

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: 29358

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04660	W05-005	B1CTW4	J5E170297-1	HAN8V1AA	9HAN8V10	5143175
		B1CTV2	J5E170297-10	HAPAM1AA	9HAPAM10	5143175
	W05-005	B1CTV8	J5E170297-2	HAN841AA	9HAN8410	5143175
		B1CTV5	J5E170297-3	HAN9C1AA	9HAN9C10	5143175
		B1CTR5	J5E170297-4	HAN9J1AA	9HAN9J10	5143175
		B1CTR4	J5E170297-5	HAN9N1AA	9HAN9N10	5143175
		B1CTT7	J5E170297-6	HAN941AA	9HAN9410	5143175
		B1CTT0	J5E170297-7	HAPAC1AA	9HAPAC10	5143175
		B1CTT3	J5E170297-8	HAPAE1AA	9HAPAE10	5143175
		B1CTT6	J5E170297-9	HAPAJ1AA	9HAPAJ10	5143175
	G05-007	B1CRV2	J5E170305-1	HAPCL1AA	9HAPCL10	5144170
	I05-036	B1CRR3	J5E170311-1	HAPCW1AA	9HAPCW10	5144172
		B1CRR3	J5E170311-1	HAPCW1AC	9HAPCW10	5144174
	G05-007	B1CRV4	J5E170347-1	HAPL21AA	9HAPL210	5144170
		B1CRV6	J5E170347-2	HAPL61AA	9HAPL610	5144170

Comments:

Report Nbr: 29358

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04660	G05-007	B1CRW0	J5E170347-3	HAPMA1AA	9HAPMA10	5144170
		B1CTX0	J5E170347-4	HAPME1AA	9HAPME10	5144170
		B1CRV8	J5E170347-5	HAPMH1AA	9HAPMH10	5144170
		B1CTW8	J5E170347-6	HAPMM1AA	9HAPMM10	5144170
		B1CRV5	J5E170347-7	HAPMR1AA	9HAPMR10	5144170
		B1CRV7	J5E170347-8	HAPMT1AA	9HAPMT10	5144170

Comments:

STL Richland
2800 George Washington Way
Richland, WA 99354

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Certificate of Analysis

Pacific Northwest National Laboratories
Sigma V Building
Richland, WA 99352

July 1, 2005

Attention: Dot Stewart

SAF Number	:	G05-007, I05-036, W05-005
Date SDG Closed	:	May 18, 2005
Number of Samples	:	Twenty (20)
Sample Type	:	Water
SDG Number	:	W04660
Data Deliverable	:	45-Day Summary

CASE NARRATIVE

I. Introduction

On May 17, 2005, twenty water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were 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>
B1CTV2	HAPAM	WATER	5/17/05
B1CTT6	HAPAJ	WATER	5/17/05
B1CTT3	HAPAE	WATER	5/17/05
B1CTT0	HAPAC	WATER	5/17/05
B1CTT7	HAN94	WATER	5/17/05
B1CTR4	HAN9N	WATER	5/17/05
B1CTR5	HAN9J	WATER	5/17/05
B1CTV5	HAN9C	WATER	5/17/05
B1CTV8	HAN84	WATER	5/17/05
B1CTW4	HAN8V	WATER	5/17/05
BICRV2	HAPCL	WATER	5/17/05
B1CRR3	HAPCW	WATER	5/17/05

B1CRV4	HAPL2	WATER	5/17/05
B1CRV6	HAPL6	WATER	5/17/05
B1CRW0	HAPMA	WATER	5/17/05
B1CTX0	HAPME	WATER	5/17/05
B1CRV8	HAPMH	WATER	5/17/05
B1CTW8	HAPMM	WATER	5/17/05
B1CRV5	HAPMR	WATER	5/17/05
B1CRV7	HAPMT	WATER	5/17/05

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:

Gas Proportional Counting

Gross Beta by method RICH-RC-5014

Gamma Spectroscopy

Iodine-129 (LL) by method RICH-RC-5025

Liquid Scintillation Counting

Tritium by method RICH-RC-5007

Chemical Analysis

Total Coliform by method 9223

IV. Quality Control

The analytical results for each analysis performed under SDG W04660 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

Gross Beta by method RICH-RC-5014:

The LCS, batch blank, sample and sample duplicate (B1CRV2) results are within contractual requirements.

Gamma Spectroscopy

Iodine-129 (LL) by method RICH-RC-5025:

The LCS, batch blank, sample and sample duplicate (B1CRR3) results are within contractual requirements.

Liquid Scintillation Counting

Tritium by method RICH-RC-5007:

The LCS, batch blank, sample and sample duplicate (B1CRR3) results are within contractual requirements.

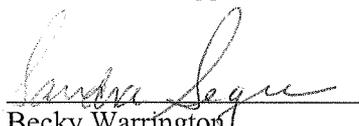
Chemical Analysis

Total Coliform by method 9223:

The LCS, batch blank, sample and sample duplicate (B1CTT7) 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:



Becky Warrington
Project Manager

feor

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, $R = \text{constants} * f(x,y,z,...)$. 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%. $Lc = (1.645 * \sqrt{2 * (BkgndCnt / BkgndCntMin) / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol)) * IngrFct$. 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%. $MDC = (4.65 * \sqrt{(BkgndCnt / BkgndCntMin) / SCntMin} + 2.71 / SCntMin) * (ConvFct / (Eff * Yld * Abn * Vol)) * IngrFct$. 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.

