

**SAF-RC-103**  
**Remaining Sites Confirmation Sampling -**  
**Other Liquid**  
**FINAL DATA PACKAGE**

**COMPLETE COPY OF DATA PACKAGE TO:**

Kathy Wendt H4-21

KW 6/18/08  
INITIAL/DATE

**COMMENTS:**

**SDG J00176**

**SAF-RC-103**

Rad only

Chem only

Rad & Chem

Complete

Partial

**Waste Site: 100-H-28:3**

**RECEIVED**  
JUN 23 2008  
**EDMC**

Analytical Data Package Prepared For

# Washington Closure Hanford



Radiochemical Analysis By

**TestAmerica**

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

Assigned Laboratory Code: TARL

Data Package Contains 19 Pages

Report No.: 39313

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
J00176	RC-103	J16VH6	J8F020187-1	KN8EX1AA	9KN8EX10	8155335

## Certificate of Analysis

Washington Hanford Closure  
2620 Fermi Avenue  
Richland, WA 99354

June 17, 2008

Attention: Joan Kessner

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SAF Number	:	RC-103
Date SDG Closed	:	June 2, 2008
Number of Samples	:	One (1)
Sample Type	:	Other Solid
SDG Number	:	J00176
Data Deliverable	:	15 -Day / Summary

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### CASE NARRATIVE

#### I. Introduction

On June 2, 2008 one other solid sample was received at TestAmerica 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>
J16VH6	KN8EX	OTHER SOLID	6/02/08

#### II. Sample Receipt

The sample was received in good condition. There was no sample date on the COC. The sample date was taken from the sample bottle label. The client was contacted and the monitor's logbook confirmed the sample label had the correct sample date. No other 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  
June 17, 2008

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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:

Sample J16VH6 was approximately 75% other liquid and 25% other solid. The sample was centrifuged. The client was notified on 6/3/08. Instructions were as follows:

Liquid Fraction

Analyze the other liquid fraction as J16VH6-A in SDG J00176A. Use a 50 ml aliquot for the sample and sample duplicate. Do not analyze a matrix spike or matrix spike duplicate. Also include a blank and LCS.

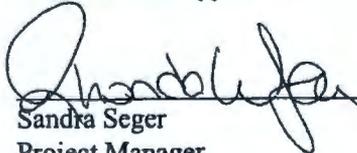
Soil Fraction

Analyze the other solid fraction as J16VH6 in SDG J00176. Use 2.5 gram aliquot for the sample, sample duplicate and matrix spike. Also include a blank and LCS. Analyze percent moisture after sample has been analyzed, if there is sufficient sample volume.

The LCS, batch blank, sample, sample duplicate (J16VH6) and sample matrix 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:

  
Sandra Seger  
Project Manager

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## Drinking Water Method Cross References

DRINKING WATER ASTM METHOD CROSS REFERENCES		
Referenced Method	Isotope(s)	TestAmerica Richland's SOP No.
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 00-02	Gross Alpha (Coprecipitation)	RICH-RC-5021
EPA 903.0	Total Alpha Radium (Ra-226)	RICH-RC-5027
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr-89/90	RICH-RC-5006
ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007

**Results in this report relate only to the sample(s) analyzed.**

### Uncertainty Estimation

TestAmerica 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

<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 TestAmerica.
<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 TestAmerica "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 TestAmerica 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: 17-Jun-08

TestAmerica TARL

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

Report No. : 39313

SDG No: J00176

Client Id	Batch	Work Order	Parameter	Result +/- Uncertainty ( 2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
8155335	7196	CR6								
J16VH6										
	KN8EX1AA		HEXCHROME	3.50E-01 +/- 0.00E+00	U	mg/kg	N/A	3.50E-01	2.00E-03	
	KN8EX1AE		HEXCHROME	3.50E-01 +/- 0.00E+00	U	mg/kg	N/A	3.50E-01	2.00E-03	0.0
No. of Results:		2								

TestAmerica  
 rpt\$TLRchSaSummary2 V5.1.6  
 A2002

RPD - Relative Percent Difference.

