

0073877

SAF-RC-024
100-BC Burial Grounds - Other Liquid
Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Jason Capron X3-40

KW 8/29/07
INITIAL/DATE

Jeanette Duncan H4-21

KW 8/29/07
INITIAL/DATE

SDG J00127

SAF-RC-024

Rad only

Chem only

Rad & Chem

Complete

Partial

Sample Location/Waste Site: 116-C-3 North Chem tank

RECEIVED
SEP 10 2007

EDMC

Analytical Data Package Prepared For
Washington Closure Hanford

RECEIVED
AUG 28 2007

Radiochemical Analysis By

TAL Richland

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

Assigned Laboratory Code: STLRL

Data Package Contains 29 Pages

Report No.: 36523

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
J00127	RC-024	J15HM7	J7H270206-1	J5N621AA	9J5N6210	7240167



STL

STL Richland
2800 George Washington Way
Richland, WA 99354

Tel: 509 375 3131 Fax: 509 375 5590
www.stl-inc.com

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

August 29, 2007

Attention: Joan Kessner

SAF Number	:	RC-024
Date SDG Closed	:	August 27, 2007
Number of Samples	:	One (1)
Sample Type	:	Other Liquid
SDG Number	:	J00127
Data Deliverable	:	24 Hour / Summary

CASE NARRATIVE

I. Introduction

On August 27, 2007 one other liquid 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>
J15HM7	J5N62	OTHER LIQUID	8/27/07

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
August 29, 2007

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

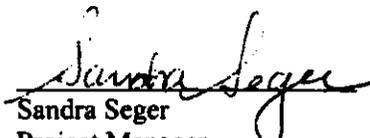
Chemical Analysis

Hexavalent Chromium by EPA method 7196A:

Sample J15HM7 was received after the holdtime had expired. Due to insufficient sample volume no duplicate, matrix spike or matrix spike duplicated was analyzed. Except as noted, the LCS, batch blank, and sample results are within contractual requirements.

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

Reviewed and approved:


Sandra Seger
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 $(\text{Result}/\text{Expected})-1$ 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%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgndCnt}/\text{BkgndCntMin})/\text{SCntMin})) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$. 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: 29-Aug-07

TAL Richland STLRL

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

Report No. : 36523

SDG No: J00127

Batch	Client Id Work Order	Parameter	Result +/- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
7240167	7196_CR6								
	J15HM7								
	J5N621AA	HEXCHROME	6.00E-03 +/- 0.00E+00		mg/L	N/A	2.00E-03	2.00E-03	
No. of Results: 1									

TAL Richland RPD - Relative Percent Difference.

rptSTLRchSaSum
mary2 V5.1.3
A2002

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

Date: 29-Aug-07

Report No. : 36523

SDG No.: J00127

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC MDA
7196_CR6 7240167 LCS, J5PRP1AC	HEXCHROME	5.14E-01 +- 0.00E+00		mg/L	N/A	103%	0.0	2.00E-03
7240167 BLANK QC, J5PRP1AA	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A			2.00E-03
No. of Results: 2								

TAL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.
 rptSTLRchQcSummary V5.1.3 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: 29-Aug-07

Lab Name: TA Richland
Lot-Sample No.: J7H270206-1
Client Sample ID: J15HM7

SDG: J00127
Report No.: 36523
COC No.: RC-024-018

Collection Date: 8/23/2007 1:52:00 PM
Received Date: 8/27/2007 3:30:00 PM
Matrix: OTHER LIQU

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: 7240167	7196_CR6				Work Order: J5N621AA		Report DB ID: 9J5N6210					
HEXCHROME	6.00E-03			0.0E+00	2.00E-03	mg/L	N/A	(3.)	8/28/07		100.0	
							2.00E-03	N/A			ML	

No. of Results: 1 Comments:

FORM II
BLANK RESULTS

Date: 29-Aug-07

Lab Name: TA Richland
Matrix: OTHER LIQUID

SDG: J00127

Report No. : 36523

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: 7240167	7196_CR6				Work Order: J5PRP1AA		Report DB ID: J5PRP1A8					
HEXCHROME	2.00E-03	U		0.0E+00	2.00E-03	mg/L	N/A	1.	8/28/07		100.0	
						2.00E-03		N/A			ML	

No. of Results: 1 Comments:

FORM II
LCS RESULTS

Date: 29-Aug-07

Lab Name: TA Richland
Matrix: OTHER LIQUID

SDG: J00127
Report No.: 36523

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: 7240167	7196_CR8					Work Order: J5PRP1AC		Report DB ID: J5PRP1AS					
HEXCHROME	5.14E-01			0.0E+00	2.00E-03	mg/L	N/A	5.00E-01		103%	8/28/07	100.0	
							Rec Limits:	85	115	0.0		ML	