7/1/2005 1:43:18 PM

STL Richland Report

Lab Code: STLRL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 29358 File Name: h:\Reportdb\edd\Fead\VRad\W04660.Edd, h:\Reportdb\edd\Fead\VRad\29358.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:				
9HAPCL10	B1CRV2		MW6-SBB-A1	G05-007	W04660					05/17/2005 09:30				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5144170	BETA	12587-47-2	9.93E+00	pCi/L	1.9E+00	2.3E+00		2.64E+00	100.0	9310_ALPHABETA	2.007E-01	L	06/27/200 11:35	I
9HAPCW10	B1CRR3		MW6-SBB-A1	I05-036	W04660					05/17/2005 11:25				
5144172	H-3	10028-17-8	1.48E+04	pCi/L	4.6E+02	7.7E+02		2.43E+02	100.0	906.0_H3_LSC	1.00E-02	L	06/23/200 08:58	I
5144174	I-129L	15046-84-1	2.24E-01	pCi/L	2.8E-01	2.8E-01	U	3.17E-01	97.6	I129LL_SEP_LEPS	3.9325E+00	L	06/29/200 09:24	I
9HAPL210	B1CRV4		MW6-SBB-A1	G05-007	W04660					05/16/2005 15:25				
5144170	BETA	12587-47-2	6.11E+02	pCi/L	1.1E+01	9.3E+01		2.65E+00	100.0	9310_ALPHABETA	2.004E-01	L	06/27/200 11:35	I
9HAPL610	B1CRV6		MW6-SBB-A1	G05-007	W04660					05/16/2005 15:15				
5144170	BETA	12587-47-2	2.55E+03	pCi/L	3.7E+01	4.3E+02		6.79E+00	100.0	9310_ALPHABETA	7.50E-02	L	06/27/200 11:35	I
9HAPMA10	B1CRW0		MW6-SBB-A1	G05-007	W04660					05/16/2005 13:45				
5144170	BETA	12587-47-2	7.85E+02	pCi/L	1.5E+01	1.2E+02		3.65E+00	100.0	9310_ALPHABETA	1.498E-01	L	06/27/200 11:35	I
9HAPME10	B1CTX0		MW6-SBB-A1	G05-007	W04660					05/16/2005 13:35				
5144170	BETA	12587-47-2	1.14E+02	pCi/L	5.0E+00	1.9E+01		2.53E+00	100.0	9310_ALPHABETA	2.001E-01	L	06/27/200 11:35	I
9HAPMH10	B1CRV8		MW6-SBB-A1	G05-007	W04660					05/16/2005 14:20				

7/1/2005 1:43:18 PM

STL Richland Report

Lab Code: STLRL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 29358 File Name: h:\Reportdb\edd\Fead\Rad\W04660.Edd, h:\Reportdb\edd\Fead\Rad\29358.Edd

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5144170	BETA	12587-47-2	1.48E+03	pCi/L	2.0E+01	2.1E+02		3.69E+00	100.0	9310_ALPHABETA	1.49E-01	L	06/27/200 11:35	I
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9HAPMM10	B1CTW8		MW6-SBB-A1	G05-007	W04660					05/16/2005 15:35				
5144170	BETA	12587-47-2	2.32E+01	pCi/L	2.5E+00	4.4E+00		2.71E+00	100.0	9310_ALPHABETA	2.00E-01	L	06/27/200 11:35	I
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9HAPMR10	B1CRV5		MW6-SBB-A1	G05-007	W04660					05/16/2005 15:05				
5144170	BETA	12587-47-2	1.48E+03	pCi/L	2.5E+01	2.9E+02		5.57E+00	100.0	9310_ALPHABETA	8.93E-02	L	06/27/200 11:35	I
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9HAPMT10	B1CRV7		MW6-SBB-A1	G05-007	W04660					05/16/2005 14:40				
5144170	BETA	12587-47-2	1.68E+03	pCi/L	2.2E+01	2.6E+02		4.03E+00	100.0	9310_ALPHABETA	1.449E-01	L	06/27/200 11:35	I

Friday, July 01, 2005

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04660.Edd, h:\Reportdb\edd\FeadIV\Rad\29358.Edd

Lab Sample Id: HA5F31AB

Sdg/Rept Nbr: W04660

29358

Collection Date: 05/17/2005 11:25

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BLK

Received Date: 05/17/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AK	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5144172 BLK	H-3 10028-17-8	2.18E+02	pCi/L	1.2E+02 1.1E+02	U	2.43E+02	100.0		906.0_H3_LSC	1.00E-02 L	06/23/2005 08:16				D

Friday, July 01, 2005

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W04660.Edd, h:\Reportdb\edd\FeadIV\Rad\29358.Edd

Lab Sample Id: HA5F31DX	Sdg/Rept Nbr: W04660	29358	Collection Date: 05/17/2005 11:25
Client Id: NA	Matrix: WATER	WATER	Sample On Date:
Moisture/Solids%*:	QC Type: BLK		Received Date: 05/17/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AM	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
5144172	H-3	-3.49E+00	pCi/L	1.1E+02	U	2.41E+02	100.0		906.0_H3_LSC	1.00E-02	06/23/2005				D
BLK	10028-17-8			9.6E+01						L	06:53				

Friday, July 01, 2005

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04660.Edd, h:\Reportdb\edd\FeadIV\Rad\29358.Edd

Lab Sample Id: HA5F51AB

Sdg/Rept Nbr: W04660

29358

Collection Date: 05/17/2005 11:25

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BLK

Received Date: 05/17/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AO	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
5144174 BLK	I-129L 15046-84-1	3.49E-01	pCi/L	1.1E-01 1.1E-01	U	2.70E-01	93.0		I129LL_SEP_L	3.9369E+00 L	06/29/2005 11:08				D

Friday, July 01, 2005

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04660.Edd, h:\Reportdb\edd\FeadIV\Rad\29358.Edd

Lab Sample Id: HA5FX1AB

Sdg/Rept Nbr: W04660

29358

Collection Date: 05/17/2005 09:30

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BLK

Received Date: 05/17/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AQ	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
5144170 BLK	BETA 12587-47-2	1.40E+00	pCi/L	1.4E+00 1.4E+00	U	2.86E+00	100.0		9310_ALPHAB	2.002E-01 L	06/27/2005 13:32				D

Friday, July 01, 2005

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\I\Rad\W04660.Edd, h:\Reportdb\edd\Fead\I\Rad\29358.Edd

Lab Sample Id: HA5F31CS

Sdg/Rept Nbr: W04660

29358

Collection Date: 05/17/2005 11:25

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BS

Received Date: 05/17/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AL	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
5144172 BS	H-3 10028-17-8	2.27E+03	pCi/L	2.3E+02 2.0E+02		2.41E+02	100.0	2.73E+03	906.0_H3_LSC	1.00E-02 L	06/23/2005 07:35			70 130	D

Friday, July 01, 2005

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04660.Edd, h:\Reportdb\edd\Fead\Rad\29358.Edd

Lab Sample Id: HA5F31EM

Sdg/Rept Nbr: W04660

29358

Collection Date: 05/17/2005 11:25

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BS

Received Date: 05/17/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AN	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
5144172 BS	H-3 10028-17-8	2.18E+03	pCi/L	2.3E+02 2.0E+02		2.43E+02	100.0	2.73E+03 79.8	906.0_H3_LSC	1.00E-02 L	06/23/2005 06:12			70 130	D

