

**SAF-RC-048**  
**100 Area and 300 Area Component of the**  
**RCBRA Water Sampling**  
**FINAL DATA PACKAGE**

**COMPLETE COPY OF DATA PACKAGE TO:**

Jill Thomson	H0-23	NB 1/25/06 INITIAL/DATE
Jeanette Duncan	H9-02	NB 1/25/06 INITIAL/DATE

**COMMENTS:**

SDG J00032 SAF-RC-048

Rad only     Chem only    Rad & Chem

Complete            Partial

**Sample Location/Waste Site: 399-1-11**

**RECEIVED**  
FEB 07 2006  
**EDMC**

Analytical Data Package Prepared For  
**Washington Closure Hanford**



Radiochemical Analysis By  
**STL Richland**

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

Assigned Laboratory Code: STLRL

Data Package Contains 19 Pages

Report No.: 31077

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
J00032		J10V25	J5L140206-1	HR4HX1AA	9HR4HX10	5350200

## Certificate of Analysis

Washington Closure Hanford  
3190 George Washington Way  
Richland, WA 99354

January 24, 2005

Attention: Joan Kessner

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SAF Number	:	RC-048
Date SDG Closed	:	December 12, 2005
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	J00032
Data Deliverable	:	45-Day / Summary

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### CASE NARRATIVE

#### I. Introduction

On December 12, 2005, one water sample was received at STL Richland (STLR) for chemistry analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

<u>WCH ID#</u>	<u>STLR ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
J10V25	HR4HX	WATER	12/14/05

#### II. Sample Receipt

The sample was received in good condition and no anomalies were noted during 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. The requested analyses were:

**Chemical Analysis**  
Hexavalent Chromium by EPA method 7196A

Washington Closure Hanford  
January 24, 2006

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#### IV. Quality Control

The analytical results for each analysis performed 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

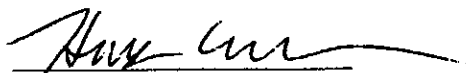
##### Chemical Analysis

##### Hexavalent Chromium by EPA method 7196A:

The LCS, batch blank, sample, sample matrix spike (J10V25), matrix spike duplicate (J10V25) and sample duplicate (J10V25) 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:



Hans Carman  
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,  $R = \text{constants} * f(x,y,z,...)$ . 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

<b>Action Lev</b>	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.
<b>Batch</b>	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
<b>Bias</b>	Defined by the equation $(\text{Result}/\text{Expected}) - 1$ as defined by ANSI N13.30.
<b>COC No</b>	Chain of Custody Number assigned by the Client or STL Richland.
<b>Count Error (#s)</b>	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.
<b>Total Uncert (#s) <i>u<sub>c</sub> - Combined Uncertainty.</i></b>	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<sub>c</sub> the combined uncertainty</i> . The uncertainty is absolute and in the same units as the result.
<b>(#s), Coverage Factor</b>	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
<b>CRDL (RL)</b>	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)
<b>Lc</b>	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.
<b>Lot-Sample No</b>	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.
<b>MDC MDA</b>	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.
<b>Primary Detector</b>	The instrument identifier associated with the analysis of the sample aliquot.
<b>Ratio U-234/U-238</b>	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.
<b>Rst/MDC</b>	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.
<b>Rst/TotUcert</b>	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.
<b>Report DB No</b>	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
<b>RER</b>	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.
<b>SDG</b>	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
<b>Sum Rpt Alpha Spec Rst(s)</b>	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.
<b>Work Order</b>	The LIMS software assign test specific identifier.
<b>Yield</b>	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: 18-Jan-06

STL Richland STLRL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 31077

SDG No: J00032

Client Id		Parameter	Result +- Uncertainty ( 2s)	Qual	Units	Yield	MDC or		
Batch	Work Order						MDA	CRDL	RPD
5350200	7196_CR6								
	J10V25								
	HR4HX1AA	HEXCHROME	4.00E-03 +- 0.0E+00		mg/L	N/A	2.00E-03	2.00E-03	
	HR4HX1AE	HEXCHROME	3.00E-03 +- 0.0E+00		mg/L	N/A	2.00E-03	2.00E-03	28.6

No. of Results: 2

STL Richland RPD - Relative Percent Difference.

rptSTLRchSaSum  
mary2 V4.14.4 A97

**QC Results Summary**

Date: 18-Jan-06

**STL Richland STLRL**

Ordered by Method, Batch No, QC Type,.

