02	J	5.6E-02	5.7E-02	5.03E-02	pCi/g	91.40%	RICHRC5057-A
CM-242	-2.41E-03	U	3.4E-03	3.4E-03	6.89E-02	pCi/g	91.40%	RICHRC5057
CM-244	-1.01E-03	U	2.0E-03	2.0E-03	5.05E-02	pCi/g	91.40%	RICHRC5072-C
NP-237	-8.76E-03	U	1.8E-02	1.8E-02	4.40E-01	pCi/g	100.00%	RICHRC5064
TH-228	9.31E-01		2.4E-01	2.7E-01	8.97E-02	pCi/g	97.40%	RICHRC5011
TH-230	6.89E-01	J	2.1E-01	2.2E-01	4.14E-02	pCi/g	97.40%	RICHRC5011
TH-232	8.88E-01	J	2.3E-01	2.6E-01	4.14E-02	pCi/g	97.40%	RICHRC5011
PU-238	-8.60E-04	U	1.7E-03	1.7E-03	4.32E-02	pCi/g	87.40%	RICHRC5010
PU-241	9.99E-01	U	1.3E+00	2.7E+00	3.08E+00	pCi/g	87.40%	ICHRC5010-LS
PU239/40	1.07E-02	U	2.1E-02	2.2E-02	2.91E-02	pCi/g	87.40%	RICHRC5010
CO-60	-1.03E-03	U	1.1E-02	1.1E-02	1.89E-02	pCi/g	N/A	RICHRC5017
CS-137DA	6.30E+00		8.4E-02	6.4E-01	N/A	pCi/g	N/A	RICHRC5017
EU-152	-3.38E-02	U	4.7E-02	4.7E-02	7.33E-02	pCi/g	N/A	RICHRC5017
EU-154	2.73E-02	U	4.1E-02	4.1E-02	7.13E-02	pCi/g	N/A	RICHRC5017
EU-155	7.51E-02	U	5.9E-02	5.9E-02	9.34E-02	pCi/g	N/A	RICHRC5017
I129	-5.71E-02	U	1.2E-01	1.2E-01	1.90E-01	pCi/g	N/A	RICHRC5017
K-40	1.37E+01		5.2E-01	1.5E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	6.90E-01		4.5E-02	8.3E-02	N/A	pCi/g	N/A	RICHRC5017
RA-226	5.63E-01		5.4E-02	7.8E-02	N/A	pCi/g	N/A	RICHRC5017
RA-228	7.41E-01		8.9E-02	1.2E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	1.11E+01		4.8E+00	5.0E+00	4.93E+00	pCi/g	100.00%	RD3222
BETA	2.79E+02		1.4E+01	2.7E+01	5.67E+00	pCi/g	100.00%	RD3222-B
TC-99	1.93E-01	U	8.9E-01	2.9E+00	2.08E+00	pCi/g	100.00%	RICHRC5029
SE-79	-4.42E-01	U	9.2E-01	3.1E+00	2.21E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	1.87E+00		N/A	2.5E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 26

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02161 / 4544
LAB SAMPLE ID:	80101605	**MATRIX:**	SOIL
CLIENT ID:	B0MJF3	**DATE RECEIVED:**	1/2/1998 10:50:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	2.44E-02	U	4.8E-02	4.8E-02	1.02E-01	pCi/g	66.60%	RICHRC5071
AM-241	4.19E-03	U	9.1E-03	9.2E-03	1.83E-02	pCi/g	92.50%	RICHRC5057-A
CM-242	-4.38E-04	U	8.8E-04	8.8E-04	2.20E-02	pCi/g	92.50%	RICHRC5057
CM-244	-7.33E-04	U	1.0E-03	1.0E-03	2.09E-02	pCi/g	92.50%	RICHRC5072-C
NP-237	1.55E-02	U	3.1E-02	3.1E-02	4.20E-02	pCi/g	100.00%	RICHRC5064
TH-228	9.75E-01		1.7E-01	2.1E-01	6.07E-02	pCi/g	82.40%	RICHRC5011
TH-230	8.11E-01	J	1.5E-01	1.8E-01	2.70E-02	pCi/g	82.40%	RICHRC5011
TH-232	1.02E+00	J	1.7E-01	2.2E-01	2.70E-02	pCi/g	82.40%	RICHRC5011
PU-238	4.37E-03	U	9.5E-03	9.6E-03	1.91E-02	pCi/g	70.40%	RICHRC5010
PU-241	-6.44E-03	U	5.2E-01	1.1E+00	1.28E+00	pCi/g	70.40%	ICHRC5010-LS
PU239/40	0.00E+00	U	0.0E+00	1.4E-02	1.28E-02	pCi/g	70.40%	RICHRC5010
CO-60	-1.75E-03	U	1.2E-02	1.2E-02	1.96E-02	pCi/g	N/A	RICHRC5017
CS-137DA	-1.29E-02	U	1.2E-02	1.2E-02	1.85E-02	pCi/g	N/A	RICHRC5017
EU-152	-1.09E-03	U	3.0E-02	3.0E-02	4.79E-02	pCi/g	N/A	RICHRC5017
EU-154	2.83E-03	U	3.7E-02	3.7E-02	6.27E-02	pCi/g	N/A	RICHRC5017
EU-155	3.19E-02	U	2.9E-02	3.0E-02	4.70E-02	pCi/g	N/A	RICHRC5017
I129	-1.44E-02	U	5.9E-02	5.9E-02	9.92E-02	pCi/g	N/A	RICHRC5017
K-40	1.68E+01		5.5E-01	1.8E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	7.42E-01		3.5E-02	8.2E-02	N/A	pCi/g	N/A	RICHRC5017
RA-226	6.07E-01		5.4E-02	8.1E-02	N/A	pCi/g	N/A	RICHRC5017
RA-228	7.45E-01		8.8E-02	1.2E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	6.00E+00		3.6E+00	3.7E+00	4.57E+00	pCi/g	100.00%	RD3222
BETA	2.57E+01		4.9E+00	5.4E+00	6.21E+00	pCi/g	100.00%	RD3222-B
TC-99	-2.56E-01	U	3.0E-01	9.8E-01	7.27E-01	pCi/g	100.00%	RICHRC5029
SE-79	-4.96E-01	U	6.2E-01	2.1E+00	1.49E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	2.20E+00		N/A	3.0E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 26

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
rptChemRadSample; v3.41

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02161 / 4544
LAB SAMPLE ID:	80101606	**MATRIX:**	SOIL
CLIENT ID:	B0MJJ1	**DATE RECEIVED:**	1/2/1998 10:50:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	1.63E-02	U	4.9E-02	5.0E-02	1.09E-01	pCi/g	62.30%	RICHRC5071
AM-241	4.84E-03	U	9.7E-03	9.7E-03	1.31E-02	pCi/g	84.30%	RICHRC5057-A
CM-242	5.35E-03	U	1.2E-02	1.2E-02	2.34E-02	pCi/g	84.30%	RICHRC5057
CM-244	8.95E-03	U	1.4E-02	1.4E-02	2.22E-02	pCi/g	84.30%	RICHRC5072-C
NP-237	1.60E-02	U	3.2E-02	3.2E-02	4.32E-02	pCi/g	100.00%	RICHRC5064
TH-228	8.73E-01		1.3E-01	1.7E-01	2.75E-02	pCi/g	83.70%	RICHRC5011
TH-230	5.86E-01	J	1.0E-01	1.3E-01	1.89E-02	pCi/g	83.70%	RICHRC5011
TH-232	7.91E-01	J	1.2E-01	1.6E-01	2.34E-02	pCi/g	83.70%	RICHRC5011
PU-238	-1.41E-03	U	1.6E-03	1.6E-03	2.93E-02	pCi/g	72.80%	RICHRC5010
PU-241	5.91E-01	U	5.4E-01	1.1E+00	1.27E+00	pCi/g	72.80%	ICHRC5010-LS
PU239/40	0.00E+00	U	0.0E+00	1.8E-02	1.59E-02	pCi/g	72.80%	RICHRC5010
CO-60	2.97E-03	U	1.0E-02	1.0E-02	1.75E-02	pCi/g	N/A	RICHRC5017
CS-137DA	-4.55E-03	U	1.1E-02	1.1E-02	1.74E-02	pCi/g	N/A	RICHRC5017
EU-152	4.32E-03	U	2.7E-02	2.7E-02	4.36E-02	pCi/g	N/A	RICHRC5017
EU-154	2.74E-02	U	3.8E-02	3.8E-02	6.70E-02	pCi/g	N/A	RICHRC5017
EU-155	3.62E-02	U	3.2E-02	3.2E-02	5.03E-02	pCi/g	N/A	RICHRC5017
I129	-1.04E-02	U	5.5E-02	5.5E-02	9.03E-02	pCi/g	N/A	RICHRC5017
K-40	1.71E+01		5.4E-01	1.8E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	6.25E-01		3.1E-02	7.0E-02	N/A	pCi/g	N/A	RICHRC5017
RA-226	5.14E-01		5.2E-02	7.3E-02	N/A	pCi/g	N/A	RICHRC5017
RA-228	5.85E-01		9.3E-02	1.1E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	5.28E+00		3.5E+00	3.6E+00	4.94E+00	pCi/g	100.00%	RD3222
BETA	2.81E+01		4.9E+00	5.5E+00	5.75E+00	pCi/g	100.00%	RD3222-B
TC-99	-4.50E-01	U	2.9E-01	9.6E-01	7.27E-01	pCi/g	100.00%	RICHRC5029
SE-79	-3.76E-01	U	6.1E-01	2.0E+00	1.46E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	1.91E+00		N/A	2.6E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 26

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra Analytical Services, Inc
rptChemRadSample: v3.41

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02161 / 4544
LAB SAMPLE ID:	80101607	MATRIX:	SOIL
CLIENT ID:	B0MJJ4	DATE RECEIVED:	1/2/1998 10:50:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	2.03E-02	U	4.3E-02	4.3E-02	9.10E-02	pCi/g	71.60%	RICHRC5071
AM-241	8.31E-03	U	1.2E-02	1.2E-02	1.12E-02	pCi/g	93.80%	RICHRC5057-A
CM-242	4.99E-03	U	1.0E-02	1.0E-02	1.35E-02	pCi/g	93.80%	RICHRC5057
CM-244	0.00E+00	U	0.0E+00	1.3E-02	1.13E-02	pCi/g	93.80%	RICHRC5072-C
NP-237	4.55E-02		5.3E-02	5.3E-02	4.10E-02	pCi/g	100.00%	RICHRC5064
TH-228	8.57E-01		1.6E-01	2.0E-01	7.13E-02	pCi/g	70.60%	RICHRC5011
TH-230	5.11E-01	J	1.2E-01	1.4E-01	2.03E-02	pCi/g	70.60%	RICHRC5011
TH-232	9.38E-01	J	1.7E-01	2.1E-01	2.03E-02	pCi/g	70.60%	RICHRC5011
PU-238	-1.36E-03	U	1.6E-03	1.6E-03	2.82E-02	pCi/g	71.10%	RICHRC5010
PU-241	-6.02E-01	U	4.9E-01	1.1E+00	1.24E+00	pCi/g	71.10%	ICHRC5010-LS
PU239/40	-1.36E-03	U	1.6E-03	1.6E-03	2.82E-02	pCi/g	71.10%	RICHRC5010
CO-60	-8.95E-03	U	1.3E-02	1.3E-02	1.98E-02	pCi/g	N/A	RICHRC5017
CS-137DA	-6.68E-03	U	1.1E-02	1.1E-02	1.70E-02	pCi/g	N/A	RICHRC5017
EU-152	-1.43E-02	U	2.8E-02	2.8E-02	4.36E-02	pCi/g	N/A	RICHRC5017
EU-154	2.76E-03	U	3.8E-02	3.8E-02	6.40E-02	pCi/g	N/A	RICHRC5017
EU-155	5.02E-02	U	3.1E-02	3.2E-02	4.99E-02	pCi/g	N/A	RICHRC5017
I129	3.20E-02	U	5.6E-02	5.6E-02	1.01E-01	pCi/g	N/A	RICHRC5017
K-40	1.65E+01		5.6E-01	1.7E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	6.32E-01		3.2E-02	7.1E-02	N/A	pCi/g	N/A	RICHRC5017
RA-226	5.27E-01		4.3E-02	6.8E-02	N/A	pCi/g	N/A	RICHRC5017
RA-228	7.32E-01		1.0E-01	1.3E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	8.32E+00		4.3E+00	4.4E+00	5.05E+00	pCi/g	100.00%	RD3222
BETA	2.45E+01		4.6E+00	5.1E+00	5.67E+00	pCi/g	100.00%	RD3222-B
TC-99	-6.33E-01	U	2.9E-01	9.7E-01	7.27E-01	pCi/g	100.00%	RICHRC5029
SE-79	-3.28E-01	U	6.2E-01	2.1E+00	1.50E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	2.07E+00		N/A	2.8E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 26

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02161 / 4544
LAB SAMPLE ID:	80101608	**MATRIX:**	SOIL
CLIENT ID:	B0MJF0	**DATE RECEIVED:**	1/2/1998 10:50:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	7.79E-02	U	5.5E-02	5.7E-02	9.81E-02	pCi/g	65.10%	RICHRC5071
AM-241	4.08E-03	U	8.9E-03	8.9E-03	1.78E-02	pCi/g	90.10%	RICHRC5057-A
CM-242	5.33E-03	U	1.1E-02	1.1E-02	1.44E-02	pCi/g	90.10%	RICHRC5057
CM-244	4.45E-03	U	8.9E-03	8.9E-03	1.20E-02	pCi/g	90.10%	RICHRC5072-C
NP-237	1.14E-02	U	3.0E-02	3.0E-02	7.50E-02	pCi/g	100.00%	RICHRC5064
TH-228	-2.05E-03	U	1.9E-02	1.9E-02	6.27E-02	pCi/g	85.30%	RICHRC5011
TH-230	3.65E-02	J	3.0E-02	3.1E-02	2.48E-02	pCi/g	85.30%	RICHRC5011
TH-232	0.00E+00	U	0.0E+00	1.9E-02	1.67E-02	pCi/g	85.30%	RICHRC5011
PU-238	-1.30E-03	U	1.8E-03	1.9E-03	3.71E-02	pCi/g	52.50%	RICHRC5010
PU-241	2.24E-01	U	7.2E-01	1.5E+00	1.76E+00	pCi/g	52.50%	ICHRC5010-LS
PU239/40	6.16E-03	U	1.6E-02	1.6E-02	4.04E-02	pCi/g	52.50%	RICHRC5010
CO-60	-1.97E-02	U	1.2E-02	1.2E-02	1.87E-02	pCi/g	N/A	RICHRC5017
CS-137DA	-5.44E-03	U	1.0E-02	1.0E-02	1.62E-02	pCi/g	N/A	RICHRC5017
EU-152	-1.74E-02	U	2.7E-02	2.7E-02	4.24E-02	pCi/g	N/A	RICHRC5017
EU-154	-4.96E-03	U	3.2E-02	3.2E-02	5.29E-02	pCi/g	N/A	RICHRC5017
EU-155	3.58E-02	U	2.6E-02	2.6E-02	4.20E-02	pCi/g	N/A	RICHRC5017
I129	4.52E-04	U	5.6E-02	5.6E-02	9.78E-02	pCi/g	N/A	RICHRC5017
K-40	1.47E+01		5.0E-01	1.6E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	5.89E-01		3.1E-02	6.7E-02	N/A	pCi/g	N/A	RICHRC5017
RA-226	5.16E-01		4.7E-02	7.0E-02	N/A	pCi/g	N/A	RICHRC5017
RA-228	6.09E-01		7.9E-02	1.0E-01	N/A	pCi/g	N/A	RICHRC5017
U-238	5.76E-01		3.1E-01	3.1E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	3.58E+00	U	2.9E+00	2.9E+00	4.16E+00	pCi/g	100.00%	RD3222
BETA	2.14E+01		4.4E+00	4.8E+00	5.63E+00	pCi/g	100.00%	RD3222-B
TC-99	-2.12E-01	U	3.0E-01	1.0E+00	7.27E-01	pCi/g	100.00%	RICHRC5029
SE-79	1.01E-01	U	6.3E-01	2.1E+00	1.49E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	1.39E+00		N/A	1.9E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 27

C015

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02161 / 4544
LAB SAMPLE ID:	80101609	**MATRIX:**	SOIL
CLIENT ID:	B0MJC2	**DATE RECEIVED:**	1/2/1998 10:50:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	1.10E-01	U	7.3E-02	7.6E-02	1.27E-01	pCi/g	53.70%	RICHRC5071
AM-241	8.76E-03	U	1.3E-02	1.3E-02	1.84E-02	pCi/g	85.90%	RICHRC5057-A
CM-242	1.66E-02		1.9E-02	1.9E-02	1.50E-02	pCi/g	85.90%	RICHRC5057
CM-244	4.22E-03	U	9.2E-03	9.2E-03	1.84E-02	pCi/g	85.90%	RICHRC5072-C
NP-237	-1.24E-03	U	2.5E-03	2.5E-03	6.22E-02	pCi/g	100.00%	RICHRC5064
TH-228	7.33E-01		1.5E-01	1.8E-01	8.17E-02	pCi/g	80.30%	RICHRC5011
TH-230	5.65E-01	J	1.2E-01	1.5E-01	3.11E-02	pCi/g	80.30%	RICHRC5011
TH-232	7.43E-01	J	1.4E-01	1.8E-01	2.74E-02	pCi/g	80.30%	RICHRC5011
PU-238	0.00E+00	U	0.0E+00	1.4E-02	1.24E-02	pCi/g	69.50%	RICHRC5010
PU-241	-2.35E-01	U	5.2E-01	1.1E+00	1.29E+00	pCi/g	69.50%	ICHRC5010-LS
PU239/40	9.14E-03	U	1.3E-02	1.3E-02	1.24E-02	pCi/g	69.50%	RICHRC5010
CO-60	-8.01E-03	U	1.6E-02	1.6E-02	2.60E-02	pCi/g	N/A	RICHRC5017
CS-137DA	3.93E-01		3.2E-02	5.1E-02	N/A	pCi/g	N/A	RICHRC5017
EU-152	-5.40E-03	U	3.8E-02	3.8E-02	6.24E-02	pCi/g	N/A	RICHRC5017
EU-154	-5.47E-02	U	5.4E-02	5.4E-02	8.43E-02	pCi/g	N/A	RICHRC5017
EU-155	3.71E-02	U	3.7E-02	3.7E-02	6.25E-02	pCi/g	N/A	RICHRC5017
I129	-6.34E-03	U	6.0E-02	6.0E-02	1.01E-01	pCi/g	N/A	RICHRC5017
K-40	1.50E+01		6.9E-01	1.6E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	9.10E-01		4.8E-02	1.0E-01	N/A	pCi/g	N/A	RICHRC5017
RA-226	7.62E-01		6.5E-02	1.0E-01	N/A	pCi/g	N/A	RICHRC5017
RA-228	9.17E-01		1.3E-01	1.6E-01	N/A	pCi/g	N/A	RICHRC5017
U-238	6.52E-01		4.6E-01	4.6E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	1.11E+01		4.8E+00	5.0E+00	4.94E+00	pCi/g	100.00%	RD3222
BETA	2.64E+01		4.8E+00	5.4E+00	5.96E+00	pCi/g	100.00%	RD3222-B
TC-99	-3.38E-01	U	3.0E-01	9.9E-01	7.27E-01	pCi/g	100.00%	RICHRC5029
SE-79	-9.91E-01	U	6.4E-01	2.1E+00	1.58E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	1.36E+00		N/A	1.9E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 27

C016

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02161 / 4544
LAB SAMPLE ID:	80103301	**MATRIX:**	SOIL
CLIENT ID:	B0MJF6	**DATE RECEIVED:**	1/5/1998 10:05:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	5.53E-02	U	5.9E-02	6.0E-02	1.14E-01	pCi/g	58.80%	RICHRC5071
AM-241	8.29E-03	U	1.2E-02	1.2E-02	1.74E-02	pCi/g	91.40%	RICHRC5057-A
CM-242	-4.11E-04	U	8.2E-04	8.2E-04	2.07E-02	pCi/g	91.40%	RICHRC5057
CM-244	0.00E+00	U	0.0E+00	1.3E-02	1.17E-02	pCi/g	91.40%	RICHRC5072-C
NP-237	1.56E-02	U	3.1E-02	3.1E-02	4.23E-02	pCi/g	100.00%	RICHRC5064
TH-228	9.94E-01		1.7E-01	2.2E-01	7.86E-02	pCi/g	80.10%	RICHRC5011
TH-230	6.14E-01	J	1.3E-01	1.5E-01	2.75E-02	pCi/g	80.10%	RICHRC5011
TH-232	9.28E-01	J	1.6E-01	2.0E-01	1.85E-02	pCi/g	80.10%	RICHRC5011
PU-238	0.00E+00	U	0.0E+00	1.9E-02	1.71E-02	pCi/g	52.40%	RICHRC5010
PU-241	-3.16E-01	U	7.0E-01	1.5E+00	1.77E+00	pCi/g	52.40%	ICHRC5010-LS
PU239/40	0.00E+00	U	0.0E+00	1.9E-02	1.71E-02	pCi/g	52.40%	RICHRC5010
CO-60	5.81E-03	U	1.3E-02	1.3E-02	2.14E-02	pCi/g	N/A	RICHRC5017
CS-137DA	-1.71E-02	U	1.1E-02	1.2E-02	1.76E-02	pCi/g	N/A	RICHRC5017
EU-152	-6.95E-02	U	3.0E-02	3.1E-02	4.54E-02	pCi/g	N/A	RICHRC5017
EU-154	3.12E-02	U	3.5E-02	3.6E-02	6.33E-02	pCi/g	N/A	RICHRC5017
EU-155	3.27E-02	U	2.8E-02	2.8E-02	4.49E-02	pCi/g	N/A	RICHRC5017
I129	-3.91E-02	U	6.6E-02	6.6E-02	1.05E-01	pCi/g	N/A	RICHRC5017
K-40	1.84E+01		5.5E-01	1.9E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	6.25E-01		3.3E-02	7.1E-02	N/A	pCi/g	N/A	RICHRC5017
RA-226	5.24E-01		4.6E-02	7.0E-02	N/A	pCi/g	N/A	RICHRC5017
RA-228	6.88E-01		8.1E-02	1.1E-01	N/A	pCi/g	N/A	RICHRC5017
U-235HP	5.93E-02	U	6.0E-02	6.1E-02	9.77E-02	pCi/g	N/A	RICHRC5017
U-238	3.66E-01		2.8E-01	2.8E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	9.14E+00		4.3E+00	4.5E+00	4.57E+00	pCi/g	100.00%	RD3222
BETA	3.26E+01		5.3E+00	5.9E+00	6.04E+00	pCi/g	100.00%	RD3222-B
TC-99	2.41E-01	U	3.1E-01	1.0E+00	7.30E-01	pCi/g	100.00%	RICHRC5029
SE-79	-1.38E+00	U	5.9E-01	2.0E+00	1.47E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	1.78E+00		N/A	2.4E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 28