Friday, July 01, 2005

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04660.Edd, h:\Reportdb\edd\FeadIV\Rad\29358.Edd

Lab Sample Id: HA5F51CS

Sdg/Rept Nbr: W04660

29358

Collection Date: 05/17/2005 11:25

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BS

Received Date: 05/17/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AP	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
5144174 BS	I-129L 15046-84-1	7.76E+00	pCi/L	1.0E+00 1.0E+00		4.34E-01	95.6	9.61E+00 80.8	I129LL_SEP_L	4.0111E+00 L	06/29/2005 11:08			70 130	D

Friday, July 01, 2005

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04660.Edd, h:\Reportdb\edd\Fead\Rad\29358.Edd

Lab Sample Id: HA5FX1CS

Sdg/Rept Nbr: W04660

29358

Collection Date: 05/17/2005 09:30

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BS

Received Date: 05/17/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AR	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
5144170 BS	BETA 12587-47-2	2.07E+01	pCi/L	3.9E+00 2.3E+00		2.60E+00	100.0	2.28E+01 91.0	9310_ALPHAB	2.005E-01 L	06/27/2005 13:32			70 130	D

Friday, July 01, 2005

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04660.Edd, h:\Reportdb\edd\FeadIV\Rad\29358.Edd

Lab Sample Id: HAPCL1CR

Sdg/Rept Nbr: W04660 29358

Collection Date: 05/17/2005 09:30

Client Id: B1CRV2

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: DUP

Received Date: 05/17/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
G05-007	MW6-SBB-A19981								AS	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
5144170 DUP	BETA 12587-47-2	1.22E+01 9.93E+00	pCi/L	2.6E+00 1.9E+00		2.49E+00	100.0		9310_ALPHAB	2.005E-01 L	06/27/2005 11:35	20.6 20.0	1.2 3		D

Friday, July 01, 2005

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W04660.Edd, h:\Reportdb\edd\Fead\VRad\29358.Edd

Lab Sample Id: HAPCW1DR

Sdg/Rept Nbr: W04660

29358

Collection Date: 05/17/2005 11:25

Client Id: B1CRR3

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: DUP

Received Date: 05/17/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
105-036	MW6-SBB-A19981								AT	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
5144172 DUP	H-3 10028-17-8	1.50E+04 1.48E+04	pCi/L	7.8E+02 4.6E+02		2.41E+02	100.0		906.0_H3_LSC	1.00E-02 L	06/23/2005 09:39	1.5 20.0	0.4 3		D

Friday, July 01, 2005

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04660.Edd, h:\Reportdb\edd\FeadIV\Rad\29358.Edd

Lab Sample Id: HAPCW1ER

Sdg/Rept Nbr: W04660

29358

Collection Date: 05/17/2005 11:25

Client Id: B1CRR3

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: DUP

Received Date: 05/17/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
I05-036	MW6-SBB-A19981								AU	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
5144174	I-129L	1.26E-01	pCi/L	1.6E-01	U	3.12E-01	97.3		I129LL_SEP_L	3.8622E+00	06/29/2005	55.5	0.9		D
DUP	15046-84-1	2.24E-01		1.6E-01						L	09:24	20.0	3		

RQC050

Severn Trent Laboratories, Inc.
WET CHEM BATCHSHEET

Run Date: 7/01/05
Time: 10:36:27

STL Richland

PRODUCTION FIGURES - WET CHEM

TOTAL NUMBER	SAMPLE NUMBER	QC	RE-RUN MATRIX	RE-RUN OTHER	MISC NUMBER	TOTAL HOURS	EXPANDED DELIVERABLE
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METHOD: IZ COLIFORM BY METHOD 9223
 QC BATCH #: 5143175
 PREP DATE: 5/23/05
 COMP DATE: 5/23/05
 USER: KENITZEP

INITIALS: DM by EA
 PREP 5-17-05
 ANAL 5-17-05

DATA ENTRY: INITIALS _____
 DATE _____

Work Order	Lab Number	Structured Analysis	Exp. Del.	Analysis Date	Sample ID:	
HAN8V-1-AA	J-5E170297-001	XX I 88 IZ 5I	E	_____	B1CTW4	5.2 col/ml
HAN84-1-AA	J-5E170297-002	XX I 88 IZ 5I	E	_____	B1CTV8	1
HAN9C-1-AA	J-5E170297-003	XX I 88 IZ 5I	E	_____	B1CTV5	< 1
HAN9J-1-AA	J-5E170297-004	XX I 88 IZ 5I	E	_____	B1CTR5	}
HAN9N-1-AA	J-5E170297-005	XX I 88 IZ 5I	E	_____	B1CTR4	
HAN94-1-AA	J-5E170297-006	XX I 88 IZ 5I	E	_____	B1CTT7	
HAN94-1-AC	J-5E170297-006-X	XX I 88 IZ 5I	E	_____	B1CTT7 DUP	
HAPAC-1-AA	J-5E170297-007	XX I 88 IZ 5I	E	_____	B1CTT0	
HAPAE-1-AA	J-5E170297-008	XX I 88 IZ 5I	E	_____	B1CTT3	
HAPAJ-1-AA	J-5E170297-009	XX I 88 IZ 5I	E	_____	B1CTT6	
HAPAM-1-AA	J-5E170297-010	XX I 88 IZ 5I	E	_____	B1CTV2	
HA3XH-1-AA	J-5E230000-175-B	XX I 88 IZ 5I		_____	INTRA-LAB BLANK	
HA3XH-1-AC	J-5E230000-175-C	XX I 88 IZ 5I		_____	INTRA-LAB CHECK	

Control Limits

(0-0)

Lot No., Due Date: J5E170311; 07/01/2005
 Client, Site: 384868; PGW 615HANFORD HANFORD
 QC Batch No., Method Test: 5144174; RGAMLEPS Gamma by LEPS
 SDG, Matrix: W04660; WATER

1.0 COC

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

Steven E. McLeod

Date

6/29/05



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 5744174

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: Jodie Co Date: 6/30/05

Lot No., Due Date: J5E170305, J5E170347; 07/01/2005
 Client, Site: 384868; PGW 615HANFORD HANFORD
 QC Batch No., Method Test: 5144170; RBETA-SR Beta by GPC-Sr/Y
 SDG, Matrix: W04660; WATER

1.0 COC

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:

Samples HAPMR1AA, HAPMT1AA, and HAPL61AA do not meet CRDL but the results >MDA>CRDL.

