SAF-B03-015
Remaining Sites Confirmation
Sampling-Soil
FINAL DATA PACKAGE

MAIL COMPLETE COPY OF DATA PACKAGE TO:

Bob Hynes X0-17 ___NB 8-22-05
INITIAL/DATE

Jeanette Duncan 1 copy(s) clipped ___NB 8-22-05
INITIAL/DATE

COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE COVER SHEET)

SDG W04703 SAF-B03-015

Rad only   X   Chem only   Rad & Chem

X   Complete   Partial

Sample Location/Waste Site: 100-D-13

Analytical Data Package Prepared For

Bechtel Hanford

Radiochemical Analysis By

STL Richland

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code: STLRL

Data Package Contains 21 Pages

Report No.: 29491

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
W04703	B03-015	J03706-A	J5G110222-1	HE8XJ1AA	9HE8XJ10	5194172
		J03707-A	J5G110222-2	HE8XN1AA	9HE8XN10	5194172
		J03708-A	J5G110222-3	HE8XP1AA	9HE8XP10	5194172

NB 8/22/05

Certificate of Analysis

Bechtel Hanford, Inc.
3190 George Washington Way
MSIN H9-02
Richland, WA 99354

July 21, 2005

Attention: Joan Kessner

SAF Number	:	B03-015
Date SDG Closed	:	July 11, 2005
Number of Samples	:	Three (3)
Sample Type	:	Other/Solid
SDG Number	:	W04703
Data Deliverable	:	15 Day/ Summary

CASE NARRATIVE

I. Introduction

On July 11, 2005, three other/solid samples were received at STL Richland (STLR) for chemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Bechtel Hanford, Inc. (BHI) specific IDs:

BHI ID#	STLR ID#	MATRIX	DATE OF RECEIPT
J03706	HE8XJ	OTHER SOLID	7/11/05
J03707	HE8XN	OTHER SOLID	7/11/05
J03708	HE8XP	OTHER SOLID	7/11/05

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during sample check in.

III. 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.

Bechtel Hanford, Inc.
July 21, 2005
Page 2

The requested analysis was: **Chemical Analyses**
Hexavalent Chromium by EPA method 7196A

IV.   Quality Control

The analytical results for each analysis performed under SDG W04703 includes 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.

QC and sample results are reported in the same units.

V.   Comments

Chemical Analyses
Hexavalent Chromium by EPA method 7196A:
The LCS, batch blank, sample, sample matrix spike and sample duplicate (J03708) 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:

[signature]
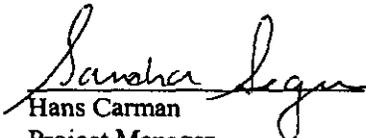
Hans Carman
Ꮜᴑᵲ   Project Manager

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 = constants * f(x,y,z,...). 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/vn), 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) u_c _Combined Uncertainty._	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, u_c _the combined uncertainty_. 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 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * 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 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * 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)/[sqrt(TPUs² + TPUd²)] 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.

Report No. : 29491

SDG No: W04703

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC or MDA	CRDL	RPD
5194172 7196_CR6									
J03706									
	HE8XJ1AA	HEXCHROME	3.50E-01 +- 0.0E+00	U	mg/kg	N/A	3.50E-01	3.50E-01	
J03707									
	HE8XN1AA	HEXCHROME	3.50E-01 +- 0.0E+00	U	mg/kg	N/A	3.50E-01	3.50E-01	
J03708									
	HE8XP1AA	HEXCHROME	3.50E-01 +- 0.0E+00	U	mg/kg	N/A	3.50E-01	3.50E-01	
	HE8XP1AE	HEXCHROME	3.50E-01 +- 0.0E+00	U	mg/kg	N/A	3.50E-01	3.50E-01	0.0

No. of Results: 4

STL Richland   **RPD**   - Relative Percent Difference.

rptSTLRchSaSum   **U Qual** - Analyzed for, but the result is less than the Mdc/Mda Total Uncert or gamma scan software did not identify the nuclide.
mary2 V4.13 A97

