

Analytical Data Package Prepared For
Pacific Northwest National Lab

Radiochemical Analysis By

STL Richland STLRL

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

Data Package Contains _____ Pages

Report Nbr: 33834

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W05067	S07-010	B1KPV4	J6K170162-1	JJXV91AA	9JJXV910	6321346

Comments:

STL Richland
2800 George Washington Way
Richland, WA 99354

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

Certificate of Analysis

Pacific Northwest National Laboratories
Sigma V Building
Richland, WA 99352

November 28, 2006

Attention: Dot Stewart

SAF Number	:	S07-010
Date SDG Closed	:	November 17, 2006
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W05067
Data Deliverable	:	15-Day / Summary

CASE NARRATIVE

I. Introduction

On October 26, one water sample was received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the sample was assigned to W05040. On November 16, 2006 a request was received to expedite the tritium analysis to a 15 day priority. The tritium analysis was deleted from W05040 and was relogged into W05067. The sample was assigned the following laboratory ID numbers to correspond with the Pacific Northwest National Laboratories (PGW) specific IDs:

<u>PGW ID#</u>	<u>STLR ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
B1KPV4	JJXV9	WATER	10/26/06

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.

Pacific Northwest National Laboratories
November 28, 2006

The requested analysis was:

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.

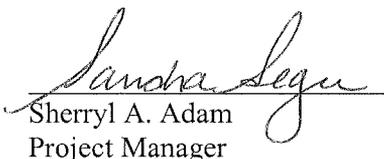
V. Comments

Liquid Scintillation Counting
Tritium by method RICH-RC-5007:

The LCS, batch blank, samples and sample duplicate (B1KPV4) 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

for

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 (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) <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.

11/28/2006 10:01:00 AM

STL Richland Report

Lab Code: STLRL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 33834 File Name: h:\Reportdb\edd\FeadIV\Rad\W05067.Edd, h:\Reportdb\edd\FeadIV\Rad\33834.Edd

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JJXV910	B1KPV4		MW6-SBB-A1	S07-010	W05067					10/26/2006 08:53				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6321346	H-3	10028-17-8	1.34E+04	pCi/L	3.9E+02	6.6E+02		3.09E+02	100.0	906.0_H3_LSC	5.00E-03	L	11/22/2006 07:40	I

Tuesday, November 28, 2006

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\VRad\W05067.Edd, h:\Reportdb\ledd\Fead\VRad\33834.Edd

Lab Sample Id: JJ0J11AB

Sdg/Rept Nbr: W05067 33834

Collection Date: 10/26/2006 08:53

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BLK

Received Date: 11/16/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType					
	MW6-SBB-A19981								AB	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
6321346 BLK	H-3 10028-17-8	4.56E+01	pCi/L	1.5E+02 1.3E+02	U	3.10E+02	100.0		906.0_H3_LSC	5.00E-03	11/22/2006 02:13				D

Tuesday, November 28, 2006

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\eddd\Fead\I\Rad\W05067.Edd, h:\Reportdb\eddd\Fead\I\Rad\33834.Edd

Lab Sample Id: JJ0J11DX

Sdg/Rept Nbr: W05067 33834

Collection Date: 10/26/2006 08:53

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BLK

Received Date: 11/16/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType					
	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
6321346 BLK	H-3 10028-17-8	-7.84E+01	pCi/L	1.4E+02 1.3E+02	U	3.19E+02	100.0		906.0_H3_LSC	5.00E-03 L	11/22/2006 04:56				D

Tuesday, November 28, 2006

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05067.Edd, h:\Reportdb\edd\FeadIV\Rad\33834.Edd

Lab Sample Id: JJ0J11CS

Sdg/Rept Nbr: W05067

33834

Collection Date: 10/26/2006 08:53

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BS

Received Date: 11/16/2006

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	Qual	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6321346 BS	H-3 10028-17-8	2.50E+03	pCi/L	2.5E+02 2.0E+02		3.11E+02	100.0	2.72E+03 91.8	906.0_H3_LSC	5.00E-03 L	11/22/2006 03:34			75 125	D