Report No. : 31077

SDG No.: J00032

Batch	Work Order	Parameter	Result +- Uncertainty ( 2s)	Qual	Units	Yield	Recovery	Bias	MDC MDA
<b>7196_CR6</b>									
5350200 MATRIX SPIKE									
	HR4HX1AC	HEXCHROME	5.39E-01 +- 0.0E+00		mg/L	N/A	102%	0.0	2.00E-03
	HR4HX1AD	HEXCHROME	5.46E-01 +- 0.0E+00		mg/L	N/A	104%	0.0	2.00E-03
5350200 LCS									
	HR8781AC	HEXCHROME	5.28E-01 +- 0.0E+00		mg/L	N/A	106%	0.1	2.00E-03
5350200 BLANK QC									
	HR8781AA	HEXCHROME	2.00E-03 +- 0.0E+00	U	mg/L	N/A			2.00E-03

No. of Results: 4

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.  
 rptSTLrchQcSummary V4.14.4 A97 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

## FORM I

Date: 18-Jan-06

## SAMPLE RESULTS

Lab Name: STL Richland

SDG: J00032

Collection Date: 12/14/2005 9:15:00 AM

Lot-Sample No.: J5L140206-1

Report No. : 31077

Received Date: 12/14/2005 11:15:00 AM

Client Sample ID: J10V25

COC No. : RC-048-74

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/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 5350200	7196_CR6			Work Order: HR4HX1AA			Report DB ID: 9HR4HX10					
HEXCHROME	<b>4.00E-03</b>			0.0E+00	2.00E-03	mg/L	N/A	(2.)	12/15/05		100.0	
							2.00E-03	N/A			ML	

No. of Results: 1

Comments:

## FORM II

Date: 18-Jan-06

## DUPLICATE RESULTS

Lab Name: STL Richland  
 Lot-Sample No.: J5L140206-1  
 Client Sample ID: J10V25

SDG: J00032  
 Report No.: 31077  
 COC No.: RC-048-74

Collection Date: 12/14/2005 9:15:00 AM  
 Received Date: 12/14/2005 11:15:00 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	Primary Detector
Batch: 5350200	7196_CR6			Work Order: HR4HX1AE		Report DB ID: HR4HX1ER		Orig Sa DB ID: 9HR4HX10				
HEXCHROME	3.00E-03			0.0E+00	2.00E-03	mg/L	N/A	(1.5)	12/15/05		100.0	
	4.00E-03			RPD 28.6		2.00E-03		N/A			ML	

No. of Results: 1      Comments:

STL Richland      RPD - Relative Percent Difference.

rptSTLRchDupV4.1 MDC|MDA,Le - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.  
 4.4 A97

FORM II  
BLANK RESULTS

Date: 18-Jan-06

Lab Name: STL Richland  
Matrix: WATER

SDG: J00032  
Report No. : 31077

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: 5350200	7196_CR6				Work Order: HR8781AA		Report DB ID: HR8781AB					
HEXCHROME	2.00E-03	U		0.0E+00	2.00E-03	mg/L	N/A	1.	12/15/05		100.0	
						2.00E-03		N/A			ML	

No. of Results: 1      Comments:

FORM II  
LCS RESULTS

Date: 18-Jan-06

Lab Name: STL Richland

SDG: J00032

Matrix: WATER

Report No. : 31077

Parameter	Result	Count Qual 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: 5350200	7196_CR6											
					Work Order: HR8781AC		Report DB ID: HR8781AS					
HEXCHROME	5.28E-01		0.0E+00	2.00E-03	mg/L	N/A	5.00E-01		106%	12/15/05	100.0	
						Rec Limits:	85	115	0.1		ML	

No. of Results: 1      Comments:

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

rptSTLRchLcs  
V4.14.4 A97

## FORM II

Date: 18-Jan-06

## MATRIX SPIKE RESULTS

Lab Name: STL Richland

SDG: J00032

Lot-Sample No.: J5L140206-1

Report No.: 31077

Matrix: WATER

Parameter	SpikeResult, Orig Rst	Count Qual Error (2 s)	Total Uncert( 2 s)	MDC MDA	Rpt Unit, CRDL	Yield	Rec- overy	Exp- ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 5350200	Work Order: HR4HX1AC	Report DB ID: HR4HX1CW	Orig Sa DB ID: 9HR4HX10									
HEXCHROME	5.39E-01 4.00E-03	0.0E+00	2.00E-03	mg/L	N/A	102.47%	5.26E-01	12/15/05	100.0 ML	7196_CR6		
Batch: 5350200	Work Order: HR4HX1AD	Report DB ID: HR4HX1DW	Orig Sa DB ID: HR4HX1CW									
HEXCHROME	5.46E-01 5.39E-01	0.0E+00	2.00E-03	mg/L	N/A	103.80%	5.26E-01	12/15/05	100.0 ML	7196_CR6		

Number of Results: 2

Comments:

STL Richland RER - Replicate Error Ratio =  $(S-D)/[\text{sqrt}(\text{sq}(\text{TPUs})+\text{sq}(\text{TPUD}))]$  as defined by ICPT BOA.  
 rptSTLRchMs Bias - (Result/Expected)-1 as defined by ANSI N13.30.  
 V4.14.4 A97

## FORM II

Date: 18-Jan-06

## MATRIX SPIKE DUPLICATE RESULTS

Lab Name: STL Richland

SDG: J00032

Lot-Sample No.: J5L140206-1

Report No.: 31077

Matrix: WATER

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: 5350200	7196_CR6			Work Order: HR4HX1AC		Report DB ID: HR4HX1CW		Orig Sa DB ID: HR4HX1DW					
HEXCHROME	5.39E-01			0.0E+00	2.00E-03	mg/L	N/A	102.47%	5.26E-01		12/15/05	100.0	
	5.46E-01	<b>RPD</b>	1.3									ML	
Batch: 5350200	7196_CR6			Work Order: HR4HX1AD		Report DB ID: HR4HX1DW		Orig Sa DB ID: HR4HX1CW					
HEXCHROME	5.46E-01			0.0E+00	2.00E-03	mg/L	N/A	103.80%	5.26E-01		12/15/05	100.0	
	5.39E-01	<b>RPD</b>	1.3									ML	
No. of Results: 2	Comments:												