Report No. : 29491

SDG No.: W04703

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
7196_CR6								
5194172 BLANK QC								
HFCVQ1AA	HEXCHROME	3.50E-01 +- 0.0E+00	U	mg/kg	N/A			3.50E-01
5194172 MATRIX SPIKE								
HE8XP1AC	HEXCHROME	3.87E+01 +- 0.0E+00		mg/kg	N/A	97%	0.0	3.50E-01
5194172 LCS								
HFCVQ1AC	HEXCHROME	3.94E+01 +- 0.0E+00		mg/kg	N/A	98%	0.0	3.50E-01

No. of Results: 3

STL Richland   **Bias**   - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchQcSum   U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

mary V4.13 A97

FORM I

SAMPLE RESULTS

Date: 25-Jul-05

Lab Name:	STL Richland	SDG: W04703	Collection Date: 7/11/2005 9:29:00 AM
Lot-Sample No.:	J5G110222-1	Report No. : 29491	Received Date: 7/11/2005 12:03:00 PM
Client Sample ID:	J03706 - A	COC No. : B03-015-302	Matrix: SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	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	Aliquot Size	Primary Detector
Batch: 5194172	7196_CR6			Work Order: HE8XJ1AA			Report DB ID: 9HE8XJ10					
HEXCHROME	3.50E-01	U		0.0E+00	3.50E-01	mg/kg	N/A	(1.)	7/12/05		2.5	
					3.50E-01		N/A				G	

No. of Results: 1   Comments:

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 25-Jul-05

Lab Name:	STL Richland	SDG:	W04703	Collection Date:	7/11/2005 10:50:00 AM
Lot-Sample No.:	J5G110222-2	Report No. :	29491	Received Date:	7/11/2005 12:03:00 PM
Client Sample ID:	J03707-A	COC No. :	B03-015-302	Matrix:	SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	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	Aliquot Size	Primary Detector
Batch: 5194172	7196_CR6			Work Order: HE8XN1AA		Report DB ID: 9HE8XN10						
HEXCHROME	3.50E-01	U		0.0E+00	3.50E-01	mg/kg	N/A	(1.)	7/12/05		2.5	
					3.50E-01			N/A			G	

No. of Results: 1   Comments:

STL Richland   MDC\|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
rptSTLRchSample   U Qual - Analyzed for, but the result is less than the Mdc/Mda\|Total Uncert or gamma scan software did not identify the nuclide.
V4.13 A97

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FORM I

Date: 25-Jul-05

SAMPLE RESULTS

Lab Name:	STL Richland	SDG:	W04703	Collection Date:	7/11/2005 9:06:00 AM
Lot-Sample No.:	J5G110222-3	Report No. :	29491	Received Date:	7/11/2005 12:03:00 PM
Client Sample ID: J03708-A		COC No. :	B03-015-302	Matrix:	SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	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	Aliquot Size	Primary Detector
Batch: 5194172	7196_CR6			Work Order: HE8XP1AA			Report DB ID: 9HE8XP10					
HEXCHROME	3.50E-01	U		0.0E+00	3.50E-01	mg/kg	N/A	(1.)	7/12/05		2.5	
					3.50E-01			N/A			G	

No. of Results: 1   Comments:

MDC|MDA,Lc - Detection, Decision Level based on Instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda[Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 25-Jul-05

DUPLICATE RESULTS

Lab Name: STL Richland	**SDG:** W04703	**Collection Date:** 7/11/2005 9:06:00 AM
Lot-Sample No.: J5G110222-3	**Report No. :** 29491	**Received Date:** 7/11/2005 12:03:00 PM
Client Sample ID: J03708 - A	**COC No. :** B03-015-302	**Matrix:** SOLID

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	Primary Detector
Batch: 5194172	7196_CR6			Work Order: HE8XP1AE		Report DB ID: HE8XP1ER			Orig Sa DB ID: 9HE8XP10			
HEXCHROME	3.50E-01	U		0.0E+00	3.50E-01	mg/kg	N/A	(1.)	7/12/05		2.5	
	3.50E-01	U	RPD 0.0			3.50E-01		N/A			G	

No. of Results: 1   **Comments:**

STL Richland   RPD   - Relative Percent Difference.

rptSTLRchDupV4.1   MDC\|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

3 A97   U Qual - Analyzed for, but the result is less than the Mdc/Mda\|Total Uncert or gamma scan software did not identify the nuclide.

