

W05180A

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DATE PRINT NAME

Analytical Data Package Prepared For

Fluor Hanford

Radiochemical Analysis By

TAL Richland TARL

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

Data Package Contains _____ Pages

Report Nbr: 37315

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W05180A	W07-005	B1N5Y1	J7J230323-1	J9NCK1AA	9J9NCK10	7296675

Comments:

Certificate of Analysis

Fluor Hanford
1200 Jadwin Ave.
Richland, WA 99352

November 8, 2007

Attention: Steve Trent

SAF Number	:	W07-0054
Date SDG Closed	:	October 23, 2007
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W05180A
Data Deliverable	:	15-Day / Summary

CASE NARRATIVE

I. Introduction

On October 23, 2007 a request for reanalysis of one water sample was received at TestAmerica Laboratories Richland (TALR) for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Pacific Northwest National Laboratories (PGW) specific ID:

<u>PGW ID#</u>	<u>STLR ID#</u>	<u>DATE OF RECEIPT</u>	<u>MATRIX</u>
B1N5Y1	J9NCK(JX8R9)	6/1/07	WATER

II. Sample Receipt

The samples were 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:

Liquid Scintillation Counting
Tritium by method RICH-RC-5007

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

Liquid Scintillation Counting

Tritium by method RICH-RC-5007:

This is a client requested reanalysis. The reanalysis results are within RER acceptance criteria. The LCS, batch blank, samples and sample duplicate (B1N5Y1) 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:



Sherryl A. Adam
Project Manager

Adam, Sherryl

From: Hampt, Heidi [Heidi_Hampt@RL.gov]
Sent: Tuesday, October 23, 2007 2:32 PM
To: Adam, Sherryl
Cc: Trent, Stephen J; Ayres, Doris E
Subject: Request for Recheck, Recount, or Reanalysis Order

Attachments: 071023STLRLR4340.rtf



071023STLRLR4340
.rtf (3 KB)

<<071023STLRLR4340.rtf>>

See Attached

10/23/2007
RECHECK, RECOUNT, OR REANALYSIS ORDER
CONTRACT NO MW6-SBB-A19981

Severn Trent Incorporated,
2800 George Washington Way
Richland, WA 99354

Battelle PNNL Order Number: 071023STLRL-R4340

Sample Delivery Group: W05180

Special Instructions None

Samples(s)

Lab Sample ID	PNNL Sample	Action	TAT	METHOD_NAME:
9JX8R910	B1N5Y1	Reanalysis	15/15	906.0_H3_LSC

Deliver Report Results to: Fluor Hanford, Inc.
1200 Jadwin Ave.
Richland, WA 99352
C/O Mr. Steve Trent

The report results must reference the Battelle PNNL-order number, SDG number, and the Battelle PNNL sample identification number shown above.

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 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

Uncertainty Estimation

Test America Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, $R = \text{constants} * f(x,y,z,...)$. The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/\sqrt{n}), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

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) <i>u_c - Combined Uncertainty.</i>	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_c the combined uncertainty</i> . 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%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgrndCnt}/\text{BkgrndCntMin})/\text{SCntMin})) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. 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%. $MDC = (4.65 * \text{Sqrt}((\text{BkgrndCnt}/\text{BkgrndCntMin})/\text{SCntMin}) + 2.71/\text{SCntMin}) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. 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.

Thursday, November 08, 2007

TAL Richland Report

Lab Code: TARL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W05180A.Edd, h:\Reportdb\edd\Fead\Rad\37315.E

Lab Sample Id: J9NEC1FN

Sdg/Rept Nbr: W05180A 37315

Collection Date: 06/01/2007 10:56

Client Id: INTRA-LAB BL

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

Received Date: 10/23/2007

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AG	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
7296675	H-3 10028-17-8	1.64E+03	pCi/L	1.5E+02 1.3E+02			100.0		906.0_H3_LSC	5.00E-03 L	10/26/2007 22:37				D

Thursday, November 08, 2007

TAL Richland Report

Lab Code: TARL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\FeadIVRad\W05180A.Edd, h:\Reportdb\ledd\FeadIVRad\37315.E

Lab Sample Id: J9NEC1GN

Sdg/Rept Nbr: W05180A 37315

Collection Date: 06/01/2007 10:56

Client Id: INTRA-LAB BL

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

Received Date: 10/23/2007

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AH	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/ L	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
7296675	H-3 10028-17-8	1.81E+03	pCi/L	1.6E+02 1.4E+02			100.0		906.0_H3_LSC	5.00E-03	10/26/2007 23:59				D

PRINT REPORT NAME

Thursday, November 08, 2007

TAL Richland QC Blank Report

Lab Code: TARL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05180A.Edd, h:\Reportdb\edd\FeadIV\Rad\37315.E

Lab Sample Id: J9NEC1AB

Sdg/Rept Nbr: W05180A 37315

Collection Date: 06/01/2007 10:56

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BLK

Received Date: 10/23/2007

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AC	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/ L	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
7296675 BLK	H-3 10028-17-8	-1.89E+01	pCi/L	1.6E+02 1.4E+02	U	3.36E+02	100.0		906.0_H3_LSC	5.00E-03	10/27/2007 01:22				D