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02161 / 4544
LAB SAMPLE ID:	80103302	**MATRIX:**	SOIL
CLIENT ID:	B0MJF9	**DATE RECEIVED:**	1/5/1998 10:05:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	-1.84E-02	U	4.7E-02	4.7E-02	1.19E-01	pCi/g	59.60%	RICHRC5071
AM-241	1.46E-02	J	1.7E-02	1.7E-02	1.32E-02	pCi/g	86.30%	RICHRC5057-A
CM-242	-2.18E-03	U	4.4E-03	4.4E-03	1.09E-01	pCi/g	86.30%	RICHRC5057
CM-244	3.04E-03	U	1.0E-02	1.0E-02	2.86E-02	pCi/g	86.30%	RICHRC5072-C
NP-237	-2.51E-03	U	3.5E-03	3.6E-03	7.16E-02	pCi/g	100.00%	RICHRC5064
TH-228	1.47E+00		2.4E-01	3.1E-01	5.55E-02	pCi/g	79.30%	RICHRC5011
TH-230	6.29E-01	J	1.3E-01	1.5E-01	1.79E-02	pCi/g	79.30%	RICHRC5011
TH-232	1.03E+00	J	1.6E-01	2.2E-01	1.79E-02	pCi/g	79.30%	RICHRC5011
PU-238	5.45E-03	U	1.1E-02	1.1E-02	1.47E-02	pCi/g	60.30%	RICHRC5010
PU-241	2.52E-01	U	6.3E-01	1.3E+00	1.53E+00	pCi/g	60.30%	ICHRC5010-LS
PU239/40	4.54E-03	U	1.1E-02	1.1E-02	2.47E-02	pCi/g	60.30%	RICHRC5010
CO-60	7.32E-03	U	1.1E-02	1.1E-02	1.92E-02	pCi/g	N/A	RICHRC5017
CS-137DA	-5.37E-03	U	1.1E-02	1.1E-02	1.75E-02	pCi/g	N/A	RICHRC5017
EU-152	-1.23E-02	U	2.6E-02	2.6E-02	4.16E-02	pCi/g	N/A	RICHRC5017
EU-154	-3.06E-02	U	3.7E-02	3.7E-02	5.96E-02	pCi/g	N/A	RICHRC5017
EU-155	1.70E-02	U	3.1E-02	3.1E-02	4.87E-02	pCi/g	N/A	RICHRC5017
I129	-5.63E-02	U	5.4E-02	5.5E-02	8.25E-02	pCi/g	N/A	RICHRC5017
K-40	1.65E+01		5.3E-01	1.7E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	6.19E-01		3.1E-02	6.9E-02	N/A	pCi/g	N/A	RICHRC5017
RA-226	5.34E-01		4.1E-02	6.7E-02	N/A	pCi/g	N/A	RICHRC5017
RA-228	6.65E-01		8.7E-02	1.1E-01	N/A	pCi/g	N/A	RICHRC5017
U-235HP	1.96E-02	U	5.4E-02	5.4E-02	8.87E-02	pCi/g	N/A	RICHRC5017
ALPHA	9.76E+00		4.4E+00	4.6E+00	4.30E+00	pCi/g	100.00%	RD3222
BETA	2.99E+01		5.2E+00	5.8E+00	6.08E+00	pCi/g	100.00%	RD3222-B
TC-99	-5.25E-01	U	3.0E-01	9.9E-01	7.30E-01	pCi/g	100.00%	RICHRC5029
SE-79	-3.69E-01	U	6.2E-01	2.0E+00	1.48E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	1.70E+00		N/A	2.3E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 27

0019

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
rpt/ChemRadSample; v3.41

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02161 / 4544
LAB SAMPLE ID:	80105101	**MATRIX:**	SOIL
CLIENT ID:	B0MJK0	**DATE RECEIVED:**	1/6/1998 11:38:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	1.10E-02	U	5.0E-02	5.0E-02	1.11E-01	pCi/g	68.00%	RICHRC5071
AM-241	-7.13E-04	U	1.0E-03	1.0E-03	2.04E-02	pCi/g	84.70%	RICHRC5057-A
CM-242	1.01E-02	U	1.5E-02	1.5E-02	2.11E-02	pCi/g	84.70%	RICHRC5057
CM-244	4.48E-03	U	9.0E-03	9.0E-03	1.21E-02	pCi/g	84.70%	RICHRC5072-C
NP-237	-3.29E-03	U	3.8E-03	3.9E-03	6.84E-02	pCi/g	100.00%	RICHRC5064
TH-228	7.35E-01		1.6E-01	2.0E-01	7.70E-02	pCi/g	65.00%	RICHRC5011
TH-230	6.91E-01	J	1.5E-01	1.8E-01	3.44E-02	pCi/g	65.00%	RICHRC5011
TH-232	6.83E-01	J	1.5E-01	1.8E-01	3.44E-02	pCi/g	65.00%	RICHRC5011
PU-238	-4.65E-04	U	9.3E-04	9.3E-04	2.34E-02	pCi/g	52.20%	RICHRC5010
PU-241	-1.31E+00	U	6.7E-01	1.5E+00	1.78E+00	pCi/g	52.20%	ICHRC5010-LS
PU239/40	0.00E+00	U	0.0E+00	1.7E-02	1.57E-02	pCi/g	52.20%	RICHRC5010
CO-60	-7.49E-04	U	1.2E-02	1.2E-02	2.01E-02	pCi/g	N/A	RICHRC5017
CS-137DA	-7.89E-03	U	1.1E-02	1.1E-02	1.78E-02	pCi/g	N/A	RICHRC5017
EU-152	-3.73E-03	U	2.6E-02	2.6E-02	4.26E-02	pCi/g	N/A	RICHRC5017
EU-154	4.49E-03	U	3.4E-02	3.4E-02	5.69E-02	pCi/g	N/A	RICHRC5017
EU-155	5.67E-02	U	2.8E-02	2.9E-02	4.57E-02	pCi/g	N/A	RICHRC5017
I129	-2.48E-02	U	5.1E-02	5.1E-02	8.29E-02	pCi/g	N/A	RICHRC5017
K-40	1.43E+01		5.0E-01	1.5E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	6.36E-01		3.1E-02	7.1E-02	N/A	pCi/g	N/A	RICHRC5017
RA-226	6.09E-01		4.9E-02	7.8E-02	N/A	pCi/g	N/A	RICHRC5017
RA-228	6.25E-01		9.6E-02	1.1E-01	N/A	pCi/g	N/A	RICHRC5017
U-238	4.12E-01		3.5E-01	3.6E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	7.52E+00		4.1E+00	4.2E+00	4.93E+00	pCi/g	100.00%	RD3222
BETA	1.88E+01		4.3E+00	4.5E+00	5.62E+00	pCi/g	100.00%	RD3222-B
TC-99	1.80E-01	U	3.1E-01	9.9E-01	7.10E-01	pCi/g	100.00%	RICHRC5029
SE-79	-6.35E-01	U	6.1E-01	2.0E+00	1.49E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	1.97E+00		N/A	2.7E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 27

0010

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
rptChemRadSample: v3.41

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02161 / 4544
LAB SAMPLE ID:	80105102	**MATRIX:**	SOIL
CLIENT ID:	B0MJJ7	**DATE RECEIVED:**	1/6/1998 11:38:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	1.45E-02	U	5.0E-02	5.0E-02	1.09E-01	pCi/g	62.90%	RICHRC5071
AM-241	1.05E-02	U	1.8E-02	1.8E-02	3.34E-02	pCi/g	62.50%	RICHRC5057-A
CM-242	-5.88E-04	U	1.2E-03	1.2E-03	2.96E-02	pCi/g	62.50%	RICHRC5057
CM-244	1.20E-02	U	1.8E-02	1.8E-02	2.52E-02	pCi/g	62.50%	RICHRC5072-C
NP-237	1.47E-02	U	2.9E-02	3.0E-02	3.99E-02	pCi/g	100.00%	RICHRC5064
TH-228	5.62E-01		1.1E-01	1.4E-01	2.65E-02	pCi/g	72.40%	RICHRC5011
TH-230	4.26E-01	J	9.8E-02	1.1E-01	2.57E-02	pCi/g	72.40%	RICHRC5011
TH-232	6.57E-01	J	1.2E-01	1.5E-01	1.52E-02	pCi/g	72.40%	RICHRC5011
PU-238	-4.57E-04	U	9.1E-04	9.2E-04	2.30E-02	pCi/g	55.10%	RICHRC5010
PU-241	2.55E-01	U	6.9E-01	1.5E+00	1.71E+00	pCi/g	55.10%	ICHRC5010-LS
PU239/40	5.25E-03	U	1.1E-02	1.1E-02	2.30E-02	pCi/g	55.10%	RICHRC5010
CO-60	1.81E-03	U	1.2E-02	1.2E-02	1.96E-02	pCi/g	N/A	RICHRC5017
CS-137DA	4.95E-03	U	1.1E-02	1.1E-02	1.76E-02	pCi/g	N/A	RICHRC5017
EU-152	7.54E-03	U	2.6E-02	2.6E-02	4.24E-02	pCi/g	N/A	RICHRC5017
EU-154	3.84E-03	U	3.7E-02	3.7E-02	6.07E-02	pCi/g	N/A	RICHRC5017
EU-155	3.74E-02	U	2.7E-02	2.7E-02	4.65E-02	pCi/g	N/A	RICHRC5017
I129	-1.19E-02	U	5.1E-02	5.1E-02	8.54E-02	pCi/g	N/A	RICHRC5017
K-40	1.50E+01		5.1E-01	1.6E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	5.32E-01		2.9E-02	6.1E-02	N/A	pCi/g	N/A	RICHRC5017
RA-226	4.26E-01		4.4E-02	6.1E-02	N/A	pCi/g	N/A	RICHRC5017
RA-228	5.32E-01		8.3E-02	9.9E-02	N/A	pCi/g	N/A	RICHRC5017
U-238	5.88E-01		5.5E-01	5.5E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	2.96E+00	U	2.9E+00	3.0E+00	5.06E+00	pCi/g	100.00%	RD3222
BETA	2.74E+01		4.8E+00	5.4E+00	5.59E+00	pCi/g	100.00%	RD3222-B
TC-99	3.23E-01	U	3.1E-01	1.0E+00	7.10E-01	pCi/g	100.00%	RICHRC5029
SE-79	-3.86E-01	U	6.1E-01	2.0E+00	1.47E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	1.40E+00		N/A	1.9E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 27

0020

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	**QUANTERRA, Richland**	**SDG: /RPT GRP:**	**W02161 / 4544**
LAB SAMPLE ID:	**80111701**	**MATRIX:**	**SOIL**
CLIENT ID:	**B0MJK6**	**DATE RECEIVED:**	**1/8/1998 2:45:00 PM**

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
SR-90	3.34E-03	U	4.6E-02	4.7E-02	1.07E-01	pCi/g	67.60%	RICHRC5071
AM-241	1.61E-02	J	1.6E-02	1.6E-02	1.09E-02	pCi/g	94.60%	RICHRC5057-A
CM-242	0.00E+00	U	0.0E+00	1.4E-02	1.27E-02	pCi/g	94.60%	RICHRC5057
CM-244	-3.23E-04	U	6.5E-04	6.5E-04	1.62E-02	pCi/g	94.60%	RICHRC5072-C
NP-237	1.49E-02	U	3.0E-02	3.0E-02	4.03E-02	pCi/g	100.00%	RICHRC5064
TH-228	5.51E-01		1.1E-01	1.3E-01	2.95E-02	pCi/g	78.00%	RICHRC5011
TH-230	4.70E-01	J	9.8E-02	1.1E-01	2.04E-02	pCi/g	78.00%	RICHRC5011
TH-232	4.85E-01	J	9.9E-02	1.2E-01	2.31E-02	pCi/g	78.00%	RICHRC5011
PU-238	-4.25E-04	U	8.5E-04	8.5E-04	2.14E-02	pCi/g	60.10%	RICHRC5010
PU-241	7.91E-02	U	6.2E-01	1.3E+00	1.53E+00	pCi/g	60.10%	ICHRC5010-LS
PU239/40	5.31E-03	U	1.1E-02	1.1E-02	1.44E-02	pCi/g	60.10%	RICHRC5010
CO-60	6.30E-03	U	1.3E-02	1.3E-02	2.28E-02	pCi/g	N/A	RICHRC5017
CS-137DA	6.49E-03	U	1.2E-02	1.2E-02	2.06E-02	pCi/g	N/A	RICHRC5017
EU-152	-9.18E-03	U	3.2E-02	3.2E-02	5.20E-02	pCi/g	N/A	RICHRC5017
EU-154	-6.09E-02	U	4.1E-02	4.2E-02	6.29E-02	pCi/g	N/A	RICHRC5017
EU-155	2.72E-02	U	3.0E-02	3.1E-02	4.84E-02	pCi/g	N/A	RICHRC5017
I129	4.23E-02	U	4.5E-02	4.5E-02	8.66E-02	pCi/g	N/A	RICHRC5017
K-40	1.42E+01		5.6E-01	1.5E+00	N/A	pCi/g	N/A	RICHRC5017
RA-224DA	6.32E-01		3.8E-02	7.4E-02	N/A	pCi/g	N/A	RICHRC5017
RA-226	6.70E-01		5.5E-02	8.6E-02	N/A	pCi/g	N/A	RICHRC5017
RA-228	7.92E-01		9.6E-02	1.2E-01	N/A	pCi/g	N/A	RICHRC5017
U-238	6.53E-01		3.4E-01	3.4E-01	N/A	pCi/g	N/A	RICHRC5017
ALPHA	7.17E+00		3.8E+00	4.0E+00	4.16E+00	pCi/g	100.00%	RD3222
BETA	2.15E+01		4.6E+00	5.0E+00	6.28E+00	pCi/g	100.00%	RD3222-B
TC-99	4.94E-01	U	3.2E-01	1.1E+00	7.30E-01	pCi/g	100.00%	RICHRC5029
SE-79	4.02E-02	U	7.5E-01	2.5E+00	1.77E+00	pCi/g	100.00%	RD3253
TOTAL-URANIUM	1.46E+00		N/A	2.0E-01	1.95E-04	ug/g	N/A	RICHRC5058

Number of Results: 27

0021

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
rptChemRadSample: v3.41

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s):	801016, 801033, 801051, 801117
Client ID:	BH1
Due Date:	3-2-98
Lab Sample Number or SDG:	W02161
Method Test Parameters:	AM/CM
Matrix:	soil

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			✓	
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?	✓	~~OK~~	~~see note below~~ JW 2/18/98	✓
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		✓	see note below	✓
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? (1-NCM)	✓		JW 2/19/98	
2. Are all required forms filed out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked?	SK ✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: Recount spike - yield high. Recount verifies high tracer yield. Spike recovery within limits + all sample results < CRDL. Report results per client. JW 2/19/98

First Level Review: Jacqueline Waddell Date: 2/18/98

Second Level Review: [signature] Date: 2/20/98

Form #: LS-038.2 /96, Rev.4

C044

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG #: RD-98-_____

Project ID: BHI
NCM Initiated by: JW 2/19/98
Sample Numbers: J0101615
Tests: Am/Cm
Matrix: Soil
W02161

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☑ Data review
- ☑ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I: Laboratory Independent

- ☐ 1. Holding time expired in transit
- ☐ 2. Sample received > 48 hrs. or 1/2 holding time has expired
- ☐ 3. Test added by client after expiration

Category II: Laboratory Dependent

- ☐ 4. Instrument failure
- ☐ 5. Analyst error
- ☐ 6. Login error
- ☐ 7. Miscommunication
- ☐ 8. Other (complete description required)

Category III: Analysis Reruns (QA/QC)

- ☐ 9. Surrogates
- ☐ 10. Internal Standards
- ☐ 11. Spike Recoveries
- ☐ 12. Blank Contamination

Category IV: Analysis Reruns (Confirmation)

- ☐ 13. Second column
- ☐ 14. Contamination check
- ☐ 15. Confirmation of matrix effects
- ☐ 16. Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17. QC data reported outside of controls
- ☐ 18. Incorrect procedure used
- ☐ 19. SOP intentionally modified with QA and Tech. approval
- ☐ 20. Invalid instrument calibration
- ☐ 21. Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22. Hardcopy deliverable error
- ☐ 23. Electronic deliverable error

Reported detection limits elevated due to:

- ☐ 24. Sample matrix
- ☐ 25. Insufficient sample volume
- ☐ 26. Other (complete description required)
- ☑ 27. *Other (specify):* Tracer yield at 110% is greater than CL of 105%.

Comments/Explanation: _____

Notification (check appropriate area):

Client notified by (name and date): _____

- ☑ in writing
- ☑ by telephone Rick Wern
- ☐ by facsimile
- ☐ other (explain)

Client's name and response: _____

- ☐ process "as is"
- ☐ on hold until _____
- ☐ re-sample
- ☐ other (explain)

Project Manager (signature and date): [signature] 2/20/98

0044A

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG#: RD-98-

Corrective Action

Root Cause — Initial and date: 2/19/98

Unknown

Corrective Action — Initial and Date: 2/19/98

Sample recounted. Recount result verified high tracer yield. PM contacted client - since radiochemical recovery is within acceptance limits and all sample results are below CRDL (and all smpl. yields w/in limits) client approves reporting original result.

Responsibility for performing CA assigned to:

Actions to prevent recurrence — Initial and Date: 2/19/98

n/a

First Level Supervisor: Jacqueline Waddell — Date: 2/19/98

Responsible Manager: — Date: 2/23/98

Quality Assurance Review

☒ Anomaly ☐ Deficiency ☐ Rerun

☐ Further action required:

Assigned to:

QA signature: — Date: 2/23/98

Corrective Action Verification

☐ Verified

☐ Cannot Verify (specify reason): N/A

Nonconformance Memo Closure

QA signature/date: 2/23/98

0044B

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number(s):	801016, 801033, 801051, 801117
Client ID:	BHI
Due Date:	2-23-98
Lab Sample Number or SDG:	W0216!
Method Test Parameters:	NP-237
Matrix:	Soil

Review Item	Yes (✓)	No (✓)	NA (✓)	2nd 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?	NCM			✓
2. Are all required forms filled out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked? Jm 2-23-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 2-23-98

Second Level Review: [signature] Date: 2/23/98

Form #: LS-038.2 /96/ Rev.4

C045

Transfer these reanalysis results. MK 2-23-98

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG #: RD-98-_____

Project ID: BHI NCM Initiated by: MKZ-23-98

Sample Numbers: 80101601-09, D01011603; 80103301-02; 80105101, 02; 80111701, WD11701

Tests: Np237

Matrix: Soil W02161

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☒ Data review
- ☒ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I: Laboratory Independent

- ☐ 1. Holding time expired in transit
- ☐ 2. Sample received > 48 hrs. or 1/2 holding time has expired
- ☐ 3. Test added by client after expiration

Category II: Laboratory Dependent

- ☐ 4. Instrument failure
- ☐ 5. Analyst error
- ☐ 6. Login error
- ☐ 7. Miscommunication
- ☐ 8. Other (complete description required)

Category III: Analysis Reruns (QA/QC)

- ☐ 9. Surrogates
- ☐ 10. Internal Standards
- ☐ 11. Spike Recoveries
- ☐ 12. Blank Contamination

Category IV: Analysis Reruns (Confirmation)

- ☐ 13. Second column
- ☐ 14. Contamination check
- ☐ 15. Confirmation of matrix effects
- ☐ 16. Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17. QC data reported outside of controls
- ☐ 18. Incorrect procedure used
- ☐ 19. SOP intentionally modified with QA and Tech. approval
- ☐ 20. Invalid instrument calibration
- ☐ 21. Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22. Hardcopy deliverable error
- ☐ 23. Electronic deliverable error

Reported detection limits elevated due to:

- ☐ 24. Sample matrix
- ☐ 25. Insufficient sample volume
- ☐ 26. Other (complete description required)
- ☒ 27. *Other (specify):* reanalysis performed

Comments/Explanation: _____

Notification (check appropriate area):

Client notified by (name and date): _____

- ☑ in writing CN
- ☐ by telephone
- ☐ by facsimile
- ☐ other (explain)

Client's name and response: _____

- ☐ process "as is"
- ☐ on hold until _____
- ☐ re-sample
- ☐ other (explain)

Project Manager (signature and date): [signature] 2/23/98

0045A

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG#: RD-98-_____

Corrective Action

Root Cause Initial and date: [illegible] 2-23-98

Initial analysis QC out of Lim As (MS + LCS)

Corrective Action Initial and Date: [illegible] 2-23-98

Sample volume analyzed reduced for samples + MS, reanalysis data accepted, LCS + MS w/in ±30%.

