0076503

W05113

REPORT COVER PAGE 1

CASE NARRATIVE 2

SAMPLE RESULTS SUMMARY 6

DATA REVIEW CHECKLIST 19

CHAIN OF CUSTODY 27

SAMPLE PREP ANALYSIS SHEETS 29

ICOC 38

TOTAL # PAGES IN DOCUMENT 40

RECEIVED
MAR 2 1 2008
EDMC

MAR 2007
RECEIVED

W0513

Analytical Data Package Prepared For

Fluor Hanford Inc.

Radiochemical Analysis By

STL Richland

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

Assigned Laboratory Code: STLRL

Data Package Contains _____ Pages

Report No.: 34557

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
W05113	F07-012	B1LMV9	J7B050192-1	JNX5F1AC	9JNX5F10	7037172
		B1LMV9	J7B050192-1	JNX5F1AE	9JNX5F10	7040184
		B1LMV9	J7B050192-1	JNX5F1AA	9JNX5F10	7040185
		B1LMV9	J7B050192-1	JNX5F1AD	9JNX5F10	7040192

MAR 2007
RECEIVED

STL Richland
2800 George Washington Way
Richland, WA 99354

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

Certificate of Analysis

Fluor Hanford
P.O. Box 1000, T6-03
Richland, WA 99352

February 27, 2007

Attention: Steve Trent

SAF Number	:	F07-012
Date SDG Closed	:	February 5, 2007
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W05113
Data Deliverable	:	45/45 Day

CASE NARRATIVE

I. Introduction

On February 5, 2007 one sample was received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the sample was assigned to lot J7B050192 and assigned the following laboratory ID number to correspond with the Fluor Hanford (FH) specific ID:

FH ID#	STLR ID#	MATRIX	DATE OF RECEIPT
B1LMV9	JNX5F	WATER	2/5/07

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:

Gas Proportional Counting
Strontium-90 by method RICH-RC-5006
Liquid Scintillation Counting
Tritium by method RICH-RC-500

February 27, 2007

Carbon-14 by method RICH-RC-5022
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

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

Gas Proportional Counting
Strontium-90 by method RICH-RC-5006
The LCS, batch blank, samples and sample duplicate (B1LMV9) results are within contractual requirements.

Liquid Scintillation Counting
Tritium by method RICH-RC-5007:
The LCS, batch blank, samples and sample duplicate (B1LMV9) results are within contractual requirements.

Carbon-14 by method RICH-RC-5022:
The LCS, batch blank, samples and sample duplicate (B1LMV9) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
The LCS, batch blank, samples, sample duplicate (B1LMV9), sample matrix spike (B1LMV9), and matrix spike duplicate results (B1LMV9) 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:

Sherryl A. Adam
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($TPUs^2$ + $TPUd^2$)] 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

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Date: 27-Feb-07

Report No. : 34557

SDG No: W05113

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC/MDA	RPD
B1LMV9	JNX5F1AC	HEXCHROME	5.90E-02 +- 0.00E+00		mg/L	N/A	2.00E-03	
B1LMV9	JNX5F1AE	C-14	2.94E+01 +- 1.67E+01		pCi/L	100%	1.65E+01	
B1LMV9	JNX5F1AA	H-3	1.21E+04 +- 6.27E+02		pCi/L	100%	3.28E+02	
B1LMV9	JNX5F1AD	STRONTIUM	1.60E-01 +- 4.46E-01	U	pCi/L	99%	9.64E-01	
B1LMV9 DUP	JNX5F1AE	HEXCHROME	6.00E-02 +- 0.00E+00		mg/L	N/A	2.00E-03	1.7
B1LMV9 DUP	JNX5F1AJ	C-14	2.02E+01 +- 1.58E+01		pCi/L	100%	1.65E+01	37.3
B1LMV9 DUP	JNX5F1AK	H-3	1.24E+04 +- 6.37E+02		pCi/L	100%	3.29E+02	2.1
B1LMV9 DUP	JNX5F1AL	STRONTIUM	4.93E-01 +- 4.89E-01	U	pCi/L	100%	9.66E-01	102.0

Number of Results: 8

STL Richland

rptSTLRchSaSum
V5.1 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
STL Richland STLRL
Ordered by QC Type, Batch No.