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FORM II

BLANK RESULTS

Lab Name: STL Richland   **SDG:** W04703

Matrix: SOLID   **Report No. :** 29491

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 5194172	7196_CR6			**Work Order:** HFCVQ1AA			**Report DB ID:** HFCVQ1AB					
HEXCHROME	3.50E-01	U		0.0E+00	3.50E-01	mg/kg	N/A	(1.)	7/12/05		2.5	
						3.50E-01		N/A			G	

No. of Results: 1   **Comments:**

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 25-Jul-05

LCS RESULTS

Lab Name: STL Richland

Matrix: SOLID

SDG: W04703

Report No. : 29491

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 5194172	7196_CR6			Work Order: HFCVQ1AC			Report DB ID: HFCVQ1AS						
HEXCHROME	3.94E+01			0.0E+00	3.50E-01	mg/kg	N/A	4.00E+01		98%	7/12/05	2.5	
				Rec Limits:				80	120	0.0		G	

No. of Results: 1 **Comments:**

STL Richland   **Bias**   - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V4.13 A97

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FORM II

MATRIX SPIKE RESULTS

Date: 25-Jul-05

Lab Name: STL Richland

SDG: W04703

Lot-Sample No.: J5G110222-3

Report No. : 29491

Matrix: SOLID

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec- overy	Exp- ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 5194172	7196_CR6			Work Order: HE8XP1AC		Report DB ID: HE8XP1CW			Orig Sa DB ID: 9HE8XP10				
HEXCHROME	3.87E+01			0.0E+00	3.50E-01	mg/kg	N/A	97.36%	3.98E+01		7/12/05	2.5	
	3.50E-01	*RPD*	196.4									G	

No. of Results: 1   **Comments:**

STL Richland   RER   - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

rptSTLRchMs   Bias   - (Result/Expected)-1 as defined by ANSI N13.30.

V4.13 A97

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Work Order Number(s): HE8XJ, HE8XN, HE8XP				
Lab Sample Numbers or SDG: W04703				

Method/Test/Parameter: Cr+6 in Soil / RICH-WC-5005				

Review Item	Yes (✓)	No (✓)	N/A (✓)	2ⁿᵈ 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 ≤ 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 ≤ 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?			✓	⌐

Review Item	Yes (✓)	No (✓)	N/A (✓)	2ᵈᵈ Level Review (✓)
E. Other			✔	—
1. Are all nonconformances included and noted?				
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:

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Analyst: _____ Date: _8/18/05_

Second-Level Review: _____ Date: _7/18/05._

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-015-302	Page 1 of 1

Collector Stankovich/Gale	Company Contact Lorna Dittmer	Telephone No. (509) 376-9664	Project Coordinator KESSNER, JH	Price Code 8C	Data Turnaround
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 100-D-13		SAF No. B03-015	Air Quality	**15 Days**
Ice Chest No.	Field Logbook No. EL-1578-7	COA C00D136700	Method of Shipment FedEx		

Shipped To EBERLINE SERVICES / LIONVILLE
Offsite Property No.
Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

W04703
J54110222
Dw 072705
SKS 7/2/05

SAMPLE ANALYSIS

				None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Preservation				None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container				G/P	G/P	G/P	aG	G/P	aG	G	G	G/P
No. of Container(s)				1	1	1	1	1	1	1		1
Volume				1000mL	250mL	125mL	250mL	120mL	250mL	60mL	250mL	125mL
				See item (1) in Special Instructions	See item (2) in Special Instructions	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081, Chloro Herbicides - 8151	See item (3) in Special Instructions	Semi-VOA 8270 (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1	NO2/NO3 - 353.2