Responsibility for performing CA assigned to: _____

Actions to prevent recurrence N/A Initial and Date: _____

First Level Supervisor: [signature] Date: 2-23-98

Responsible Manager: [signature] Date: 2/23/98

Quality Assurance Review

- ☐ Anomaly
- ☐ Deficiency
- ☒ Rerun
- ☐ Further action required: _____

Assigned to: _____

QA signature: [signature] Date: 2/23/98

Corrective Action Verification

- ☐ Verified
- ☐ Cannot Verify (specify reason): N/A

Nonconformance Memo Closure

QA signature/date: [signature] 2/23/98

0045B

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s): 801016, 801033, 801051, 801117

Client ID: BHI

Due Date: 3-2-98

Lab Sample Number or SDG: W02161

Method Test Parameters: NP-237

Matrix: Soil

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd 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? JM 2-9-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			

Comments on any "No" response: _____

First Level Review: [signature] Date: 2-11-98

Second Level Review: _____ Date: _____

Form #: LS-038.2 /96, Rev 4

Reanalyze

C046

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number(s): 801016, 801033, 801051, 801117

Client ID: BNI

Due Date: 2-23-98

Lab Sample Number or SDG: W02161

Method Test Parameter: Plutonium

Matrix: Soil

Review Item	Yes(✓)	No(✓)	NA(✓)	2nd 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?	✓	✓ N/Cm		✓
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?	N/Cm		N/A	✓
2. Are all required forms filled out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked? JM 2-12-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any 'No' response: _____

First Level Review: [signature] Date: 2-12-98

Second Level Review: [signature] Date: 2/13/98

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QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG #: RD-98-_____

Project ID: BHI NCM Initiated by: [initials] 2-12-98

Sample Numbers: 80101601, 02

Tests: Pu130

Matrix: Soil W02161

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☒ Data review
- ☒ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I: Laboratory Independent

- ☐ 1. Holding time expired in transit
- ☐ 2. Sample received > 48 hrs. or 1/2 holding time has expired
- ☐ 3. Test added by client after expiration

Category II: Laboratory Dependent

- ☐ 4. Instrument failure
- ☐ 5. Analyst error
- ☐ 6. Login error
- ☐ 7. Miscommunication
- ☐ 8. Other (complete description required)

Category III: Analysis Reruns (QA/QC)

- ☐ 9. Surrogates
- ☐ 10. Internal Standards
- ☐ 11. Spike Recoveries
- ☐ 12. Blank Contamination

Category IV: Analysis Reruns (Confirmation)

- ☐ 13. Second column
- ☐ 14. Contamination check
- ☐ 15. Confirmation of matrix effects
- ☐ 16. Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17. QC data reported outside of controls
- ☐ 18. Incorrect procedure used
- ☐ 19. SOP intentionally modified with QA and Tech. approval
- ☐ 20. Invalid instrument calibration
- ☐ 21. Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22. Hardcopy deliverable error
- ☐ 23. Electronic deliverable error

Reported detection limits elevated due to:

- ☒ 24. Sample matrix
- ☐ 25. Insufficient sample volume
- ☐ 26. Other (complete description required)
- ☐ 27. *Other (specify):* _____

Comments/Explanation: _____

Notification (check appropriate area):

Client notified by (name and date): _____

- ☑ in writing CN
- ☐ by telephone
- ☐ by facsimile
- ☐ other (explain)

Client's name and response: _____

- ☐ process "as is"
- ☐ on hold until _____
- ☐ re-sample
- ☐ other (explain)

Project Manager (signature and date): [signature] 2/13/98

0047A

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG#: RD-98-_____

Corrective Action

Root Cause Initial and date: DF 2-12-98

Reduced sample volume analyzed due to high beta screening results.

Corrective Action Initial and Date: MB 2-98

Data accepted with MDAs achieved.

Responsibility for performing CA assigned to: _____

Actions to prevent recurrence N/A Initial and Date: _____

First Level Supervisor: _____ Date: 2-23-98

Responsible Manager: _____ Date: 2/23/98

Quality Assurance Review

☒ Anomaly ☐ Deficiency ☐ Rerun

☐ Further action required: _____

Assigned to: _____

QA signature: Jodie G. Date: 2/23/98

Corrective Action Verification

☐ Verified

☐ Cannot Verify (specify reason): N/A

Nonconformance Memo Closure

QA signature/date: Jodie G. 2/23/98

0047B

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number(s): 801016, 801033, 801051, 801117				
Client ID: BNI				
Due Date: 3-2-98				
Lab Sample Number or SDG: W02161				
Method Test Parameters: Pu-241				
Matrix: Soil				
Review Item	**Yes (✓)**	**No (✓)**	**NA (✓)**	**2nd Level Review (✓)**
A. Calibration				
1. Is the calibration documentation included where applicable?			✓	
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?	✓		NA	✓
2. Were all sample holding times met?	✓			✓
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓	✓ NCM		✓
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?	(N) NCM			✓
2. Are all required forms filled out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked? 2m 2-20-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 2-20-98

Second Level Review: [signature] Date: 2/20/98

Form #: LS-038.2 /96, Rev.4

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG #: RD-98-_____

Project ID: BHI NCM Initiated by: [signature] 2-20-98

Sample Numbers: 80101601+02

Tests: Pu241

Matrix: Soil W02161

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☑ Data review
- ☑ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I: Laboratory Independent

- ☐ 1. Holding time expired in transit
- ☐ 2. Sample received > 48 hrs. or 1/2 holding time has expired
- ☐ 3. Test added by client after expiration

Category II: Laboratory Dependent

- ☐ 4. Instrument failure
- ☐ 5. Analyst error
- ☐ 6. Login error
- ☐ 7. Miscommunication
- ☐ 8. Other (complete description required)

Category III: Analysis Reruns (QA/QC)

- ☐ 9. Surrogates
- ☐ 10. Internal Standards
- ☐ 11. Spike Recoveries
- ☐ 12. Blank Contamination

Category IV: Analysis Reruns (Confirmation)

- ☐ 13. Second column
- ☐ 14. Contamination check
- ☐ 15. Confirmation of matrix effects
- ☐ 16. Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17. QC data reported outside of controls
- ☐ 18. Incorrect procedure used
- ☐ 19. SOP intentionally modified with QA and Tech. approval
- ☐ 20. Invalid instrument calibration
- ☐ 21. Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22. Hardcopy deliverable error
- ☐ 23. Electronic deliverable error

Reported detection limits elevated due to:

- ☑ 24. Sample matrix
- ☐ 25. Insufficient sample volume
- ☐ 26. Other (complete description required)
- ☐ 27. *Other (specify):* _____

Comments/Explanation: _____

Notification (check appropriate area):

Client notified by (name and date): _____

- ☑ in writing CN
- ☐ by telephone
- ☐ by facsimile
- ☐ other (explain)

Client's name and response: _____

- ☐ process "as is"
- ☐ on hold until _____
- ☐ re-sample
- ☐ other (explain)

Project Manager (signature and date): [signature] 2/20/98

0048A

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG#: RD-98-

Corrective Action

Root Cause Initial and date: 2-20-98

high sample activity requiring reduction of sample volume analyzed

Corrective Action Initial and Date: 2-20-98

Data accepted with MDA reached

Responsibility for performing CA assigned to:

Actions to prevent recurrence N/A Initial and Date:

First Level Supervisor: Date: 2-20-98

Responsible Manager: Date: 2/23/98

Quality Assurance Review

☒ Anomaly ☐ Deficiency ☐ Rerun

☐ Further action required:

Assigned to:

QA signature: Date: 2/23/98

Corrective Action Verification

☐ Verified

☐ Cannot Verify (specify reason): N/A

Nonconformance Memo Closure

QA signature/date: 2/23/98

0048B

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s):	801016, 801033, 801051, 801117
Client ID:	BH1
Due Date:	3-2-98
Lab Sample Number or SDG:	W02161
Method Test Parameters:	Th-150
Matrix:	Soil

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd 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?	SK			
5. Were all calculations checked at a minimum frequency?	—			
6. Units checked?	—			✓

Comments on any "No' response: _____

First Level Review: [signature] Date: 2-13-98

Second Level Review: [signature] Date: 2/17/95

Form #: LS-038,2 /96, Rev.4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s): 801016

Client ID: BHI

Due Date: 2-23-98

Lab Sample Number or SDG: W92161

Method Test Parameters: WISO

Matrix: Soil

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd 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?		— NCm		✓
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?	INCm		APC	✓
2. Are all required forms filed out?	—			✓
3. Correct methodology used?	—			✓
4. Transcription checked? Jm 2-9-98	—			
5. Were all calculations checked at a minimum frequency?	—			
6. Units checked?	—			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 2-12-98

Second Level Review: [signature] Date: 2/13/98

Form #: LS-038, 2/96, Rev.4

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG #: RD-98-

Project ID: BHI

NCM Initiated by: MR 2-12-98

Sample Numbers: 80101601, 02

Tests: UTO

Matrix: Soil

W02161

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☒ Data review
- ☒ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I: Laboratory Independent

- ☐ 1. Holding time expired in transit
- ☐ 2. Sample received > 48 hrs. or 1/2 holding time has expired
- ☐ 3. Test added by client after expiration

Category II: Laboratory Dependent

- ☐ 4. Instrument failure
- ☐ 5. Analyst error
- ☐ 6. Login error
- ☐ 7. Miscommunication
- ☐ 8. Other (complete description required)

Category III: Analysis Reruns (QA/QC)

- ☐ 9. Surrogates
- ☐ 10. Internal Standards
- ☐ 11. Spike Recoveries
- ☐ 12. Blank Contamination

Category IV: Analysis Reruns (Confirmation)

- ☐ 13. Second column
- ☐ 14. Contamination check
- ☐ 15. Confirmation of matrix effects
- ☐ 16. Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17. QC data reported outside of controls
- ☐ 18. Incorrect procedure used
- ☐ 19. SOP intentionally modified with QA and Tech. approval
- ☐ 20. Invalid instrument calibration
- ☐ 21. Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22. Hardcopy deliverable error
- ☐ 23. Electronic deliverable error

Reported detection limits elevated due to:

- ☒ 24. Sample matrix
- ☐ 25. Insufficient sample volume
- ☐ 26. Other (complete description required)
- ☐ 27. *Other (specify):* _____

Comments/Explanation: _____

Notification (check appropriate area):

Client notified by (name and date): _____

- ☑ in writing CN
- ☐ by telephone
- ☐ by facsimile
- ☐ other (explain)

Client's name and response: _____

- ☐ process "as is"
- ☐ on hold until _____
- ☐ re-sample
- ☐ other (explain)

Project Manager (signature and date): [signature] 2/13/98

0050A

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG#: RD-98-

Corrective Action

Root Cause: Reduced sample volume analyzed due to high beta screening activity. Initial and date: MK 2-12-98

Corrective Action Data accepted with MDA achieved Initial and Date: MK 2-12-98

Responsibility for performing CA assigned to:

Actions to prevent recurrence N/A Initial and Date:

First Level Supervisor: Date: 2-12-98

Responsible Manager: Date: 2/23/98

Quality Assurance Review

☒ Anomaly ☐ Deficiency ☐ Rerun

☐ Further action required:

Assigned to:

QA signature: Date: 2/23/98

Corrective Action Verification

☐ Verified

☐ Cannot Verify (specify reason): N/A

Nonconformance Memo Closure

QA signature/date: 2/23/98

0050B

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s):	801016, 801033, 801051, 801117
Client ID:	BH1
Due Date:	3-2-98
Lab Sample Number or SDG:	WO2161
Method Test Parameters:	I-129
Matrix:	SOIL

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd 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?	—	— NCM		—
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?	NCM			—
2. Are all required forms filed out?	—			—
3. Correct methodology used?	—			—
4. Transcription checked?	SC			
5. Were all calculations checked at a minimum frequency?	—			
6. Units checked?	—			—

Comments on any "No" response: _____

First Level Review: [signature] Date: 2-18-98

Second Level Review: [signature] Date: 2/20/98

Form #: LS-038.2/96, Rev.4

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG #: RD-98-_____

Project ID: BHI NCM Initiated by: [signature] 2-18-98

Sample Numbers: 80101601, 02

Tests: I129

Matrix: Soil W02161

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☒ Data review
- ☒ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I: Laboratory Independent

- ☐ 1. Holding time expired in transit
- ☐ 2. Sample received > 48 hrs. or 1/2 holding time has expired
- ☐ 3. Test added by client after expiration

Category II: Laboratory Dependent

- ☐ 4. Instrument failure
- ☐ 5. Analyst error
- ☐ 6. Login error
- ☐ 7. Miscommunication
- ☐ 8. Other (complete description required)

Category III: Analysis Reruns (QA/QC)

- ☐ 9. Surrogates
- ☐ 10. Internal Standards
- ☐ 11. Spike Recoveries
- ☐ 12. Blank Contamination

Category IV: Analysis Reruns (Confirmation)

- ☐ 13. Second column
- ☐ 14. Contamination check
- ☐ 15. Confirmation of matrix effects
- ☐ 16. Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17. QC data reported outside of controls
- ☐ 18. Incorrect procedure used
- ☐ 19. SOP intentionally modified with QA and Tech. approval
- ☐ 20. Invalid instrument calibration
- ☐ 21. Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22. Hardcopy deliverable error
- ☐ 23. Electronic deliverable error

Reported detection limits elevated due to:

- ☒ 24. Sample matrix high activity
- ☐ 25. Insufficient sample volume
- ☐ 26. Other (complete description required)
- ☐ 27. *Other (specify):* _____

Comments/Explanation: _____

Notification (check appropriate area):

Client notified by (name and date): _____

- ☒ in writing CN
- ☐ by telephone
- ☐ by facsimile
- ☐ other (explain)

Client's name and response: _____

- ☐ process "as is"
- ☐ on hold until _____
- ☐ re-sample
- ☐ other (explain)

Project Manager (signature and date): [signature] 2/20/98

00514

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG#: RD-98-

Corrective Action

Root Cause Initial and date: MK 2-18-98

High beta/gamma activity in samples increasing the compton background of the sample making it impossible to meet the CDL of 2pCi/g.

MK 2-18-8

Corrective Action Initial and Date: MK 2-18-98

Blank & all other samples in the batch the MDAs are less than the CDL. Data accepted with MDAS achieved.

Responsibility for performing CA assigned to:

Actions to prevent recurrence N/A Initial and Date:

First Level Supervisor: Date: 2-18-98

Responsible Manager: Date: 2/23/98

Quality Assurance Review

☒ Anomaly ☐ Deficiency ☐ Rerun

☐ Further action required:

Assigned to:

QA signature: Date: 2/23/98

Corrective Action Verification

☐ Verified

☐ Cannot Verify (specify reason): N/A

Nonconformance Memo Closure

QA signature/date: 2/23/98

0051B

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s):	801016, 801033, 801051, 801117
Client ID:	BHI
Due Date:	3-2-98
Lab Sample Number or SDG:	W02161
Method Test Parameters:	Gamma
Matrix:	Soil

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd 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?	✓	✓ NCM		✓
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?	1 NCM		AFK	✓
2. Are all required forms filed out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked?	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 2-18-98

Second Level Review: [signature] Date: 2/20/98

Form #: LS-038.2/96, Rev.4

Report BHI5, K41, Ra224DA, Ra226DA, Ra228DA for all samples. In addition report isotopes listed on bottom of summary report. Samples 80103301 + 02 report 0052HP.

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG #: RD-98-_____

Project ID: BHI NCM Initiated by: 2-18-98

Sample Numbers: 80101601,02

Tests: Gamma

Matrix: Soil W02161

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☒ Data review
- ☒ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I: Laboratory Independent

- ☐ 1. Holding time expired in transit
- ☐ 2. Sample received > 48 hrs. or 1/2 holding time has expired
- ☐ 3. Test added by client after expiration

Category II: Laboratory Dependent

- ☐ 4. Instrument failure
- ☐ 5. Analyst error
- ☐ 6. Login error
- ☐ 7. Miscommunication
- ☐ 8. Other (complete description required)

Category III: Analysis Reruns (QA/QC)

- ☐ 9. Surrogates
- ☐ 10. Internal Standards
- ☐ 11. Spike Recoveries
- ☐ 12. Blank Contamination

Category IV: Analysis Reruns (Confirmation)

- ☐ 13. Second column
- ☐ 14. Contamination check
- ☐ 15. Confirmation of matrix effects
- ☐ 16. Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17. QC data reported outside of controls
- ☐ 18. Incorrect procedure used
- ☐ 19. SOP intentionally modified with QA and Tech. approval
- ☐ 20. Invalid instrument calibration
- ☐ 21. Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22. Hardcopy deliverable error
- ☐ 23. Electronic deliverable error

Reported detection limits elevated due to:

- ☒ 24. Sample matrix
- ☐ 25. Insufficient sample volume
- ☐ 26. Other (complete description required)
- ☐ 27. *Other (specify):* _____

Comments/Explanation: _____

Notification (check appropriate area):

Client notified by (name and date): _____

- ☒ in writing CN
- ☐ by telephone
- ☐ by facsimile
- ☐ other (explain)

Client's name and response: _____

- ☐ process "as is"
- ☐ on hold until _____
- ☐ re-sample
- ☐ other (explain)

Project Manager (signature and date): [signature] 2/20/98

0052A

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG#: RD-98-

Corrective Action

Root Cause Initial and date: TTK 2-18-98

Very high sample activity increasing sample ~~act MDA~~ compton background + therefore sample MDA. TTK 2-18-98

Corrective Action Initial and Date: TTK 2-18-98

Data accepted with MDAs achieved

Responsibility for performing CA assigned to:

Actions to prevent recurrence N/A Initial and Date:

First Level Supervisor: [signature] Date: 2-18-98

Responsible Manager: [signature] Date: 2/23/98

Quality Assurance Review

☒ Anomaly ☐ Deficiency ☐ Rerun

☐ Further action required:

Assigned to:

QA signature: Jodie Co[signature] Date: 2/23/98

Corrective Action Verification

☐ Verified

☐ Cannot Verify (specify reason): N/A

Nonconformance Memo Closure

QA signature/date: Jodie Co[signature] 2/23/98

0052B

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number(s): 801016, 801033, 801051, 801117

Client ID: BHI

Date Date: 3-2-98

Lab Sample Number or ID#: W02161

Method Test Parameter: Alpha

Matrix: Soil

Review Item	Yes (✓)	No (✓)	NA (✓)	2nd 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 filled out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked? JM 1-27-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: Jacqueline Waldeck Date: 2/17/98

Second Level Review: [signature] Date: 2/17/98

Form #: LS-038.2/96, Rev.4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number(s): 801016, 801033, 801051, 801117

Client ID: BHI

Date Done: 3-2-98

Lab Sample Number or SDG: W92161

Method Test Parameter: Beta

Matrix: Soil

Review Item	Yes(✓)	No(✓)	NA(✓)	2nd 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 filled out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked? JM 1-22-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: Jacqueline Waddell Date: 2/17/98

Second Level Review: [signature] Date: 2/17/98

Form #: LS-038.2/96, Rev. 4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number(s): 801016, 801033, 801051, 801117

Client ID: BHI

Due Date: 2-23-98

Lab Sample Number or SDG: WQ2161

Method Test Parameter: Sr-90

Matrix: Soil

Review Item	Yes (✓)	No (✓)	NA (✓)	2nd 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? Jm 2-13-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: MDA not met for 801016W01+02 - reduced volumes qualified due to screen results. Activity exceeds achieved MDA for both samples.

First Level Review: Angeline Waddell Date: 2/17/98

Second Level Review: [signature] Date: 2/17/98

Form #: LS-038.2/96, Rev 4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s): 801016

Client ID: BHI

Due Date: 3-2-98

Lab Sample Number or SDG: W92161

Method Test Parameters: Tc-99

Matrix: Soil

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd 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?	✓	✓ NCM		✓
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?	N/A NCM			
2. Are all required forms filed out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked? JM 2-2-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 2-2-98

Second Level Review: [signature] Date: 2/13/98

Form #: LS-038.2 /96, Rev.4

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG #: RD-98-_____

Project ID: GHI
NCM Initiated by: 2-2-98
Sample Numbers: 80101601 7-02
Tests: TC99
Matrix: Soil
W02161

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☒ Data review
- ☒ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I: Laboratory Independent

- ☐ 1. Holding time expired in transit
- ☐ 2. Sample received > 48 hrs. or 1/2 holding time has expired
- ☐ 3. Test added by client after expiration

Category II: Laboratory Dependent

- ☐ 4. Instrument failure
- ☐ 5. Analyst error
- ☐ 6. Login error
- ☐ 7. Miscommunication
- ☐ 8. Other (complete description required)

Category III: Analysis Reruns (QA/QC)

- ☐ 9. Surrogates
- ☐ 10. Internal Standards
- ☐ 11. Spike Recoveries
- ☐ 12. Blank Contamination

Category IV: Analysis Reruns (Confirmation)

- ☐ 13. Second column
- ☐ 14. Contamination check
- ☐ 15. Confirmation of matrix effects
- ☐ 16. Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17. QC data reported outside of controls
- ☐ 18. Incorrect procedure used
- ☐ 19. SOP intentionally modified with QA and Tech. approval
- ☐ 20. Invalid instrument calibration
- ☐ 21. Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22. Hardcopy deliverable error
- ☐ 23. Electronic deliverable error

Reported detection limits elevated due to:

- ☒ 24. Sample matrix
- ☐ 25. Insufficient sample volume
- ☒ 26. Other (complete description required)
- ☐ 27. *Other (specify):* _____

Comments/Explanation: reduced sample volume analyzed due to high scintillating activity strange

Notification (check appropriate area):

Client notified by (name and date): _____

- ☒ in writing CN
- ☐ by telephone
- ☐ by facsimile
- ☐ other (explain)

Client's name and response: _____

- ☐ process "as is"
- ☐ on hold until _____
- ☐ re-sample
- ☐ other (explain)

Project Manager (signature and date): [signature] 2/13/98

0056A

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG#: RD-98-

Corrective Action

Root Cause Initial and date: JK 2-2-98

high screening activity requiring reduction of sample volume analyzed

Corrective Action Initial and Date: JK 2-2-98

Data accepted with MOA advised.