10-06130

First Level Review *Pam Anderson*

Date *6-30-05*



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 5744170

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: BICRV6, BICRV5 activity > MDA > CRDL

Second Level Review: Jodie Ca Date: 6/30/05

Clouseau Nonconformance Memo



NCM #: 10-06120 NCM Initiated By: Pam Anderson Date Opened: 06/30/2005 Date Closed:	Classification: Anomaly Status: GLREVIEW Production Area: Environmental - Sep Tests: Beta by GPC-Sr/Y Lot #'s (Sample #'s): J5E170347 (2,7,8), QC Batches: 5144170
Nonconformance: MDA not met Subcategory: Data accepted	

Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Pam Anderson	06/30/2005	The samples HAPMR1AA, HAPMT1AA, HAPM61AA do not meet CRDL but the results >MDA>CRDL.

Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Pam Anderson	06/30/2005	NA

Client Notification Summary

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

Quality Assurance Verification

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

Approval History

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

Lot No., Due Date: J5E170311; 07/01/2005
 Client, Site: 384868; PGW 615HANFORD HANFORD
 QC Batch No., Method Test: 5144172; RTRITIUM H-3 by LSC
 SDG, Matrix: W04660; WATER

1.0 COC

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

Ann E. Meland

Date

6/28/05



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 5744172

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: Jodie Ca Date: 6/30/05

Lot No., Due Date: J5E170297; 07/01/2005
 Client, Site: 384868; PGW 615HANFORD HANFORD
 QC Batch No., Method Test: 5143175;
 SDG, Matrix: W04660; WATER

1.0 COC

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

Pam Anderson

Date

7-1-05



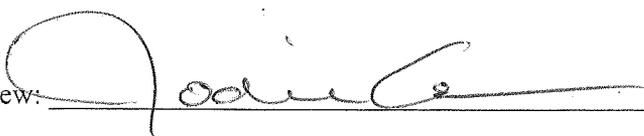
STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 5743175

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?	✓	J.C 7/1/05	✓
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:  Date: 7/1/05

Collector: R.T. SICKLE	Contact/Requester: DL STEWART	Telephone No. 509-376-5056
SAF No. W05-005	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: RCRA GW MONITORING, MAY 2005	DTS-SAWS-H 90	Ice Chest No. WM-1 Temp.
Shipped To (Lab): <u>Severn Trent Incorporated, Richland</u>	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: RCRA	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
 ** 57671 JSE170297
 W04660 Due 7/1/05

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
 A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, not to exceed SDG closure of 14 days.
 Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CTV2		W	5-17-05	0953	1x500-mL P	9223_COLIFORM: Coliform (1)	Na2S2O3 Cool 4C
B1CTV2		W	↓	↓	1x20-mL P	Activity Scan HAPAM	None

Relinquished By: R.T. SICKLE (Print) (Sign)	Date/Time: MAY 17 2005 (1336)	Received By: P. Davidson (Print) (Sign)	Date/Time: MAY 17 2005 (1336)	Matrix *
Relinquished By	Date/Time	Received By	Date/Time	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	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

Collector: R.T. SICKLE	Contact/Requester: DL STEWART	Telephone No. 509-376-5056
SAF No. W05-005	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: RCRA GW MONITORING, MAY 2005	DTS-SHNS-H 90	Ice Chest No. WM-1 Temp.
Shipped To (Lab): Severn Trent Incorporated, Richland	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: RCRA	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
 ** 37671 JSE170297
 W04660 5-17-05 Dec 21/05

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
 A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, not to exceed SDG closure of 14 days.
 Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CTT6		W	5-17-05	08:59	1x500-mL P	9223_COLIFORM: Coliform (1)	Na2S2O3 Cool 4C
B1CTT6		W			1x20-mL P	Activity Scan	None
						HAPAS	

Relinquished By: R.T. SICKLE (Signature)	Date/Time: MAY 17 2005	Received By: P. Davidson (Signature)	Date/Time: MAY 17 2005	Matrix *
Relinquished By:	Date/Time:	Received By:	Date/Time:	S = Soil DS = Drum Solid SF = 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:	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:

PNNL **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** C.O.C. # **W05-005-285**
 Page 1 of 1

Collector R.T. SICKLE	Contact/Requester DL STEWART	Telephone No. 509-376-5056	MSIN	FAX
SAF No. W05-005	Sampling Origin HANFORD SITE	Purchase Order/Charge Code		
Project Title RCRA GW MONITORING, MAY 2005	DTS-SAWS-H90	Ice Chest No. WYM-1	Temp.	
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.		
Protocol RCRA	Priority: 45 Days	Offsite Property No.		

POSSIBLE SAMPLE HAZARDS/REMARKS
 ** 57671 JSE170297
 W04660 Due 7/1/05

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
 A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, not to exceed SDG closure of 14 days.
 Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CTT0		W	5-17-05	1042	1x500-mL P	9223_COLIFORM: Coliform (1)	Na2S2O3 Cool 4C
B1CTT0		W	↓	↓	1x20-mL P	Activity Scan HAPAC	None

Relinquished By R.T. SICKLE <i>[Signature]</i>	Date/Time MAY 17 2005	Received By P. Davidson <i>[Signature]</i>	Date/Time MAY 17 2005	Matrix * S = Soil DS = Drum Solid SF = 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	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
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Collector <i>K. J. YOUNG</i>	Contact/Requester DL STEWART	Telephone No. MSIN FAX 509-376-5056
SAF No. W05-005	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title RCRA GW MONITORING, MAY 2005	<i>DTS SAWS H89</i>	Ice Chest No. <i>SAWS 213</i> Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol RCRA	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
*** 57671 JSE170297*
W04660 Due 7/1/05

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
 A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, not to exceed SDG closure of 14 days.
 Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CTR4		W	<i>5-17-05</i>	<i>0952</i>	1x500-mL P	9223_COLIFORM: Coliform (1)	Na2S2O3 Cool 4C
B1CTR4		W	↓	↓	1x20-mL P	Activity Scan <i>HAN9N</i>	None

Relinquished By <i>K. J. YOUNG</i> <i>Den Young</i> <i>1325</i>	Received By <i>P. Davidson</i> <i>1325</i>	Date/Time MAY 17 2005
Relinquished By	Received By	Date/Time
Relinquished By	Received By	Date/Time
Relinquished By	Received By	Date/Time