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.

QC Results Summary

Date: 17-Jun-08

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 39313

SDG No.: J00176

Batch	Work Order	Parameter	Result +- Uncertainty ( 2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC MDA
7196_CR6	8155335	MATRIX SPIKE, J16VH6							
	KN8EX1AC	HEXCHROME	1.52E+02 +- 0.00E+00		mg/kg	N/A	81%	-0.2	3.50E-01
	8155335	LCS,							
	KN9MR1AC	HEXCHROME	1.81E+01 +- 0.00E+00		mg/kg	N/A	91%	-0.1	3.50E-01
	8155335	BLANK QC,							
	KN9MR1AA	HEXCHROME	3.50E-01 +- 0.00E+00	U	mg/kg	N/A			3.50E-01

No. of Results: 3

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.  
 rptSTLRchQcSummary V5.1.6 A2002 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  
SAMPLE RESULTS

Date: 17-Jun-08

Lab Name: TestAmerica

SDG: J00176

Collection Date: 6/2/2008 1:00:00 PM

Lot-Sample No.: J8F020187-1

Report No. : 39313

Received Date: 6/2/2008 2:55:00 PM

Client Sample ID: J16VH6

COC No. : RC-103-083

Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	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: 8155335	7196_CR6		Work Order: KN8EX1AA			Report DB ID: 9KN8EX10					
HEXCHROME	<b>3.50E-01</b> U		0.0E+00	3.50E-01	mg/kg	N/A	(1.)	6/3/08		2.5	
						2.00E-03	N/A			G	

No. of Results: 1

Comments:

## FORM II

Date: 17-Jun-08

## DUPLICATE RESULTS

Lab Name: TestAmerica

SDG: J00176

Collection Date: 6/2/2008 1:00:00 PM

Lot-Sample No.: J8F020187-1

Report No.: 39313

Received Date: 6/2/2008 2:55:00 PM

Client Sample ID: J16VH6

COC No.: RC-103-083

Matrix: SOIL

Parameter	Result, Orig Rst	Qual	Count Error ( 2 s)	Total Uncert( 2 s)	MDC MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 8155335	7196_CR6			Work Order: KN8EX1AE		Report DB ID: KN8EX1ER		Orig Sa DB ID: 9KN8EX10				
HEXCHROME	3.50E-01	U		0.0E+00	3.50E-01	mg/kg	N/A	(1.)	6/3/08		2.5	
	3.50E-01	U	RPD	0.0		2.00E-03		N/A			G	

No. of Results: 1      Comments:

TestAmerica

RPD - Relative Percent Difference.

rptSTLRchDupV5.1  
.6 A2002

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 not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II  
BLANK RESULTS

Date: 17-Jun-08

Lab Name: TestAmerica

SDG: J00176

Matrix: SOIL

Report No. : 39313

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: 8155335	7196_CR8				Work Order: KN9MR1AA		Report DB ID: KN9MR1AB					
HEXCHROME	3.50E-01	U		0.0E+00	3.50E-01	mg/kg	N/A	(1.)	6/3/08		2.5	
						2.00E-03		N/A			G	
No. of Results: 1	Comments:											

FORM II  
LCS RESULTS

Date: 17-Jun-08

Lab Name: TestAmerica

SDG: J00176

Matrix: SOIL

Report No. : 39313

Parameter	Result	Count Qual Error (2 s)	Total Uncert(2 s)	MDC MDA	Report Unit	Yield	Expected Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 8155335	7196_CR6				Work Order: KN9MR1AC		Report DB ID: KN9MR1AS					
HEXCHROME	1.81E+01		0.0E+00	3.50E-01	mg/kg	N/A	2.00E+01		91%	6/3/08	25	
						Rec Limits:	85	115	-0.1		G	
No. of Results: 1	Comments:											