Responsibility for performing CA assigned to:

Actions to prevent recurrence N/A Initial and Date:

First Level Supervisor: Date: 2-2-98

Responsible Manager: Date: 2/23/98

Quality Assurance Review

☒ Anomaly ☐ Deficiency ☐ Rerun

☐ Further action required:

Assigned to:

QA signature: Date: 2/23/98

Corrective Action Verification

☐ Verified

☐ Cannot Verify (specify reason): N/A

Nonconformance Memo Closure

QA signature/date: 2/23/98

0056B

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s): 801051

Client ID: BHI

Due Date: 2-23-98

Lab Sample Number or SDG: WD2161

Method Test Parameters: Tc-99

Matrix: Soil

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd 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? JM 2-2-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 2-4-98

Second Level Review: [signature] Date: 2/13/98

Form #: LS-038.2 /96, Rev.4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s): 801033

Client ID: BH I

Due Date: 2-23-98

Lab Sample Number or SDG: W02161

Method Test Parameters: Tc-99

Matrix: Soil

Review Item	Yes (✓)	No (✓)	NA (✓)	2nd 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? JM 2-2-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 2-4-98

Second Level Review: [signature] Date: 2/13/98

Form #: LS-038.2 /96, Rev.4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s): 801 117

Client ID: BHI

Due Date: 3-2-98

Lab Sample Number or SDG: W02161

Method Test Parameters: TC-99

Matrix: Soil

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd 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? JM 2-2-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 2-4-98

Second Level Review: [signature] Date: 2/13/98

Form #: LS-038.2 /96, Rev.4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number(s): 801016, 801033, 801051, 801117

Client ID: BNI

Due Date: 2-23-98

Lab Sample Number or SDG: W92161

Method Test Parameter: Se-79

Matrix: Soil

Review Item	Yes (✓)	No (✓)	NA (✓)	2nd 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? am 2/23/97	—			
5. Were all calculations checked at a minimum frequency?	—			
6. Units checked?	—			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 2-23-98

Second Level Review: [signature] Date: 2/23/98

Form #: LS-038.2/96, Rev.4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s): 801016 801033 801051 801117

Client ID: BHI

Due Date: 3-2-98

Lab Sample Number or SDG: W0 2161

Method Test Parameters: uranium

Matrix: Soil

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd 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? 2-11-98 PK	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No' response: _____

First Level Review: [signature] Date: 2-12-98

Second Level Review: [signature] Date: 2/13/98

Form #: LS-038,2/96, Rev.4

CHAIN OF

CUSTODY FORMS

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC-96-060	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

Data Turnaround: **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS: ≈ 80,000 dpm β, < 0.5 mrem/hr on homogenized split spoon

Special Handling and/or Storage: Cool 4C

SAMPLE ANALYSIS: 801015 SDG 1 W02160 TH 1/5/98

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2	0	0	0	0	0	0	2	2	2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NH3/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJC6 01	Soil	12-29-97	16:05	X		X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg / R.Fahlberg	1-2-98 0535	Doug Bowen	1-2-98 0910
Doug Bowen	1-2-98 1050	[illegible]	1-2-98 1050 hrs

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

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	B98-004	Page 2 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC-96-060	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

≈80,000 dpm β, < 0.5 mrem/hr on homogenized Split Spoon

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	~~2~~ 1	~~2~~ 1	~~2~~ 1 0	~~0~~ 2	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha, Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 -- Sr-90	Technetium-99	Total Uranium

TH 1/5/98

8010156.

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJC5 01	Soil	12-29-97	16:05	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg / R.Fahlberg	1-2-98 0835	Doug Bowers	1-2-98/0910
Doug Bowers	1-2-98/1050	R. Fahlberg	1-2-98 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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

C064

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC96-060	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~% 12,00~~ DAS 12/30/97
% 1,200 dpmβ, < 0.5 mrem/hr

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1 2	0	0	0	0	0	0	~~1~~ 0	0 2	1 2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions.	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions.	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

801015

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJD1 02	Soil	12-30-97	12:40	X	~~X~~ NO DAS 12/30/97	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R Fahlberg / R Fahlberg	1-2-98 0910	Doug Bowen	1-2-98/0910
Doug Bowen	1-2-98/1050	Karen Schmeling	1-2-98 1050

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

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

0065

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 2 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC96-060	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS: ≤40,000 dpm β, < 0.5 mrem/hr

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	~~1~~ 2	~~1~~ 2	~~1~~ 0	~~0~~ 2	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 – Sr-90	Technetium-99	Total Uranium

SAMPLE ANALYSIS

80101602

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJD1	Soil	12-30-97	12:40	X	X	X	X	X	X	X	X	X	~~X~~ 12/31/97 DAS

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg/R.Fahlberg	1-2-98 0910	Doug Bowers	1-2-98/0910
Doug Bowers	1-2-98/1050	Karen Stahlenberg	1-2-98 1050 1100 cm

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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

0066

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2 ~~1~~ 12/31/97 DAS	0	0	0	0	0	0	2 ~~1~~ 12/31/97 DAS	0	2 ~~1~~ 12/31/97 DAS
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

80101503

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJD7	Soil	12/31/97	09:30	X		X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: R.Fahlberg / R.Fahlberg — Date/Time: 1-2-98 0905	Received By: Doug Bowers — Date/Time: 1-2-98/0905		
Relinquished By: Doug Bowers — Date/Time: 1-2-98/1050	Received By: [signature] — Date/Time: 1-2-98 1050		
Relinquished By: — Date/Time:	Received By: — Date/Time:		
Relinquished By: — Date/Time:	Received By: — Date/Time:		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

2100 CAM

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

C067

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 2 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Data Turnaround: 45 Days			
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: EBC 96-034	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG PAS	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2x	2x	2x	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha, Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 -- Sr-90	Technetium-99	Total Uranium

80101603

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJD7	Soil	12/31/97	09:30	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	1-2-98 0905	Doug Bowman	1-2-98/0905
Doug Bowman	1-2-98/1050	Lance Fahlberg	1-2-98 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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

0069

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS
≈ 6,000 dpm β, < 0.5 mrem/hr
DAS 12/30/97 1,000
DAS 12/30/97

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG DAS 12/30/97	aG	aG	aG	aG	aG	aG	aG DAS 12/30/97	aG	aG DAS 12/30/97
No. of Container(s)	2 ~~1~~	0	0	0	0	0	0	2 ~~1~~	0	2 ~~1~~
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

80101504

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJC8	Soil	12-30-97	09:20	X	~~X~~ NO DAS 12/30/97	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	1-2-98 0900	Doug Bowers	1-2-98/0900
Doug Bowers	1-2-98/1050	Karen Hendrickson	1-2-98 1050

SPECIAL INSTRUCTIONS
(1). ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

2100 CPM

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

C069

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 2 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: FRC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

≈ ~~6,000~~ dpm β, < 0.5 mrem/hr
2,100
DAS - 12/30-97

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG DAS 12/30/97	aG DAS 12/30/97	aG DAS 12/30/97	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2 X	2 X	2 X	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 – Sr-90	Technetium-99	Total Uranium

SAMPLE ANALYSIS

80101604

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJC8	Soil	12-30-97	09:20	X	X	X	X	~~X~~ 12/31/97 DAS	X	X	X	X	X

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg / R.Fahlberg	1-2-98 0900	Doug Bowers	1-2-98/0900
Doug Bowers	1-2-98/1050	[illegible]	1-2-98 1050 2100 CAM

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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

0070

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector R.Fahlberg/D.St John	**Company Contact** C. Wittreich	**Telephone No.** 372-9586	**Project Coordinator** KOERNER, CC	**Data Turnaround** 45 Days
Project Designation 216-B-2-2 Ditch - Soil	**Sampling Location** 200 East		**SAF No.** B98-004	
Ice Chest No. ERC 96-034	**Field Logbook No.** EL-1281		**Method of Shipment** Hand Delivered	
Shipped To Quanterra Incorporated	**Offsite Property No.**		**Bill of Lading/Air Bill No.**	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage Cool 4C

SAMPLE ANALYSIS 80101505

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2	0	0	0	0	0	0	2	0	2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJF3	Soil	12/31/97	11:15	X		X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	1-2-98 0910	Doug Bowman	1-2-98/0910
Doug Bowman	1-2-98/1050	Kevin Stillwelling	1-2-98 1100 PM

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

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

C071

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 2 of 2

Collector R.Fahlberg/D.St John	Company Contact C. Wittreich Telephone No. 372-9586	Project Coordinator KOERNER, CC	Data Turnaround 45 Days
Project Designation 216-B-2-2 Ditch - Soil	Sampling Location 200 East	SAF No. B98-004	
Ice Chest No. ERC 96-034	Field Logbook No. EL-1281	Method of Shipment Hand Delivered	
Shipped To Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	12/30/97 DAS 2 X	12/30/97 DAS 2 X	12/30/97 DAS 2 X	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 -- Sr-90	Technetium-99	Total Uranium

80101605

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJF3	Soil	12/31/97	11:15	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	1.2.98 0910	Doug Bowers	1.2.98/0910
Doug Bowers	1.2.98/1050	Karen Fahlberg	1.2.98 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

1100 CPM

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	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	~~1~~ 2 ~~RF~~	0	0	0	0	0	0	~~1~~ 2 ~~RF~~	0	~~1~~ 2 ~~RF~~
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

80101506

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJJ1	Soil	12-31-97	1305	X	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: R.Fahlberg 1-2-98	Date/Time: R.Fahlberg 0915	Received By: Doug Bowers	Date/Time: 1-2-98/0915
Relinquished By: Doug Bowers	Date/Time: 1-2-98/1050	Received By: [illegible]	Date/Time: 1050 1-2-98
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

1100 CPM

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

0073

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 2 of 2

Collector R.Fahlberg/D.St John	Company Contact C. Wittreich Telephone No. 372-9586	Project Coordinator KOERNER, CC	Data Turnaround 45 Days
Project Designation 216-B-2-2 Ditch - Soil	Sampling Location 200 East	SAF No. B98-004	
Ice Chest No. ERC 96-034	Field Logbook No. EL-1281	Method of Shipment Hand Delivered	
Shipped To Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	~~1~~ 2	~~1~~ 2	~~1~~ 2	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 – Sr-90	Technetium-99	Total Uranium

80101606

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJJ1	Soil	12-31-97	1305	X	X	X	X	~~X~~ RG	X	X	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg / R.Fahlberg	1-2-98 0915	Doug Bowers	1-2-98/0915
Doug Bowers	1-2-98/1050	[illegible]	1-2-98 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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

0074

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Data Turnaround: 45 Days			
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

SAMPLE ANALYSIS: 80101507

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	0	0	0	0	0	0	1	0	1
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJJ4	Soil	12-31-97	1420	X	X 12-31-97	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	1-2-98 0915	Doug Bauman	1-2-98/0915
Doug Bauman	1-2-98/1050	Paul Stickling	1-2-98 1050

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

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	B98-004	Page 2 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: FAC 96-034	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

Data Turnaround: **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1 2	1 2	1 2	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 – Sr-90	Technetium-99	Total Uranium
80101607										
Sample No. / Matrix * / Sample Date / Sample Time										
BOMJJ4 / Soil / 12-3-97 / 1420	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: R. Fahlberg (R. Fahlberg) 1-2-98	Date/Time: 0915	Received By: Doug Bowman	Date/Time: 1-2-98/0915 1050
Relinquished By: Doug Bowman	Date/Time: 1-2-98/1050	Received By: Bruce Fitzhenry	Date/Time: 1-2-98
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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	B98-004	Page 1 of 2

Collector R.Fahlberg/D.St John	Company Contact C. Wittreich Telephone No. 372-9586	Project Coordinator KOERNER, CC	Data Turnaround 45 Days
Project Designation 216-B-2-2 Ditch - Soil	Sampling Location 200 East	SAF No. B98-004	
Ice Chest No. EAC96-034	Field Logbook No. EL-1281	Method of Shipment Hand Delivered	
Shipped To Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2 ~~1~~ 12/31/97 DAS	0	0	0	0	0	0	2 ~~1~~ 12/31/97 DAS	0	2 ~~1~~ 12/31/97 DAS
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

80101508

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJF0	Soil	12/31/97	09:30	X		X	X	X	X	X	X	X	X

Special Handling and/or Storage: Cool 4C

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: R.Fahlberg / R.Fahlberg	Date/Time: 1-2-98 0910	Received By: Doug Bowers	Date/Time: 1-2-98/0910
Relinquished By: Doug Bowers	Date/Time: 1-2-98/1050	Received By: [illegible]	Date/Time: 1-2-98 1050 1100 AM
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

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	B98-004	Page 2 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS: 80101608

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG DS 12/31/97	aG DS 12/31/97	aG 12/31/97	aG DS	aG	aG	aG	aG	aG	aG
No. of Container(s)	~~2~~ 1	~~2~~ 1	~~2~~ 1	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 -- Sr-90	Technetium-99	Total Uranium

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJFO	Soil	12/31/97	09:30	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	1-2-98 0910	Doug Bowers	1-2-98 / 0910
Doug Bowers	1-2-98 / 1050	Laura Hinkley	1-2-98 1050

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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

6070

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS
~~≈ 400 dpm β~~ DAS 12/29/97
~~< 0.5 mrem/hr on sample media~~

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	0	0	0	0	0	0	0 ~~1~~ 0	0	1
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

80101509

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJC2	Soil	12-29-97	1430	X		X	X	X	X	X	X	~~X~~	X

12/29/97 DAS

12/30/97 DAS
NOTE: Lineout of this analyte is incorrect
Please RUN Semi VOA Per Special Inst. #2 Below

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: R.Fahlberg 1-2-98	Date/Time: 0900	Received By: Doug Bowen	Date/Time: 1-2-98/0900
Relinquished By: Doug Bowen	Date/Time: 1-2-98/1050	Received By: [illegible]	Date/Time: 1050 1-2-98
Relinquished By	Date/Time	Received By	Date/Time: 2100 CAM
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
(1). ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

No Radioactivity detected w/ field instruments
Contact Rich Weiss, ERC Sample Management for Analytical Priority

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

0070

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 2 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS
~~1400 dpm β~~ 12/29/97 DAS
<0.5 mrem/hr on sample ~~media~~

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 -- Sr-90	Technetium-99	Total Uranium

SAMPLE ANALYSIS

80101609

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJG2	Soil	12-29-97	1430	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R.Fahlberg / R.Fahlberg	1-2-98 0900	Doug Bowers	1-2-98 / 0900
Doug Bowers	1-2-98 / 1050	[illegible]	1-2-98 1050
			2:00 PM

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

No Radioactivity detected with field instruments
contact Rich Weiss of sample Mgt for analytical priority

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

0080

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: 45 days
VERIFY DATA TURNAROUND REQUIREMENTS ON SAF

Collector: R. Fahlberg	Company Contact: C. Wittreich	Telephone: 372-9586
Project Designation: 216-B-2-2 Ditch	Sampling Location: Zoo East	SAF No.: B98-004
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered
Shipped To: Quanterra	Offsite Property No.	Bill of Lading/Air Bill No.
Possible Sample Hazards/Remarks: no radioactivity detected with field instruments		
Special Handling and/or Storage		

Preservation	none											
Type of Container	P											
No. of Container(s)	1											
Volume	20ml											
	see note											

SAMPLE ANALYSIS: 80101509

Sample No.	Matrix*	Date Sampled	Time Sampled										
BomJC2	soil	12-29-97	1430	X									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg	1-2-98 0900	Doug Bowers	1-2-98 0900
Doug Bowers	1-2-98 1050	[illegible]	1050

SPECIAL INSTRUCTIONS
Extra analyte incase needed by laboratory
original analysis canceled
contact Rich Weiss of sample Mgt
for analytical priority

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

[illegible]

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector R.Fahlberg/D.St John	Company Contact C. Wittreich Telephone No. 372-9586	Project Coordinator KOERNER, CC	Data Turnaround 45 Days
Project Designation 216-B-2-2 Ditch - Soil	Sampling Location 200 East	SAF No. B98-004	
Ice Chest No. ERC 96-034	Field Logbook No. EL-1281	Method of Shipment Hand Delivered	
Shipped To Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	~~2~~ 1 RUN	~~0~~ 1 RUN	0	0	0	0	~~0~~ 1 RUN	1	0	1
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS 80101510	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJD4	Soil	12-30-97	1425		X					X			

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By R.Fahlberg / R.Fahlberg 1-2-97	Date/Time 0900	Received By Doug Bowen	Date/Time 1-2-98/0900
Relinquished By Doug Bowen	Date/Time 1-2-98/1050	Received By Karen Stehlenberg	Date/Time 1-2-98 1050
Relinquished By	Date/Time	Received By	Date/Time 2000 pm
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

TOC & pH only

No other analysis as marked on Bottle

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
O - Other

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

C082

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 1-2-98 1050 SG#: W02161

Work Order Number: 801015 +016 SAF #: B98-003 B98-004

Shipping Container ID: ERC 96-03 Chain of Custody # B98-003-01 B98-004 B98-003-03 B98-003-06 B98-003-07 B98-003-08 B98-003-18 B98-003-19

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 [✓] Ice
6. Number of samples in shipping container: ~~100~~ 101
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: 1-2-98

Telephoned To: _____ On _____ By _____

C083

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 1-2-98 1050 SG#: W02161

Work Order Number: 801015 + 016 SAF #: B98-003 B98-004

Shipping Container ID: ERC-96-060 Chain of Custody # B98-003-02 B98-003-04

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: 30
7. Sample holding times exceeded? Yes [] No []

8. Samples have:
   _____tape _____hazard labels
   _____custody seals _____appropriate sample labels

9. Samples are:
   _____in good condition _____leaking
   _____broken _____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: 1-2-98

Telephoned To:_____ On_____ By_____

0084

Quantera BOMJCZ CCN: 053570

215 pCi/sm

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Activity: N/A
Close CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

REF: The Health Physics and Radiological Health Handbook

The purpose of this memo is to provide direction in determining using field instruments, when samples taken in support of the 216 B 2-2 vadose zone investigations must be shipped as radioactive material as defined in Department of Transportation requirements.

Radioactive material for shipping purposes is defined by the Department of Transportation as any material that has an activity in excess of 2,000 pCi/gm. For the purpose of conservatism, the demarcation point for determining radioactive material for shipping purposes will be 1,500 pCi/gm. Two separate approaches will be used to validate the use of field instruments to determine activity in soil samples.

The first approach is to use a formula for determining beta exposure rate from solutions of radioactive material contained in the *Health Physics and Radiological Health Handbook*. This formula is 2.12 times the average energy of the beta particle in MEV, times the concentration of the isotope in uCi/gm.

$$2.12\ X\ E\ X\ C = Rads/hr$$

Where; 2.12 is a conversion factor
E is the average energy of the beta particle (Sr90 = 0.195 MEV, Y90 = 0.935 MEV)
C is the concentration of the isotope in uCi/gm

Inserting the values for Sr/Y90 beta energy and the concentration of 1,500 pCi/gm

$$2.12\ X\ (0.195 + 0.935)\ X\ 1.5\ X\ 10^{-3}\ uCi/gm = 0.0036\ Rads/hr$$

0.0036 RADS/hr is equal to 3.6 mRad/hr. The field instrument has a correction factor of 3 for beta radiation, so the RO-20 (beta/gamma dose rate instrument) would read 1.2 mRad/hr. Field readings taken at the 216 B2-2 trench showed for each 1 mRad/hr as read (uncorrected) on the RO-20, the E-600 ratemeter equipped with an SH-380 plastic scintillator, read 100,000 dpm. Therefore, from the above comparison, a sample with an activity of 1,500 pCi/gm would read 1.2 mRad/hr on the RO-20 and 120,000 dpm on the E-600 equipped with a SH-380 probe.

For the second approach, a soil standard with 300 pCi/gm is used. This soil standard was read with an Electra ratemeter equipped with a DP-6 plastic scintillator that had 30% efficiency for Sr90. The 300 pCi/gm source read 16 cpm per pCi/gm. Multiplying this value by 1,500 pCi/gm would result in a reading on the Electra/DP-6 equipment of 80,000 dpm (using an efficiency of 30%). So for this instrument, 1,500 pCi/gm of Sr90 would read 80,000 dpm.

From this we can gather the 1,500 pCi/gm will range between 80,000 dpm and 120,000 dpm. The RCT and sampler/shipper will verify actual readings in the field using the 300-pCi/gm Sr90 source and logged. The 1,500-pCi/gm value will be used.

SKD:dld

Copies:
R. C. Havenor X0-17
V. J. Rohay H9-02
W. S. Thompson L0-19
RadCon Engineering FIle/LB X0-23
Document and Info Services H0-09

CH2MHILL SUBJECT Quanterra Sample Sets BY D. St. John
216-B-2-2 Ditch SHEET NO. 1 of 2 DATE 1/2/98
Boring 8079 PROJECT NO.

Per Dewlers Total Act. Calc letter:

$$\left(\frac{\text{cpm soil}}{\text{cpm source}}\right) 300\ \text{pCi/gm} = \text{Sample Activity}$$

Assume all Sr-90

* BOMJC2

$$\left(\frac{1000\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{215\ \text{pCi/gm}}$$

* BOMJC8

$$\left(\frac{1500\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{321\ \text{pCi/gm}}$$

* BOMJD4

$$\left(\frac{1000\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{215\ \text{pCi/gm}}$$

* BOMK85 & BOMK84
No radioactivity

* BOMJD7

$$\left(\frac{150\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{32\ \text{pCi/gm}}$$

* BOMJF3

$$\left(\frac{150\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{32\ \text{pCi/gm}}$$

* BOMJJ1

$$\left(\frac{150\ \text{cpm}}{1400\ \text{cpm}}\right) 300\ \text{pCi/gm} = \underline{32\ \text{pCi/gm}}$$

0087 of

SUBJECT Quanterra Sample Sets BY D. St. John
216-B-2-2 Ditch SHEET NO. 2 OF 2 DATE 1/2/98
Boring 8079 PROJECT NO.

* BOMJJ4

$$\left(\frac{100\ cpm}{1400\ cpm}\right) 300\ pCi/gm = \underline{22\ pCi/gm}$$

fp 2/2

Quantera BOM JC8
321 pci/gm

CCN: 053570

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Actuation: N/A
Close CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

REF: The Health Physics and Radiological Health Handbook

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Where; 2.12 is a conversion factor
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0.0036 RADS/hr is equal to 3.6 mRad/hr. The field instrument has a correction factor of 3 for beta radiation, so the RO-20 (beta/gamma dose rate instrument) would read 1.2 mRad/hr. Field readings taken at the 216 B2-2 trench showed for each 1 mRad/hr as read (uncorrected) on the RO-20, the E-600 ratemeter equipped with an SH-380 plastic scintillator, read 100,000 dpm. Therefore, from the above comparison, a sample with an activity of 1,500 pCi/gm would read 1.2 mRad/hr on the RO-20 and 120,000 dpm on the E-600 equipped with a SH-380 probe.