Sample No.	Matrix *	Sample Date	Sample Time									
J03706-A₃ fb HE8XJ	SOIL	7/11/05	0929	X	X	X	X	X	X	X	X	X
J03707-A B fb HE8IN	SOIL		1050	X	X	X	X	X	X		X	X
J03708-A₈I HE8XP	SOIL		0906	X	X	X	X	X	X	X	X	X
~~J03709~~	~~7/11/05~~	~~SOIL~~										
~~J03D20~~	~~7/11/05~~	~~SOIL~~										

CHAIN OF POSSESSION				Sign/Print Names			SPECIAL INSTRUCTIONS	Matrix *
Relinquished By/Removed From	Date/Time			Received By/Stored In	Date/Time			
Chaco / CT. Ice	7/11/05	1203		Jeff Jensen	07 11 05	1203	(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Americium-244~~}; Gross Alpha & Gross Beta; ~~Nickel-63, Isotopic Plutonium (Plutonium-238, Plutonium-239/240), Strontium 89,90 - Total Sr, Technetium 99, Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238};~~ Total Uranium	S=Soil SE=Sediment SO=Solid
Relinquished By/Removed From	Date/Time			Received By/Stored In	Date/Time		(2) ICP Metals - 6010TR (SW846) {~~Aluminum,~~ Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, ~~Calcium,~~ Chromium, Cobalt, Copper, ~~Iron,~~ Lead, ~~Magnesium,~~ Manganese, Molybdenum, Nickel, ~~Potassium,~~ Selenium, ~~Silicon,~~ Silver, ~~Sodium,~~ Vanadium, Zinc}; Mercury - 7471 - (CV)	W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed From	Date/Time			Received By/Stored In	Date/Time		(3) IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}	T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From	Date/Time			Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time			Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time			Received By/Stored In	Date/Time			

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

<100 CPM

Sample Check-in List

Date/Time Received: _c7 4 o5   1203_   _B05 - 004_
                                                                          _B03 - 015_
Client: _BHI_   SDG #: _W04703_ NA [ ] SAF #: _803 - 017_ NA [ ]

Work Order Number: _J54110222_   Chain of Custody # _B05-004 -058 B03-015 - 802_

                                                                          _B05 - 017 - 320_
Shipping Container ID:_____   Air Bill # _____

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:_____$\mathcal{8}$_ NA [ ]   5.Vermiculite/packing materials is NA [ ] Wet [ ] Dry [√]

6.   Number of samples in shipping container:_____5_____

7.   Sample holding times exceeded?   NA [ ] Yes [ ] No [√]

8.   Samples have:
     _____tape   _____hazard labels
     _X_custody seals   _X_appropriate samples labels

9.   Samples are: ·
     _X_in good condition   _____leaking
     _____broken   _____have air bubbles
                                                 (Only for samples requiring head space)

10. Sample pH taken?   NA [√]   pH<2 [ ]   pH>2 [ ]   pH>9 [ ]

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:_____ Date:_02 11 05_____

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on_____by_____ Person contacted_____

[ ] No action necessary; process as is.

Project Manager_____ Date_____

LS-023, 9/03, Rev. 5

Sample Preparation/Analysis

Balance Id:

127642, Bechtel Hanford, Inc. , Bechtel
Hanford, Inc.