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

rptSTLRchLcs  
V5.1.6 A2002

## FORM II

Date: 17-Jun-08

## MATRIX SPIKE RESULTS

Lab Name: TestAmerica

SDG: J00176

Lot-Sample No.: J8F020187-1, J16VH6

Report No.: 39313

Matrix: SOIL

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: 8155335	Work Order: KN8EX1AC	Report DB ID: KN8EX1CW	Orig Sa DB ID: 9KN8EX10									
HEXCHROME	1.52E+02	0.0E+00	3.50E-01	mg/kg	N/A	81.15%	1.87E+02	6/3/08	2.5	7196_CR6	G	
	3.50E-01											

Number of Results: 1

Comments:

TestAmerica 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.  
 V5.1.6 A2002

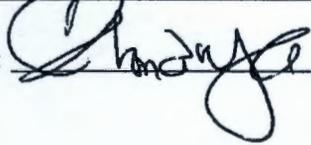
Batch Number(s): 8155335      J 00176      J8F020187      Due 7/17				
Lab Sample Numbers or SDG: W05414				
Method/Test/Parameter: Cr+6 in SOLID / RICH-WC-5005, Rev 8				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 <sup>nd</sup> Level Review (✓)
<b>A. Initial Calibration</b>	✓			✓
1. Performed at required 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>	✓			No Ncm ✓
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:

Analyst: 

Date: 6/3/08

Second-Level Review: 

Date: 6/14/08

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-030-083	Page 1 of 2	
Collector <i>D. Rios</i>	Company Contact Matt Perrott	Telephone No. 372-9088	Project Coordinator KESSNER, JH		Price Code 9C	Data Turnaround <b>15 Days</b>		
Project Designation Remaining Sites Confirmation Sampling - Other Solid		Sampling Location <i>100-H-283</i>		SAF No. <i>8761206</i> RC-030-103				
Ice Chest No.	Field Logbook No. EL-1601-2	COA <i>COOH28A000</i>	Method of Shipment					
Shipped To TestAmerica Incorporated, Richland		Offsite Property No.		Bill of Lading/Air Bill No.				
POSSIBLE SAMPLE HAZARDS/REMARKS			Preservation	Cool 4C				
Special Handling and/or Storage			Type of Container	GP				
			No. of Container(s)	1				
			Volume	<del>100ml</del> 50ml				
SAMPLE ANALYSIS			Chromium	Hex - 7196				
Sample No.	Matrix *	Sample Date	Sample Time					
J16VH6	OTHER SOLID	<i>1st 6/2/08</i>					<i>KNB EX</i>	
J16VH6	<i>other liquid</i> OTHER SOLID	<i>J16VH6</i>	<i>1300</i>	<i>X</i>				
J16VH7	OTHER SOLID							
J16VH8	OTHER SOLID							
J16VH9	OTHER SOLID	<i>B Hudson 6/2/08</i>						
CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS			Matrix *	
Relinquished By/Removed From <i>D. Rios</i>	Date/Time <i>6-2-08 1415</i>	Received By/Stored In <i>B Hudson</i>	Date/Time <i>6/2/08 1415</i>	<i>J8F020187</i> <i>SDG#: J00176</i> <i>Duc: 6/17/08</i> Confirmed with client the correct sample date is 6/2/08. The label on the sample date of the monitor's logbook was verified & both confirmed the correct date. <i>6/17/08</i>			Solid Portion per J. Kessner phone call 9:47 on 6/3/08	S=Soil SE=Soil SO=Soil SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wb=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>B Hudson</i>	Date/Time <i>6/2/08 1455</i>	Received By/Stored In <i>R. L. LAWE</i>	Date/Time <i>TAL 6208</i>					
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				



### Sample Check-in List

Date/Time Received: 6208 1455 GM Screen Result 0.2K

Client: WCH SDG #: J00176 NA [ ] SAF #: RC-103 NA [ ]

Work Order Number: J8F020187 Chain of Custody # RC-103-083

Shipping Container ID: N/A 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? NA [ ] Yes  No [ ]
- 4. Cooler Temperature: \_\_\_\_\_ 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 Sample Labels

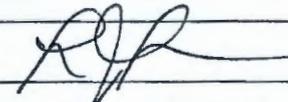
9. Samples are:  
 In Good Condition  Leaking  
 Broken  Have Air Bubbles  
(Only for samples requiring no head space.)