C 0 8 8

15

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SKD:dld

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V. J. Rohay H9-02
W. S. Thompson L0-19
RadCon Engineering File/LB X0-23
Document and Info Services H0-09

CCN: 053570

Quanterra BOMJF3
32 pCi/gm

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Assignee: N/A
Closure CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

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SKD:dld

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CCN: 053570

Quanterra BOMJD4

215 pCi/gm

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required NO
Due Date: N/A
Assignee: N/A
Closes CCN: N/A
OU: 216 B2-2
TSD N/A
ERA N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

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RadCon Engineering
X0-23/531-0729

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CCN: 053570

Quanterra BOMK84

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Ø pCi/gm

Job No. 22192
Written Response Required: NO
Due Date: N/A
Amount: N/A
Close CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

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16

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Quanterra BOMJFO

CCN: 053570

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required NO
Due Date: N/A
Assignee: N/A
Close CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

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C097

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W. S. Thompson L0-19
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Document and Info Services H0-09

Quantera BOM JJ4

22 pCi/gm

CCN: 053570

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required NO
Due Date: N/A
Activator: N/A
Closes CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

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Document and Info Services H0-09

CCN: 053570

Quanterra BOM JJ1

32 pCi/gm

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Activities: N/A
Claim CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

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C101

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SKD:dld

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CH2M HILL SUBJECT _____ BY _____
SHEET NO. ____ of ____ DATE _____
PROJECT NO. _____

Per DeMers Total Activity Calc Letter:

$$\left(\frac{\text{cpm Soil}}{\text{cpm Source}}\right) 300\ pCi/gm = \text{Total Activity sample}$$

BOMJFO

$$\left(\frac{150\ cpm}{1400\ cpm}\right) 300\ pCi/gm = 32\ pCi/gm$$

CCN: 053570

Quanterra BOMJD7

32 pCi/gm

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Actionee: N/A
Closes CCN: N/A
OU: 216 B2-2
TSD: N/A
ERA: N/A
Subject Code: 5850

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C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

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RadCon Engineering File/LB X0-23
Document and Info Services H0-09

1. SHIP FROM U.S. DEPT. OF ENERGY C/O

Company: BHI Hanford
Address: 3728 Building 300 Area
City, State, Zip: Richland WA 99301
Contact: David St John
Phone: 509-376-8540

RADIOACTIVE SHIPMENT RECORD

100903 3.
Page 1 of 2

Ship: [X] Prepaid [ ] Collect 4.
Via: [X] Motor [ ] Air Pegr [ ] UPS [ ] Rail [ ] Air Cargo [ ] Site Carrier
SHIPMENT AUTHORIZATION NUMBER

2. SHIP TO

Company: Quanterra Laboratory
Address: 2800 George WA Way
City, State, Zip: Richland WA 99301
Attention: Karen Actenburg
Phone: 509-375-3131

Markings Applied
Radioactive - LSA [ ]
Radioactive - SCO [ ]
Type A [ ]
Type B with trefoil [ ]
N/A

LSA Description
LSA-I [ ]
LSA-II [ ]
LSA-III [ ]
SCO-I [ ]
SCO-II [ ]
N/A

Labels Applied
Empty [ ]
Radioactive White - I [ ]
Radioactive Yellow - II [ ]
Radioactive Yellow - III [ ]
Subsidiary Hazard [ ]
N/A

For Normal Form only 7.
Identify
Physical Form: [ ] Liquid [ ] Gas [X] Solid
Chemical Form: [X] Elemental [ ] Metal [ ] Nitrate [ ] Oxide [ ] Mixture [ ] Other

EMERGENCY RESPONSE
Telephone: 509-373-3800
Emergency Response Guide(s): [illegible]

Highway Route Controlled Quantity [ ]
Exclusive Use Shipment with instructions [ ]
Placards Applied [ ]
If Rail Specify:
Fissile Excepted, Grams: <15 gm [X]
Excepted Package Statement [X]

5. HM Proper Shipping Name: _____ Radioactive Material,

	excepted package - empty packaging	7	UN2910
	excepted package - instruments or articles	7	UN2910
X	excepted package - limited quantity of material	7	UN2910
	excepted package - articles manufactured from natural or depleted uranium or natural thorium	7	UN2910
	Special Form, n.o.s.	7	UN2974
	Low Specific Activity, n.o.s.	7	UN2912
	n.o.s.	7	UN2982
	Fissile, n.o.s.	7	UN2918
	Surface Contaminated Object	7	UN2913

Warning – Fissile Material Controlled Shipment. Do Not Load More Than N/A Packages Per Vehicle. In Loading and Storage Areas, Keep at Least 20 Feet From Other Packages Bearing Radioactive Labels.

11.

No. Pkg.	Model Package	Contents	Serial No.	Seal No.	Isotopes	T.I.	Bq/Package	Gr. Wt. Kg.
1	Strong tight	N/A	N/A	tape	Sr 90	N/A	7.8x10^-4 Bq	
Poly Cooler No. ERC96-060 containing soil samples BOM TC5 and BOM TD1 packed in double poly bags and wet ice.								
(Shipper may describe package in detail on one of the unused lines above)					TOTALS	N/A	7.8x10^-4 Bq	

12. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Certifier's Signature On behalf of DOE-RL	Date	Organization	Complete Cost Code (Inc. End Function)
David St John	01/02/98	ERC Anal. Field Svcs.	DE 8200

13.

Surface Dose Rate of Package: [✓] <0.005 or ____ mSv/hr; <0.5 or ____ mrem/hr (N+ß γ)
Dose Rate @ 1 Meter from Surface of Package: [✓] <0.005 or ____ mSv/hr; <0.5 or ____ mrem/hr (N+ß γ)
Smears of Outer Container: [✓] <0.41 Bq (22 dpm) ß γ/cm²; [✓] <0.04 Bq (2.2 dpm) α/cm²; [ ] <Tbl. 2-2 HSRCM Onsite Limits
TRUCK LOAD OR EXCLUSIVE USE: Surface @ 2 meters @ Cab or sleeper: [✓] <2 mSv/hr (200 mrem/hr); [✓] <0.1 mSv/hr (10 mrem/hr); [✓] <0.02 mSv/hr (2 mrem/hr) (Using N+ß γ)
Additional Data and Instructions (Inc. Readings on Internal Packaging): N/A
Signature - Radiation Monitoring: Diane Gooldy
Bldg.: 3728 Survey No.: GW-97-0002 Date: 1.2.98

14. TRANSPORTER

Vehicle Number	DRIVER SIGNATURE	RECEIVER SIGNATURE	Date
1G-1566	Doug Bowers	Karen Actenburg	1-2-98

15. OFFSITE AUTHORIZATION
Shipment has been inspected and verified to be in compliance with DOT regulations
Authorized Signature: Keith R. Smith Printed Name: Keith R. Smith Date: 1-2-98

16. AUTHORIZATION FOR SHIPMENT

AIR TRANSPORT CERTIFICATION: [X] N/A
CARGO AIRCRAFT: [ ] Cargo Aircraft Only Labels Applied
PASSENGER AIRCRAFT: [ ] Ltd Qty [ ] <3 T.I. [ ] Research/Medical Diagnosis [ ] Human Medical Research
Pkg. Dimensions (cm)

17. OFFSITE AUTHORIZATION

Tracking No.	Date Shipped	Routing	ETA
RMBH 2130	1-2-98	Bechtel Vehicle	1-2-98
Surveyed By	Date	Approved for Shipment Offsite	Date
		[signature]	1-2-98

54-6000-[illegible]7)

CH2MHILL SUBJECT Quanterra Samples BY D. St. John
216-B-2-2 Ditch SHEET NO. 1 of 1 DATE 1/2/98
Boring No 8079 PROJECT NO.

BOM1JC5

Activity: $\left(\frac{20,000 \text{ cpm}}{1400 \text{ cpm}}\right) 300 \text{ pCi/gm} = 4285 \text{ pCi/gm}$ for Sample

mass: $\approx (1720 \text{ ml})(1.7 \text{ gm/ml}) = 2924 \text{ gm}$

Have:

Sr-90 @ $4285 \text{ pCi/gm} = 4.285 \times 10^{-9} \text{ Ci/gm} \Rightarrow 1.3 \times 10^{-5} \text{ Ci}$

BOMJD1

Activity: $\left(\frac{37,600 \text{ cpm}}{1,400 \text{ cpm}}\right) 300 \text{ pCi/gm} \Rightarrow 8057 \text{ pCi/gm}$ for Sample

mass: $\approx (1720 \text{ ml})(1.7 \text{ gm/ml}) = 2924 \text{ gm}$

Have:

Sr-90 @ $8057 \text{ pCi/gm} = 8.057 \times 10^{-9} \text{ Ci/gm} \Rightarrow 1.4 \times 10^{-5} \text{ Ci}$

BOMJC5 and BOMJD1

Total Have:

$1.3 \times 10^{-5} \text{ Ci} + 1.4 \times 10^{-5} \text{ Ci} = 2.9 \times 10^{-5} \text{ Ci} = 7.8 \times 10^{-4} \text{ Bq}$.

Allowed:

Isotope	A_2	$A_2 (10^{-3})$
Sr-90	2.70 Ci	2.7×10^{-3} Ci

Have vs Allowed

Have 2.9×10^{-5} Ci < Allowed 2.7×10^{-3} Ci

∴ Limited Quantity

POTENTIAL HAZARDS

HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel, and the public during transportation accidents. Packaging durability is related to potential hazards of material.
- Low-level radioactive material; very low radiation hazard to people.
- Quantity of material presents low radiation hazard if released from package during accident.
- Some radioactive materials cannot be detected by commonly available instruments.
- Packages do not have RADIOACTIVE I, II, or III labels. Some may have EMPTY labels or may have the word "Radioactive" in the package marking.
- If any radioactive contamination occurs, it will be extremely low level.

FIRE OR EXPLOSION

- Some of these materials may burn, but most do not ignite readily.
- Radioactivity does not change flammability or other properties of materials.

PUBLIC SAFETY

- CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Priorities for rescue, life-saving, first aid, and control of fire and other hazards are higher than the priority for measuring radiation levels.
- Radiation Authority must be notified of accident conditions, and is usually responsible for radiological decisions.
- Isolate spill or leak area immediately for at least 25 to 50 meters (80 to 160 feet) in all directions.
- Stay upwind.
- Keep unauthorized personnel away.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

PROTECTIVE CLOTHING

- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters protective clothing will provide adequate protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 100 meters (330 feet).

Fire

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

C108

NAERG96 RADIOACTIVE MATERIALS (LOW LEVEL RADIATION) GUIDE 161

EMERGENCY RESPONSE

FIRE

- Presence of radioactive material will not change effectiveness of fire control techniques.
- Move containers from fire area if you can do it without risk.
- Do not move damaged packages; move undamaged packages out of fire zone.

Small Fires

- Dry chemical, CO_2, water spray or regular foam.

Large Fires

- Water spray, fog (flooding amounts).

SPILL OR LEAK

- Do not touch damaged packages or spilled material.

Liquid Spills

- Cover with sand, earth or other noncombustible absorbent material.
- Cover powder spill with plastic sheet or tarp to minimize spreading.

FIRST AID

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Apply artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Injured persons who contacted released material may be a minor contamination problem to contacted persons, equipment and facilities.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

RADIOACTIVE MATERIAL, EXCEPTED PACKAGE-
LIMITED QUANTITY OF MATERIAL, 7, UN 2910

THIS PACKAGE CONFORMS TO THE CONDITIONS
AND LIMITATIONS SPECIFIED IN 49 CFR
173.421 FOR RADIOACTIVE MATERIAL,
EXCEPTED PACKAGE-LIMITED QUANTITY OF
MATERIAL, UN 2910

U.S. DEPARTMENT OF ENERGY, RICHLAND WA.
BY RUST FEDERAL SERVICES HANFORD
P.O. BOX 1970, 2355 STEVENS DRIVE
RICHLAND, WA 99352

801015 Chem 801016 Rad. (B) 1/5/98

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0MJC5		1/5/1998	QUAD22C	1/5/1998 11:05:53 AM	B0MJC5	30	161	5.27833333	15214	506.11333
01	SOLID		Bkg:	1/1/1998 2:04:10 AM	BKG	600	53	0.08833333	612	1.02

Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 9.96E+01	Alp;	(Dpm/ -2.19E+00	(uCi/ -9.89E-03	(pCi/ -9.89E+00	± 5.4E+00	CAT	1.0E+03	Lab
Ppt mg: 99.6	Units: g	, mg	Bet;	Alq): 1.10E+03	Sa): 4.99E+00	Lig): 4.99E+03	± 4.0E+01	III	2.0E-02	Alq Lig

BHI B0MJC8		1/5/1998	QUAD22D	1/5/1998 11:05:53 AM	B0MJC8	30	9	0.23166667	422	13.115
04	SOLID		Bkg:	1/1/1998 2:04:10 AM	BKG	600	41	0.06833333	571	0.9516667

Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 9.46E+01	Alp;	(Dpm/ 5.91E-01	(uCi/ 2.82E-03	(pCi/ 2.82E+00	± 4.9E+00	CAT	1.8E+01	Lab
Ppt mg: 94.6	Units: g	, mg	Bet;	Alq): 2.87E+01	Sa): 1.36E-01	Lig): 1.36E+02	± 7.1E+00	II	7.3E-01	Alq Lig

BHI B0MJD1		1/5/1998	QUAD23A	1/5/1998 11:05:58 AM	B0MJD1	30	248	8.185	19232	640.03833
02	SOLID		Bkg:	1/1/1998 2:04:16 AM	BKG	600	49	0.08166667	617	1.0283333

Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 9.64E+01	Alp;	(Dpm/ 1.98E+01	(uCi/ 9.27E-02	(pCi/ 9.27E+01	± 9.8E+00	CAT	5.4E-01	Lab
Ppt mg: 96.4	Units: g	, mg	Bet;	Alq): 1.39E+03	Sa): 6.50E+00	Lig): 6.50E+03	± 4.7E+01	III	1.5E-02	Alq Lig

BHI B0MJD7		1/5/1998	QUAD23B	1/5/1998 11:05:58 AM	B0MJD7	30	5	0.07166667	77	1.565
03	SOLID		Bkg:	1/1/1998 2:04:16 AM	BKG	600	57	0.095	601	1.0016667

Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 9.86E+01	Alp;	(Dpm/ 4.00E-01	(uCi/ 1.83E-03	(pCi/ 1.83E+00	± 4.8E+00	CAT	2.7E+01	Lab
Ppt mg: 98.6	Units: g	, mg	Bet;	Alq): 3.40E+00	Sa): 1.56E-02	Lig): 1.56E+01	± 3.0E+00	I	6.4E+00	Alq Lig

BHI B0MJF0		1/5/1998	QUAD23C	1/5/1998 11:05:58 AM	B0MJF0	30	7	0.16166667	118	2.965
08	SOLID		Bkg:	1/1/1998 2:04:16 AM	BKG	600	43	0.07166667	581	0.9683333

Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 9.94E+01	Alp;	(Dpm/ 9.11E-01	(uCi/ 4.13E-03	(pCi/ 4.13E+00	± 4.9E+00	CAT	1.2E+01	Lab
Ppt mg: 99.4	Units: g	, mg	Bet;	Alq): 6.39E+00	Sa): 2.89E-02	Lig): 2.89E+01	± 3.6E+00	I	3.5E+00	Alq Lig

BHI B0MJF3		1/5/1998	QUAD23D	1/5/1998 11:05:58 AM	B0MJF3	30	14	0.42	114	2.9566667
05	SOLID		Bkg:	1/1/1998 2:04:16 AM	BKG	600	28	0.04666667	506	0.8433333

Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 1.03E+02	Alp;	(Dpm/ 2.68E+00	(uCi/ 1.18E-02	(pCi/ 1.18E+01	± 5.0E+00	CAT	4.2E+00	Lab
Ppt mg: 102.7	Units: g	, mg	Bet;	Alq): 6.15E+00	Sa): 2.70E-02	Lig): 2.70E+01	± 3.4E+00	II	3.7E+00	Alq Lig

BHI B0MJJ1		1/5/1998	QUAD24B	1/5/1998 11:05:44 AM	B0MJJ1	30	4	0.02	99	2.235
06	SOLID		Bkg:	1/1/1998 2:04:03 AM	BKG	600	68	0.11333333	639	1.065

Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 1.01E+02	Alp;	(Dpm/ -1.91E-03	(uCi/ -8.53E-06	(pCi/ -8.53E-03	± 4.9E+00	CAT	1.0E+03	Lab
Ppt mg: 100.6	Units: g	, mg	Bet;	Alq): 5.02E+00	Sa): 2.25E-02	Lig): 2.25E+01	± 3.4E+00	I	4.5E+00	Alq Lig

(R) 1/5/98

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0MJJ4		1/5/1998	QUAD24C	1/5/1998 11:05:44 AM	B0MJJ4	30	10	0.26166667	80	1.6916667
07	SOLID		Bkg:	1/1/1998 2:04:03 AM	BKG	600	43	0.07166667	585	0.975
Anl Date: 1/5/1998	Tot Sa, Alq:	1.00E+03	, 1.00E+02	Alp; (Dpm/ 1.69E+00	(uCi/ 7.59E-03	(pCi/ 7.59E+00	± 5.2E+00	CAT	6.6E+00	Lab
Ppt mg: 100.4	Units:	g	, mg	Bet; Alq): 3.57E+00	Sa): 1.60E-02	Lig): 1.60E+01	± 3.0E+00	I	6.3E+00	Alq Lig
BHI B0MK84		1/5/1998	QUAD24D	1/5/1998 11:05:44 AM	B0MK84	30	6	0.145	45	0.5
	LIQUID		Bkg:	1/1/1998 2:04:03 AM	BKG	600	33	0.055	600	1
Anl Date: 1/5/1998	Tot Sa, Alq:	7.00E+00	, 1.00E+01	Alp; (Dpm/ 4.02E-01	(uCi/ 1.27E-04	(pCi/ 1.81E+01	± 2.1E+01	CAT	1.4E+00	Lab
Ppt mg: 0	Units:	L	, ml	Bet; Alq): 8.84E-01	Sa): 2.79E-04	Lig): 3.98E+01	± 2.0E+01	I	1.3E+00	Alq Lig
BHI B0MK85		1/5/1998	QUAD21A	1/5/1998 11:57:56 AM	B0MK85	30	7	0.11333333	45	0.4466667
	LIQUID		Bkg:	1/1/1998 2:03:58 AM	BKG	600	72	0.12	632	1.0533333
Anl Date: 1/5/1998	Tot Sa, Alq:	7.00E+00	, 1.00E+01	Alp; (Dpm/ 3.16E-01	(uCi/ 9.97E-05	(pCi/ 1.42E+01	± 2.2E+01	CAT	1.8E+00	Lab
Ppt mg: 0	Units:	L	, ml	Bet; Alq): 8.30E-01	Sa): 2.62E-04	Lig): 3.74E+01	± 2.1E+01	I	1.3E+00	Alq Lig
BHI TEDF0102981		1/5/1998	QUAD21B	1/5/1998 11:57:56 AM	TEDF0102981	30	4	0.05333333	44	0.5066667
	LIQUID		Bkg:	1/1/1998 2:03:58 AM	BKG	600	48	0.08	576	0.96
Anl Date: 1/5/1998	Tot Sa, Alq:	1.00E+00	, 1.00E+01	Alp; (Dpm/ 1.55E-01	(uCi/ 6.98E-06	(pCi/ 6.98E+00	± 3.2E+01	CAT	3.6E+00	Lab
Ppt mg: 2.3	Units:	L	, ml	Bet; Alq): 9.51E-01	Sa): 4.29E-05	Lig): 4.29E+01	± 2.0E+01	I	1.2E+00	Alq Lig

C110

Client Sample Screening Results

05-Jan-98

(R) 1/5/98

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0J2Y8		1/5/1998	QUAD21A	1/5/1998 11:05:49 AM	B0J2Y8	30	53	1.64666667	3549	117.24667
	SOLID		Bkg:	1/1/1998 2:03:58 AM	BKG	600	72	0.12	632	1.0533333
Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 1.03E+02	Alp; (Dpm/ 2.46E+00	(uCi/ 1.08E-02	(pCi/ 1.08E+01	± 5.9E+00	CAT III	4.7E+00	Lab Alq Lig	
Ppt mg: 102.9	Units: g	, mg	Bet; Alq): 2.71E+02	Sa): 1.19E+00	Lig): 1.19E+03	± 2.0E+01		8.4E-02		
BHI B0JD05		1/5/1998	QUAD21B	1/5/1998 11:05:49 AM	B0JD05	30	33	1.02	1312	42.773333
	SOLID		Bkg:	1/1/1998 2:03:58 AM	BKG	600	48	0.08	576	0.96
Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 1.00E+02	Alp; (Dpm/ 4.14E+00	(uCi/ 1.86E-02	(pCi/ 1.86E+01	± 6.1E+00	CAT II	2.7E+00	Lab Alq Lig	
Ppt mg: 100.3	Units: g	, mg	Bet; Alq): 9.59E+01	Sa): 4.31E-01	Lig): 4.31E+02	± 1.2E+01		2.3E-01		
BHI B0JD08		1/5/1998	QUAD21C	1/5/1998 11:05:49 AM	B0JD08	30	437	14.4883333	18709	622.715
	SOLID		Bkg:	1/1/1998 2:03:58 AM	BKG	600	47	0.07833333	551	0.9183333
Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 1.04E+02	Alp; (Dpm/ 5.42E+01	(uCi/ 2.36E-01	(pCi/ 2.36E+02	± 1.4E+01	CAT III	2.1E-01	Lab Alq Lig	
Ppt mg: 103.7	Units: g	, mg	Bet; Alq): 1.39E+03	Sa): 6.05E+00	Lig): 6.05E+03	± 4.4E+01		1.7E-02		
BHI B0JD09		1/5/1998	QUAD21D	1/5/1998 11:05:49 AM	B0JD09	30	122	3.96833333	6176	204.90333
	SOLID		Bkg:	1/1/1998 2:03:58 AM	BKG	600	59	0.09833333	578	0.9633333
Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 1.10E+02	Alp; (Dpm/ 1.39E+01	(uCi/ 5.70E-02	(pCi/ 5.70E+01	± 8.1E+00	CAT III	8.8E-01	Lab Alq Lig	
Ppt mg: 109.7	Units: g	, mg	Bet; Alq): 4.64E+02	Sa): 1.91E+00	Lig): 1.91E+03	± 2.4E+01		5.2E-02		
BHI B0JD10		1/5/1998	QUAD22A	1/5/1998 11:05:53 AM	B0JD10	30	33	0.995	1499	48.925
	SOLID		Bkg:	1/1/1998 2:04:10 AM	BKG	600	63	0.105	625	1.0416667
Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 1.09E+02	Alp; (Dpm/ 3.76E+00	(uCi/ 1.55E-02	(pCi/ 1.55E+01	± 5.5E+00	CAT II	3.2E+00	Lab Alq Lig	
Ppt mg: 109	Units: g	, mg	Bet; Alq): 1.06E+02	Sa): 4.38E-01	Lig): 4.38E+02	± 1.2E+01		2.3E-01		
BHI B0MJC2 09		1/5/1998	QUAD22B	1/5/1998 11:05:53 AM	B0MJC2	30	12	0.315	121	2.9316667
	SOLID		Bkg:	1/1/1998 2:04:10 AM	BKG	600	51	0.085	661	1.1016667
Anl Date: 1/5/1998	Tot Sa, Alq: 1.00E+03	, 1.13E+02	Alp; (Dpm/ 2.07E+00	(uCi/ 8.27E-03	(pCi/ 8.27E+00	± 5.0E+00	CAT I	6.0E+00	Lab Alq Lig	
Ppt mg: 112.6	Units: g	, mg	Bet; Alq): 6.38E+00	Sa): 2.55E-02	Lig): 2.55E+01	± 3.3E+00		3.9E+00		

C1111

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004-20	Page 1 of 3

Collector R. Fahlberg/D. St. John	**Company Contact** Curt Wittreich	**Telephone No.** 372-9586	**Project Coordinator** KOERNER, CC
Project Designation 216-B-2-2 Ditch - Soil	**Sampling Location** 200 East		**SAF No.** B98-004
Ice Chest No. ERC96-060	**Field Logbook No.** EL-1281		**Method of Shipment** Fed Ex
Shipped To Quanterra Incorporated	**Offsite Property No.**		**Bill of Lading/Air Bill No.**

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactivity <.d with field instruments.