1

TAL RICHLAND

Thursday, November 08, 2007

TAL Richland QC Blank Report

Lab Code: TARL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W05180A.Edd, h:\Reportdb\edd\Fead\Rad\37315.E

Lab Sample Id: J9NEC1DX

Sdg/Rept Nbr: W05180A 37315

Collection Date: 06/01/2007 10:56

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BLK

Received Date: 10/23/2007

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AE	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/ L	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
7296675 BLK	H-3 10028-17-8	-1.00E+02	pCi/L	1.5E+02 1.3E+02	U	3.41E+02	100.0		906.0_H3_LSC	5.00E-03	10/27/2007 04:06				D

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3

Thursday, November 08, 2007

TAL Richland QC Control Sample Report

Lab Code: TARL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\FeadIV\Rad\W05180A.Edd, h:\Reportdb\ledd\FeadIV\Rad\37315.E

Lab Sample Id: J9NEC1CS

Sdg/Rept Nbr: W05180A 37315

Collection Date: 06/01/2007 10:56

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BS

Received Date: 10/23/2007

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AD	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
7296675 BS	H-3 10028-17-8	2.48E+03	pCi/L	2.6E+02 2.2E+02		3.37E+02	100.0	2.77E+03 89.6	906.0_H3_LSC	5.00E-03 L	10/27/2007 02:44			70 130	D

Thursday, November 08, 2007

TAL Richland QC Control Sample Report

Lab Code: TARL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\Rad\W05180A.Edd, h:\Reportdb\ledd\Fead\Rad\37315.E

Lab Sample Id: J9NEC1EM

Sdg/Rept Nbr: W05180A 37315

Collection Date: 06/01/2007 10:56

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BS

Received Date: 10/23/2007

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AF	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
7296675 BS	H-3 10028-17-8	2.60E+03	pCi/L	2.7E+02 2.2E+02		3.40E+02	100.0	2.77E+03 93.8	906.0_H3_LSC	5.00E-03 L	10/27/2007 05:29			70 130	D

Thursday, November 08, 2007

TAL Richland QC Duplicate Report

Lab Code: TARL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\IVRad\W05180A.Edd, h:\Reportdb\ledd\Fead\IVRad\37315.E

Lab Sample Id: J9NCK1CR

Sdg/Rept Nbr: W05180A 37315

Collection Date: 06/01/2007 10:56

Client Id: B1N5Y1

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: DUP

Received Date: 10/23/2007

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
W07-005	MW6-SBB-A19981								AB	H					
Batch # / Qc Type	Analy/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/ L	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
7296675 DUP	H-3 10028-17-8	6.57E+04 6.63E+04	pCi/L	2.6E+03 8.6E+02		3.37E+02	100.0		906.0_H3_LSC	5.00E-03	10/27/2007 08:14	.9 20.0	0.3 3		D



STL

Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

11/7/2007 4:35:05 PM

Lot No., Due Date: J7J230323; 11/07/2007
Client, Site: 384868; PGW 615HANFORD HANFORD
QC Batch No., Method Test: 7296675; RTRITIUM H-3 by LSC
SDG, Matrix: W05180A; WATER

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

First Level Review *Paul Antonson*

Date 11/7/07

Data Review Checklist RADIOCHEMISTRY Second Level Review

Batch Number: 17296675
W85180A

Review Item	Yes (✓)	No (✓)	NA (✓)
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 within contract acceptance criteria?	/		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	/		
7. Do the MS/MSD results and yields meet acceptance criteria?			/
8. Do the duplicate sample results and yields meet acceptance criteria?	/		
C. Other			
1. Are all Non-conformances 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 Adams* Date: 11-8-07

UNIT PRINT NAME

SERIAL NO. JTF040203 SDG #580 Due 7/16/07	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST J7J230323 Due 11-07-07	C.O.C. # W07-005-214 Page 1 of 1
Collector: Fluor Hanford SAF No.: W07-005 Project Title: RCRA MAY 2007 Shipped To (Lab): Severn Trent Incorporated, Richland	Contact/Requester: Dot Stewart Sampling Origin: Hanford Site Method of Shipment: Govt. Vehicle Priority: 45 Days	Telephone No.: 509-376-5056 Purchase Order/Charge Code: Ice Chest No.: SKINS Temp.: Bill of Lading/Air Bill No.: Offsite Property No.:
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 INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All Labs except WSCF: Batch all samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days. WSCF: Batch all GW samples submitted into one SDG, daily closure.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative	
B1N5Y1		W	6-1-07	1056	1x20-mL P	Activity Scan	None	
B1N5Y1		W	↓	↓	1x4000-mL G/P	GAMMALL_GS: List-1 (9)	HNO3 to pH <2	
B1N5Y1		W			1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2	
B1N5Y1		W			1x1000-mL P	9310_ALPHABETA_GPC: Gross Beta (1)	HNO3 to pH <2	
B1N5Y1		W			1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2	
B1N5Y1		W			1x1000-mL P	906.0_H3_LSC: Tritium (1)	J9NCK	None