- Matrix ***
- S = Soil
 - SE = Sediment
 - SO = Solid
 - SL = Sludge
 - W = Water
 - O = Oil
 - A = Air
 - DS = Drum Solid
 - DL = Drum Liquid
 - T = Tissue
 - WI = Wine
 - L = Liquid
 - V = Vegetation
 - X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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Collector K.J. YOUNG	Contact/Requester DL STEWART	Telephone No. MSIN FAX 509-376-5056
SAF No. W05-005	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title RCRA GW MONITORING, MAY 2005	DTS- SAWS H 89	Ice Chest No. SAWS 213 Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol RCRA	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** 57671 JSE170297
W04660 Due 7/1/05

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
 A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, not to exceed SDG closure of 14 days.
 Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CTR5		W	5-17-05	0810	1x500-mL P	9223_COLIFORM: Coliform (1)	Na2S2O3 Cool 4C
B1CTR5		W	↓	↓	1x20-mL P	Activity Scan } HAN95	None

Relinquished By K.J. YOUNG <i>[Signature]</i> MAY 17 2005	Received By P. Davidson <i>[Signature]</i> MAY 17 2005	Matrix * S = Soil DS = Drum Solid SF = 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

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W05-005-305
		Page <u>1</u> of <u>1</u>

Collector K. J. YOUNG	Contact/Requester DL STEWART	Telephone No. 509-376-5056 MSIN FAX
SAF No. W05-005	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title RCRA GW MONITORING, MAY 2005	DTS - Sawp H89	Ice Chest No. SAWS 213 Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol RCRA	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS ** W04660 JSE170297 57671 Due 7/1/05	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, 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
B1CTV5		W	5-17-05	1046	1x500-mL P	9223_COLIFORM: Coliform (1)	Na2S2O3 Cool 4C
B1CTV5		W	↓	↓	1x20-mL P	Activity Scan	None

Relinquished By K. J. YOUNG Sign <i>[Signature]</i> Date/Time MAY 17 2005	Received By P. Davidson Sign <i>[Signature]</i> Date/Time MAY 17 2005	Matrix * S = Soil DS = Drum Solid SF = 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 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
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PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

W05-005-301

Page 1 of 1

Collector <i>K.J. YOUNG</i>	Contact/Requester DL STEWART	Telephone No. 509-376-5056	MSIN FAX
SAF No. W05-005	Sampling Origin HANFORD SITE	Purchase Order/Charge Code	
Project Title RCRA GW MONITORING, MAY 2005	<i>DTS - Saws H89</i>	Ice Chest No. <i>Saws 213</i>	Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.	
Protocol RCRA	Priority: 45 Days	Offsite Property No.	

POSSIBLE SAMPLE HAZARDS/REMARKS
 **
57671 JSE170297
W04660 Dec 7/1/05

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
 A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, not to exceed SDG closure of 14 days.
 Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CTV8		W	<i>5-17-05</i>	<i>1131</i>	1x500-mL P	9223_COLIFORM: Coliform (1)	Na2S2O3 Cool 4C
B1CTV8		W	<i>↓</i>	<i>↓</i>	1x20-mL P	Activity Scan <i>HAN84</i>	None

Relinquished By <i>K.J. YOUNG</i> <i>[Signature]</i> Date/Time <i>MAY 17 2005</i>	Received By <i>P. Davidson</i> <i>[Signature]</i> Date/Time <i>MAY 17 2005</i>	Matrix *
Relinquished By Date/Time	Received By Date/Time	S = Soil DS = Drum Solid SF = Sediment DI = Drum Linn 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
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PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W05-005-297
		Page 1 of 1

Collector K. J. YOUNG	Contact/Requester DL STEWART	Telephone No. MSIN FAX 509-376-5056
SAF No. W05-005	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title RCRA GW MONITORING, MAY 2005	DTS - SAWS H89	Ice Chest No. SAWS 213 Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol RCRA	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS **57621 55E170297 W04660 Due 7/1/05	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, 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
B1CTW4		W	5-17-05	1241	1x500-mL P	9223_COLIFORM: Coliform (1) HAN8V	Na2S2O3 Cool 4C
B1CTW4		W	↓	↓	1x20-mL P	Activity Scan	None

Relinquished By K. J. YOUNG <i>[Signature]</i> MAY 17 2005	Received By P. Davidson <i>[Signature]</i> MAY 17 2005	Matrix * S = Soil DS = Drum Solid SF = Sediment DI = Drum Liquid SO = Solid T = Tissue SI = 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
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STL

Sample Check-in List

Date/Time Received: 5/17/05 @ 1336

Client: PGW SDG #: W04660 NA [] SAF #: W05-005 NA []

Work Order Number: JSE170297 Chain of Custody # W05-005-309, 313, 289, 285 ^{3/4}

Shipping Container ID: DTS-SAWS-H90 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: 10
7. Sample holding times exceeded? NA Yes [] No []
8. Samples have:
 - _____ tape
 - custody seals
 - _____ hazard labels
 - appropriate samples labels
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: 5/17/05

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[] No action necessary; process as is.

Project Manager _____ Date _____



STL

Sample Check-in List

Date/Time Received: 5/17/05 @ 1325

Client: PGW SDG #: W04660 NA [] SAF #: W05-005 NA []

Work Order Number: J5E170297 Chain of Custody # W05-005-281, 282, 305, 301, 297

Shipping Container ID: DTS-SAWS-H89 Air Bill # 12

1. Custody Seals on shipping container intact? NA [] Yes [X] No []
2. Custody Seals dated and signed? NA [] Yes [X] No []
3. Chain of Custody record present? Yes [X] No []
4. Cooler temperature: _____ NA [X] 5. Vermiculite/packing materials is NA [] Wet [] Dry [X]
6. Number of samples in shipping container: 10
7. Sample holding times exceeded? NA [X] Yes [] No []
8. Samples have:
 - _____ tape
 - X custody seals
 - _____ hazard labels
 - X appropriate samples labels
9. Samples are:
 - X in good condition
 - _____ broken
 - _____ leaking
 - _____ have air bubbles
 - (Only for samples requiring head space)
10. Sample pH taken? NA [X] pH<2 [] pH>2 [] pH>9 []
11. Sample Location, Sample Collector Listed? * Yes [] No [X]
*For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [] No [X]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: [Signature] Date: 5/17/05

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[] No action necessary; process as is.