Tuesday, November 28, 2006

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W05067.Edd, h:\Reportdb\edd\Fead\Rad\33834.Edd

Lab Sample Id: JJ0J11EM

Sdg/Rept Nbr: W05067 33834

Collection Date: 10/26/2006 08:53

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BS

Received Date: 11/16/2006

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	Qual MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6321346 BS	H-3 10028-17-8	2.42E+03	pCi/L	2.5E+02 2.1E+02	3.21E+02	100.0	2.72E+03	906.0_H3_LSC	5.00E-03 L	11/22/2006 06:18			75 125	D

Tuesday, November 28, 2006

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05067.Edd, h:\Reportdb\edd\FeadIV\Rad\33834.Edd

Lab Sample Id: JJXV91CR

Sdg/Rept Nbr: W05067

33834

Collection Date: 10/26/2006 08:53

Client Id: B1KPV4

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: DUP

Received Date: 11/16/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
S07-010	MW6-SBB-A19981								AF	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qual	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6321346	H-3	1.31E+04	pCi/L	6.5E+02		3.09E+02	100.0		906.0_H3_LSC	5.00E-03	11/22/2006	2.1	0.6		D
DUP	10028-17-8	1.34E+04		3.9E+02						L	09:01	20.0	3		

Lot No., Due Date: J6K170162; 12/01/2006
Client, Site: 384868; PGW 615HANFORD HANFORD
QC Batch No., Method Test: 6321346; RTRITIUM H-3 by LSC
SDG, Matrix: W05067; WATER

	Yes	No	N/A
8.0 Correction Calculation Protocol Used. OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.01 The Appropriate Methods Were Used To Analyze the Samples OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.02 Final Results Are in the Appropriate Activity Units OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.03 Batch Contains the Required QC Appropriate for the Method OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.04 The Correct Tracer and QC Vials Where Used in the Samples OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.06 At Least the Minimum Sample Volume Was Used Analysis Volume => JJXV91AA 5.00<10.00 Q:VB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.07 The Correct Count Geometry was Used. Count Geometry => JJ0J11AG SVP15/5<>SVP10/10 JJ0J11AF SVP15/5<>SVP10/10 JJ0J11AA SVP15/5<>SVP10/10 JJ0J11AC SVP15/5<>SVP10/10 JJ0J11AD SVP15/5<>SVP10/10 JJ0J11AE SVP15/5<>SVP10/10 JJXV91AA SVP15/5<>SVP10/10 JJXV91AC SVP15/5<>SVP10/10 Q:VC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.09 Method Blank is within Control Limits. OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.1 Comments:			
8.11 Matrix Blank is within Control Limits. OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.14 LCS within Control Limits. OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.15 MLCS within Control Limits. OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.16 MS within Control Limits. No Matrix Spike Samples (MS) found in Batch!	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.17 Tracer within Control Limits. No Tracers found in Batch!	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.18 Samples are above Minimum Tracer Yield (No Failed Samples) No Tracers found in Batch!	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.19 Sample Specific MDC <= CRDL. OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.2 Comments:			
8.21 Result < Lc, Activity Not Detected, U Flag. No Limit Specified!	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.22 Result < Mdc, Activity Not Detected, U Flag. No Positive Results OK Calc_IDL Not Calculated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.23 Result <= Action Level, when Defined. OK; No Action Level Found => H-3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK; No Callin Level Found => H-3			
8.24 Result + 3s >=0, Not Too Negative. OK	<input checked="" type="checkbox"/>	No	N/A
8.25 Counting Spectrum are within FWHM Limits. No FWHM found in Batch Data!	Yes	No	<input checked="" type="checkbox"/> N/A
8.26 Instruments have Current Calibrations.	Yes	No	N/A
8.27 Correct Count Library Used. No Count Library found in Batch Data!	Yes	No	<input checked="" type="checkbox"/> N/A
8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later versions)	Yes	No	N/A
8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later versions)	Yes	No	N/A
8.3 Comments:			
8.31 Results Blank Subtracted as Appropriate. OK	<input checked="" type="checkbox"/>	No	N/A