Date: 27-Feb-07

Report No. : 34557

SDG No.: W05113

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
MATRIX SPIK	JNX5F1AC	HEXCHROME	3.19E-01 +- 0.00E+00		mg/L	N/A			2.00E-03
MATRIX SPIK	JNX5F1AD	HEXCHROME	3.26E-01 +- 0.00E+00		mg/L	N/A			2.00E-03
BLANK QC	JN0QV1AA	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A			2.00E-03
		HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A			2.00E-03
BLANK QC	JN6431AA	C-14	-9.59E-02 +- 6.84E+00	U	pCi/L	100%			8.27E+00
BLANK QC	JN6441AA	H-3	1.08E+02 +- 1.65E+02	U	pCi/L	100%			3.29E+02
BLANK QC	JN6441AD	H-3	1.80E+02 +- 1.70E+02	U	pCi/L	100%			3.36E+02
BLANK QC	JN65H1AA	STRONTIUM	3.21E-01 +- 4.48E-01	U	pCi/L	98%			9.25E-01
BLANK QC	JN0QX1AA	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A			2.00E-03
LCS	JN6431AC	C-14	1.79E+02 +- 2.65E+01		pCi/L	100%	99%	0.0	8.26E+00
LCS	JN6441AC	H-3	2.38E+03 +- 2.57E+02		pCi/L	100%	88%	-0.1	3.27E+02
LCS	JN6441AE	H-3	2.61E+03 +- 2.68E+02		pCi/L	100%	96%	0.0	3.35E+02
LCS	JN65H1AC	STRONTIUM	2.64E+01 +- 6.88E+00		pCi/L	95%	97%	0.0	1.09E+00

Number of Results: 13

STL Richland
rptSTLRichQcSum
V5.1 A2002

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

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: 27-Feb-07

Lab Name:	STL Richland	SDG:	W05113	Collection Date:	2/5/2007 9:22:00 AM
Lot-Sample No.:	J7B050192-1	Report No. :	34557	Received Date:	2/5/2007 12:45:00 PM
Client Sample ID:	B1LMV9	COC No. :	F07-012-102	Matrix:	WATER

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	Analy Method, Primary Detector
Batch: 7037172	Work Order: JNX5F1AC			Report DB ID: 9JNX5F10								
HEXCHROME	5.90E-02			0.0E+00	2.00E-03	mg/L	N/A	(29.5)	2/6/07 08:30 a		100.0	7196_CR6
								N/A			ML	
Batch: 7040184	Work Order: JNX5F1AE			Report DB ID: 9JNX5F10								
C-14	2.94E+01		7.8E+00	1.7E+01	1.65E+01	pCi/L	100%	(1.8)	2/20/07 03:01 a		0.1	C14_LSC
						7.92E+00	2.00E+02	(3.5)			L	LSC3
Batch: 7040185	Work Order: JNX5F1AA			Report DB ID: 9JNX5F10								
H-3	1.21E+04		3.9E+02	6.3E+02	3.28E+02	pCi/L	100%	(37.)	2/22/07 03:44 a		0.005	906.0_H3_LSC
						1.57E+02	4.00E+02	(38.7)			L	LSC6
Batch: 7040192	Work Order: JNX5F1AD			Report DB ID: 9JNX5F10								
STRONTIUM	1.60E-01	U	4.4E-01	4.5E-01	9.64E-01	pCi/L	99%	0.17	2/20/07 01:59 p		0.4998	SRTOT_SEP_PRECIP
						4.58E-01		0.72			L	GPC32A

Number of Results: 4

Comments:

STL Richland
rptSTLRchSample
V5.1 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

Date: 27-Feb-07

DUPLICATE RESULTS

Lab Name:	STL Richland	SDG:	W05113	Collection Date:	2/5/2007 9:22:00 AM
Lot-Sample No.:	J7B050192-1	Report No. :	34557	Received Date:	2/5/2007 12:45:00 PM
Client Sample ID:	B1LMV9 DUP	COC No. :	F07-012-102	Matrix:	WATER

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7037172	Work Order: JNX5F1AE			Report DB ID: JNX5F1JR		Orig Sa DB ID: 9JNX5F10						
HEXCHROME	6.00E-02			0.0E+00	2.00E-03	mg/L	N/A	(30.)	2/6/07 08:30 a		100.0	7196_CR6
	5.90E-02	RPD	1.7					N/A			ML	
Batch: 7040184	Work Order: JNX5F1AJ			Report DB ID: JNX5F1JR		Orig Sa DB ID: 9JNX5F10						
C-14	2.02E+01		7.5E+00	1.6E+01	1.65E+01	pCi/L	100%	(1.2)	2/20/07 03:43 a		0.1	C14_LSC
	2.94E+01	RPD	37.3			2.00E+02		(2.6)			L	LSC3
Batch: 7040185	Work Order: JNX5F1AK			Report DB ID: JNX5F1KR		Orig Sa DB ID: 9JNX5F10						
H-3	1.24E+04		3.9E+02	6.4E+02	3.29E+02	pCi/L	100%	(37.7)	2/22/07 05:06 a		0.005	906.0_H3_LSC
	1.21E+04	RPD	2.1			4.00E+02		(38.9)			L	LSC6
Batch: 7040192	Work Order: JNX5F1AL			Report DB ID: JNX5F1LR		Orig Sa DB ID: 9JNX5F10						
STRONTIUM	4.93E-01	U	4.7E-01	4.9E-01	9.66E-01	pCi/L	100%	0.51	2/20/07 01:59 p		0.5068	SRTOT_SEP_PRECIP
	1.60E-01	U RPD	102.0					(2.)			L	GPC32B

Number of Results: 4

Comments:

STL Richland
rptSTLRchDupV5.1
A2002

RPD - Relative Percent Difference.
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: 27-Feb-07

Lab Name: STL Richland SDG: W05113

Lot-Sample No.: #Error Report No. : 34557 Matrix: WATER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7037172	Work Order: JN0QV1AA			Report DB ID: JN0QV1AB								
HEXCHROME	2.00E-03	U		0.0E+00	2.00E-03	mg/L	N/A	1. N/A	2/6/07 08:30 a		100.0 ML	TBD
HEXCHROME	2.00E-03	U		0.0E+00	2.00E-03	mg/L	N/A	1. N/A	2/6/07 08:30 a		100.0 ML	7196_CR6
Batch: 7037172	Work Order: JN0QX1AA			Report DB ID: JN0QV1AC								
HEXCHROME	2.00E-03	U		0.0E+00	2.00E-03	mg/L	N/A	1. N/A	2/6/07		100.0 ML	7196_CR6

Number of Results: 3

Comments:

STL Richland
rptSTLRchBlank
V5.1 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.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 27-Feb-07

Lab Name: STL Richland

SDG: W05113

Lot-Sample No.: J7B090000-184

Report No. : 34557

Matrix: WATER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7040184	Work Order:	JN6431AA		Report DB ID:	JN6431AB							
C-14	-9.59E-02	U	3.4E+00	6.8E+00	8.27E+00	pCi/L	100%	-0.01	2/20/07 01:36 a		0.2	C14_LSC
					3.96E+00	2.00E+02		-0.03			L	LSC3

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V5.1 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: 27-Feb-07

Lab Name: STL Richland SDG: W05113

Lot-Sample No.: J7B090000-185 Report No. : 34557 Matrix: WATER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7040185	Work Order: JN6441AA			Report DB ID: JN6441AB								
H-3	1.08E+02	U	1.4E+02	1.7E+02	3.29E+02	pCi/L	100%	0.33	2/21/07 10:14 p		0.005	906.0_H3_LSC
					1.57E+02	4.00E+02		(1.3)			L	LSC6
Batch: 7040185	Work Order: JN6441AD			Report DB ID: JN6441DX								
H-3	1.80E+02	U	1.4E+02	1.7E+02	3.36E+02	pCi/L	100%	0.54	2/22/07 12:59 a		0.005	906.0_H3_LSC
					1.61E+02	4.00E+02		(2.1)			L	LSC6

Number of Results: 2

Comments:

STL Richland
rptSTLRichBlank
V5.1 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: 27-Feb-07

Lab Name: STL Richland **SDG:** W05113

Lot-Sample No.: J7B090000-192 **Report No. :** 34557 **Matrix:** WATER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7040192	Work Order: JN65H1AA			Report DB ID: JN65H1AB								
STRONTIUM	3.21E-01	U	4.4E-01	4.5E-01	9.25E-01	pCi/L	98%	0.35	2/20/07 01:59 p		0.4993	SRTOT_SEP_PRECIP
					4.38E-01			(1.4)			L	GPC32C

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V5.1 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

LCS RESULTS

Date: 27-Feb-07

Lab Name: STL Richland

SDG: W05113

Lot-Sample No.: J7B090000-184

Report No. : 34557

Matrix: WATER

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	Analy Method, Primary Detector
Batch: 7040184	Work Order: JN6431AC			Report DB ID: JN6431CS									
C-14	1.79E+02		7.5E+00	2.6E+01	8.26E+00	pCi/L	100.00%	1.81E+02	5.85E+00	99%	2/20/07 02:18 a	0.2	C14_LSC
							Reo Limits:	70.	130.	0.0		L	LSC3

Number of Results: 1

Comments:

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

FORM II

LCS RESULTS

Date: 27-Feb-07

Lab Name: STL Richland

SDG: W05113

Lot-Sample No.: J7B090000-185

Report No. : 34557

Matrix: WATER

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	Analy Method, Primary Detector
Batch: 7040185	Work Order: JN6441AC			Report DB ID: JN6441CS									
H-3	2.38E+03		2.1E+02	2.6E+02	3.27E+02	pCi/L	100.00%	2.71E+03	8.14E+01	88%	2/21/07 11:37 p	0.005	906.0_H3_LSC
							Rec Limits:	70.	130.	-0.1		L	LSC6
Batch: 7040185	Work Order: JN6441AE			Report DB ID: JN6441EM									
H-3	2.61E+03		2.2E+02	2.7E+02	3.35E+02	pCi/L	100.00%	2.71E+03	8.14E+01	96%	2/22/07 02:22 a	0.005	906.0_H3_LSC
							Rec Limits:	70.	130.	0.0		L	LSC6

Number of Results: 2

Comments:

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

rptSTLRchLcs
V5.1 A2002

STL RICHLAND

FORM II

LCS RESULTS

Date: 27-Feb-07

Lab Name: STL Richland

SDG: W05113

Lot-Sample No.: J7B090000-192

Report No. : 34557

Matrix: WATER

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	Analy Method, Primary Detector
Batch: 7040192	Work Order: JN65H1AC			Report DB ID: JN65H1CS									
STRONTIUM	2.64E+01		1.5E+00	7.0E+00	1.09E+00	pCi/L	94.60%	2.72E+01	5.36E-01	97%	2/20/07 01:59 p	0.5011	SRTOT_SEP_PRECIP
							Rec Limits:			0.0		L	GPC32D

Number of Results: 1

Comments:

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

rptSTLRchLcs
V5.1 A2002

FORM II

MATRIX SPIKE RESULTS

Date: 27-Feb-07

Lab Name: STL Richland SDG: W05113

Lot-Sample No.: J7B050192-1 Report No. : 34557 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	Analy Method, Primary Detector
Batch: 7037172	Work Order:	JNX5F1AC		Report DB ID:	JNX5FCW		Orig Sa DB ID:	9JNX5F10					
HEXCHROME	3.19E-01			0.0E+00	2.00E-03	mg/L	N/A		0.00E+00		2/6/07 08:30 a	100.0	7196_CR6
	5.90E-02											ML	

Number of Results: 1

Comments:

STL Richland RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT SOA.
rptSTLRchMs V5.1 Bias - (Result/Expected)-1 as defined by ANSI N13.30.
A2002

SEVERN TRENT STL

STL Richland
Hexavalent Chromium - Water

Analyst:	S. Wheland	Calibration Curve Information				SOP Information		BATCH #	7037172
Start Date:	2/6/2007		Amount	Conc.(mg/L)	ABS.	RICH-WC-5003		SDG #	W05113
Start Time:	8:30	Blank	0.000	0.000	0.000	Revision 7		Matrix	Water
End Date:	2/6/2007	Std. 1	0.100	0.0507	0.099				
End Time	9:30	Std. 2	0.500	0.25073	0.476			Instrument Information	
Analyst Signature:		Std. 3	0.750	0.375	0.708	MDL (mg/L)	0.002	Instrument:	Hach DR2010
		Std. 4	1.500	0.750	1.394			Wavelength:	540
		Std 5	2.000	1.000	1.844			R Squared	0.99990
Date:	02/06/07	Standard Volume (mL):			100.000			Slope:	1.84223
		Date of Curve:			2/6/2007			Intercept:	0.00893

	Calibration Information:	ICV Information:		LCS Information:		Matrix Spike Information:	
Dilution ID #	Cr-07-0011	Cr-07-0012		Cr-07-0011		Cr-07-0011	
Prep Date:	02/06/07	02/06/07		02/06/07		02/06/07	
Concentration (mg/L)	50	50		50		50	
Expiration Date:	02/07/07	02/07/07		02/07/07		02/07/07	
Pipettor(s)	70,190	190		190		190	
Volume Used (Expected Value		1.000	0.50000	1.00	0.50000	0.50	0.26316

Expected values are only amounts added in mg and not final concentrations

Sample ID	Client ID	Type	Sample Volume (mL)	Sample ABS.	Blank ABS.	Corrected ABS.	Dilution Factor	Curve Conc. (mg/L)	Final Conc. (mg/L)	% Rec.
n/a	n/a	ICV	100.000	0.944	0.000	0.944	1	0.5076	0.508	101.51%
n/a	n/a	ICB	100.000	0.000	0.000	0.000	1	<MDL	<MDL	
JN0QV-1AA-B	n/a	Prep Blank	100.000	0.005		0.005	1	0.0021	<MDL	
JN0QV-1AC-C	n/a	LCS	100.000	0.948		0.948	1	0.5097	0.510	101.95%
JNX5F-1AC	B1LMV9	Sample	100.000	0.118		0.118	1	0.0592	0.059	
JNX5F-1AC-S	B1LMV9-MS	MS	100.000	0.597		0.597	1	0.3192	0.319	98.80%
JNX5F-1AD-D	B1LMV9-MSD	MSD	100.000	0.610		0.610	1	0.3263	0.326	101.49%
JNX5F-1AE-X	B1LMV9-DUP	Duplicate	100.000	0.119		0.119	1	0.0597	0.060	
			100.000				1			
			100.000				1			
			100.000				1			
n/a	n/a	CCV	100.000	0.948		0.948	1	0.5097	0.510	101.95%
n/a	n/a	CCB	100.000	0.004		0.004	1	-0.0027	<MDL	
			100.000				1			
			100.000				1			
			100.000				1			
			100.000				1			
			100.000				1			
			100.000				1			

STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

2/21/2007 10:48:46 AM

Lot No., Due Date: J7B050192; 03/23/2007

Client, Site: 108302; FLH HANFORD

QC Batch No., Method Test: 7040192; RSRTOT SrTot by GPC

SDG, Matrix: W05113; WATER

1.0 ICOC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓	No	N/A
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓	No	N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓	No	N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓	No	N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes ✓	No	N/A
3.0 QC Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes ✓	No	N/A
3.5 Are the sample yields and MDAs within contract limits?	Yes ✓	No	N/A
4.0 Raw Data			
4.1 Were results calculated in the correct units?	Yes ✓	No	N/A
4.2 Were analysis volumes entered correctly?	Yes ✓	No	N/A
4.3 Were Yields entered correctly?	Yes	No	N/A ✓
4.4 Were spectra reviewed/meet contractual requirements?	Yes ✓	No	N/A
4.5 Were raw counts reviewed for anomalies?	Yes ✓	No	N/A
5.0 Other			
5.1 Are all nonconformances included and noted?	Yes	No	N/A ✓
5.2 Are all required forms filled out?	Yes ✓	No	N/A
5.3 Was the correct methodology used?	Yes ✓	No	N/A
5.4 Was transcription checked?	Yes ✓	No	N/A
5.5 Were all calculations checked at a minimum frequency?	Yes ✓	No	N/A
5.6 Are worksheet entries complete and correct?	Yes ✓	No	N/A

6.0 Comments on any No response:

First Level Review Lisa Anderson **Date** 2/21/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7040192
W05113

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Sherryl A. Adams Date: 2-27-07

STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

2/22/2007 1:28:07 PM

Lot No., Due Date: J7B050192; 03/23/2007

Client, Site: 108302; FLH HANFORD

QC Batch No., Method Test: 7040185; RTRITIUM H-3 by LSC

SDG, Matrix: W05113; WATER

	Yes	No	N/A
1.0 ICOC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?	✓		
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?	✓		
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level Review [signature] **Date** 2/22/07

STL Richland

QAS_RADCALCv4.8.26

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7040185
W05113

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Sheryl A Adam Date: 2-25-07

STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

2/20/2007 12:54:53 PM

Lot No., Due Date: J7B050192; 03/23/2007

Client, Site: 108302; FLH HANFORD

QC Batch No., Method Test: 7040184; RC14 C-14 by LSC

SDG, Matrix: W05113; WATER

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?	✓		
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?	✓		
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level Review [signature] **Date** 2/20/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7040184
W05113

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response:

Second Level Review: Sheryl A Adam Date: 2-20-07

SEVERN TRENT STL

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Work Order Number(s): **JN0QV, JNX5F**

Lab Sample Numbers or SDG: W05113

Method/Test/Parameter: **Cr+6 in Water / RICH-WC-5003**

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 (✓)	2nd 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:

Analyst: [signature] Date: 2/6/07

Second-Level Review: Sherryl R Adam Date: 2-27-07

STL RICHLAND

Fluor Hanford Inc. JTB050192

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST W05113

F07-012-102

PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Hughes/Wise Due 03-23-07	COMPANY CONTACT: TRENT, SJ	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ
SAMPLING LOCATION: 15M AT-K-3-DM Rev 2/5/07	PROJECT DESIGNATION: AQUIFER TUBE SAMPLING IN THE 100-KR-4 OU		SAP NO.: F07-012
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-451-1	COA: 122543E510	METHOD OF SHIPMENT: GOVERNMENT VEHICLE
SHIPPED TO: Severn Trent Incorporated, Richland	OFFSITE PROPERTY NO.: N/A Rev 2/5/07		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 7N

AIR QUALITY: ☐

DATA TURNAROUND: 45 Days / 45 Days

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool 4C	~~HNO3 to pH <2~~ None	~~HCl~~ to pH <2 HNO_3	None	Rev 2/5/07				
TYPE OF CONTAINER	aG	P Rev 2/5/07	P	P Glass					
NO. OF CONTAINER(S)	1	1	2	1					
VOLUME	500mL	~~1000mL~~ 125mL	1000mL	1000mL					
SAMPLE ANALYSIS	Chromium Hex - 7196; *	Gross Alpha; Gross Beta; Carbon 14 Rev 2/5/07	Radiochem-90Sr Strontium 89,90-- Total Sr	Tritium - H3; Rev 2/5/07 Ion Exch					

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1LMV9	WATER	2/5/07	0922	✓	✓	✓	✓					
									JNX5F			

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. Pfister / [signature]	2/5/07 1241	[signature] Eric Darley	2/5/07 1245

SPECIAL INSTRUCTIONS: * filtered <0.45 µm

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 2/5/07 12:45

Client: FLH SDG #: W05113 NA [ ] SAF #: F07-012 NA [ ]

Work Order Number: J7B050192 Chain of Custody # F07-012-102

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
   - ____ custody seals
   - ____ hazard labels
   - ✓ appropriate samples labels

   2XLP
   1XLPG
   1X500MLG
   1X125MLP
9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking.
   - ____ 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: 2/5/07 12:45

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

2/20/2007 10:44:00 AM

Sample Preparation/Analysis

Balance Id:1120462733

108302, Fluor Hanford Inc , Waste
Management Federal Servi

CG Sr-Total Prp/SepRC5006
TH Total Strontium by GPC
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 03/19/2007