Project Manager _____ Date _____

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # G05-007-10
		Page <u>1</u> of <u>1</u>

Collector DURATEK E. M. HALL	Contact/Requester DL STEWART	Telephone No. MSIN FAX 509-376-5056
SAF No. G05-007	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title LTMC NR2 REBOUND, MAY 2005	DTS-SAWS-H91	Ice Chest No. SML 124 Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol Other	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS ** 57671 JSE170305 W04660 Done 7/1/05	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, 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
B1CRV2		W	5-17-05	0930	1x1000-mL P	9310_ALPHABETA_GPC: Gross Beta (1)	HNO3 to pH <2
B1CRV2		W	↓	↓	1x20-mL P	Activity Scan	None

Relinquished By DURATEK E. M. HALL	Print	Sign <i>[Signature]</i>	Date/Time MAY 17 2005	Received By P. Davidson	Print	Sign <i>[Signature]</i>	Date/Time MAY 17 2005	Matrix *
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	S = Soil DS = Drum Solid SF = 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	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	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
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STL

Sample Check-in List

Date/Time Received: 5/17/05 @ 1400

Client: POW SDG #: W04660 NA [] SAF #: G105-007 NA []

Work Order Number: 55E170305 Chain of Custody # G105-007-10

Shipping Container ID: DTS-SAWS-491 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: 6
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: [Signature] Date: 5/17/05

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[] No action necessary; process as is.

Project Manager _____ Date _____

PNNL **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** **C.O.C. # I05-036-11**

Page 1 of 1

Collector DURATEK F. M. HALL	Contact/Requester DL STEWART	Telephone No. MSIN FAX 509-376-5056
SAF No. I05-036	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title LTMC 2UPL MAY 2005	Method of Shipment GOVT. VEHICLE	Ice Chest No. 5ML 124 Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Priority: 45 Days	Bill of Lading/Air Bill No.
Protocol SURV		Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
 ** 57671 JSEI70311
 W04660 Due 7/1/05

SPECIAL INSTRUCTIONS **Hold Time** **Total Activity Exemption:** Yes No
 A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, not to exceed SDG closure of 14 days.
 Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CRR3		W	5/17/05	1125	1x1000-mL P	906.0_H3_LSC: Tritium (1)	None
B1CRR3		W	↓	↓	1x20-mL P	Activity Scan	None
B1CRR3		W	↓	↓	2x4000-mL G/P	I129LL_SEP_LEPS_GS_LL: I-129 (1)	None

Relinquished By DURATEK F. M. HALL	Print	Sign	Date/Time 4/10 MAY 17 2005	Received By P. Davidson	Print	Sign	Date/Time 4/10 MAY 17 2005	Matrix *
Relinquished By	Date/Time	Received By	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SI = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By	Date/Time	Received By	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	Date/Time	Date/Time	Date/Time	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: 5/17/05 @ 1400

Client: PGW SDG #: W04660 NA SAF #: I05-036 NA

Work Order Number: JSE170311 Chain of Custody # I05-036-11

Shipping Container ID: DTS-SAWS-H91 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: 6
7. Sample holding times exceeded? NA Yes No
8. Samples have:
 - tape
 - custody seals
 - hazard labels
 - appropriate samples labels
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: 5/17/05

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

No action necessary; process as is.

Project Manager _____ Date _____

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # G05-007-18
		Page <u>1</u> of <u>1</u>

Collector <i>Radford / Newell</i>	Contact/Requester DL STEWART	Telephone No. MSIN FAX 509-376-5056
SAF No. G05-007	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title LTMC NR2 REBOUND, MAY 2005		Ice Chest No. Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol Other	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS ** ** <div style="text-align: center; margin-top: 10px;"> <i>W04660</i> <i>J5E1703A7</i> </div>	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, 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
B1CRV6		W	5/16/05	1515	1x1000-mL P	9310_ALPHABETA_GPC: Gross Beta (1) <i>HAPL6</i>	HNO3 to pH <2
B1CRV6		W	5/16/05	1515	1x20-mL P	Activity Scan	None

Relinquished By <i>Judie Newell</i> Print Sign Date/Time <i>Judie Newell</i> 5/16/05 1630	Received By <i>Sig 5 Locked Storage</i> Print Sign Date/Time <i>Sig 5 Locked Storage</i> 5/16/05 1630	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 SIG 5 LOCKED STORAGE Date/Time SIG 5 LOCKED STORAGE 5/17/05 14:00	Received By E.L. RADFORD Date/Time <i>E. Radford</i> 5/17/05 14:00	
Relinquished By E.L. RADFORD Date/Time <i>E. Radford</i> 5/17/05 14:45	Received By <i>Jeff Jensen</i> Date/Time <i>Jeff Jensen</i> 05/17/05 1445	
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
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<100 cpm

Collector <i>Radford / Newell</i>	Contact/Requester DL STEWART	Telephone No. MSIN FAX 509-376-5056
SAF No. G05-007	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title LTMC NR2 REBOUND, MAY 2005		Ice Chest No. Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol Other	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

W04660
JSE 170 347

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, not to exceed SDG closure of 14 days.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CTX0		W	<i>5/16/05</i>	<i>1335</i>	1x1000-mL P	9310_ALPHABETA_GPC: Gross Beta (1) <i>HAPME</i>	HNO3 to pH <2
B1CTX0		W	<i>5/16/05</i>	<i>1335</i>	1x20-mL P	Activity Scan	None

Relinquished By <i>Jackie Newell</i>	Received By <i>Sig 5 Locked Storage</i>	Matrix *
Print Sign Date/Time <i>Jackie Newell</i> 5/16/05 1630	Print Sign Date/Time <i>Sig 5 Locked Storage</i> 5/16/05 1630	S = Soil DS = Drum Solid SF = 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 <i>Sig 5 Locked Storage</i>	Received By <i>E Radford E Radford</i>	
Date/Time 5/17/05 1400	Date/Time 5/17/05 1400	
Relinquished By <i>R. Radford E Radford</i>	Received By <i>Jeff Tomson</i>	
Date/Time 5/17/05 1445	Date/Time 05/20/05 1445	
Relinquished By	Received By	
Date/Time	Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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<100 cpm

