

Bechtel Hanford

Analysis By

Severn Trent Laboratories Richland

2800 G.W. Way, Richland, Wa 99352, (509) 375-3131

Report Nbr: 10520

SDG No.	SAF No.	CLIENT ID No.	STL ID No.
W03176	B99-014	B0XC25 B0XC26	9DDCXP10 9DDCXW10

RECEIVED
AUG 17 2000

EDMC

MAY 2000
RECEIVED
Data
Log In

Comments:

Quanterra
2800 George Washington Way
Richland, Washington 99352-1613

509 375-3131 Telephone
509 375-5590 Fax

CERTIFICATE OF ANALYSIS

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

May 24, 2000

Attention: Joan Kessner



SAF Number : B99-014
Date SDG Closed : May 18, 2000
Number of Samples : Two (2)
Sample Type : Water
SDG Number : W03176
Data Deliverable : 7-Day / Summary

I. Introduction

On May 18, 2000, two water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Bechtel Hanford, Inc. (BHI) specific IDs:

<u>STLR ID#</u>	<u>BHI ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
9DDCXP10	B0XC25	WATER	5/18/00
9DDCXW10	B0XC26	WATER	5/18/00

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 analysis was: **Gas Proportional Counting**
Total Strontium by method RICH-RC-5006

Bechtel Hanford, Inc.
May 24, 2000
Page 2

III. Quality Control

The analytical results for each analysis performed under SDG W03176 includes a minimum of two Laboratory Control Samples (LCS) and one method (reagent) blank. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

IV. Comments

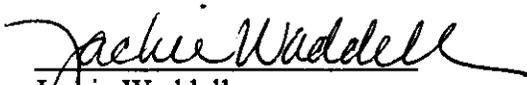
Gas Proportional Counting

Total Strontium by method RICH-RC-5006:

The achieved MDA for sample B0XC25 does not meet the CRDL due to a reduced volume analyzed. The detected activity exceeds the achieved MDA and the data are accepted for reporting. Except as noted, the laboratory control samples, batch blank and sample results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:


Jackie Waddell
Project Manager

BLANK RESULTS

LAB NAME: STL Richland

SDG /RPT GRP: W03176 / 10520

LOT,RPT DB ID: J0E180000-362 DDDD011B

MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT- CH
STRONTIUM	9.59E-01	U	1.4E+00	1.4E+00	3.01E+00	pCi/L	97.90%	RICHRC5006	DDDD0	0139362

Number of Results:

LABORATORY CONTROL SAMPLE

LAB NAME: STL Richland **SDG: /RPT GRP:** W03176 / 10520
LAB SAMPLE ID: DDDD012S **MATRIX:** WATER

ANALYTE	RESULT	COUNTING Q ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
STRONTIUM	5.77E+01	4.6E+00	1.7E+01	2.97E+00	pCi/L	97.60%	6.79E+01	84.95%

Number of Results:

STL RICHLAND
Data Review Checklist
RADIOCHEMISTRY

Priority

Lot Number: <u>JOE 180209</u>					
Client ID: <u>BHL</u>					
Due Date: <u>5-23-00</u>					
QC Batch Number: <u>0139362</u>			SDG Number: <u>3174</u>		
Method Test Parameter: <u>TOTAL Sr</u>					
Matrix: <u>Water</u>					
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)	
A. Calibration					
1. Is the calibration documentation included where applicable?			✓	✓	
B. Sample Analysis					
1. Are the sample yields within acceptance criteria?	✓			↓	
2. Were all sample holding times met?	✓				
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓				
C. QC Samples					
1. Is the blank yield within acceptance criteria?	✓				
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓				
3. Does the blank result meet the Contract criteria?	✓				
4. Is the blank result < the 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. Do the MS/MSD results and yields meet acceptance criteria?			✓		
10. Do the duplicate sample results and yields meet acceptance criteria?			✓		
D. Other					
1. Are all Nonconformances included and noted?			✓		
2. Are all required forms filled out?	✓				
3. Was the correct methodology used?	✓				
4. Was transcription checked?	✓				
5. Were all calculations checked at a minimum frequency?	✓				
6. Were units checked?	✓				