Sep1 DT/Tm Tech: 02/19/2007 15:44,ManisD

Batch: 7040192 WATER pCi/L PM, Quote: SA , 29754

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 7037172 88EA, 7040184 5SS3, 7040185 ARS6, 7040192 CGTH,

[redacted]

Prep Tech: ,BockJ

Work Ord, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	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 JNX5F-1-AD J7B050192-1-SAMP [redacted] 02/05/2007 09:22			499.80g,in AmtRec: 125ML,500ML,3XLP	499.80g	SRTA16570 02/06/07,pd 09/11/06,r #Containers: 5	1.5 02/19/2007 15:44,s1	98.7	100	32A Scr:	1451 Alpha: -2.66E-04 uCi/Sa	2/20/07 Beta: -8.43E-05 uCi/Sa	
2 JNX5F-1-AL-X J7B050192-1-DUP [redacted] 02/05/2007 09:22			506.80g,in AmtRec: 125ML,500ML,3XLP	506.80g	SRTA16571 02/06/07,pd 09/11/06,r #Containers: 5	1.5 02/19/2007 15:44,s1	99.7	100	32B Scr:	Alpha: -2.66E-04 uCi/Sa	Beta: -8.43E-05 uCi/Sa	
3 JN65H-1-AA-B J7B090000-192-BLK [redacted] 02/05/2007 09:22			499.30g,in AmtRec:	499.30g #Containers: 1	SRTA16572 02/06/07,pd 09/11/06,r	1.5 02/19/2007 15:44,s1	97.6	100	32C Scr:	Alpha:	Beta:	
4 JN65H-1-AC-C J7B090000-192-LCS [redacted] 02/05/2007 09:22			501.10g,in AmtRec:	501.10g #Containers: 1	STSC1814 01/24/07,pd 09/11/06,r	1.5 02/19/2007 15:44,s1	94.6	100	32D Scr:	Alpha:	Beta:	

Comments:

```
All Clients for Batch:
   108302, Fluor Hanford Inc                    Waste Management Federal Servi,  SA , 29754

JNX5F1AD-SAMP Constituent List:
  Sr-90       RDL:2          pCi/L     LCL:70     UCL:130    RPD:20
JN65H1AA-BLK:
  Sr-90       RDL:2          pCi/L     LCL:       UCL:       RPD:
JN65H1AC-LCS:
  Sr-90       RDL:2          pCi/L     LCL:70     UCL:130    RPD:20
JNX5F1AD-SAMP Calc Info:
```

2/20/2007 10:44:05 AM

Sample Preparation/Analysis

CG Sr-Total Prp/SepRC5006
TH Total Strontium by GPC
5I CLIENT: HANFORD

Balance Id:1120482733

Pipet #: _____

AnalyDueDate: 03/19/2007

Sep1 DT/Tm Tech: 02/19/2007 15:44,ManisD

Batch: 7040192
SEQ Batch, Test: None

pCi/L

Sep2 DT/Tm Tech:

Prep Tech: ,BockJ

Work Ord, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	[redacted]	Dish Size	[redacted] Geometry	[redacted] 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 ODRs: B
JN65H1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JN65H1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

2/9/2007 8:06:10 AM

Sample Preparation/Analysis

108302, Fluor Hanford Inc Management Federal Servi , Waste

AR H-3 Prp/SepRC5007
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

AnalyDueDate: 03/19/2007

Batch: 7040185 WATER pCi/L PM, Quote: SA , 29754

SEQ Batch, Test: None

Balance Id: 12445
Pipet #:
Sep1 DT/Tm Tech: 2/6 0 [illegible]
Sep2 DT/Tm Tech:
Prep Tech:

Work Order, Lot, Sample DateTime	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:
1 JNX5F-1-AA J7B050192-1-SAMP [redacted] 02/05/2007 09:22		AmtRec: 125ML,500ML,3XLP	#Containers: 5			Scr:	Alpha:	Beta:
2 JNX5F-1-AK-X J7B050192-1-DUP [redacted] 02/05/2007 09:22		AmtRec: 125ML,500ML,3XLP	#Containers: 5			Scr:	Alpha:	Beta:
3 JN644-1-AA-B J7B090000-185-BLK [redacted] 02/05/2007 09:22		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
4 JN644-1-AC-C J7B090000-185-LCS [redacted] 02/05/2007 09:22		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
5 JN644-1-AD-BX J7B090000-185-MBLK [redacted] 02/05/2007 09:22		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
6 JN644-1-AE-CM J7B090000-185-MLCS [redacted] 02/05/2007 09:22		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
7 JN644-1-AF-BN J7B090000-185-IBLK [redacted] 02/05/2007 09:22		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

2/9/2007 8:06:19 AM

Sample Preparation/Analysis

AR H-3 Prp/SepRC5007
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

Balance Id: 12445
Pipet #:
Sep1 DT/Tm Tech: 2-21-07am
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 03/19/2007

Batch: 7040185 pCi/L
SEQ Batch, Test: None

[redacted]

Work Order, Lot, Sample DateTime	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:

Comments:

All Clients for Batch:
108302, Fluor Hanford Inc Waste Management Federal Servi, SA , 29754

JNX5F1AA-SAMP Constituent List:
H-3 RDL:400 pCi/L LCL:70 UCL:130 RPD:20
JN6441AA-BLK:
H-3 RDL:400 pCi/L LCL: UCL: RPD:
JN6441AC-LCS:
H-3 RDL:400 pCi/L LCL:70 UCL:130 RPD:20
JN6441AD-MBLK:
H-3 RDL:400 pCi/L LCL: UCL: RPD:
JN6441AE-MLCS:
H-3 RDL:400 pCi/L LCL:70 UCL:130 RPD:20
JN6441AF-IBLK:
H-3 RDL:400 pCi/L LCL: UCL: RPD:

JNX5F1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JN6441AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JN6441AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JN6441AD-MBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JN6441AE-MLCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JN6441AF-IBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

STL RICHLAND

33

STL RICHLAND

2/9/2007 8:06:04 AM

Sample Preparation/Analysis

108302, Fluor Hanford Inc , Waste
Management Federal Servi

5S C-14 Prp/SepRC5022
S3 Carbon-14 by Liquid Scint
5I CLIENT: HANFORD

AnalyDueDate: 03/19/2007

Batch: 7040184 WATER pCi/L PM, Quote: SA , 29754
SEQ Batch, Test: None

Balance Id: N/A
Pipet #:
Sep1 DT/Tm Tech: 2-13-07 bm
Sep2 DT/Tm Tech:
Prep Tech:

[redacted]

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count Off (24hr) Circle	Off	CR Analyst, Init/Date	Comments:
1 JNX5F-1-AE J7B050192-1-SAMP [redacted] 02/05/2007 09:22		AmtRec: 125ML,500ML,3XLP	#Containers: 5					Scr: Alpha: Beta:	
2 JNX5F-1-AJ-X J7B050192-1-DUP [redacted] 02/05/2007 09:22		AmtRec: 125ML,500ML,3XLP	#Containers: 5					Scr: Alpha: Beta:	
3 JN643-1-AA-B J7B090000-184-BLK [redacted] 02/05/2007 09:22		AmtRec:	#Containers: 1					Scr: Alpha: Beta:	
4 JN643-1-AC-C J7B090000-184-LCS [redacted] 02/05/2007 09:22		AmtRec:	#Containers: 1					Scr: Alpha: Beta:	
5 JN643-1-AD-B J7B090000-184-BLK [redacted] 02/05/2007 09:22		AmtRec:	#Containers: 1					Scr: Alpha: Beta:	

Comments:

All Clients for Batch:
108302, Fluor Hanford Inc Waste Management Federal Servi, SA , 29754

JNX5F1AE-SAMP Constituent List:
C-14 RDL:200 pCi/L LCL:70 UCL:130 RPD:20

34

2/9/2007 8:06:10 AM

Sample Preparation/Analysis

5S C-14 Prp/SepRC5022
S3 Carbon-14 by Liquid Scint
5I CLIENT: HANFORD

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 03/19/2007

Batch: 7040184 pCi/L
SEQ Batch, Test: None

[redacted]

Work Order, Lot, Sample DateTime	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:

```
JN6431AA-BLK:
 C-14        RDL:200        pCi/L    LCL:       UCL:       RPD:
JN6431AC-LCS:
 C-14        RDL:200        pCi/L    LCL:70     UCL:130    RPD:20
JN6431AD-BLK:
 C-14        RDL:200        pCi/L    LCL:       UCL:       RPD:
JNX5F1AE-SAMP Calc Info:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
JN6431AA-BLK:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
JN6431AC-LCS:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
JN6431AD-BLK:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
```

Approved By _____ Date: _____

STL RICHLAND

2/6/2007 9:42:51 AM

Sample Preparation/Analysis

108302, Fluor Hanford Inc Management Federal Servi , Waste

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

AnalyDueDate: 03/19/2007

Batch: 7037172 WATER ug/L PM, Quote: SA , 29754
SEQ Batch, Test: None All Tests: 8SS3, 88EA, ARS6, CGTH, 7037167 ARS6, 7037172 88EA,

[redacted]

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	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 JNX5F-1-AC J7B050192-1-SAMP [redacted] 02/05/2007 09:22		AmtRec: 125ML,500ML,3XLP	#Containers: 5			Scr:	Alpha:	Beta:
2 JNX5F-1-AF-S J7B050192-1-MS [redacted] 02/05/2007 09:22		AmtRec: 125ML,500ML,3XLP	#Containers: 5			Scr:	Alpha:	Beta:
3 JNX5F-1-AG-D J7B050192-1-MSD [redacted] 02/05/2007 09:22		AmtRec: 125ML,500ML,3XLP	#Containers: 5			Scr:	Alpha:	Beta:
4 JNX5F-1-AH-X J7B050192-1-DUP [redacted] 02/05/2007 09:22		AmtRec: 125ML,500ML,3XLP	#Containers: 5			Scr:	Alpha:	Beta:
5 JN0QV-1-AA-B J7B060000-172-BLK [redacted] 02/05/2007 09:22		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
6 JN0QV-1-AC-C J7B060000-172-LCS [redacted] 02/05/2007 09:22		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

