

0057943

W03774

Analytical Data Package Prepared For

Bechtel Hanford

Radiochemical Analysis By

STL Richland

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

Assigned Laboratory Code: STLRL

Data Package Contains 23 Pages

Report No.: 19716

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
W03774		B14MB9	J2E200144-		9E1PL410	2140189

RECEIVED
AUG 19 2002

EDMC



CERTIFICATE OF ANALYSIS

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

June 4, 2002

Attention: Joan Kessner

SAF Number	:	B00-056
Date SDG Closed	:	May 20, 2002
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W03774
Data Deliverable	:	15 Day/Summary

I. Introduction

On May 20, 2002, one water sample was received at STL Richland (STLR) for chemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Bechtel Hanford, Inc. (BHI) specific ID:

<u>STLR ID#</u>	<u>BHI ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
E1PL4	B14MB9	WATER	5/20/02

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: **Chemical Analysis**
Chromium Hex by EPA method 7196

III. Quality Control

The analytical results for each analysis performed under SDG W03741 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

Bechtel Hanford, Inc.
June 4, 2002
Page 2

Quality control sample results are reported in mg/L.

IV Comments

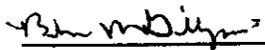
Chemical Analyses

Chromium Hex by EPA method 7196:

The MS (B14MB9) and MS/MSD (B14MB9) were below 30%. The post digestive spike recovery was 34% confirming matrix effects from the sample. The sample had heavy particulate and was filtered, spiked and then processed. All remaining sample was used. The LCS, batch blank, sample duplicate (B14MB9), 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:



Barbara M. Gillespie
Project Manager

Drinking Water Method Cross References

DRINKING WATER ASTM METHOD CROSS REFERENCES		
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, $R = \text{constants} * f(x,y,z,\dots)$. The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/\sqrt{n}), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) <i>u_c - Combined Uncertainty.</i>	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, <i>u_c the combined uncertainty.</i> The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgndCnt} / \text{BkgndCntMin}) / \text{SCntMin})) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$. For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. $MDC = (4.65 * \text{Sqrt}((\text{BkgndCnt} / \text{BkgndCntMin}) / \text{SCntMin}) + 2.71 / \text{SCntMin}) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$. For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
RER	The equation Replicate Error Ratio = $(S - D) / [\text{sqrt}(\text{TPUs}^2 + \text{TPUd}^2)]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 04-Jun-02

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Report No. : 19716

SDG No: W03774

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC MDA	RER
B14MB9	9E1PL410	HEXCHROME	5.00E-03 +- 0.0E+00		mg/L	N/A	2.00E-03	
B14MB9 DUP	E1PL41AE	HEXCHROME	5.00E-03 +- 0.0E+00		mg/L	N/A	2.00E-03	
Number of Results:		2						

QC Results Summary
STL Richland STLRL
 Ordered by QC Type, Batch No.

Date: 04-Jun-02

Report No. : 19716

SDG No.: W03774

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC MDA
MATRIX SPI	E1PL41AC	HEXCHROME	1.52E-01 +- 0.0E+00		mg/L	N/A	28.90%	-0.7	2.00E-03
MATRIX SPI	E1PL41AD	HEXCHROME	1.41E-01 +- 0.0E+00		mg/L	N/A	26.81%	-0.7	2.00E-03
LCS	E1P521AC	HEXCHROME	5.07E-01 +- 0.0E+00		mg/L	N/A	101.40%	0.0	2.00E-03
BLANK QC	E1P521AA	HEXCHROME	0.00E+00 +- 0.0E+00	U	mg/L	N/A			2.00E-03

Number of Results: 4

FORM I

Date: 04-Jun-02

SAMPLE RESULTS

Lab Name: STL Richland

SDG: W03774

Collection Date: 5/20/2002 8:20:00 AM

Lot-Sample No.: J2E200144-

Report No. : 19716

Received Date: 5/20/2002 11:05:00 AM

Client Sample ID: B14MB9

COC No. : B00-056-033

Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Count Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Allquot Size	Analy Method, Primary Detector
Batch: 2140189	Work Order:				Report DB ID: 9E1PL410							
HEXCHROME	5.00E-03			0.0E+00	2.00E-03	mg/L	N/A	(2.5) N/A	5/20/02		100.0 ML	EPA7196

Number of Results: 1

Comments:

8000

FORM II

Date: 04-Jun-02

DUPLICATE RESULTS

Lab Name: STL Richland
 Lot-Sample No.: J2E200144-
 Client Sample ID: B14MB9 DUP

SDG: W03774
 Report No. : 19716
 COC No. : B00-056-033

Collection Date: 5/20/2002 8:20:00 AM
 Received Date: 5/20/2002 11:05:00 AM
 Matrix: WATER

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2140489	Work Order:			Report DB ID: E1PL41AE		Orig Sa DB ID: 9E1PL410						
HEXCHROME	5.00E-03			0.0E+00	2.00E-03	mg/L	N/A	(2.5)	5/20/02		100.0	EPA7196
	5.00E-03	RPD	0.0					N/A			ML	

Number of Results: 1

Comments:

6009

FORM II
BLANK RESULTS

Date: 04-Jun-02

Lab Name: STL Richland

SDG: W03774

Lot-Sample No.: J2E200144-

Report No. : 19716

Matrix: WATER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MD A,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2140489	Work Order:			Report DB ID: E1P521AA								
HEXCHROME	0.00E+00	U		0.0E+00	2.00E-03	mg/L	N/A	0. N/A	5/20/02		100.0 ML	EPA7196

Number of Results: 1

Comments:

0010

FORM II
LCS RESULTS

Date: 04-Jun-02

Lab Name: STL Richland

SDG: W03774

Lot-Sample No.: J2E200144-

Report No. : 19716

Matrix: WATER

Parameter	Result	Count Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MD	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2140489	Work Order:	Report DB ID: E1P521AC											
HEXCHROME	5.07E-01		0.0E+00	2.00E-03	mg/L	N/A	5.00E-01			101.40%	5/20/02	100.0	EPA7196
						Rec Limits:				0.0		ML	

Number of Results: 1

Comments:

0011

FORM II
MATRIX SPIKE RESULTS

Date: 04-Jun-02

Lab Name: STL Richland

SDG: W03774

Lot-Sample No.: J2E200144-

Report No. : 19716

Matrix: WATER

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MD	Rpt Unit, CRDL	Yield	Rec- overy	Exp- ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2140489	Work Order:			Report DB ID: E1PL41AD		Orig Sa DB ID: 9E1PL410							
HEXCHROME	1.41E-01			0.0E+00	2.00E-03	mg/L	N/A	26.81%	5.26E-01		5/20/02	100.0	EPA7196
	5.00E-03	RPD	1.9									ML	
HEXCHROME	1.52E-01			0.0E+00	2.00E-03	mg/L	N/A	28.90%	5.26E-01		5/20/02	100.0	EPA7196
	5.00E-03	RPD	1.9									ML	

Number of Results: 2

Comments:

0012

SEVERN

TRENT

SERVICES

Richland Laboratory
Data Review Check List
METALS

Work Order Number(s): EIPL4		BATCH # 2140489		
Lab Sample Numbers or SDG: W03774		LOT# J2E200144		
Method/Test/Parameter: CR+6 IN WATER		RICHWC 5003 R.4		
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient within QC limits?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits?	✓			✓
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters \leq reporting limit?	✓			✓
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within QC limits?	✓			✓
2. CCB analyzed at required frequency and all results \leq reporting limit?	✓			✓
C. Sample Analysis				
1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?			✓	✓
2. Were all sample holding times met?	✓			✓
D. QC Samples				
1. All results for the preparation blank below limits?	✓			✓
2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable?		✓		✓
3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable?	✓			✓
4. Analytical spikes within QC limits where applicable?			✓	✓
5. ICP only: One serial dilution performed per SDG?			✓	✓
6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency?			✓	✓
7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits?			✓	✓

SEVERN

TRENT

SERVICES

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 2140489

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Calibration			
1. Is the calibration documentation included?	✓		X and
B. Sample Analysis			
1. Are the sample yields within acceptance criteria?			✓
2. 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. Were units checked?	✓		

Comments on any "No" response:

Matrix Interference

Second Level Review: Sh m b t p w

Date: 5/30/02

Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
E. Other				
1. Are all nonconformances included and noted? JO 5535	✓			✓
2. Is the correct date and time of analysis shown?	✓			✓
3. Did the analyst sign and date the front page of the analytical run?	✓			✓
4. Correct methodology used?	✓			✓
5. Transcriptions checked?	✓			✓
6. Calculations checked at minimum frequency?	✓			✓
7. Units checked?	✓			✓

Comments on any "No" response:

D2) SPIKE RECOVERIES FROM MS/MSD AND MS RERUN.
 & POST DIGESTIVE SPIKE WERE ALL BELOW G.C.
 LIMITS.