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	P	P	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1L	1L	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS 801032 SDG W02161	See item (1) in Special Instructions.	Iodine-129 801033	NO2/NO3 - 353.1; Ammonia - 350.1	Total Cyanide - 9010	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)	Activity Scan	Gross Alpha; Gross Beta 801033	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	See item (2) in Special Instructions	See item (3) in Special Instructions. 801033

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJF6 01	Soil	1-2-98	1500	X	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By	Date/Time	Received By	Date/Time
Kenneth Kern for R. Fahlberg	1/5/98 1005	[signature]	1/5/98 1005
		L100CRM	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Uranium-235)
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(3) Isotopic Thorium; Isotopic Plutonium, Plutonium-241; Americium-241/Curium-244

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	B98-004-20	Page 2 of 3

Collector R. Fahlberg/D. St. John	**Company Contact** Curt Wittreich	**Telephone No.** 372-9586	**Project Coordinator** KOERNER, CC	**Data Turnaround** 45 Days
Project Designation 216-B-2-2 Ditch - Soil	**Sampling Location** 200 East		**SAF No.** B98-004	
Ice Chest No. ERC-96-060	**Field Logbook No.** EL-1281		**Method of Shipment** Fed Ex	
Shipped To Quanterra Incorporated	**Offsite Property No.**		**Bill of Lading/Air Bill No.**	

POSSIBLE SAMPLE HAZARDS/REMARKS
Radio activity < d. with field instruments.

Special Handling and/or Storage

SAMPLE ANALYSIS
801032

Preservation	None	None	None	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	120ml	120ml
	Isotopic Uranium	Mercury - 7471 - (CV)	Neptunium-237 801032	pH (Soil) - 9045	Selenium-79	Strontium-89,90 -- Sr-90	Technetium-99	Total Uranium	PCBs - 8080	See item (1) in Special Instructions
					801033					

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJF6 01	Soil	1-2-98	1500		X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By	Date/Time	Received By	Date/Time
K. Fahlberg R. Fahlberg	1-5-98 1005	D. Fahlberg	1-5-98 1005
		Lockpry	

SPECIAL INSTRUCTIONS
(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

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

C113

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004-21	Page 1 of 3

Collector R. Fahlberg/D. St. John	**Company Contact** Curt Wittreich	**Telephone No.** 372-9586	**Project Coordinator** KOERNER, CC
Project Designation 216-B-2-2 Ditch - Soil	**Sampling Location** 200 East		**SAF No.** B98-004
Ice Chest No. ERC96-060	**Field Logbook No.** EL-1281		**Method of Shipment** Fed Ex
Shipped To Quanterra Incorporated	**Offsite Property No.**		**Bill of Lading/Air Bill No.**

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactivity < detectable with field Instruments

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	P	P	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	1L	1L	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS 801032	See item (1) in Special Instructions	Iodine-129 801033	NO2/NO3 - 353.1, Ammonia - 350.1	Total Cyanide - 9010	VOA - 8260A (TCL), VOA - 8260A (Add-On) [1-Butanol, Diethyl ether]	Activity Scan	Gross Alpha; Gross Beta 801033	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	See item (2) in Special Instructions	See item (3) in Special Instructions 801033
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
B0MJF9 02	Soil	1-3-98	0942	X	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By	Date/Time	Received By	Date/Time
Renee Nielsen for Fahlberg	1/5/98 1005	[illegible]	1-5-98 1005
		2100 pm	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Uranium-235}
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) {Bismuth, Boron, Tin}; ICP Metals - 6010A (Supertrace) {Arsenic, Lead, Selenium}
(3) Isotopic Thorium; Isotopic Plutonium; Plutonium-241, Americium-241/Curium-244

Matrix *

S	=	Soil
SE	=	Sediment
SO	=	Solid
SI	=	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 C114	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004-21	Page 2 of 3

Collector R. Fahlberg/D. St. John	**Company Contact** Curt Wittreich **Telephone No.** 372-9586	**Project Coordinator** KOERNER, CC	**Data Turnaround** 45 Days
Project Designation 216-B-2-2 Ditch - Soil	**Sampling Location** 200 East	**SAF No.** B98-004	
Ice Chest No. ERC96-060	**Field Logbook No.** EL-1281	**Method of Shipment** Fed Ex	
Shipped To Quanterra Incorporated	**Offsite Property No.**	**Bill of Lading/Air Bill No.**	

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactivity < detectable with field Instruments

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	120ml	120ml
SAMPLE ANALYSIS	Isotopic Uranium	Mercury - 7471 - (CV)	Neptunium-237	pH (Soil) - 9045	Selenium-79	Strontium-89,90 -- Sr-90	Technetium-99	Total Uranium	PCBs - 8080	See item (1) in Special Instructions
801032			801033		801033					

Sample No.	Matrix *	Sample Date	Sample Time										
B0MJF9 02	Soil	1·3·98	0942		X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By	Date/Time	Received By	Date/Time
Renee Nielsen for R. Fahlberg	1/5/98 1005	[signature]	1-5-98 1005
		2100CPM	

SPECIAL INSTRUCTIONS

(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) [Tributyl phosphate]

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

C115

CCN: 053570

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required NO
Due Date N/A
Assignee N/A
Claim CCN: N/A
OU. 216 B2-2
TSD N/A
ERA N/A
Subject Code: 5850

TO: D. A. St John L0-19
C. D. Wittreich H9-06
F. G. Zwiesler X0-23

DATE: December 10, 1997

COPIES: See Below

FROM: S. K. De Mers
RadCon Engineering
X0-23/531-0729

SUBJECT: **USING FIELD READINGS TO DETERMINE SHIPPING REQUIREMENTS FOR SAMPLES IN SUPPORT OF THE 216 B 2-2 VADOSE ZONE INVESTIGATION**

REF: The Health Physics and Radiological Health Handbook

The purpose of this memo is to provide direction in determining using field instruments, when samples taken in support of the 216 B 2-2 vadose zone investigations must be shipped as radioactive material as defined in Department of Transportation requirements.

Radioactive material for shipping purposes is defined by the Department of Transportation as any material that has an activity in excess of 2,000 pCi/gm. For the purpose of conservatism. the demarcation point for determining radioactive material for shipping purposes will be 1,500 pCi/gm. Two separate approaches will be used to validate the use of field instruments to determine activity in soil samples.

The first approach is to use a formula for determining beta exposure rate from solutions of radioactive material contained in the *Health Physics and Radiological Health Handbook*. This formula is 2.12 times the average energy of the beta particle in MEV, times the concentration of the isotope in uCi/gm.

$$2.12\ X\ E\ X\ C = Rads/hr$$

Where; 2.12 is a conversion factor
E is the average energy of the beta particle (Sr90 = 0.195 MEV, Y90 = 0.935 MEV)
C is the concentration of the isotope in uCi/gm

Inserting the values for Sr/Y90 beta energy and the concentration of 1,500 pCi/gm

$$2.12\ X\ (0.195 + 0.935)\ X\ 1.5\ X\ 10^{-3}\ uCi/gm = 0.0036\ Rads/hr$$

0.0036 RADS/hr is equal to 3.6 mRad/hr. The field instrument has a correction factor of 3 for beta radiation, so the RO-20 (beta/gamma dose rate instrument) would read 1.2 mRad/hr. Field readings taken at the 216 B2-2 trench showed for each 1 mRad/hr as read (uncorrected) on the RO-20, the E-600 ratemeter equipped with an SH-380 plastic scintillator, read 100,000 dpm. Therefore, from the above comparison, a sample with an activity of 1,500 pCi/gm would read 1.2 mRad/hr on the RO-20 and 120,000 dpm on the E-600 equipped with a SH-380 probe.

For the second approach, a soil standard with 300 pCi/gm is used. This soil standard was read with an Electra ratemeter equipped with a DP-6 plastic scintillator that had 30% efficiency for Sr90. The 300 pCi/gm source read 16 cpm per pCi/gm. Multiplying this value by 1,500 pCi/gm would result in a reading on the Electra/DP-6 equipment of 80,000 dpm (using an efficiency of 30%). So for this instrument, 1,500 pCi/gm of Sr90 would read 80,000 dpm.

From this we can gather the 1,500 pCi/gm will range between 80,000 dpm and 120,000 dpm. The RCT and sampler/shipper will verify actual readings in the field using the 300-pCi/gm Sr90 source and logged. The 1,500-pCi/gm value will be used.

SKD:dld

Copies:
R. C. Havenor X0-17
V. J. Rohay H9-02
W. S. Thompson L0-19
RadCon Engineering FIle/LB X0-23
Document and Info Services H0-09

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 1/5 1000 SG#: W02161

Work Order Number: 801032 + 033 SAF #: B98-004 B98-003

Shipping Container ID: 96-060 Chain of Custody # B98-004-20 B98-003-13 + 14 + 21

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°
5. Vermiculite/packing materials is Wet [ ] Dry [✓] n/a
6. Number of samples in shipping container: 44
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: D. Heidelberg Date: 1-5-98

Telephoned To: _____ On _____ By _____

0118

801032 Chem 801033 Rad.

Client Sample Screening Results

06-Jan-98

(B) 1/6/98

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0JD11		1/6/1998	QUAD22D	1/6/1998 8:55:54 AM	B0JD11	30	7	0.16476190	344	10.54381
	SOLID		Bkg:	1/6/1998 12:36:31 AM	BKG	700	48	0.06857143	646	0.9228571

Anl Date: 1/6/1998	Tot Sa, Alq: 7.00E+02	, 9.84E+01	Alp;	(Dpm/ 3.46E-01	(uCi/ 1.11E-03	(pCi/ 1.58E+00	± 4.6E+00	CAT I	3.2E+01	Lab
Ppt mg: 98.4	Units: g	, mg	Bet;	Alq): 2.31E+01	Sa): 7.41E-02	Lig): 1.06E+02	± 6.2E+00		9.4E-01	Alq Lig

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0JD12		1/6/1998	QUAD23A	1/6/1998 8:55:59 AM	B0JD12	30	79	2.56476190	343	10.537619
	SOLID		Bkg:	1/6/1998 12:36:41 AM	BKG	700	48	0.06857143	627	0.8957143

Anl Date: 1/6/1998	Tot Sa, Alq: 7.00E+02	, 1.04E+02	Alp;	(Dpm/ 1.71E+01	(uCi/ 5.17E-02	(pCi/ 7.38E+01	± 8.5E+00	CAT II	6.8E-01	Lab
Ppt mg: 104.4	Units: g	, mg	Bet;	Alq): 2.13E+01	Sa): 6.44E-02	Lig): 9.21E+01	± 5.6E+00		1.1E+00	Alq Lig

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0MJF6		1/6/1998	QUAD23B	1/6/1998 8:55:59 AM	B0MJF6	30	24	0.75	146	3.9438095
01	SOLID		Bkg:	1/6/1998 12:36:41 AM	BKG	700	35	0.05	646	0.9228571

Anl Date: 1/6/1998	Tot Sa, Alq: 2.00E+03	, 9.80E+01	Alp;	(Dpm/ 4.88E+00	(uCi/ 4.46E-02	(pCi/ 2.23E+01	± 6.1E+00	CAT II	2.2E+00	Lab
Ppt mg: 98	Units: g	, mg	Bet;	Alq): 8.19E+00	Sa): 7.53E-02	Lig): 3.77E+01	± 4.0E+00		2.7E+00	Alq Lig

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0MJF9		1/6/1998	QUAD23C	1/6/1998 8:55:59 AM	B0MJF9	30	39	1.26	186	5.2128571
02	SOLID		Bkg:	1/6/1998 12:36:41 AM	BKG	700	28	0.04	691	0.9871429

Anl Date: 1/6/1998	Tot Sa, Alq: 2.00E+03	, 9.77E+01	Alp;	(Dpm/ 8.24E+00	(uCi/ 7.60E-02	(pCi/ 3.80E+01	± 7.1E+00	CAT II	1.3E+00	Lab
Ppt mg: 97.7	Units: g	, mg	Bet;	Alq): 1.06E+01	Sa): 9.74E-02	Lig): 4.87E+01	± 4.4E+00		2.1E+00	Alq Lig

C119

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC 96-060	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

Data Turnaround: **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

SAMPLE ANALYSIS: 80105001 SDL W02161

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1 RS	0	0	0	0	0	0	RS 1 2	0	RS 1 2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO3/NO2 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJK0	Soil	1-5-98	1510	X	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
For R. Fahlberg Doug Bowers	1-6-98/1138	Heidelberg	1-6-98 1138
		Lloyd Pruf	

SPECIAL INSTRUCTIONS

(1). ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

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	B98-004	Page 2 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich	Telephone No.: 372-9586	Project Coordinator: KOERNER, CC
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East		SAF No.: B98-004
Ice Chest No.: ERC 96-060	Field Logbook No.: EL-1281		Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

Data Turnaround: **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS: 80105101

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	RE 1 2	RE 1 2	RE 1 2	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 – Sr-90	Technetium-99	Total Uranium
Sample No. / Matrix * / Sample Date / Sample Time										
BOMJKO / Soil / 1-5-98 / 1510	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: For R. Fahlberg / Doug Bowman	Date/Time: 1-6-98/1138	Received By: Heidelberg / Lidoc	Date/Time: 1-6-98 1122
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

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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	B98-004	Page 1 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC96-060	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2	0	0	0	0	0	0	2	0	2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

80105002

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJJ7	Soil	1-5-98	1025	X	X DLB	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: For R Fahlberg Doug Bowers	Date/Time: 1-6-98/1138	Received By: D Hadelberg	Date/Time: 1-6-98 1138
Relinquished By	Date/Time	Received By: L100LPM	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

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

C122

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 2 of 2

Collector: R.Fahlberg/D.St John	Company Contact: C. Wittreich — Telephone No.: 372-9586	Project Coordinator: KOERNER, CC	Data Turnaround: 45 Days
Project Designation: 216-B-2-2 Ditch - Soil	Sampling Location: 200 East	SAF No.: B98-004	
Ice Chest No.: ERC 96-060	Field Logbook No.: EL-1281	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	2	2	2	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 -- Sr-90	Technetium-99	Total Uranium

SAMPLE ANALYSIS

80105102

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJJ7	Soil	1-5-98	1025	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
For R. Fahlberg Doug Bowers	1-6-98/1138	[signature]	1-6-98 1138
		4100 CPM	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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

0123

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector R.Fahlberg/D.St John	Company Contact C. Wittreich Telephone No. 372-9586	Project Coordinator KOERNER, CC	Data Turnaround 45 Days
Project Designation 216-B-2-2 Ditch - Soil	Sampling Location 200 East	SAF No. B98-004	
Ice Chest No. ERC 96-060	Field Logbook No. EL-1281	Method of Shipment Hand Delivered	
Shipped To Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	~~0~~ R 1	0	0	0	0	~~0~~ R 1	1	0	1
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

Special Handling and/or Storage
Cool 4C

SAMPLE ANALYSIS
80105003

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJK3	Soil	1-5-98	1525		X					X			

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
For R.Fahlberg Doug Bowers	1-6-98/1138	[signature]	1-6-98 1138
		C100CPM	

Sign/Print Names

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (App IX Add-On) (Tributyl phosphate)

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

0124

Quanterra Sample Sets R. Fahkers
216 B-2-2 Ditch 1-6-98
Boring 8079

Per Demers total activity Calc. Letter

$\left(\frac{\text{cpm soil}}{\text{cpm source}}\right)$ 300 pCi/gm = Sample Activity

assume all Sr-90

BOMJJ7 $\left(\frac{100 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 22 pCi/gm

BOMJK0 $\left(\frac{100 \text{ cpm}}{1400 \text{ cpm}}\right)$ 300 pCi/gm = 22 pCi/gm

0125

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 1/6 1140 SG#: W02161 B98-003

Work Order Number: 801050 + 051 SAF #: B98-023 B98-004

Shipping Container ID: 96-060 Chain of Custody # B98-023-12 B98-004 B98-003-20 + 21

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 5° C
5. Vermiculite/packing materials is Wet [ ] Dry [✓] na
6. Number of samples in shipping container: 39
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: Heidelberg Date: 1-6-98

Telephoned To: _____ On _____ By _____

0126

801050 Chem 801051 - Rad.

Client Sample Screening Results

06-Jan-98

CX 1/6/98

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0MJJ7		1/6/1998 11:00:00 AM	QUAD24A	1/6/1998 1:47:20 PM	B0MJJ7	30	20	0.57809524	109	2.6704762
02	SOLID		Bkg:	1/6/1998 12:36:25 AM	BKG	700	62	0.08857143	674	0.9628571
Anl Date: 1/6/1998	Tot Sa, Alq: 1.00E+03	, 1.08E+02	Alp; (Dpm/ 4.15E+00	(uCi/ 1.73E-02	(pCi/ 1.73E+01	± 5.9E+00	CAT II	2.9E+00	Lab Alq	
Ppt mg: 107.7	Units: g	, mg	Bet; Alq): 5.75E+00	Sa): 2.40E-02	Lig): 2.40E+01	± 3.3E+00		4.2E+00	Lig	
BHI B0MJK0		1/6/1998 11:00:00 AM	QUAD24B	1/6/1998 1:47:20 PM	B0MJK0	30	13	0.36904762	112	2.7719048
01	SOLID		Bkg:	1/6/1998 12:36:25 AM	BKG	700	45	0.06428571	673	0.9614286
Anl Date: 1/6/1998	Tot Sa, Alq: 1.00E+03	, 1.05E+02	Alp; (Dpm/ 2.48E+00	(uCi/ 1.06E-02	(pCi/ 1.06E+01	± 5.3E+00	CAT II	4.7E+00	Lab Alq	
Ppt mg: 105.4	Units: g	, mg	Bet; Alq): 6.03E+00	Sa): 2.58E-02	Lig): 2.58E+01	± 3.4E+00		3.9E+00	Lig	
BHI B0MJK3		1/6/1998 11:00:00 AM	QUAD24C	1/6/1998 1:47:20 PM	B0MJK3	30	23	0.69095238	117	2.9442857
	SOLID		Bkg:	1/6/1998 12:36:25 AM	BKG	700	53	0.07571429	669	0.9557143
Anl Date: 1/6/1998	Tot Sa, Alq: 6.00E+01	, 9.49E+01	Alp; (Dpm/ 4.44E+00	(uCi/ 1.27E-03	(pCi/ 2.11E+01	± 6.2E+00	CAT I	2.4E+00	Lab Alq	
Ppt mg: 94.9	Units: g	, mg	Bet; Alq): 6.03E+00	Sa): 1.72E-03	Lig): 2.86E+01	± 3.7E+00		3.5E+00	Lig	
BHI B0MLW5		1/6/1998 11:00:00 AM	QUAD24D	1/6/1998 1:47:20 PM	B0MLW5	30	155	5.0952381	450	13.965714
	SOLID		Bkg:	1/6/1998 12:36:25 AM	BKG	700	50	0.07142857	724	1.0342857
Anl Date: 1/6/1998	Tot Sa, Alq: 1.00E+03	, 9.86E+01	Alp; (Dpm/ 3.32E+01	(uCi/ 1.52E-01	(pCi/ 1.52E+02	± 1.2E+01	CAT III	3.3E-01	Lab Alq	
Ppt mg: 98.6	Units: g	, mg	Bet; Alq): 2.81E+01	Sa): 1.28E-01	Lig): 1.28E+02	± 6.8E+00		7.8E-01	Lig	

C127

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-004	Page 1 of 2

Collector R.Fahlberg/D.St John	Company Contact C. Wittreich Telephone No. 372-9586	Project Coordinator KOERNER, CC	Data Turnaround 45 Days
Project Designation 216-B-2-2 Ditch - Soil	Sampling Location 200 East	SAF No. B98-004	
Ice Chest No.	Field Logbook No. EL-1281	Method of Shipment Hand Delivered	
Shipped To Quanterra Incorporated	Offsite Property No.	Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
Cool 4C

Preservation	None	Cool to 4C	Cool 4C	None	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	~~1~~ 2	0	0	0	0	0	0	~~1~~ 2	0	~~1~~ 2
Volume	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 9060	Total Cyanide - 9010	Mercury - 7471 - (CV)	NO2/NO3 - 353.1; Ammonia - 350.1	IC Anions - 300.0 (Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate)	pH (Soil) - 9045	PCBs - 8080	See item (2) in Special Instructions	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Butanol, Diethyl ether)

80111601 SDL W02161

Sample No.	Matrix *	Sample Date	Sample Time										
BOMJK6	Soil	1-7-98	1600	X		X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By [signature]	Date/Time 1255 1-8-98	Received By [signature]	Date/Time 1-8-98 1255
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