First Level Review Pam Anderson

Date 11-24-06



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6321346
W05067

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 R Adams Date: 11-24-06

Seger, Sandra

J6K170162 W05067

From: Adam, Sherryl
Sent: Thursday, November 16, 2006 10:27 AM
To: Seger, Sandra
Subject: FW: 15 TAT for sample B1KPV4
Importance: High

*Rec'd 11/16/06
Due 12/1/06
W05067*

JJXV9

From: Stewart, Dorothy L [mailto:dot.stewart@pnl.gov]
Sent: Thursday, November 16, 2006 10:14 AM
To: Adam, Sherryl; Thompson, Christopher J; Conley, Scott F
Cc: Felmy, Diana; Peterson, Robert E
Subject: 15 TAT for sample B1KPV4
Importance: High

Sherryl,
We would like to expedite to a 15 TAT for the tritium analyses for the above referenced sample?

Thanks,
Dot

Dot Stewart
Senior Project Manager
Pacific Northwest National Laboratory
509 376-5056

PNNL J6J270144 W05040 Due 12-11-06	<h2 style="margin:0;">CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</h2>	C.O.C. # <h3 style="margin:0;">S07-010-117</h3>
		Page <u>1</u> of <u>1</u>

Collector Fluor Hanford D. R. BREWINGTON	Contact/Requester Dot Stewart	Telephone No. MSIN FAX 509-376-5056
SAF No. S07-010	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title SURV. OCTOBER 2006	Logbook: HNF-N-506-2	Ice Chest No. AFS-04-022 Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol SURV	Priority: 45 Days	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 PNNL GW samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG closure of 14 days. Submit invoices & deliverables to DL Stewart, PNNL
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Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1KPV4		W	10/26/06	0853	1x1000-mL P	906.0_H3_LSC: Tritium (1)	None
B1KPV4		W			1x20-mL P	Activity Scan	None
B1KPV4		W			1x1000-mL P	9310_ALPHABETA_GPC: Alpha + Beta (2)	HNO3 to pH <2
B1KPV4		W			2x1000-mL G/P	C14_LSC: C-14 (1)	None
B1KPV4		W			1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2
B1KPV4		W			3x1000-mL G/P	SRISO_SEP_PRECIP_GPC: Sr-90 (1)	HNO3 to pH <2
B1KPV4		W			1x500-mL G/P	UTOT_KPA: Uranium (1) JHDX	HNO3 to pH <2
<div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); opacity: 0.5;"> <p style="font-size: 2em; font-family: cursive;">D. Wall</p> <p style="font-size: 1.5em;">10/26/06</p> </div>							

Relinquished By Fluor Hanford D. R. BREWINGTON	Print Sign <i>D. Brewington</i>	Date/Time 1500 OCT 26 2006	Received By <i>S. Smith</i>	Print Sign <i>S. Smith</i>	Date/Time 1500 OCT 26 2006	Matrix * S = Soil DS = Drum Solid SF = Sediment DH = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By		Date/Time	Received By		Date/Time	
Relinquished By		Date/Time	Received By		Date/Time	
Relinquished By		Date/Time	Received By		Date/Time	
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: 10/26/06 1500

Client: P6W SDG #: W05040 NA SAF #: 507-010 NA

Work Order Number: J6J270144 Chain of Custody # 507-010-103,117,118

Shipping Container ID: N/A Air Bill # N/A

1. Custody Seals on shipping container intact? NA Yes No
2. Custody Seals dated and signed? NA Yes No
3. Chain of Custody record present? Yes No
4. Cooler temperature: _____ NA 5. Vermiculite/packing materials is NA Wet Dry
6. Number of samples in shipping container: 3
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: A. Smith Date: 10/26/06 1500

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[] No action necessary; process as is.