Analyst: Martha Salvi

Date: 5-28-02

Second-Level Review: [Signature]

Date: 5-30-02

Clouseau Nonconformance Memo



NCM #: J05535	Classification: Anomaly
NCM Initiated By: Dale OConnell	Status: QAREVIEW
Date Opened: 05/30/02	Production Area: Classical Chemistry
Date Closed: N/A	Tests: 7196A
	Lot #'s (Sample #'s): J2E200144 (1)
	QC Batch: 2140489
Nonconformance: Batch Result Out of Limits	
Subcategory: MS/MSD result outside acceptance limits	

Problem Description / Root Cause

Name	Date	Description
Dale OConnell	05/30/02	Matrix effect confirmed upon analysis of post-digestive spike

Corrective Action

Name	Date	Corrective Action
Dale OConnell	05/30/02	Report results

Approval History

Name	Date Approved:	Position
Dale OConnell	05/30/02	

CHAIN OF CUSTODY

U-21023

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B00-056-033		Page 1 of 1			
Collector R.B. Kerkow		Company Contact R.B. Kerkow		Telephone No. 372-2187		Project Coordinator TRENT, SJ		Price Code 7c		Data Turnaround		
Project Designation 100-NR-1 TSD Sites R. A. Sampling - Water		Sampling Location 116-N-3, Decon Pad Sump (5)		SAF No. B00-056		Air Quality <input type="checkbox"/>		15/15				
Ice Chest No. ELC-99-024		Field Logbook No. EL-1524-1		COA R1325N2600		Method of Shipment Government vehicle						
Shipped To Severn Trent Incorporated, Richland		Offsite Property No.			Bill of Lading/Air Bill No.							
POSSIBLE SAMPLE HAZARDS/REMARKS Potentially Radioactive Special Handling and/or Storage None				Preservation		None	Cool 4C					
				Type of Container		P	G					
				No. of Container(s)		1	1					
				Volume		20mL	500mL					
SDG W03774 SAMPLE ANALYSIS Due 6-04 J2E200144				Activity Scan		Chromium Hex - 7196						
Sample No.	Matrix *	Sample Date	Sample Time									
B14MB9 E1PL4	WATER	5-20-02	0820	X	X							
CHAIN OF POSSESSION Sign/Print Names				SPECIAL INSTRUCTIONS Lab COA: R1325N2F00						Matrix * S=Soil SE=Sediment SO=Solid S=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By RB Kerkow, ERC		Date/Time 5-20-02		Received By A. Fincheart		Date/Time 5-20-02						
Relinquished By		Date/Time		Received By		Date/Time						
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				

00100

ERC Radiological Counting Facility Analysis Report

RCF Number RCF10242

Sample Date & Time 5/15/2002 0930Project ID: 116-N-3SAF Number: B00-056Date Analyzed 5/16/2002 12:3Sample ID: B14MB6

Gamma Energy Analysis

Nuclide	Activity (pCi/g)	Error (pCi/g)	MDC (pCi/g)
K-40	< 2.6E+00		2.6E+00
Co-60	< 3.3E-01		3.3E-01
Cs-137	< 3.2E-01		3.2E-01
Eu-152	< 6.4E-01		6.4E-01
Eu-154	< 8.9E-01		8.9E-01
Eu-155	< 7.5E-01		7.5E-01
Am-241	< 3.9E-01		3.9E-01

TIE TO:
B14MB9

Total GEA (pCi/g)

+/-

	Activity (pCi/g)	Error (pCi/g)
Gross Alpha**	4.5E-02	+/- 3.9E-02
Gross Beta	1.5E+00	+/- 1.5E-01

Alpha MDC (pCi/g)
2.6E-02

Beta MDC (pCi/g)
8.5E-01

Definitions:

All errors reported at 2 standard deviations.

N/R = no result or analysis not requested. <MDC = Less than detection limit.

All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.

Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.

The analysis of Np-237 is based on the activity of Pa-233.

²³⁵U is the activity of ²¹⁴Pb and ²¹⁴Bi, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.

²³²Th is the activity of ²²⁸Ac, ²¹²Pb, and ²⁰⁸Tl, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.