No. of Results: 1 Comments:



STL

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s): 72140167				
Lab Sample Numbers or J00127				
Method/Test/Parameter: Cr+6 in Water / RICH-WC-5003				
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 ≤ 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 (✓)	2 nd 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:

_____ Hold time was violated before sample receipt; Insufficient sample for duplicate and MS's

Analyst: _____

Anna E. Whitehead

Date: 8/28/2007

Second-Level Review: _____

Joanne

Date: 8/29/07

Clouseau Nonconformance Memo



NCM #: 10-10714	Classification: Anomaly
NCM Initiated By: Steven Wheland	Status: GLREVIEW
Date Opened: 08/28/2007	Production Area: Classical Chemistry
Date Closed:	Tests: 7196A
Nonconformance: Other (describe in detail)	Lot #'s (Sample #'s): J7H270206 (1), J7H280000 (167),
Subcategory: Other (explanation required)	QC Batches: 7240167,

Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Steven Wheland	08/28/2007	Samples were received after the holdtime had expired; Due to insufficient sample no duplicate, MS and MSD were run.

Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Steven Wheland	08/28/2007	Report data

Client Notification Summary

<u>Client</u>	<u>Project Manager</u>	<u>Notified</u>	<u>Response</u>	<u>How Notified</u>	<u>Note</u>
			<u>Response</u>		<u>Response Note</u>

Quality Assurance Verification

<u>Verified By</u>	<u>Due Date</u>	<u>Status</u>	<u>Notes</u>
		This section not yet completed by QA.	

Approval History

<u>Date Approved</u>	<u>Approved By</u>	<u>Position</u>
----------------------	--------------------	-----------------

J7H270204 J00127 Date 08-28-07

TESTAMERICA RICHLAND

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-024-018	Page 1 of 1
Collector C. Martinez		Company Contact C. Martinez		Telephone No. 539-2816		Project Coordinator KESSNER, JII	Price Code
Project Designation 100-BC Burial Grounds - Other Liquid Quick Turn		Sampling Location 116-C-3 North Chem tank		SAF No. RC-024		Data Turnaround 24 hrs	
Ice Chest No. 19		Field Logbook No. EFL1173-13		COA R116C32600		Method of Shipment Government Vehicle / <i>Private</i>	
Shipped To Severn Trent Incorporated, Richland		Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A			
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Potential high rad and pH</i>		Preservation Cool 4C					
Special Handling and/or Storage <i>None</i>		Type of Container GP					
		No. of Container(s) 1					
		Volume 125mL					
SAMPLE ANALYSIS		Chromium Hex - 7196					
Sample No.	Matrix *	Sample Date	Sample Time				
J15HM7	OTHER LIQUID	08/23/07	1352	✓		J5N62	
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS	
Relinquished By: Removed From <i>R. Alford - AS Alexander</i>		Date/Time 8-23-07 1440		Received By: Stored In <i>Charlene de la Motte</i>		Date/Time 08/23/07	
Relinquished By: Removed From <i>Charlene de la Motte</i>		Date/Time 08/23/07 1655		Received By: Stored In <i>3723 IA</i>		Date/Time 08/23/07	
Relinquished By: Removed From <i>3723/IA</i>		Date/Time 8-27-07 1509		Received By: Stored In <i>Kim Singley</i>		Date/Time 8-27-07	
Relinquished By: Removed From <i>Kim Singley</i>		Date/Time 8-27-07 1510		Received By: Stored In <i>Alcedo DAND HARRIS</i>		Date/Time 8-27-07	
Relinquished By: Removed From <i>DAVID HARRIS</i>		Date/Time 8-27-07 15:30		Received By: Stored In <i>LILANE TALLER</i>		Date/Time 8-27-07 1530	
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	

14

- Matrix *
- S: Soil
 - SL: Sediment
 - SO: Solid
 - SL: Sludge
 - W: Water
 - O: Oil
 - A: Air
 - DS: Dross/Slag
 - DL: Dross/Liquid
 - T: Tissue
 - M: Msp.
 - L: Log
 - V: Vegetation
 - N: Other

Radiological Counting Facility

Analysis Report for RCF18298

J15HM6 SAF NO. RC-024 100BC/116C-3 NORTH CHEM TANK LIQUID SAMPLE

GAMMA SPECTRUM ANALYSIS

Sample Identification : RCF18298
Sample Description : J15HM6 SAF NO. RC-024 100BC/116C-3 NORTH CHEM TANK LIQUID SAMPLE
Sample Type : 125 ml poly bott
Unit :
Sample Point :