Comments on any "No" response: Samples results > IDC > CRDL

First Level Review: *Pamela Kemnitz* Date: 5-23-00
 Second Level Review: *Jacqui Waddell* Date: 5/24/00

CHAIN OF CUSTODY

Q-27040

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B99-014-3	Page #	Errat of #Errat	
Collector Kevin D. HUGHES	Company Contact Julian Laurenz	Telephone No. 372-9582	Project Coordinator TRENT, SJ		Price Code 1D	Data Turnaround 7 Days			
Project Designation 100-NR-2 Pump & Treat Operational Sampling		Sampling Location 100-NR-2 N-SPRINGS Pump and Treat		SAF No. B99-014	Air Quality <input type="checkbox"/>				
Ice Chest No. 5-15-00 N/A ERC 97-079	Field Logbook No. EL-1345-1	COA R10NR2C560	Method of Shipment Govt Vehicle			Bill of Lading/Air Bill No. N/A			
Shipped To Quantem Incorporated		Offsite Property No. N/A							
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	N/A				
				Type of Container	P				
				No. of Container(s)	Z				
				Special Handling and/or Storage	Volume 500 mL				
SDC W03176				Tone 525 SAMPLE ANALYSIS JOE180209 SR90					
Sample No.	Matrix *	Sample Date	Sample Time						
BOXC25	Water	5/18/00	07:35	X	DOCXP				
BOXC26	Water	5/18/00	07:36	X	DOCXW				
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By Kevin D. HUGHES		Date/Time 5/18/00		Received By R. F. [Signature]		Date/Time 10:00		Influent = BoxC25 Effluent = BoxC26 Prior Data < 2000 pgu/g	S - Soil SE - Sediment SO - Solid S - Sludge W - Water O - Oil A - Air DS - Drum Labels DL - Drum Labels T - Tissue WT - Wipe L - Liquid V - Vegetation X - Other
Relinquished By R. F. [Signature]		Date/Time 1/00		Received By [Signature]		Date/Time 5-18-00			
Relinquished By [Signature]		Date/Time 5-18-00		Received By [Signature]		Date/Time 5-18-00			
Relinquished By		Date/Time		Received By		Date/Time			
Relinquished By		Date/Time		Received By		Date/Time			
Relinquished By		Date/Time		Received By		Date/Time			
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

0011

Figure 1. Sample Check-in List

Date/Time Received: 5/18/00 11:00 SDG#: W03176
 Work Order Number: JOE180209 SAF#: B99-014
 Shipping Container ID: ER697079 Chain of Custody #: B99-014-3

1. Outermost shipping container damaged? Yes No
2. Custody Seals on shipping container intact? Yes No
3. Custody Seals dated and signed? Yes No
4. Chain-of-Custody record present? Yes No
5. Chain-of-Custody includes the following information:
 - Client name Yes No
 - Project name or number Yes No
 - Sample date/time for each sample Yes No
 - Container types, sizes and number of containers Yes No
 - Short description of sample, i.e., matrix Yes No
 - Analyses requested Yes No
 - Preservation used or "none" or N/A if not applicable Yes No
 - Date and time of relinquish and receipt Yes No
 - Signatures of those persons relinquishing and receiving Yes No
6. Sample numbers on chain of custody match those on sample containers? Yes No
7. Collection date and date of laboratory receipt are within project specific holding time requirements? Yes No
8. Cooler temperature: 40C 2 Bottles
9. Vermiculite/packing materials is: Wet Dry

10.	Samples have: <input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
	<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
11.	Samples are: <input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
	<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

12. Were any anomalies identified in sample receipt? Yes No
13. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: K. Pattenberg Date: 5-18-00 11:00
 Telephone/Fax/E-mailed to: _____ On _____ By _____