DW Alkaline Digestion by method 3060A
EA Chromium, Hexavalent (7196A)

Pipet #: _____

Report Due: 07/26/2005

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 5194172   SOIL   mg/kg   PM, Quote: BG2, 27038   Sep2 DT/Tm Tech:
SEQ Batch, Test: None   All Tests: DWEA, 5194172 DWEA,

Prep Tech:

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 HE8XJ-1-AA										
J5G110222-1-SAMP										
07/11/2005 09:29		AmtRec: 125P	#Containers: 1					Scr Rst:	Alpha:	Beta:
2 HE8XN-1-AA										
J5G110222-2-SAMP										
07/11/2005 10:50		AmtRec: 125P	#Containers: 1					Scr Rst:	Alpha:	Beta:
3 HE8XP-1-AA										
J5G110222-3-SAMP										
07/11/2005 09:06		AmtRec: 125P	#Containers: 1					Scr Rst:	Alpha:	Beta:
4 HE8XP-1-AC-S										
J5G110222-3-MS										
07/11/2005 09:06		AmtRec: 125P	#Containers: 1					Scr Rst:	Alpha:	Beta:
5 HE8XP-1-AD-D										
J5G110222-3-MSD										
07/11/2005 09:06		AmtRec: 125P	#Containers: 1					Scr Rst:	Alpha:	Beta:
6 HE8XP-1-AE-X										
J5G110222-3-DUP										
07/11/2005 09:06		AmtRec: 125P	#Containers: 1					Scr Rst:	Alpha:	Beta:

STL Richland   Key: In - Initial Amt,   fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2   Page 1   ISV - Insufficient Volume for Analysis   WO Cnt: 6

Richland Wa.   pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added   ICOC v4.8.08

Sample Preparation/Analysis

DW Alkaline Digestion by method 3060A
EA Chromium, Hexavalent (7196A)
5l CLIENT: HANFORD

Balance Id:

Pipet #: _____

Sep1 DT/Tm Tech: _____

Report Due: 07/26/2005

Batch: 5194172   mg/kg

SEQ Batch, Test: None

Sep2 DT/Tm Tech: _____

Prep Tech: _____

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
7 HFCVQ-1-AA-B										
J5G130000-172-BLK										
07/11/2005 09:06		AmtRec:	#Containers: 1					Scr Rst:	Alpha:	Beta:
8 HFCVQ-1-AC-C										
J5G130000-172-LCS										
07/11/2005 09:06		AmtRec:	#Containers: 1					Scr Rst:	Alpha:	Beta:

Comments:

All Clients for Batch:
    127642, Bechtel Hanford, Inc.   Bechtel Hanford, Inc.   , BG2, 27038

```
HE8XJ1AA-SAMP Constituent List:
   HEXCHROME   RDL:0.35      mg/kg   LCL:80    UCL:120    RPD:20
HE8XP1AC-MS:
   HEXCHROME   RDL:0.35      mg/kg   LCL:75    UCL:125    RPD:20
HE8XP1AD-MSD:
   HEXCHROME   RDL:0.35      mg/kg   LCL:75    UCL:125    RPD:20
HFCVQ1AA-BLK:
   HEXCHROME   RDL:0.35      mg/kg   LCL:     UCL:       RPD:
HFCVQ1AC-LCS:
   HEXCHROME   RDL:0.35      mg/kg   LCL:80    UCL:120    RPD:20

HE8XJ1AA-SAMP Calc Info:
   Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
HE8XP1AC-MS:
   Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
HE8XP1AD-MSD:
   Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
HFCVQ1AA-BLK:
   Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
HFCVQ1AC-LCS:
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STL Richland   Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2   Page 2   ISV - Insufficient Volume for Analysis   WO Cnt: 8

Richland Wa.   pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added   ICOC v4.8.08

Sample Preparation/Analysis

DW Alkaline Digestion by method 3060A
EA Chromium, Hexavalent (7196A)
5I CLIENT: HANFORD

Report Due: 07/26/2005

Batch: 5194172   mg/kg

SEQ Batch, Test: None

Balance Id:

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

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

Approved By _____   Date: _____

STL Richland   Key: In - Initial Amt,   fi - Final Amt,   di - Diluted Amt, s1 - Sep1, s2 - Sep2   Page 3   ISV - Insufficient Volume for Analysis   WO Cnt: 8

Richland Wa.   pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added   ICOC v4.8.08