Sample Size : 1.000E+00 units
Facility : Default

Sample Taken On : 8/23/2007 2:40:00PM
Acquisition Started : 8/27/2007 9:17:17AM

Procedure : 125 ml poly bottle
Operator : RCT
Detector Name : BEGE
Geometry : 125 ml Poly Bott
Live Time : 7200.0 seconds
Real Time : 7201.1 seconds

QUALITATIVE ONLY

Dead Time : 0.02 %

Peak Locate Threshold : 3.00
Peak Locate Range (in channels) : 40 - 4096
Peak Area Range (in channels) : 40 - 4096
Identification Energy Tolerance : 1.000 keV

*unknown geometry
8/27/07

Energy Calibration Used Done On : 8/21/2007
Efficiency Calibration Used Done On : 4/4/2007
Efficiency Calibration Description : Efficiency calibration 125 poly Bege

Sample Number : 14477

INTERFERENCE CORRECTED REPORT

Table with 5 columns: Nuclide Name, Nuclide Id Confidence, Wt mean Activity (pCi/units), Wt mean Activity Uncertainty, Comments. Rows include CS-137 and AM-241.

Handwritten calculations: 2.239 x 10^3 pCi/unit, 3.59 x 10^3 pCi/unit, 50-90, 9.85 x 10^2 pCi/unit.

Analysis Report for RCF18298

J15HM6 SAF NO. RC-024 100BC/116C-3 NORTH CHEM TANK LIQUID SAMPLE

- ? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity
 d = identified by daughter product energy lines assumed to be in secular equilibrium

Errors quoted at 2.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/27/2007 11:17:21AM
 Peak Locate From Channel : 40
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Rate (CPS)	Peak Rate (%) Uncertainty
1 <i>CS-137</i>	32.03	1.29E-01	
2 <i>NB-94</i>	49.46	1.95E-02	7.92
5 <i>CO-60</i>	1332.09	5.18E-03	45.01 52.03

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\GOZERIApexRootDefault\Library\RCF UNKNOWN.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/units)	Nuclide MDA (pCi/units)	Line MDA (pCi/units)
K-40	1460.83	10.67	-2.02E+01	4.15E+02	4.15E+02
CO-60	1173.24	99.90	3.91E+00	5.84E+01	6.80E+01
	1332.50	99.98	-1.98E+01		5.84E+01
NB-94	702.63	99.81	3.42E+01	5.07E+01	5.07E+01
	871.10	99.89	-1.89E+01		5.49E+01
AG-108m	433.94	90.50	-1.48E+01	3.02E+01	3.02E+01
	614.28	89.80	1.37E+01		4.56E+01
	722.94	90.80	5.68E+01		5.57E+01
+ CS-137	661.66	* 85.21	9.85E+02	4.84E+01	4.84E+01
EU-152	121.78	28.40	-5.29E+00	3.37E+01	3.37E+01
	344.29	26.60	-1.37E+01		7.79E+01
	964.11	14.50	3.25E+01		4.29E+02
	1408.00	20.80	1.17E+02		2.47E+02
EU-154	123.10	40.50	1.72E+01	2.37E+01	2.37E+01
	723.36	19.70	1.16E+02		2.55E+02
	873.23	11.45	2.92E+01		4.85E+02
	1004.78	17.90	6.26E+01		3.56E+02

Analysis Report for RCF18298

J15HM6 SAF NO. RC-024 100BC/116C-3 NORTH CHEM TANK LIQUID SAMPLE

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/units)	Nuclide MDA (pCi/units)	Line MDA (pCi/units)
EU-155	1274.54	35.50	5.72E+01		1.64E+02
	86.54	34.00	3.80E+00	2.34E+01	2.34E+01
	105.31	20.60	-6.71E-01		4.44E+01
PB-212	74.81	10.50	5.17E+01	4.51E+01	7.81E+01
	77.11	17.70	-1.18E+01		4.51E+01
RA-226d	87.19	6.27	-9.52E+01		1.24E+02
	186.11	3.28	3.04E+01	5.79E+01	3.42E+02
	241.92	7.46	-1.79E+02		1.86E+02
	295.09	19.20	-5.06E+01		8.75E+01
	351.87	37.10	2.54E+00		5.79E+01
	609.31	46.10	3.51E+01		8.76E+01
	1120.27	15.00	-6.23E+01		4.10E+02
TH-232d	1764.49	15.90	-8.47E+01		9.79E+01
	238.58	43.60	-5.75E+00	3.22E+01	3.22E+01
	338.42	12.40	-8.27E+01		1.64E+02
	583.02	30.87	6.94E+01		1.24E+02
	911.16	29.00	6.96E+01		2.12E+02
	968.97	17.40	-1.55E+00		3.49E+02
U-235	143.79	10.50	-3.42E+01	2.12E+01	9.37E+01
	163.38	4.70	-1.43E+01		2.16E+02
	185.74	53.00	1.95E+00		2.12E+01
	205.33	4.70	6.69E+01		2.74E+02
U-238d	63.29	3.80	-3.30E+02	1.39E+02	2.21E+02
	92.56	5.41	-6.95E+01		1.39E+02
+ AM-241	59.54	* 35.70	7.17E+02	2.93E+01	2.93E+01
CM-243	99.52	14.40	-3.12E+01	3.40E+01	5.34E+01
	103.73	23.00	3.64E+01		3.40E+01
	116.93	8.32	1.29E+01		1.11E+02
	228.19	10.56	1.63E+00		1.24E+02
	277.60	14.00	-5.09E+01		1.06E+02
CM-245	99.52	21.10	-2.13E+01	2.33E+01	3.64E+01
	103.73	33.60	2.49E+01		2.33E+01
	116.93	12.20	8.80E+00		7.55E+01
	174.94	9.50	5.42E+01		1.10E+02