36

STL RICHLAND

2/6/2007 9:42:58 AM

Sample Preparation/Analysis

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

AnalyDueDate: 03/19/2007

Batch: 7037172 ug/L
SEQ Batch, Test: None

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

[redacted]

Work Order, Lot, Sample DateTime	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:

Comments:

All Clients for Batch:
108302, Fluor Hanford Inc Waste Management Federal Servi, SA , 29754

JNX5F1AC-SAMP Constituent List:
HEXCHROME RDL: ug/L LCL:85 UCL:115 RPD:20
JNX5F1AF-MS Constituent List:
HEXCHROME RDL:10 ug/L LCL:85 UCL:115 RPD:20
JNX5F1AG-MSD:
HEXCHROME RDL:10 ug/L LCL:85 UCL:115 RPD:20
JN0QV1AA-BLK:
HEXCHROME RDL: ug/L LCL: UCL: RPD:
JN0QV1AC-LCS:
HEXCHROME RDL:10 ug/L LCL:85 UCL:115 RPD:20

JNX5F1AC-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JNX5F1AF-MS Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JNX5F1AG-MSD:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JN0QV1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JN0QV1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

2/21/2007 10:47:40 AM

ICOC Fraction Transfer/Status Report

ByDate: 2/21/2006, 2/26/2007, Batch: '7040192', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting				Comments
7040192							
AC		CalcC	BockJ	2/16/2007 8:39:33			
SC			andersonp	IsBatched	2/9/2007 8:06:02 AM		ICOC_RADCALC v4.8.26
SC			BockJ	InPrep	2/16/2007 8:39:33 AM		RICH-RC-5016 Revision 6
SC			BockJ	Prep1C	2/16/2007 9:05:10 AM		RICH-RC-5016 REVISION 6
SC			ManisD	InSep1	2/16/2007 9:13:36 AM		RICH-RC-5006 REV 6
SC			ManisD	Sep1C	2/20/2007 10:44:12 AM		RICH-RC-5006 REV 6
SC			BlackCL	InCnt1	2/20/2007 10:45:54 AM		RICH-RD-0003 REVISION 4
SC			DAWKINSO	CalcC	2/20/2007 7:19:26 PM		RICH-RD-0003 REVISION 4
AC			BockJ	2/16/2007 9:05:10			
AC			ManisD	2/16/2007 9:13:36			
AC			BlackCL	2/20/2007 10:45:54			
AC			DAWKINSO	2/20/2007 7:19:26 PM			

AC: Accepting Entry; SC: Status Change

2/22/2007 1:27:40 PM

ICOC Fraction Transfer/Status Report

ByDate: 2/22/2006, 2/27/2007, Batch: '7040185', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7040185						
AC		CalcC	McDowellD	2/21/2007 8:19:07		
SC			andersonp	IsBatched	2/9/2007 8:06:02 AM	ICOC_RADCALC v4.8.26
SC			McDowellD	InSep1	2/21/2007 8:19:07 AM	RICH-RC-5007 REVISION 6
SC			McDowellD	Sep1C	2/21/2007 2:34:25 PM	RICH-RC-5007 REVISION 6
SC			StringerR	InCnt1	2/21/2007 2:45:26 PM	RICH-RD-0001 REVISION 3
SC			StringerR	CalcC	2/22/2007 10:27:21 AM	RICH-RD-0001 REVISION 3
AC			McDowellD	2/21/2007 2:34:25 PM		
AC			StringerR	2/21/2007 2:45:26 PM		
AC			StringerR	2/22/2007 10:27:21		

AC: Accepting Entry; SC: Status Change

2/20/2007 12:54:00 PM

ICOC Fraction Transfer/Status Report

ByDate: 2/20/2006, 2/25/2007, Batch: '7040184', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7040184						
AC		CalcC	McDowellD	2/13/2007 9:53:36		
SC			andersonp	IsBatched	2/9/2007 8:08:02 AM	ICOC_RADCALC v4.8.26
SC			McDowellD	InSep1	2/13/2007 9:53:36 AM	RICH-RC-5022 REVISION 3
SC			McDowellD	Sep1C	2/19/2007 1:40:42 PM	RICH-RC-5022 REVISION 3
SC			BlackCL	InCnt1	2/19/2007 1:43:28 PM	RICH-RD-0001 REVISION 3
SC			BlackCL	CalcC	2/20/2007 8:40:28 AM	RICH-RD-0001 REVISION 3
AC			McDowellD	2/19/2007 1:40:42 PM		
AC			BlackCL	2/19/2007 1:43:28 PM		
AC			BlackCL	2/20/2007 8:40:26		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 4

ICOCFractions v4.8.26