10. Sample pH taken? NA [ ] pH<2 [ ] pH>2  pH>9 [ ] Amount HNO<sub>3</sub> Added \_\_\_\_\_

11. Sample Location, Sample Collector Listed? \*  
\*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: 6208

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on \_\_\_\_\_ by \_\_\_\_\_ Person Contacted \_\_\_\_\_

[ ] No action necessary; process as is.

Project Manager \_\_\_\_\_ Date \_\_\_\_\_

TESTAMERICA

6/3/2008 11:54:41 AM

127642, Washington Closure Hanford  
Bechtel Hanford, Inc.

**Sample Preparation/Analysis**

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

Balance Id:

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

AnalyDueDate: 06/17/2008

Sep1 DT/Tm Tech:

Batch: 8155335 SOIL mg/L  
SEQ Batch, Test: None All Tests: 8155335 88EA,

PM, Quote: SS, 27023

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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1 KN8EX-1-AA		2.5560						
J8F020187-1-SAMP								
06/02/2008 13:00		AmtRec: 500G	#Containers: 1			Scr:	Alpha:	Beta:

2 KN8EX-1-AC-S		2.6775						
J8F020187-1-MS								
06/02/2008 13:00		AmtRec: 500G	#Containers: 1			Scr:	Alpha:	Beta:

3 KN8EX-1-AD-D		2.6414			10.8ug			
J8F020187-1-MSD	MsPBCrO4							
06/02/2008 13:00		AmtRec: 500G	#Containers: 1			Scr:	Alpha:	Beta:

4 KN8EX-1-AE-X		2.5442						
J8F020187-1-DUP								
06/02/2008 13:00		AmtRec: 500G	#Containers: 1			Scr:	Alpha:	Beta:

5 KN9MR-1-AA-B								
J8F030000-335-BLK								
06/02/2008 13:00		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

6 KN9MR-1-AC-C								
J8F030000-335-LCS								
06/02/2008 13:00		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

TESTAMERICA

6/3/2008 11:54:42 AM

**Sample Preparation/Analysis**

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

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

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

AnalyDueDate: 06/17/2008

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

Batch: 8155335 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, Washington Closure Hanford                      Bechtel Hanford, Inc.                      , SS , 27023

KN8EX1AA-SAMP Constituent List:

KN8EX1AC-MS Constituent List:

KN8EX1AD-MSD:

KN9MR1AA-BLK:

KN9MR1AC-LCS:

KN8EX1AA-SAMP Calc Info:

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

KN8EX1AC-MS Calc Info:

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

KN8EX1AD-MSD:

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

KN9MR1AA-BLK:

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

KN9MR1AC-LCS:

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

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

<b>Analyst:</b>	D. Petty	<b>Calibration Curve Information</b>				<b>SOP Information</b>	<b>BATCH #</b>	8155335	
<b>Start Date:</b>	6/3/2008	<b>Blank</b>	<b>Amount</b>	<b>Conc.(mg/L)</b>	<b>ABS.</b>	<b>RICH-WC-5005</b>	<b>SDG #</b>		
<b>Start Time:</b>			0.000	0.000	0.000	<b>Revision 7</b>	<b>Matrix</b>	Soil	
<b>End Date:</b>	6/3/2008	<b>Std. 1</b>	0.100	0.050	0.100	<b>Instrument Information</b>			
<b>End Time:</b>		<b>Std. 2</b>	0.500	0.250	0.495	<b>MDL (mg/kg)</b>	0.35	<b>Instrument:</b>	Hach DR2010
<b>Analyst Signature:</b>		<b>Std. 3</b>	0.750	0.375	0.731			<b>Wavelength:</b>	540
<b>Date:</b>	6/4/08	<b>Std. 4</b>	1.500	0.750	1.439			<b>R Squared</b>	0.99976
		<b>Std. 5</b>	2.000	1.000	1.888			<b>Slope:</b>	1.89023
		<b>Standard Volume (mL):</b>			100.000			<b>Intercept:</b>	0.01153
		<b>Date of Curve:</b>			6/3/2008				