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

Reviewed and Approved:

MARK J. KORNISH

(print/sign/date)

AUG 27 2007

Sample Check-in List

Date/Time Received: 08.27.07 1530

Client: WCH SDG#: J00127 NA SAF#: RC-024 NA

Work Order Number: J7H270206 Chain of Custody # RC-024-018

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: _____ 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: LL J. Sm. Va Date: 08.27.07

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

No action necessary; process as is.

Project Manager _____ Date _____

TESTAMERICA RICHLAND

8/28/2007 8:27:18 AM

Sample Preparation/Analysis

Balance Id: _____

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

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

Pipet #: _____

AnalyDueDate: 08/28/2007 *J00127*

51 CLIENT: HANFORD

PRIORITY

Sep1 DT/Tm Tech: _____

Batch: 7240167 WATER mg/L
SEQ Batch, Test: None All Tests: 88EA, 7240167 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 J5N62-1-AA								
J7H270206-1-SAMP								
								
08/23/2007 13:52		AmtRec: 120MLP	#Containers: 1			Scr:	Alpha:	Beta:
2 J5N62-1-AC-S								
J7H270206-1-MS								
								
08/23/2007 13:52		AmtRec: 120MLP	#Containers: 1			Scr:	Alpha:	Beta:
3 J5N62-1-AD-D								
J7H270206-1-MSD								
								
08/23/2007 13:52		AmtRec: 120MLP	#Containers: 1			Scr:	Alpha:	Beta:
4 J5N62-1-AE-X								
J7H270206-1-DUP								
								
08/23/2007 13:52		AmtRec: 120MLP	#Containers: 1			Scr:	Alpha:	Beta:
5 J5PRP-1-AA-B								
J7H280000-167-BLK								
								
08/23/2007 13:52		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
6 J5PRP-1-AC-C								
J7H280000-167-LCS								
								
08/23/2007 13:52		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

ESTIMATED CA RI CHLAND 20

8/28/2007 8:27:20 AM

Sample Preparation/Analysis

Balance Id: _____

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

Pipet #: _____

AnalyDueDate: 08/28/2007

PRIORITY

Sep1 DT/Tm Tech: _____

Batch: 7240167
SEQ Batch, Test: None

mg/L

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. , 88 , 27023

J5N621AA-SAMP Constituent List:						
HEXCHROME	RDL:0.002	mg/L	LCL:85	UCL:115	RPD:20	
J5N621AC-MS Constituent List:						
HEXCHROME	RDL:0.002	mg/L	LCL:85	UCL:115	RPD:20	
J5N621AD-MSD:						
HEXCHROME	RDL:0.002	mg/L	LCL:85	UCL:115	RPD:20	
J5PRP1AA-BLK:						
HEXCHROME	RDL:0.002	mg/L	LCL:	UCL:	RPD:	
J5PRP1AC-LCS:						
HEXCHROME	RDL:0.002	mg/L	LCL:85	UCL:115	RPD:20	
J5N621AA-SAMP Calc Info:						
Uncert Level (#s):	2	Decay to SaDt:	Y	Blk Subt.:	N	Sci.Not.: Y ODRs: B
J5N621AC-MS Calc Info:						
Uncert Level (#s):	2	Decay to SaDt:	Y	Blk Subt.:	N	Sci.Not.: Y ODRs: B
J5N621AD-MSD:						
Uncert Level (#s):	2	Decay to SaDt:	Y	Blk Subt.:	N	Sci.Not.: Y ODRs: B
J5PRP1AA-BLK:						
Uncert Level (#s):	2	Decay to SaDt:	Y	Blk Subt.:	N	Sci.Not.: Y ODRs: B
J5PRP1AC-LCS:						
Uncert Level (#s):	2	Decay to SaDt:	Y	Blk Subt.:	N	Sci.Not.: Y ODRs: B

Approved By _____ Date: _____