STL Richland RER - Replicate Error Ratio =  $(S-D)/[\text{sqrt}(\text{sq}(\text{TPUs})+\text{sq}(\text{TPUd}))]$  as defined by ICPT BOA.  
 rptSTLRchMsDup2 Bias - (Result/Expected)-1 as defined by ANSI N13.30.  
 V4.14.4 A97



**STL**

**Richland Laboratory  
Data Review Check List  
Hexavalent Chromium**

<b>Work Order Number(s):</b> HR4HX				
<b>Lab Sample Numbers or SDG:</b> J00032				
<b>Method/Test/Parameter:</b> Cr+6 in Water / RICH-WC-5003, Rev 7				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 <sup>nd</sup> Level Review (✓)
<b>A. Initial Calibration</b>				
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>B. Continuing Calibration</b>				
1. CCV analyzed at required frequency and all parameters within QC limits?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
<b>C. Sample Analysis</b>				
1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?	✓			✓
2. Were all sample holding times met?	✓			✓
<b>D. QC Samples</b>				
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 (✓)	2 <sup>nd</sup> Level Review (✓)
<b>E. Other</b>			✓	
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:           *Alan E. Wheland*          

Date:           1/13/06          

Second-Level Review:           *[Signature]*          

Date:           1-13-06

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-74		Page 1 of 1	
Collector <b>R.T. SICKLE</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>7N</b>	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location <b>399-1-11</b>				SAF No. RC-048		Data Turnaround <b>45 Days</b>	
Ice Chest No.		Field Logbook No. EL-1592		COA BESRAS6520		Method of Shipment GOV. VEHICLE			
Shipped To Severn Trent Incorporated, Richland		Offsite Property No. N/A				Bill of Lading/Air Bill No. N/A			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> POTENTIAL RADIOACTIVE <b>BHI 27023</b>  Special Handling and/or Storage <b>J00032</b> COOL 4C <b>JSL140260</b> <b>Due 012706</b>		Preservation		Cool 4C					
		Type of Container		G/P					
		No. of Container(s)		1					
		Volume		500mL					
				Chromium Hex - 7196					
<b>SAMPLE ANALYSIS</b>									
Sample No.	Matrix *	Sample Date	Sample Time						
J10V25	HR4HX	12-14-05	0915	X					
<b>CHAIN OF POSSESSION</b>					<b>SPECIAL INSTRUCTIONS</b>				
Relinquished By/Removed From <b>R.T. SICKLE</b>		Date/Time 12-14-05		Received By/Stored In <b>Kevin Sample</b>		Date/Time 12-14-05		Matrix * S=Soil SB=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <b>Kevin Sample</b>		Date/Time 12-14-05		Received By/Stored In <b>[Signature]</b>		Date/Time 12-14-05			
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			
<b>LABORATORY SECTION</b>					<b>SPECIAL INSTRUCTIONS</b>				
Received By		Title		Date/Time		10.5°C			
Disposal Method		Disposed By		Date/Time					



# STL

## Sample Check-in List

Date/Time Received: 12 14 05 1115

Client: BHI SDG #: J00032 NA [ ] SAF #: AC-049 NA [ ]

Work Order Number: 551190260 Chain of Custody # AC-049-79

Shipping Container ID: NA 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: 10.5 NA [ ] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry
6. Number of samples in shipping container: 1
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 [ ] 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: [Signature] Date: 12 14 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



STL RICHLAND

12/16/2005 10:29:59 AM

**Sample Preparation/Analysis**

Balance Id: \_\_\_\_\_

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

Pipet #: \_\_\_\_\_

Report Due: 01/27/2006

Sep1 DT/Tm Tech: \_\_\_\_\_

Batch: 5350200 mg/L  
 SEQ Batch, Test: None

Sep2 DT/Tm Tech: \_\_\_\_\_

Prep Tech: \_\_\_\_\_

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

All Clients for Batch:  
 127642, Bechtel Hanford, Inc. Bechtel Hanford, Inc. , HC , 27023

HR4HX1AA-SAMP Constituent List:  
 HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20

HR4HX1AC-MS Constituent List:  
 HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20

HR4HX1AD-MSD:  
 HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20

HR8781AA-BLK:  
 HEXCHROME RDL:0.002 mg/L LCL: UCL: RPD:

HR8781AC-LCS:  
 HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20

HR4HX1AA-SAMP Calc Info:  
 Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

HR4HX1AC-MS Calc Info:  
 Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

HR4HX1AD-MSD:  
 Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

HR8781AA-BLK:  
 Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

HR8781AC-LCS:  
 Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By \_\_\_\_\_ Date: \_\_\_\_\_

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