(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Bismuth, Boron, Tin); ICP Metals - 6010A (Supertrace) (Arsenic, Lead, Selenium)
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (App IX Add-On) (Tributyl phosphate)

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	B98-004	Page 2 of 2

Collector R.Fahlberg/D.St John	Company Contact C. Wittreich	Telephone No. 372-9586	Project Coordinator KOERNER, CC	Date Turnaround 45 Days
Project Designation 216-B-2-2 Ditch - Soil	Sampling Location 200 East		SAF No. B98-004	
Ice Chest No.	Field Logbook No. EL-1281		Method of Shipment Hand Delivered	
Shipped To Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS

80111701

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	12	12	12	0	0	0	0	0	0	0
Volume	120ml	500ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml	60ml
	See item (1) in Special Instructions	Iodine-129	See item (2) in Special Instructions	Gross Alpha; Gross Beta	Isotopic Uranium	Neptunium-237	Selenium-79	Strontium-89,90 -- Sr-90	Technetium-99	Total Uranium
Sample No.	Matrix *	Sample Date	Sample Time										
B0MJK6	Soil	1-7-98	1600	X	X	X	X		X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
[signature]	1-8-98 1255	[signature]	1-8-98 0955
Relinquished By	Date/Time	Received By	Date/Time
		4:00pm	
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
(2) Isotopic Thorium; Isotopic Plutonium; Plutonium-241; Americium-241/Curium-244

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

C120

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 1-8-98 1255 SG#: W02161

Work Order Number: 801116 + 117 SAF #: B98-004 + B98-003

Shipping Container ID: 96-085 Chain of Custody # B98-004 + B98-003-2

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: 15
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: 1-8-98

Telephoned To: _____ On _____ By _____

801116 Chem 801117 Rad

Client Sample Screening Results

09-Jan-98

(P3) 1/9/97

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0MJK6		1/9/1998	QUAD21A	1/9/1998 9:26:11 AM	B0MJK6	30	11	0.27166667	72	1.465
01	SOLID		Bkg:	1/9/1998 12:16:42 AM	BKG	600	57	0.095	561	0.935

Anl Date: 1/9/1998 Tot Sa, Alq: 1.00E+03 , 9.76E+01 Alp; (Dpm/ 1.78E+00 (uCi/ 8.22E-03 (pCi/ 8.22E+00 ± 5.6E+00 CAT I 6.1E+00 Lab Alq
Ppt mg: 97.6 Units: g , mg Bet; Alq): 3.23E+00 Sa): 1.49E-02 Lig): 1.49E+01 ± 3.0E+00 6.7E+00 Lig

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0MN96		1/9/1998	QUAD21B	1/9/1998 9:26:11 AM	B0MN96	30	15	0.42166667	52	0.7766667
	LIQUID		Bkg:	1/9/1998 12:16:42 AM	BKG	600	47	0.07833333	574	0.9566667

Anl Date: 1/9/1998 Tot Sa, Alq: 2.00E+00 , 1.00E+01 Alp; (Dpm/ 1.34E+00 (uCi/ 1.21E-04 (pCi/ 6.04E+01 ± 2.6E+01 CAT I 4.1E-01 Lab Alq
Ppt mg: 2.9 Units: L , ml Bet; Alq): 1.26E+00 Sa): 1.13E-04 Lig): 5.66E+01 ± 2.1E+01 8.8E-01 Lig

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0MNB6		1/9/1998	QUAD21C	1/9/1998 9:26:11 AM	B0MNB6	30	11	0.31833333	57	1.0733333
	LIQUID		Bkg:	1/9/1998 12:16:42 AM	BKG	600	29	0.04833333	496	0.8266667

Anl Date: 1/9/1998 Tot Sa, Alq: 2.00E+00 , 1.00E+01 Alp; (Dpm/ 9.39E-01 (uCi/ 8.46E-05 (pCi/ 4.23E+01 ± 2.2E+01 CAT I 5.9E-01 Lab Alq
Ppt mg: 3.3 Units: L , ml Bet; Alq): 1.94E+00 Sa): 1.75E-04 Lig): 8.73E+01 ± 2.2E+01 5.7E-01 Lig

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0MNB8		1/9/1998	QUAD21D	1/9/1998 9:26:11 AM	B0MNB8	30	14	0.4	110	2.6433333
	LIQUID		Bkg:	1/9/1998 12:16:42 AM	BKG	600	40	0.06666667	614	1.0233333

Anl Date: 1/9/1998 Tot Sa, Alq: 6.00E+00 , 1.00E+01 Alp; (Dpm/ 1.21E+00 (uCi/ 3.26E-04 (pCi/ 5.43E+01 ± 2.6E+01 CAT I 4.6E-01 Lab Alq
Ppt mg: 3.7 Units: L , ml Bet; Alq): 5.00E+00 Sa): 1.35E-03 Lig): 2.25E+02 ± 3.1E+01 2.2E-01 Lig

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0MNC1		1/9/1998	QUAD22A	1/9/1998 9:26:17 AM	B0MNC1	30	17	0.50833333	108	2.6333333
	LIQUID		Bkg:	1/9/1998 12:16:49 AM	BKG	600	35	0.05833333	580	0.9666667

Anl Date: 1/9/1998 Tot Sa, Alq: 6.00E+00 , 1.00E+01 Alp; (Dpm/ 1.44E+00 (uCi/ 3.89E-04 (pCi/ 6.48E+01 ± 2.4E+01 CAT I 3.9E-01 Lab Alq
Ppt mg: 3 Units: L , ml Bet; Alq): 4.62E+00 Sa): 1.25E-03 Lig): 2.08E+02 ± 2.9E+01 2.4E-01 Lig

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0MNC4		1/9/1998	QUAD22B	1/9/1998 9:26:17 AM	B0MNC4	30	14	0.37833333	67	1.2366667
	LIQUID		Bkg:	1/9/1998 12:16:49 AM	BKG	600	53	0.08833333	598	0.9966667

Anl Date: 1/9/1998 Tot Sa, Alq: 6.00E+00 , 1.00E+01 Alp; (Dpm/ 1.13E+00 (uCi/ 3.06E-04 (pCi/ 5.11E+01 ± 2.4E+01 CAT I 4.9E-01 Lab Alq
Ppt mg: 1.9 Units: L , ml Bet; Alq): 2.13E+00 Sa): 5.75E-04 Lig): 9.58E+01 ± 2.3E+01 5.2E-01 Lig

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS AM/CM/10 **MATRIX** SOIL **DUE DATE** 3-2-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 01 016	-1B	BH11	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 01 016	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE IQ0 182
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 01 016 03	-		Duplicate of Sample # 80101603
D 01 016 05	-		" " 80101605
801 016 01	-09		
033 01	-02		
05101	-02		
11701	-		
	-		
	-		

Batched and QC updated by [illegible] on 1-22-98

Rec'd in Prep Lab by [illegible] on 1-20-98 Sop# RICHRC5013/RICHRC5019 Rev# ____

Rec'd in Sep Lab by [illegible] on 2/2/98 Sop# RICHRC5057 Rev# ____

Rec'd in Sep lab by ____ on ____ Sop# ____ Rev# ____

ED/CPPT by [illegible] on 2-12-98 Sop# RICHRC5003 Rev# 1

Rec'd in C.R. by ____ on 2/12/98 Sop# RICHRC5008 Rev# ____

Data Reviewed by [illegible] on 2/18/98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

C132

Quanterra
Environmental Services

DUE DATE 2/23/98

*** REANALYSIS REQUEST ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

CUSTOMER BHI

MATRIX Soil

ANALYSIS Np237

SAMPLE DELIVERY GROUP W02161

BATCH NUMBER

LAB SAMPLE ID	CUSTOMER ID	COMMENTS
1) 80101601		.02g
2) 02		.02g
3) 03		
4) D0101603		
5) 80101604		.7g
6) 05		
7) D0101605		
8) 80101606		
9) 07		
10) 08		
11) 09		
12) 80103301		
13) 02		
14) 80105101		
15) 02		
16) 80111701		
17) W0111701		
18)		
19)		
20)		

LAB QC ID		
BLANK) J0101623		
SPIKE) J0101625		

ACTIONS (Initial & Date)

1) INITIATED MC 2-11-98
SOP(S) # RICHRC0002 Rev 1

2) PREP LAB RECEIVED JN 2-12-98
SOP(S) # RICHRC5013/RICHRC5019

3) SAMPLE REMAINDER STORED JN 2-13-98
SOP(S) #

4) SEPARATION LAB RECEIVED 2/17/98 DM
SOP(S) # RICHRC5064 REV 0
Coppt. 2-18-98 RICHRC5003.1

5) COUNTING/MEASUREMENT LAB RECEIVED 2/18/98
SOP(S) # RICHRC0008

6) DATA REVIEWED AND ANALYTICAL PREP STORED MC 2-23-98
SOP(S) # RICHRC0002 Rev 1

0132

RC-048 10/96 REV 3

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS NP237 **MATRIX** SOIL **DUE DATE** 3-2-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 01 016	-1B	BHI	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 01 016	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE EQR160
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE ~~EQ~~ 1-23-98
D 01 016 03	-		Duplicate of Sample # 80101603
D 01 016 05 2/5/98	-		" " 80101605
~~J 01 117 01~~ W0111701	-		MATRIX SPIKE OF SA# 80111701 EQR161
80101601	-09	W02161	
03301	-02		
05101	-02		
11701	-		
	-		

Batched and QC updated by [illegible] on 1-22-98

Rec'd in Prep Lab by [illegible] on 1-20-98 Sop# RICHRC5013/RICHRC5019 Rev# ____

Rec'd in Sep Lab by DM on 2/3/98 Sop# RD3208 Rev# 1

Rec'd in Sep lab by NA on ____ Sop# NA Rev# ____

ED/CPPT by DM on 2/5/98 Sop# RICHRC5003 Rev# 1

Rec'd in C.R. by [illegible] on 2/5/98 Sop# RICHRD220r Rev# 0

Data Reviewed by JTK on 2-11-98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

C134

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	GES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J010161 B				
	J010161 S	EGR160			
1)	80101601		BHI	BOMJC5	
	~~D0101601~~	dup	BAB 1-21-98		
2)	80101602		BHI	BOMJD1	
	~~D0101602~~	dup	BAB 1-21-98		
3)	80101603		BHI	BOMJD7	
	D0101603	dup			
4)	80101604		BHI	BOMJC8	
5)	80101605		BHI	BOMJF3	
	D0101605	dup			
6)	80101606		BHI	BOMJJ1	
7)	80101607		BHI	BOMJJ4	
8)	80101608		BHI	BOMJF0	SA #08 VENTED DURING MBP
9)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD3800

2) PREP LAB RECEIVED JH 1-6-98

SOP(S) # RICHRC5013

3) JH 1-20-98 RICHRC50 ? SAMPLE REMAINDER STORED JH 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED 2/3/98 DM

SOP(S) # RD3208, REV 1

Co-precip. 2/5/98 DM
RICHRC5003, R1

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

C135

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP WD2161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	80MJF6	
2)	80103302		BHI	80MJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98

SOP(S) # RD3000

2) PREP LAB RECEIVED JH 1-8-98

SOP(S) # RICHRC 5013

3) JH 1-20-98 RICHRC5019 SAMPLE REMAINDER STORED JH 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED 2/3/98 DM

SOP(S) # RD3008, Rev1

CD-Precip 2/5/98 DM
RICHRC 5003, R1

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

C136

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-051

	GES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	BOMJK0	
2)	80105102		BHI	BOMJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED JW 1-8-98

SOP(S) # RICHRC 5013

3) JW 1-20-98 RICHRC SEM SAMPLE REMAINDER STORED JW 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED 2/3/98 DM

SOP(S) # RD3208, Rev1

Co-precip. 2/5/98 DM
RICHRC 5003, R1

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

0137

*** NP-237 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004 BATCH NUMBER 01-117

QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1) 80111701 ~~J0111[illegible]~~ EQR161		BHI	BOMJK6	
W0111701				

ACTIONS (Initial & Date)

1) INITIATED JH 1/9/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED JW 1-12-98

SOP(S) # RICHRC5013

3) JW 1-20-98 RICHRC 5019 SAMPLE REMAINDER STORED JW 1-20-98

SOP(S) # N/A

4) SEPARATION LAB RECEIVED 2/3/98 DM

SOP(S) # RD3208, Rev 1

co-precip. 2/5/98 DM
RICHRC 5003, R1

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

0138

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

2/23/98

ANALYSIS Pu150 **MATRIX** SOIL **DUE DATE** ~~3-2-98~~

JM 2-11-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 01 016	-1B	BH11	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 01 016	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE FGHI 3/4
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 01 016 03	-		Duplicate of Sample # 80101603
D 01 016 05	-		" " 80101605
80 016 01	-09		WØ2161
033 01	-02		
05101	-02		
11701	-		
	-		
	-		

Batched and QC updated by JV on 1-22-98

Rec'd in Prep Lab by JV on 1-20-98 Sop# RICHRC5013/RICHRC5019 Rev# ____

Rec'd in Sep Lab by CB on 2/2/98 Sop# RICHRC5057 RICHRC5010 Rev# ____

Rec'd in Sep lab by ____ on ____ Sop# ____ Rev# ____

ED CPPT by CB on 2/10/98 Sop# RICHRC5039 Rev# ____

Rec'd in C.R. by ____ on 2/10/98 Sop# RICHRC5008 Rev# 0

Data Reviewed by JK on 2/12/98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

Extracted D0101605 because there was alot of iron present RB 2/9/98 RICHRC5030

C139

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J0101610 J0101615				
1)	80101601		BHI	BOMJC5	REDUCED ALIQUOT
2)	80101602		BHI	BOMJD1	REDUCED ALIQUOT
3)	80101603 D0101603		BHI	BOMJD7	
4)	80101604		BHI	BOMJC8	REDUCED ALIQUOT
5)	80101605 D0101605		BHI	BOMJF3	
6)	80101606		BHI	BOMJJ1	
7)	80101607		BHI	BOMJJ4	
8)	80101608		BHI	BOMJF0	
9)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED JV 1-6-98

SOP(S) # RICHRC5013

3) SAMPLE REMAINDER STORED JV 1-20-98 RICHRC5019 JV 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED JK 2-12-98

SOP(S) # RICHRC0002 fw 1

C140

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	80MJF6	
2)	80103302		BHI	80MJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98

SOP(S) # RD 8800

2) PREP LAB RECEIVED JW 1-8-98

SOP(S) # RICHRC5213

3) JW 1-20-98 RICHRC5219 SAMPLE REMAINDER STORED JW 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004 BATCH NUMBER 01-051

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	BOMJK0	
2)	80105102		BHI	BOMJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98

SOP(S) # RD 8000

2) PREP LAB RECEIVED JH 1-8-98

SOP(S) # RICHRC5013

3) SAMPLE REMAINDER STORED JH 1-20-98 RICHRC5019 JH 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** PU(SO ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-117

QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1) 80111701		BHI	80MJK6	

ACTIONS (Initial & Date)

1) INITIATED JW 1/9/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED JW 1-12-98

SOP(S) # RICHRC5E13

3) JW 1-20-98 RICHRC5C17 SAMPLE REMAINDER STORED JW 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS PU 241 **MATRIX** SOIL **DUE DATE** 3-2-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 01 016	-1B	1341	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 01 016	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE EQAJC30
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 01 016 03	-		Duplicate of Sample # 80101603
D 01 016 05	-		" " 80101605
801 016 01	-09		WO 2161
033 01	-02		
05101	-02		
11701	-		
	-		
	-		

Batched and QC updated by [illegible] on 1-22-98

Rec'd in Prep Lab by [illegible] on 1-20-98 Sop# RICHRC5012/RICHRC5019 Rev# ____

Rec'd in Sep Lab by RB on 2/13/98 Sop# RICHRC5010 Rev# ____

Rec'd in Sep lab by ____ on ____ Sop# ____ Rev# ____

ED/CPPT by ____ on ____ Sop# ____ Rev# ____

Rec'd in C.R. by B on 2/13/98 Sop# RICHRC0001 Rev# 0

Data Reviewed by [illegible] on 2-20-98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J0101615 J0101615 EQAJ030				
1)	80101601		BHI	BOMJC5	REDUCED ALIQUOT
2)	80101602		BHI	BOMJD1	REDUCED ALIQUOT
3)	80101603 D0101603		BHI	BOMJD7	
4)	80101604		BHI	BOMJC8	REDUCED ALIQUOT
5)	80101605 D0101605		BHI	BOMJF3	
6)	80101606		BHI	BOMJJ1	
7)	80101607		BHI	BOMJJ4	
8)	80101608		BHI	BOMJF0	
9)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD 8800

2) PREP LAB RECEIVED JV 1-6-98

SOP(S) # RICHRC5013

3) SAMPLE REMAINDER STORED JV 1-20-98 RICHRC5019 JV 1-20-98

SOP(S) # N/A

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	BOMJF6	
2)	80103302		BHI	BOMJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98

SOP(S) # RD0000

2) PREP LAB RECEIVED gv 1-8-98

SOP(S) # RICHRC5013

3) gv 1-20-98 RICHRC5019 SAMPLE REMAINDER STORED gv 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

C146

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF

MATRIX : SOIL B98-004

SAMPLE DELIVERY GROUP W02161

BATCH NUMBER 01-051

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	BOMJK0	
2)	80105102		BHI	BOMJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98

SOP(S) # RD 8800

2) PREP LAB RECEIVED gil 1-8-98

SOP(S) # RICHRC 5012

3) 1-20-98 RICHRC5019 SAMPLE REMAINDER STORED gil 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** PU-241 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-117

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80111701		BHI	BOMJK6	

ACTIONS (Initial & Date)

1) INITIATED JH 1/9/98

SOP(S) # RD 8800

2) PREP LAB RECEIVED JW 1-12-98

SOP(S) # RICHRC 5013

3) JW 1-20-98 RICHRC5013 SAMPLE REMAINDER STORED JW 1-20-98

SOP(S) # N4

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS TH 150 **MATRIX** SOIL **DUE DATE** 3-2-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 01 016	-1B	BH1	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 01 016	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE EQVI 162
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 01 016 03	-		Duplicate of Sample # 80101603
D 01 016 05	-		" " 80101605
1-22-98 J 801 016 01	-09		
033 01	-02		
051 01	-02		
117 01	-		
	-		
	-		

Batched and QC updated by [signature] on 1-22-98

Rec'd in Prep Lab by [signature] on 1-20-98 Sop# RICHRC5013/RICHRC5019 Rev#

Rec'd in Sep Lab by [signature] on 01-29-98 Sop# RICHRC 5011 Rev# 0

Rec'd in Sep lab by _____ on _____ Sop# _____ Rev# _____

ED/CPPT by DM on 2/5/98 Sop# RICHRC 5003 Rev# 1

Rec'd in C.R. by _____ on 2/5/98 Sop# RICHRC0008 Rev# 0

Data Reviewed by [signature] on 2-13-98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	GES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J01016 18				
	J01016 15				
1)	80101601		BHI	BOMJC5	
2)	80101602		BHI	BOMJD1	
3)	80101603		BHI	BOMJD7	
	P01016 03				
4)	80101604		BHI	BOMJC8	
5)	80101605		BHI	BOMJF3	
	P01016 05				
6)	80101606		BHI	BOMJJ1	
7)	80101607		BHI	BOMJJ4	
8)	80101608		BHI	BOMJF0	SAMPLE #08 VENTED FUMES DURING M.B.P.
9)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD 8800

2) PREP LAB RECEIVED JH 1-6-98

SOP(S) # RICHRC 5013

3) JH 1-20-98 RICHRC 5013 SAMPLE REMAINDER STORED JH 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED DM 2/5/98

SOP(S) # RICHRC 5003, R1

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	BOMJF6	
2)	80103302		BHI	BOMJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98

SOP(S) # RD 3500

2) PREP LAB RECEIVED gv 1-8-98

SOP(S) # RICHRC5013

3) gv 1-20-98 RICHRC5019 SAMPLE REMAINDER STORED gv 1-20-98

SOP(S) # N/A

4) SEPARATION LAB RECEIVED DM 2/5/98

SOP(S) # RICHRC 5003, R1

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-051

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	BOMJK0	
2)	80105102		BHI	BOMJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98

SOP(S) # RD8000

2) PREP LAB RECEIVED JH 1-8-98

SOP(S) # RICHRC5013

3) JH 1-20-98 RICHRC5013 SAMPLE REMAINDER STORED JH 1-20-98

SOP(S) # LA

4) SEPARATION LAB RECEIVED DM 2/5/98

SOP(S) # RICHRC 5003, R1

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

*** THISO ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004 BATCH NUMBER 01-117

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80111701		BHI	BOMJK6	

ACTIONS (Initial & Date)

1) INITIATED JH 1/9/98

SOP(S) # RD8800

2) PREP LAB RECEIVED JW 1-12-98

SOP(S) # RICHRC5013

3) JW 1-20-98 RICHRC 5019 SAMPLE REMAINDER STORED JW 1-20-98

SOP(S) # N/A

4) SEPARATION LAB RECEIVED DM 2/5/98

SOP(S) # RICHRC 5003, R1

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

2-23

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	GES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J010164 B				
	J010161 S	EGIE 275			
1)	80101602		BHI	BOMJD1	
	D010 1602				

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED 1-6-98

SOP(S) # RICHRC 5013

3) SAMPLE REMAINDER STORED 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED 02-03-98

SOP(S) # RICHRC 5030

ED RD 2/6/98

RICHRC5039

1st Extraction
2/5/98 DM
RICHRC 5030

5) COUNTING/MEASUREMENT LAB B 2/6/98

SOP(S) # RICHRD0008RD

6) DATA REVIEWED AND ANALYTICAL PREP STORED 2-12-98

SOP(S) # RICHRC0002 Rev 1

C154

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS I 129 **MATRIX** SOIL **DUE DATE** 3-2-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 01 016	-1B	BHI	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 01 016	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 01 016 03	-		Duplicate of Sample # 80101603
D 01 016 05	-		" " 80101605
801 016 01	-09		
033 01	-02		
051 01	-02		
117 01	-		
	-		
	-		