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

**The gross alpha results are not corrected for mass absorption

* No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst



T.J. Salda

5/20/2002

Report To

Richard Kerkow

Joun Kessner

Fax

372-8655

372-9467

Report Printed: Monday, May 20, 2002

0019

Sample Check-in List

Date/Time Received: 05/20/02 @ 11:05 a.m.
 Client: BHT SDG #: W03974 NA SAF #: B00-56 NA
 Work Order Number: J2E200144 Chain of Custody # B00-056-033
 Shipping Container ID: ERC-99-006 Air Bill # N/A

1. Custody Seals on shipping container intact? NA Yes No
2. Custody Seals dated and signed? NA Yes No
3. Chain of Custody record present? Yes No
4. Cooler temperature: 4°C NA 5. Vermiculite/packing materials is NA Wet Dry
6. Number of samples in shipping container: 2
7. Sample holding times exceeded? NA Yes No
8. Samples have:
 - tape hazard labels
 - custody seals appropriate samples labels
9. Samples are:
 - in good condition leaking
 - broken have air bubbles
 (Only for samples requiring head space)
10. Sample pH taken? NA pH < 2 pH > 2
11. Sample Location, Sample Collector Listed? * Yes No
 *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes No
13. Description of anomalies (include sample numbers): _____

Sample Custodian: [Signature] Date: 05/20/02

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[] No action necessary; process as is.

Project Manager _____ Date _____

5/20/2002 3:22:10 PM

Sample Preparation/Analysis

Balance Id: _____

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
EA Chromium, Hexavalent (7196A)

Pipet #: _____

Report Due: 06/04/2002 **WO 3774**

51 CLIENT: HANFORD

PRIORITY

Sep1 DT/Tm Tech: _____

Batch: 2140489 WATER mg/L

PM, Quote: BG1, 27023

Sep2 DT/Tm Tech: _____

SEQ Batch, Test: None

Prep Tech: _____

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 E1PL4-1-AA J2E200144-1-SAMP								
05/20/2002 08:20			AmtRec: 500P,20ML	#Containers: 2		Scr Rst:	Alpha:	Beta:
2 E1PL4-1-AC-S J2E200144-1-MS								
05/20/2002 08:20			AmtRec: 500P,20ML	#Containers: 2		Scr Rst:	Alpha:	Beta:
3 E1PL4-1-AD-D J2E200144-1-MSD								
05/20/2002 08:20			AmtRec: 500P,20ML	#Containers: 2		Scr Rst:	Alpha:	Beta:
4 E1PL4-1-AE-X J2E200144-1-DUP								
05/20/2002 08:20			AmtRec: 500P,20ML	#Containers: 2		Scr Rst:	Alpha:	Beta:
5 E1PS2-1-AA-B J2E200000-489-BLK								
05/20/2002 08:20			AmtRec:	#Containers: 1		Scr Rst:	Alpha:	Beta:
6 E1PS2-1-AC-C J2E200000-489-LCS								
05/20/2002 08:20			AmtRec:	#Containers: 1		Scr Rst:	Alpha:	Beta:

6021

Sample Preparation/Analysis

Balance Id: _____

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
 EA Chromium, Hexavalent (7196A)
 5I CLIENT: HANFORD

Pipet #: _____

Report Due: 06/04/2002

Sep1 DT/Tm Tech: _____

Batch: 2140489 mg/L

Sep2 DT/Tm Tech: _____

SEQ Batch, Test: None

Prep Tech: _____

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Ini/Date
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Comments:

All Clients for Batch:
 127642, BECHTEL HANFORD, INC. Bechtel Hanford, Inc. , B01, 27023

E1PL41AA-SAMP Constituent List:

E1PL41AC-MS Constituent List:

E1PL41AD-MSD:

E1P521AA-BLK:

E1P521AC-LCS:

E1PL41AA-SAMP Calc Info:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

E1PL41AC-MS Calc Info:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

E1PL41AD-MSD:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

E1P521AA-BLK:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

E1P521AC-LCS:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

0022

5/30/02 2:34:52 PM

ICOC Fraction Transfer/Status Report

ByDate: 4/30/02, 5/31/02, Batch: '2140489', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
2140489				
AC	Prep1C	FABREM	5/20/02 3:30:30 PM	
SC		MillerKV	IsBatched 5/20/02 3:22:03 PM	ICOC_RADCALC v4.5.3.2
SC		FABREM	Prep1C 5/20/02 3:30:30 PM	RICH-WC-5003 REVISION 5
SC		FABREM	Prep1C 5/20/02 7:45:50 PM	RICH-WC-5003 REVISION 5
AC		FABREM	5/20/02 7:45:50 PM	

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AC: Accepting Entry, SC: Status Change

STL Richland
Richland Wa.