	<b>Calibration Information:</b>	<b>ICV Information:</b>	<b>LCS Information:</b>	<b>Matrix Spike Information:</b>	<b>PbCrO4 Information</b>
<b>Dilution ID #</b>	Cr-08-00115	Cr-08-00116	Cr-08-00115	Cr-08-00115	<b>Weight PbCrO4</b> 10.8
<b>Prep Date:</b>	06/03/08	06/03/08	06/03/08	06/03/08	<b>PDMS Information</b>
<b>Concentration (mg/L)</b>	50	50	50	50	<b>Dilution ID</b> Cr-08-00109
<b>Expiration Date:</b>	06/04/08	06/04/08	06/04/08	06/04/08	<b>Concentration</b> 1000
<b>Pipettor(s)</b>	70, 190	190	190	190	<b>Pipettor</b>
<b>Volume Used (mL)</b>	1.000		1.00	0.50	<b>Volume</b> 0.05
<b>Expected Value (mg)</b>	0.500		0.50	0.25	<b>Extract Volume</b>

Sample ID	Client ID	Type	Sample Weight (g)	Blank ABS.	Sample ABS.	PDMS ABS.	Dilution Factor	Volume (L)	Percent Solids	Wet Sample (mg/g)	Final Dry Sample (mg/kg)	%Recoveries Spike PDMS	MDL
n/a	n/a	ICV	2.5		0.986		1	0.1	100.000%	0.02062116	20.62116037	103.11%	
				Abs-Blank	0.986					Expected	20		
n/a	n/a	ICB	2.5		0.002		1	0.1	100.000%	-0.000201746	<MDL		
				Abs-Blank	0.002								
KN9MR1AA	n/a	PB	2.5		0.007		1	0.1	100.000%	-9.59386E-05	<MDL		0.35
				Abs-Blank	0.007								
KN9MR1AC	n/a	LCS	2.5		0.867		1	0.1	100.000%	0.018102943	18.10294303	90.51%	0.35
				Abs-Blank	0.867					Expected	20		
KN8EX1AA	H6-SOIL FRAC	Sample	2.556		0.015		1	0.1	5.000%	7.17462E-05	<MDL		0.342332
				Abs-Blank	0.015								
KN8EX1AC-S		MS	2.6775		0.395		1	0.1	5.000%	0.007576769	151.5353803	81.15%	0.326797
				Abs-Blank	0.395					Expected	186.7413632		
KN8EX1AD-D		MSD					1	0.1	5.000%	Expected			
KN8EX1AE-X		Duplicate	2.5442		0.024		1	0.1	5.000%	0.000259224	<MDL		0.34392
				Abs-Blank	0.024								
KN8EX1APbCrO4		PbCrO4	10.8		1.283		20	0.1	5.000%	0.124565384	2491.307684	78.62%	1.62037
				Abs-Blank	1.283					Expected	3168.8		
				Abs-Blank			1	0.1	100.000%				
				Abs-Blank			1	0.1	100.000%				
n/a	n/a	CCV	2.5		0.969		1	0.1	100.000%	0.020261415	20.26141504	101.31%	0.35
				Abs-Blank	0.969					Expected	20		
n/a	n/a	CCB	2.5		0		1	0.1	100.000%	-0.000244069	<MDL		0.35
				Abs-Blank	0								
				Abs-Blank			1	0.1	100.000%				