Collector <i>Radford / Newell</i>	Contact/Requester DL STEWART	Telephone No. MSIN FAX 509-376-5056
SAF No. G05-007	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title LTMC NR2 REBOUND, MAY 2005		Ice Chest No. Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol Other	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS ** ** <div style="text-align: right; margin-top: 10px;"><i>w04660</i> <i>JSE170347</i></div>	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, 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
B1CRV8		W	5-16-05	1420	1x1000-mL P	9310_ALPHABETA_GPC: Gross Beta (1) <i>HAPM4</i>	HNO3 to pH <2
B1CRV8		W	5-16-05	1420	1x20-mL P	Activity Scan	None

Relinquished By <i>Julie Newell</i> <i>Julie Newell</i> 5-16-05 1630	Received By <i>Sign 5 Locked Storage</i> 5-16-05 1630	Matrix * S = Soil DS = Drum Solid SF = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By UNLOCKED STORAGE 5/17/05 14:00	Received By EL RADFORD <i>Radford</i> 5/17/05 1400	
Relinquished By EL RADFORD <i>Radford</i> 5/17/05 1445	Received By <i>Tell Jones</i> <i>J.M.P.</i> 05-17-05 1445	
Relinquished By	Received By	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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6100 cpm

Collector <i>Radford / Newell</i>	Contact/Requester DL STEWART	Telephone No. MSIN FAX 509-376-5056
SAF No. G05-007	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title LTMC NR2 REBOUND, MAY 2005		Ice Chest No. Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol Other	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

W04660
JSE1703A7

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes No
A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, not to exceed SDG closure of 14 days.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CTW8		W	<i>5/16/05</i>	<i>1535</i>	1x1000-mL P	9310_ALPHABETA_GPC: Gross Beta (1) <i>HAPMM</i>	HNO3 to pH <2
B1CTW8		W	<i>5/16/05</i>	<i>1535</i>	1x20-mL P	Activity Scan	None

Relinquished By <i>Jake Newell</i>	Received By <i>Sig 5 Locked Storage</i>	Matrix *
Print Sign <i>Jake Newell</i>	Print Sign <i>Sig 5 Locked Storage</i>	S = Soil DS = Drum Solid SF = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Date/Time <i>5/16/05 1630</i>	Date/Time <i>5/16/05 1630</i>	
Relinquished By SIG 5 LOCKED STORAGE	Received By <i>EL RADFORD</i>	
Date/Time <i>5/17/05 1400</i>	Date/Time <i>5/17/05 1400</i>	
Relinquished By <i>EL RADFORD</i>	Received By <i>Jeff Jensen</i>	
Date/Time <i>5/16/05 1445</i>	Date/Time <i>05/17/05 1445</i>	
Relinquished By	Received By	
Date/Time	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By
		Date/Time

< 100 CPM

PNNL C.O.C. # **G05-007-16**

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Collector <i>Radford/Newell</i>	Contact/Requester DL STEWART	Telephone No. MSIN FAX 509-376-5056
SAF No. G05-007	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title LTMC NR2 REBOUND, MAY 2005		Ice Chest No. Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol Other	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS ** ** <div style="text-align: center; margin-top: 10px;"> <i>L09660</i> <i>JSE170397</i> </div>	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, 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
B1CRV5		W	<i>5/16/05</i>	<i>1505</i>	1x1000-mL P	9310_ALPHABETA_GPC: Gross Beta (1) <i>HAPMR</i>	HNO3 to pH <2
B1CRV5		W	<i>5/16/05</i>	<i>1505</i>	1x20-mL P	Activity Scan	None

Relinquished By <i>Jackie Novell</i> <i>Jackie Novell</i> 5/16/05 1630	Received By <i>Sig 5 Locked Storage</i> 5/16/05 1630	Matrix * S = Soil DS = Drum Solid SF = 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 SIG 5 LOCKED STORAGE 5/17/05 14:00	Received By EL RADFORD <i>Radford</i> 5/17/05 14:00	
Relinquished By EL RADFORD <i>Radford</i> 5/17/05 14:45	Received By <i>Jett Jensen</i> 05/17/05 1445	
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
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L100 cpm



STL

Sample Check-in List

Date/Time Received: 05 17 05 1445

Client: PGL, PNA SDG #: W04660, 661 NA [] SAF #: 605-007 NA []

Work Order Number: JSE170347, 349 Chain of Custody # 605-007-14, 18, 26, 31, 22, 29, 16, 20, 28, 30, 24

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: 24
7. Sample holding times exceeded? NA Yes [] No []
8. Samples have:
 - _____ tape
 - custody seals
 - _____ hazard labels
 - appropriate samples labels
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: 05 17 05

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[] No action necessary; process as is.

Project Manager _____ Date _____

6/22/2005 2:18:14 PM

Sample Preparation/Analysis

Balance Id:na

384868, Pacific Northwest National Laboratories ,
Pacific Northwest National Lab

BN I-129 Prp/SepRC5025

TB Gamma by LEPD

Pipet #: _____

Report Due: 07/01/2005

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 5144174 WATER pCi/L

PM, Quote: SS , 57671

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 5144172 ARS6, 5144174 BNTB,

Prep Tech: NortonJ



Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	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 HAPCW-1-AC J5E170311-1-SAMP 05/17/2005 11:25	3932.50g,in	3932.50g,in	ITA4490 06/10/05,pd 01/03/05,r	IFA	36.1	100	L4	1104	4/29/05	
AmtRec: 20ML,LP,2X4LP		#Containers: 4		Scr Rst:		Alpha: 2.35E+02 pCi/L		Beta: 1.16E+02 pCi/L		
2 HAPCW-1-AE-X J5E170311-1-DUP 05/17/2005 11:25	3862.20g,in	3862.20g,in	ITA4491 06/10/05,pd 01/03/05,r		36.0		L5	1104		
AmtRec: 20ML,LP,2X4LP		#Containers: 4		Scr Rst:		Alpha: 2.35E+02 pCi/L		Beta: 1.16E+02 pCi/L		
3 HA5F5-1-AA-B J5E240000-174-BLK 05/17/2005 11:25	3936.90g,in	3936.90g,in	ITA4492 06/10/05,pd 01/03/05,r		34.4		L4	1248	6/29/05	
AmtRec:		#Containers: 1		Scr Rst:		Alpha:		Beta:		
4 HA5F5-1-AC-C J5E240000-174-LCS 05/17/2005 11:25	4011.10g,in	4011.10g,in	isd0545 05/04/05,pd 01/03/05,r		38.6		L5	1204		
AmtRec:		#Containers: 1		Scr Rst:		Alpha:		Beta:		

Comments:

All Clients for Batch:
384868, Pacific Northwest National Laboratories Pacific Northwest National Lab, SS , 57671