Project Manager _____ Date _____

11/17/2006 11:39:02 AM

Sample Preparation/Analysis

Balance Id: 12445

384868, Pacific Northwest National Laboratory
Pacific Northwest National Lab

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

PRIORITY

Pipet #: _____

AnalyDueDate: 12/01/2006 *WO5067*

Sep1 DT/Tm Tech: *11-21-2006*

Batch: 6321346 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:
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1 JJXV9-1-AA								
J6K170162-1-SAMP								
10/26/2006 08:53		AmtRec: LP	#Containers: 1			Scr:	Alpha:	Beta:

2 JJXV9-1-AC-X								
J6K170162-1-DUP								
10/26/2006 08:53		AmtRec: LP	#Containers: 1			Scr:	Alpha:	Beta:

3 JJ0J1-1-AA-B								
J6K170000-346-BLK								
10/26/2006 08:53		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

4 JJ0J1-1-AC-C								
J6K170000-346-LCS								
10/26/2006 08:53		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

5 JJ0J1-1-AD-BX								
J6K170000-346-MBLK								
10/26/2006 08:53		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

6 JJ0J1-1-AE-CM								
J6K170000-346-MLCS								
10/26/2006 08:53		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

7 JJ0J1-1-AF-BN								
J6K170000-346-IBLK								
10/26/2006 08:53		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

11/17/2006 11:39:04 AM

Sample Preparation/Analysis

Balance Id: 12445

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

PRIORITY

Pipet #: _____

AnalyDueDate: 12/01/2006

Sep1 DT/Tm Tech: 11-21-06om

Batch: 6321346
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 JJ0J1-1-AG-BN

J6K170000-346-IBLK



10/26/2006 08:53

AmtRec:

#Containers: 1

Scr:

Alpha:

Beta:

Comments:

All Clients for Batch:

384868, Pacific Northwest National Laboratory

Pacific Northwest National Lab, SA, 57671

JJXV91AA-SAMP Constituent List:

H-3	RDL:400	pCi/L	LCL:70	UCL:130	RPD:20
JJ0J11AA-BLK:					
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:
JJ0J11AC-LCS:					
H-3	RDL:400	pCi/L	LCL:70	UCL:130	RPD:20
JJ0J11AD-MBLK:					
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:
JJ0J11AE-MLCS:					
H-3	RDL:400	pCi/L	LCL:70	UCL:130	RPD:20
JJ0J11AF-IBLK:					
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:
JJ0J11AG-IBLK:					
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:

JJXV91AA-SAMP Calc Info:

Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
JJ0J11AA-BLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
JJ0J11AC-LCS:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
JJ0J11AD-MBLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
JJ0J11AE-MLCS:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
JJ0J11AF-IBLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B

11/17/2006 11:39:05 AM

Sample Preparation/Analysis

Balance Id: _____

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

PRIORITY

Pipet #: _____

AnalyDueDate: 12/01/2006

Sep1 DT/Tm Tech: _____

Batch: 6321346
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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JJ0J11AG-IBLK:

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

Approved By _____ Date: _____

ICOC Fraction Transfer/Status Report

ByDate: 11/22/2005, 11/27/2006, Batch: '6321346', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
6321346				
AC		CalcC	McDowellID 11/21/2006 10:50:37	
SC		wagarr	IsBatched 11/17/2006 11:38:44 AM	ICOC_RADCALC v4.8.24
SC		McDowellID	InSep1 11/21/2006 10:50:37 AM	RICH-RC-5007 REVISION 6
SC		McDowellID	Sep1C 11/21/2006 4:13:24 PM	RICH-RC-5007 REVISION 6
SC		DAWKINSO	InCnt1 11/21/2006 4:20:40 PM	RICH-RD-0001 REVISION 3
SC		BlackCL	CalcC 11/22/2006 10:40:34 AM	RICH-RD-0001 REVISION 3
AC		McDowellID	11/21/2006 4:13:24	
AC		DAWKINSO	11/21/2006 4:20:40	
AC		BlackCL	11/22/2006 10:40:34	

AC: Accepting Entry; SC: Status Change