Client Sample Screening Results

18-May-00

Ⓟ 5/18/00

CLIENT CODE	ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B	
BII	BOXC25DDCXP		5/18/2000 11:26:00 AM	QUAD21A	5/18/2000 12:26:55 PM	BOXC25DDCXP	30	7	0.163333333	125	3.17666667	
	DIXXP	LIQUID		Bkg:	5/18/2000 2:20:17 AM	BKG	600	42	0.07	594	0.99	
Anal Date:	5/18/00	Tot Sa, Alq:	5.00E-01	, 1.00E+00	Alp:	(Dpm/ 3.71E-01	(uCi/ 8.36E-05	(pCi/ 1.67E+02	+ 2.1E+02	CAT	1.5E-01	Lab
Ppt mg:	0	Units:	L	, ml	Bet:	Alq: 6.24E+00	Sa): 1.40E-03	L/g): 2.81E+03	+ 3.3E+02	1	1.8E-02	Alq
												L/g
BII	BOXC26DDCXW		5/18/2000 11:26:00 AM	QUAD21B	5/18/2000 12:26:55 PM	BOXC26DDCXW	30	10	0.245	43	0.52666667	
	DIXW	LIQUID		Bkg:	5/18/2000 2:20:17 AM	BKG	600	53	0.088333333	544	0.90666667	
Anal Date:	5/18/00	Tot Sa, Alq:	5.00E-01	, 1.00E+00	Alp:	(Dpm/ 7.48E-01	(uCi/ 1.69E-04	(pCi/ 3.37E+02	+ 2.3E+02	CAT	7.4E-02	Lab
Ppt mg:	0.1	Units:	L	, ml	Bet:	Alq: 8.67E-01	Sa): 1.95E-04	L/g): 3.90E+02	+ 1.9E+02	1	1.3E-01	Alq
												L/g

0013

18-May-00

Quanterra Environment Services, SCP V2.03

1

RQC053

Parent Batch:
Associated Batches:

:
:
:

PRIORITY
Today

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

* QC BATCH: 0139362 *

W03176

TH: Total Strontium by GPC
CG: Sr-Total Prp/SepRC5006
SI: CLIENT: HANFORD

PRIORITY
Today

Run Date: 5/18/00
Time: 14:18:14

Page: 1

Analytical Due Date: 5/25/00

Project Manager: JW2

Lot# Work Order	Analyt Due Client Matrix	Client Name Aliquot Geometry	Count	Time	Mid/Ave Date/Time	Tracer ID Spike ID	CRDL	Units	Screen Info - (Ci) Alpha Beta	PM Bin
JOE180209-001 DDCXP-1-01 WATER Comments: WATER	5/25/00	Bechtel Hanford, .0000	.000		5/18/00 7:35		2.00E+00	pCi/L	**NYS **NYS 60-05/00	JW2
		<i>60 ml</i>								
JOE180209-002 DDCXW-1-01 WATER Comments: WATER	5/25/00	Bechtel Hanford, .0000	.000		5/18/00 7:36		2.00E+00	pCi/L	**NYS **NYS 60-05/00	JW2
JOE180000-362 B DDDDO-1-01 WATER Comments:	5/25/00	Bechtel Hanford,			5/18/00 7:35		2.00E+00	pCi/L	**NA **NA	JW2
JOE180000-362 C DDDDO-1-02 WATER Comments:	5/25/00	Bechtel Hanford,			5/18/00 7:35		2	pCi/L	**NA **NA	JW2
JOE180000-362 C DDDDO-1-03 WATER Comments:	5/25/00	Bechtel Hanford,			5/18/00 7:35		2	pCi/L	**NA **NA	JW2

Total Number of Samples In Batch: 00005

Batch Information:

Dry Wt: N

Decay Correct: Y

Blank Sub: None

Call In:

Uncert: Both

Sigma: 1.960

ODR: Target List + Other Detected

BLANK CRDL
SEFONIUM 90

2.00E+00

Tracer Yield
Strontium Trace (020-105)

Type
RPD

QC Control Limits

** NYS = Not Yet Screened

** NA = Not Applicable

** Other = Other than Gross Alpha or Gross Beta

++ Indicates that Batch Information has changed for this sample. Print worksheet for details.

0014

COC Signature Page

W03776

Lot or Batch #: 0139302	Initials/Date	Procedure #
Released By	HA 5-18-00	RIKHC0009
Received	OM 5-18-00	RIKHC 5006
Released By	OM 5-19-00	n/a
Received	CR 5/19/2000	RICHARD003REV2
Released By	W 5/21/00	n/a
Received	JM 5-22-00	RICHARD 2.8.2-1
Released By	JM 5-22-00	n/a
Received	PK 5-22-00	RICHARD002
Released By	PK 5-23-00	n/a
Received		
Released By		n/a
Received		
Released By		n/a
Received		