JX8129

Relinquished By: <i>DR Brew</i> Date/Time: JUN 01 2007	Received By: <i>Jim Anderson</i> Date/Time: JUN 01 2007	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By: _____	Received By: _____	
Relinquished By: _____	Received By: _____	
Relinquished By: _____	Received By: _____	
FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By: _____	Date/Time: _____



STL

Sample Check-in List

Date/Time Received: 6/11/07 3:30 PM

Client: PNNL SDG #: W0580 NA SAF #: W07-005 NA

Work Order Number: JTF040203 Chain of Custody # W07-005-206,190,214,

Shipping Container ID: _____ Air Bill # _____ 198

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: 4
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: S. Smith Date: 06-07-07

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

No action necessary; process as is.

Project Manager _____ Date 6/11/07

LS-023, 9/03, Rev. 5

10/24/2007 2:37:36 PM Sample Preparation/Analysis Balance Id: 12445
 384868, Pacific Northwest National Laboratory, AR H-3 Prp/SepRC5007 Pipet #: _____
 Pacific Northwest National Lab S6 Tritium by Liquid Scint Sep1 DT/Tm Tech: 10-26-07ow
AnalyDueDate: 11/07/2007 W05180A 51 CLIENT: HANFORD PRIORITY
Batch: 7296675 WATER pCi/L PM, Quote: SA, 57671 Sep2 DT/Tm Tech: _____
 SEQ Batch, Test: None 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:
1 J9NCK-1-AA								
J7J230323-1-SAMP								
								
06/01/2007 10:56		AmtRec: 500MLP	#Containers: 1			Scr:	Alpha:	Beta:
2 J9NCK-1-AC-X								
J7J230323-1-DUP								
								
06/01/2007 10:56		AmtRec: 500MLP	#Containers: 1			Scr:	Alpha:	Beta:
3 J9NEC-1-AA-B								
J7J230000-675-BLK								
								
06/01/2007 10:56		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
4 J9NEC-1-AC-C								
J7J230000-675-LCS								
								
06/01/2007 10:56		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
5 J9NEC-1-AD-BX								
J7J230000-675-MBLK								
								
06/01/2007 10:56		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
6 J9NEC-1-AE-CM								
J7J230000-675-MLCS								
								
06/01/2007 10:56		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
7 J9NEC-1-AF-BN								
J7J230000-675-IBLK								
								
06/01/2007 10:56		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

DATE PRINTED

10/24/2007 2:37:36 PM

Sample Preparation/Analysis

Balance Id: 12445

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

PRIORITY

Pipet #: _____

AnalyDueDate: 11/07/2007

Sep1 DT/Tm Tech: 10-26-07 *am*

Batch: 7296675
SEQ Batch, Test: None

pCi/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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8 J9NEC-1-AG-BN

J7J230000-675-IBLK

06/01/2007 10:56	AmtRec:	#Containers: 1	Scr:	Alpha:	Beta:
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Comments:

All Clients for Batch:

384868, Pacific Northwest National Laboratory Pacific Northwest National Lab, SA , 57671

J9NCK1AA-SAMP Constituent List:

J9NEC1AA-BLK:

J9NEC1AC-LCS:

J9NEC1AD-MBLK:

J9NEC1AE-MLCS:

J9NEC1AF-IBLK:

J9NEC1AG-IBLK:

J9NCK1AA-SAMP Calc Info:

Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
J9NEC1AA-BLK: Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
J9NEC1AC-LCS: Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
J9NEC1AD-MBLK: Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
J9NEC1AE-MLCS: Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
J9NEC1AF-IBLK: Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B

TA Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2
Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

ISV - Insufficient Volume for Analysis

WO Cnt: 8

ICOC v4.8.29

UNIT PRINT NAME

10/24/2007 2:37:36 PM

Sample Preparation/Analysis

Balance Id: _____

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

PRIORITY

Pipet #: _____

AnalyDueDate: 11/07/2007

Sep1 DT/Tm Tech: _____

Batch: 7296675 pCi/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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J9NEC1AG-IBLK:

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

Approved By _____ Date: _____

3
3

ICOC Fraction Transfer/Status Report

ByDate: 11/7/2006, 11/12/2007, Batch: '7296675', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
7296675				
AC	CalcC	McDowellD	10/26/2007 3:49:21	
SC		wagarr	IsBatched 10/24/2007 1:36:37 PM	ICOC_RADCALC v4.8.29
SC		McDowellD	Sep1C 10/26/2007 3:49:21 PM	RICH-RC-5007 REVISION 6
SC		DAWKINSO	InCnt1 10/26/2007 4:29:49 PM	RICH-RD-0001 REVISION 4
SC		BlackCL	CalcC 10/29/2007 6:57:44 AM	RICH-RD-0001 REVISION 4
AC		DAWKINSO	10/26/2007 4:29:49	
AC		BlackCL	10/29/2007 6:57:44	

AC: Accepting Entry; SC: Status Change