Batched and QC updated by JV on 1-20-98

Rec'd in Prep Lab by JV on 1-6-98 Sop# RICHRC5012/RICHRC5017 Rev# ____

Rec'd in Sep Lab by NA on ____ Sop# NA Rev# ____

Rec'd in Sep lab by ____ on ____ Sop# ____ Rev# ____

ED/CPPT by ____ on ____ Sop# ____ Rev# ____

Rec'd in C.R. by ____ on 1/20/98 Sop# RICHRC5007 Rev# 1

Data Reviewed by MC on 2-18-98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J0101618				
	J0101615	CAL 922			
1)	80101601		BHI	BOMJC5	~~REDUCE~~ 2-1-2018
2)	80101602		BHI	BOMJD1	
3)	80101603		BHI	BOMJD7	
	D0101603				
4)	80101604		BHI	BOMJC8	
5)	80101605		BHI	BOMJF3	
	D0101605				
6)	80101606		BHI	BOMJJ1	
7)	80101607		BHI	BOMJJ4	
8)	80101608		BHI	BOMJF0	
9)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD8800

2) PREP LAB RECEIVED JV 1-6-98

SOP(S) # RICHR5013/RICHR5019

3) SAMPLE REMAINDER STORED JV 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	BOMJF6	
2)	80103302		BHI	BOMJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98

SOP(S) # RD8000

2) PREP LAB RECEIVED JH 1-8-98

SOP(S) # RICHRC5013/RICHRC5017

3) SAMPLE REMAINDER STORED JH 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED ✓

SOP(S) # ✓

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-051

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	BOMJK0	
2)	80105102		BHI	BOMJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98

SOP(S) # RD 3300

2) PREP LAB RECEIVED JV 1-8-98

SOP(S) # RICHRC5013/RICHRC5017

3) SAMPLE REMAINDER STORED JV 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED ✓

SOP(S) # ✓

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004 BATCH NUMBER 01-117

QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1) 80111701		BHI	B0MJK6	

ACTIONS (Initial & Date)

1) INITIATED JH 1/9/98

SOP(S) # RD 5500

2) PREP LAB RECEIVED JH 1-12-98

SOP(S) # RICHRC 5017/RICHRC 5017

3) SAMPLE REMAINDER STORED JH 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED ✓

SOP(S) # ✓

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS GAMMA **MATRIX** SOIL **DUE DATE** 3-2-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J	-1B	BHI	QC BATCH REAGENT BLANK
J 01 016	-1X		QC BATCH MATRIX BLANK
J 01 016	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE CAL 491
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 01 016 03	-		Duplicate of Sample # 801 016 03
D 01 016 05	-		" " 801 016 05
801 016 01	- 09	W02161	
033 01	- 02		γ spec add on U235
051 01	- 02		
117 01	-		
	-		
	-		

Batched and QC updated by JW on 1-21-98

Rec'd in Prep Lab by JW on 1-6-98 Sop# RICHRC5013/RICHRC5017 Rev#

Rec'd in Sep Lab by NA on Sop# Rev#

Rec'd in Sep lab by on Sop# Rev#

ED/CPPT by on Sop# Rev#

Rec'd in C.R. by [signature] on 1/21/98 Sop# RICHRD0007 Rev# 0

Data Reviewed by JK on 2-18-98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

C160

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W021601

MATRIX : SOIL

BATCH NUMBER 01-016

	GES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J0101601X	OSBK			
	J0101601M	CAL 491			
1)	80101601		BHI	BOMJC5	
2)	80101602		BHI	BOMJD1	
3)	80101603 D0101603		BHI	BOMJD7	
4)	80101604		BHI	BOMJC8	
5)	80101605 D0101605		BHI	BOMJF3	
6)	80101606		BHI	BOMJJ1	
7)	80101607		BHI	BOMJJ4	
8)	80101608		BHI	BOMJF0	
9)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED JH 1-6-98

SOP(S) # RICHRC5013/RICHRC5017

3) SAMPLE REMAINDER STORED JH 1-21-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	BOMJF6	
2)	80103302		BHI	BOMJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98

SOP(S) # RD 0800

2) PREP LAB RECEIVED JW 1-8-98

SOP(S) # RICHRC5013/RICHRC5017

3) SAMPLE REMAINDER STORED JW 1-21-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED ✓

SOP(S) # ✓

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** GAMMA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-051

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	80MJK0	
2)	80105102		BHI	80MJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98

SOP(S) # RD 2800

2) PREP LAB RECEIVED gv 1-8-98

SOP(S) # RICHRC5012/RICHRC5017

3) SAMPLE REMAINDER STORED gv 1-21-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED ✓

SOP(S) # ✓

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

*** GAMMA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004 BATCH NUMBER 01-117

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80111701		BHI	BOMJK6	

ACTIONS (Initial & Date)

1) INITIATED JH 1/9/98

SOP(S) # RDMMD

2) PREP LAB RECEIVED JW 1-12-98

SOP(S) # RICHRC5013/RICHRC5017

3) SAMPLE REMAINDER STORED JW 1-21-98

SOP(S) # N/A

4) SEPARATION LAB RECEIVED ✓

SOP(S) # ✓

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS ALPHA **MATRIX** SOIL **DUE DATE** 3-2-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 01 016	-1B	BHI	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 01 016	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE EQEG 1899 10.141 ± 0.089858 DPM
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 01 016 03	-		Duplicate of Sample # 80101603
D 01 016 05	-		" " 80101605
801 016 01	-09		
03301	-02		WO 2161
05101	-02		
11701	-		
	-		
	-		

Batched and QC updated by JW on 1-21-98

Rec'd in Prep Lab by JW on 1-12-98 Sop# RICHRC5013/RD7222 Rev# ____

Rec'd in Sep Lab by NA on ____ Sop# ____ Rev# ____

Rec'd in Sep lab by ____ on ____ Sop# ____ Rev# ____

ED/CPPT by ____ on ____ Sop# ____ Rev# ____

Rec'd in C.R. by ____ on 1/21/98 Sop# RICHRC0203 Rev# 1

Data Reviewed by JW on 2/17/98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J010161B J010161S				
1)	80101601		BHI	BOMJC5	
2)	80101602		BHI	BOMJD1	
3)	80101603 D0101603		BHI	BOMJD7	
4)	80101604		BHI	BOMJC8	
5)	80101605 D0101605		BHI	BOMJF3	
6)	80101606		BHI	BOMJJ1	
7)	80101607		BHI	BOMJJ4	
8)	80101608		BHI	BOMJF0	
9)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED JW 1-6-98

SOP(S) # RICHRC5013/RD3222

3) SAMPLE REMAINDER STORED JW 1-21-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	BOMJF6	
2)	80103302		BHI	BOMJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED JW 1-8-98

SOP(S) # RICHRC5013/RD2222

3) SAMPLE REMAINDER STORED JW 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED ✓

SOP(S) # ✓

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** ALPHA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004 BATCH NUMBER 01-051

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	BOMJK0	
2)	80105102		BHI	BOMJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98
SOP(S) # RD 2800

2) PREP LAB RECEIVED JW 1-8-98
SOP(S) # RICHRC5013/RD3222

3) SAMPLE REMAINDER STORED JW 1-21-98
SOP(S) # NA

4) SEPARATION LAB RECEIVED ✓
SOP(S) # ✓

5) COUNTING/MEASUREMENT LAB _____
SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____
SOP(S) # _____

*** ALPHA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-117

	GES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80111701		BHI	BOMJK6	

ACTIONS (Initial & Date)

1) INITIATED 1/9/98

SOP(S) # RD3500

2) PREP LAB RECEIVED 1-12-98

SOP(S) # RICHRC 5013/RD3222

3) SAMPLE REMAINDER STORED 1-21-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS BETA **MATRIX** SOIL **DUE DATE** 3-2-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 01 016	-1B	BHI	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 01 016	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE EQAU 601 30.082 ± 0.37541 DPM
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 01 016 03	-		Duplicate of Sample # 80101603
D 01 016 05	-		" " 80101605
80101601	-09		
03301	-02		
05701	-02		
11701	-		
	-		
	-		

Batched and QC updated by JN on 1-21-98

Rec'd in Prep Lab by JN on 1-12-98 Sop# RICHRC5013/RD3222 Rev# ____

Rec'd in Sep Lab by NA on ____ Sop# ____ Rev# ____

Rec'd in Sep lab by ____ on ____ Sop# ____ Rev# ____

ED/CPPT by ____ on ____ Sop# ____ Rev# ____

Rec'd in C.R. by ____ on 1/21/98 Sop# RICHRC0003 Rev# 1

Data Reviewed by JN on 2/17/98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J0101613				
	J0101615 EQAN 601				
1)	80101601		BHI	BOMJC5	
2)	80101602		BHI	BOMJD1	
3)	80101603		BHI	BOMJD7	
	D0101603				
4)	80101604		BHI	BOMJC8	
5)	80101605		BHI	BOMJF3	
	D0101605				
6)	80101606		BHI	BOMJJ1	
7)	80101607		BHI	BOMJJ4	
8)	80101608		BHI	BOMJF0	
9)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED JH 1-6-98

SOP(S) # RICHRC5013/RD3222

3) SAMPLE REMAINDER STORED JH 1-21-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	80MJF6	
2)	80103302		BHI	80MJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98

SOP(S) # RD DRUD

2) PREP LAB RECEIVED JH 1-8-98

SOP(S) # RICHRC5013/RD3222

3) SAMPLE REMAINDER STORED JH 1-21-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED ✓

SOP(S) # ✓

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** BETA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-051

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	BOMJK0	
2)	80105102		BHI	BOMJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98

SOP(S) # RD3222

2) PREP LAB RECEIVED JH 1-8-98

SOP(S) # RICHRC5013/RD3222

3) SAMPLE REMAINDER STORED JH 1-21-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED ✓

SOP(S) # ✓

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** BETA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-117

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80111701		BHI	BOMJK6	

ACTIONS (Initial & Date)

1) INITIATED JH 1/9/98

SOP(S) # RD3300

2) PREP LAB RECEIVED JH 1-12-98

SOP(S) # RICHRC5013/RD3222

3) SAMPLE REMAINDER STORED JH 1-21-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED ✓

SOP(S) # ✓

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS Sr 90 **MATRIX** Soil **DUE DATE** ~~3-2-98~~ 2-23-98

JM 2-13-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J01016	-1B	BHI	QC BATCH REAGENT BLANK
J N/A	-1X		QC BATCH MATRIX BLANK
J01016	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE EC85347 30.108 ± 0.42927 JM
J N/A	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D01016	-03		Duplicate of Sample # 80101603
80101601	-09		WP2161
80103301	-02		
80105101	-02		
80111701	- N/A		
	-		
Doc 1-22-98			
	-		

Batched and QC updated by Doc on 1-22-98

Rec'd in Prep Lab by Doc on 1-21-98 Sop# RICHRC5013 Rev# 0

Rec'd in Sep Lab by RTM on 2/2/98 Sop# RichRC5006 Rev# 2

Rec'd in Sep lab by RTM on 2/9/98 Sop# RichRC5071 Rev# 0

ED/CPPT by _____ on _____ Sop# _____ Rev# _____

Rec'd in C.R. by [illegible] on 2/12/98 Sop# RICHRD0003 Rev# 0

Data Reviewed by [illegible] on 2/17/98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

3-2-98 JH

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J01016 1B				
	J01016 1S				
1)	80101601		BHI	BOMJC5	
2)	80101602		BHI	BOMJD1	
3)	80101603		BHI	BOMJD7	
	D0101603	Dup			
4)	80101604		BHI	BOMJC8	
5)	80101605		BHI	BOMJF3	
6)	80101606		BHI	BOMJJ1	
7)	80101607		BHI	BOMJJ4	
8)	80101608		BHI	BOMJF0	
9)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED JH 1-6-98

SOP(S) # RICHRC 5013

3) SAMPLE REMAINDER STORED JH 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

80101601, 02, 04: ALIQUOT REDUCED DUE TO high αB Screening Results 1-21-98 DC

Prep 2 rec'd: 1-21-98 DC
RICHRC 5013-0

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	BOMJF6	
2)	80103302		BHI	BOMJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98

SOP(S) # RD 0802

2) PREP LAB RECEIVED JH 1-8-98

SOP(S) # RICHRC 5013

3) SAMPLE REMAINDER STORED JH 1-20-98

SOP(S) # N/A

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

prep 2 rec'd: 1-21-98 DOL
RICHRC5013 -0

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004 BATCH NUMBER 01-057

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	BOMJK0	
2)	80105102		BHI	BOMJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98

SOP(S) # RD

2) PREP LAB RECEIVED JV 1-8-98

SOP(S) # RICHRC5013

3) SAMPLE REMAINDER STORED JV 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

prep 2 rec'd: 1-21-98
RICHRC5013

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-117

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80111701		BHI	BOMJK6	

ACTIONS (Initial & Date)

1) INITIATED JH 1/9/98

SOP(S) # RD3500

2) PREP LAB RECEIVED JN 1-12-98

SOP(S) # RICHRC5013

3) SAMPLE REMAINDER STORED JN 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

Prep 2 rec'd: 1-21-98 DC
RICHRC5013-0

PUE 3-2-98

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J0101G18 ↓ 13				
1)	80101601		BHI	BOMJC5	
2)	80101602		BHI	BOMJD1	
3)	80101603		BHI	BOMJD7	
4)	80101604		BHI	BOMJC8	
5)	80101605		BHI	BOMJF3	
6)	80101606 Dup		BHI	BOMJJ1	
7)	80101607		BHI	BOMJJ4	
8)	80101608		BHI	BOMJF0	
9)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98
SOP(S) # RD001

2) PREP LAB RECEIVED gv 1-6-98
SOP(S) # RICHRC5013

3) SAMPLE REMAINDER STORED gv 1-20-98
SOP(S) # NA

4) SEPARATION LAB RECEIVED RB 1/29/98
SOP(S) # RICHRC5029

5) COUNTING/MEASUREMENT LAB 1/29/98
SOP(S) # RICHRD0001

6) DATA REVIEWED AND ANALYTICAL PREP STORED JRC 2-2-98
SOP(S) # RICHRC0002 Rev 1

0180

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004 BATCH NUMBER 01-051

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	80MJK0	
2)	80105102		BHI	80MJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98
SOP(S) # RD8800

2) PREP LAB RECEIVED gw 1-8-98
SOP(S) # RICHRC5013

3) SAMPLE REMAINDER STORED gw 1-20-98
SOP(S) # N/A

4) SEPARATION LAB RECEIVED RB 1/29/98
SOP(S) # RICHRC5029

5) COUNTING/MEASUREMENT LAB 1/29/98
SOP(S) # RICHRD0001

6) DATA REVIEWED AND ANALYTICAL PREP STORED MK 2-4-98
SOP(S) # RICHRC0002 Rev 1

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	BOMJF6	
2)	80103302		BHI	BOMJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98
SOP(S) # RD8800

2) PREP LAB RECEIVED [illegible] 1-8-98
SOP(S) # RICHRC5013

3) SAMPLE REMAINDER STORED [illegible] 1-20-98
SOP(S) # N/A

4) SEPARATION LAB RECEIVED RB 1/29/98
SOP(S) # RICHRC5029

5) COUNTING/MEASUREMENT LAB [illegible] 1/24/98
SOP(S) # RICHRC0001

6) DATA REVIEWED AND ANALYTICAL PREP STORED MC 2-4-98
SOP(S) # RICHRC0002 Rev1

3-2-98

*** TC-99 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-117

QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1) 80111701		BHI	HOMJK6	

ACTIONS (Initial & Date)

1) INITIATED DH 1/8/98

SOP(S) # RDDDD

2) PREP LAB RECEIVED RB 1/28/98

SOP(S) # RICHRC5029

3) SAMPLE REMAINDER STORED RB 1/28/98

SOP(S) # N/A

4) SEPARATION LAB RECEIVED RB 1/29/98

SOP(S) # RICHRC5029

5) COUNTING/MEASUREMENT LAB 1/29/98

SOP(S) # RICHRD0001

6) DATA REVIEWED AND ANALYTICAL PREP STORED JK 2-4-98

SOP(S) # RICHRC0002 Rev 1

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS SE 79 **MATRIX** Soil **DUE DATE** _____

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 01 016	~~-1B~~ 2B	BH11	QC BATCH REAGENT BLANK
J _____	-1X		QC BATCH MATRIX BLANK
J 01 016	-1M or ~~1S~~ 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE RD QC 4800 SE 15 ~100 GPM
J _____	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 01 016 03	-		Duplicate of Sample # 80101603
D 01 016 05	-		" " 80101605
W 01 117 01	-		MATRIX SPIKE OF SA # 801 117 01
801 016 01	-09		
03301	-02		
05101	-02		
11701	-		
	-		

Batched and QC updated by JN on 2-6-98

Rec'd in Prep Lab by JN on 2-2-98 Sop# RICHRC5013 / RICHRC5019 Rev# _____

Rec'd in Sep Lab by RB on 2/10/98 Sop# ~~RICH~~ RB 2-17-98 RD3253 Rev# 0

Rec'd in Sep lab by RB on 2/17/98 Sop# RD3253 Rev# 0

ED/CPPT by _____ on _____ Sop# _____ Rev# _____

Rec'd in C.R. by _____ on _____ Sop# _____ Rev# _____

Data Reviewed by JK on 2-23-98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
					1-30-98 ~~BLANK VENTED FUMES DURING MBD~~
1)	80101601		BHI	BOMJC5	~~SA #~~ 1-30-98
2)	80101602		BHI	BOMJD1	
3)	80101603		BHI	BOMJD7	
4)	80101604		BHI	BOMJC8	
5)	80101605		BHI	BOMJF3	
6)	80101606		BHI	BOMJJ1	
7)	80101607		BHI	BOMJJ4	
8)	80101608		BHI	BOMJF0	
9)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD 2000

2) PREP LAB RECEIVED gw 1-6-98

SOP(S) # RICHRC 5013

3) SAMPLE REMAINDER STORED gw 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	BOMJF6	
2)	80103302		BHI	BOMJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98

SOP(S) # RD2800

2) PREP LAB RECEIVED gv 1-8-98

SOP(S) # RICHRC 5013

3) SAMPLE REMAINDER STORED gv 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-051

	GES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	BOMJK0	
2)	80105102		BHI	BOMJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98

SOP(S) # RD8800

2) PREP LAB RECEIVED JH 1-8-98

SOP(S) # RICHRC5013

3) SAMPLE REMAINDER STORED JH 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004 BATCH NUMBER 01-117

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80111701		BHI	BOMJK6	

ACTIONS (Initial & Date)

1) INITIATED JH 1/9/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED JN 1-12-98

SOP(S) # RICHRC 5013

3) SAMPLE REMAINDER STORED JN 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS URANIUM **MATRIX** SOIL **DUE DATE** 3-2-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 01 016	-1B	BHI	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 01 016	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE EQIK 268
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 01 016 03	-		Duplicate of Sample # 801 016 03
D 01 016 05	-		" " 801 01605
J 01 117 1M	-		MATRIX SPIKE OF # 801 117 01 EQIK269
801 016 01	-09		
03301	-02		
05101	-02		
11701	-		
	-		

Batched and QC updated by [illegible] on 1-22-98

Rec'd in Prep Lab by [illegible] on 1-20-98 Sop# RICHRC5013/RICHRC9019 Rev# ____

Rec'd in Sep Lab by NA on ____ Sop# NA Rev# ____

Rec'd in Sep lab by ____ on ____ Sop# ____ Rev# ____

ED/CPPT by ____ on ____ Sop# ____ Rev# ____

Rec'd in C.R. by B on 1/29/98 Sop# RICHRC5058 Rev# 1

Data Reviewed by MC on 2-12-98 Sop# RICHRC0002 Rev# 1

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Jan-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL

BATCH NUMBER 01-016

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J010161 B				
	J010161 S	EQIK 268			
1)	80101601		BHI	BOMJC5	
	80101602				
2)	80101603		BHI	BOMJD7	
	D0101603	dup			
3)	80101604		BHI	BOMJC8	
4)	80101605		BHI	BOMJF3	
	D0101605	dup			
5)	80101606		BHI	BOMJJ1	
6)	80101607		BHI	BOMJJ4	
7)	80101608		BHI	BOMJF0	
8)	80101609		BHI	BOMJC2	

ACTIONS (Initial & Date)

1) INITIATED JH 1/5/98

SOP(S) # RD 3800

2) PREP LAB RECEIVED JH 1-6-98

SOP(S) # RICHRC503

3) JW 1-20-98 RICHRC5019 SAMPLE REMAINDER STORED JH 1-20-98

SOP(S) # N/A

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

6-Jan-1998
Page 1

CUSTOMER: BHI SAF

SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004

BATCH NUMBER 01-033

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80103301		BHI	BOMJF6	
2)	80103302		BHI	BOMJF9	

ACTIONS (Initial & Date)

1) INITIATED JH 1/6/98

SOP(S) # RD8800

2) PREP LAB RECEIVED JW 1-8-98

SOP(S) # RICHRC5013

3) JW 1-20-98 RICHRC5013 SAMPLE REMAINDER STORED JW 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** URANIUM ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

7-Jan-1998
Page 1

CUSTOMER: BHI SAF SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004 BATCH NUMBER 01-051

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80105101		BHI	BOMJK0	
2)	80105102		BHI	BOMJJ7	

ACTIONS (Initial & Date)

1) INITIATED JH 1/7/98

SOP(S) # RD8800

2) PREP LAB RECEIVED JW 1-8-98

SOP(S) # RICHRC5013

3) JW 1-20-98 RICHRC5019 SAMPLE REMAINDER STORED JW 1-20-98

SOP(S) # N/A

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** URANIUM ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

9-Jan-1998
Page 1

CUSTOMER: BHI SAF SAMPLE DELIVERY GROUP W02161

MATRIX : SOIL B98-004 BATCH NUMBER 01-117

QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1) 80111701		BHI	BOMJK6	
~~10111701~~ 20111711M		mS	EQIK 269	

ACTIONS (Initial & Date)

1) INITIATED JH 1/9/98

SOP(S) # RD 0002

2) PREP LAB RECEIVED JW 1-12-98

SOP(S) # RICHRC 5013

3) JW 1-20-98 RICHRC5019 SAMPLE REMAINDER STORED JW 1-20-98

SOP(S) # NA

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____