HAPCW1AC-SAMP Constituent List:

I-129	RDL:1.00E+00	pCi/L	LCL:	UCL:	RPD:
HA5F51AA-BLK:					
I-129	RDL:1.00E+00	pCi/L	LCL:	UCL:	RPD:
HA5F51AC-LCS:					
I-129	RDL:5	pCi/L	LCL:70	UCL:130	RPD:20

HAPCW1AC-SAMP Calc Info:

6/29/2005 3:58:18 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/29/2004, 7/4/2005, Batch: '5144174', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
5144174				
AC		CalcC	NortonJ 6/22/2005 11:32:34	
SC			heidelbergt IsBatched 5/24/2005 8:20:39 AM	ICOC_RADCALC v4.8.08
SC			NortonJ InPrep 6/22/2005 11:32:34 AM	RICH-RC-5025 REVISION3
SC			NortonJ Prep1C 6/29/2005 9:21:56 AM	RICHRC5025 REV3
SC			BlackCL InCnt1 6/29/2005 9:22:17 AM	RICH-RD-0007 REVISION 5
SC			BlackCL CalcC 6/29/2005 1:16:55 PM	RICH-RD-0007 REVISION 5
AC			NortonJ 6/29/2005 9:21:56	
AC			BlackCL 6/29/2005 9:22:17	
AC			BlackCL 6/29/2005 1:16:55 PM	

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

6/27/2005 10:08:28 AM

Sample Preparation/Analysis

Balance Id:1121153482

384868, Pacific Northwest National Laboratories,
Pacific Northwest National Lab

BC Gross Beta PrpRC5014
S8 Gross Beta by GPC using Sr/Y-90 curve
5I CLIENT: HANFORD

Pipet #: 236

Report Due: 07/01/2005

Sep1 DT/Tm Tech: *[Signature]*

Batch: 5144170 WATER pCi/L
SEQ Batch, Test: None

PM, Quote: SS, 57671

Sep2 DT/Tm Tech: *[Signature]*

Prep Tech: ,ScottM



Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	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 HAPCL-1-AA J5E170305-1-SAMP 05/17/2005 09:30	200.70g,in									
<p><i>1.5 80.0 100 28c 1024 6/24/05</i></p> <p>AmtRec: 20ML,LP #Containers: 2 Scr Rst: Alpha: 1.52E+01 pCi/L Beta: 1.39E+01 pCi/L</p>										
2 HAPCL-1-AC-X J5E170305-1-DUP 05/17/2005 09:30	200.50g,in									
<p><i>82.5 28D</i></p> <p>AmtRec: 20ML,LP #Containers: 2 Scr Rst: Alpha: 1.52E+01 pCi/L Beta: 1.39E+01 pCi/L</p>										
3 HAPL2-1-AA J5E170347-1-SAMP 05/16/2005 15:25	200.40g,in									
<p><i>46.0 31A</i></p> <p>AmtRec: VIAL20,LP #Containers: 2 Scr Rst: Alpha: 5.67E+02 pCi/L Beta: 3.09E+02 pCi/L</p>										
4 HAPL6-1-AA * J5E170347-2-SAMP 05/16/2005 15:15	75.00g,in									
<p><i>14.7 31B</i></p> <p>AmtRec: VIAL20,LP #Containers: 2 Scr Rst: Alpha: 2.04E+03 pCi/L Beta: 1.22E+03 pCi/L</p>										
5 HAPMA-1-AA * J5E170347-3-SAMP 05/16/2005 13:45	149.80g,in									
<p><i>36.2 31C</i></p> <p>AmtRec: VIAL20,LP #Containers: 2 Scr Rst: Alpha: 1.02E+03 pCi/L Beta: 6.03E+02 pCi/L</p>										
6 HAPME-1-AA J5E170347-4-SAMP 05/16/2005 13:35	200.10g,in									
<p><i>31.5 31D</i></p> <p>AmtRec: VIAL20,LP #Containers: 2 Scr Rst: Alpha: 1.76E+02 pCi/L Beta: 8.12E+01 pCi/L</p>										
7 HAPMH-1-AA * J5E170347-5-SAMP 05/16/2005 14:20	149.00g,in									
<p><i>28.6 31A</i></p> <p>AmtRec: VIAL20,LP #Containers: 2 Scr Rst: Alpha: 1.14E+03 pCi/L Beta: 6.55E+02 pCi/L</p>										

6/27/2005 10:08:30 AM

Sample Preparation/Analysis

Balance Id:1121153482

384868, Pacific Northwest National Laboratories ,
Pacific Northwest National Lab

BC Gross Beta PrpRC5014
S8 Gross Beta by GPC using Sr/Y-90 curve
5I CLIENT: HANFORD

Pipet #: _____

Report Due: 07/01/2005

Sep1 DT/Tm Tech:

Batch: 5144170 WATER

pCi/L

PM, Quote: SS , 57671

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,ScottM



Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 HAPMM-1-AA J5E170347-6-SAMP 	200.00g,in									
05/16/2005 15:35	AmtRec: VIAL20,LP	#Containers: 2								
9 HAPMR-1-AA * J5E170347-7-SAMP 	89.30g,in									
05/16/2005 15:05	AmtRec: VIAL20,LP	#Containers: 2								
10 HAPMT-1-AA * J5E170347-8-SAMP 	144.90g,in									
05/16/2005 14:40	AmtRec: VIAL20,LP	#Containers: 2								
11 HA5FX-1-AA-B J5E240000-170-BLK 	200.20g,in									
05/17/2005 09:30	AmtRec:	#Containers: 1								
12 HA5FX-1-AC-C J5E240000-170-LCS 	200.50g,in	BESB2443	04/28/05,pd 09/21/04,r							
05/17/2005 09:30	AmtRec:	#Containers: 1								

Comments:

Handwritten notes: *8/27/05*, *1.5 33.1 100 32B 1024*, *19.0 32C*, *26.7 32D*, *0.3 26A 1422*, *0.5 26B*

** Reduced Aliquots*

All Clients for Batch:
384868, Pacific Northwest National Laboratories Pacific Northwest National Lab, SS , 57671

HAPCL1AA-SAMP Constituent List:
BETA RDL:4.00E+00 pCi/L LCL: UCL: RPD:

ICOC Fraction Transfer/Status Report

ByDate: 6/30/2004, 7/5/2005, Batch: '5144170', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
5144170				
AC		CalcC	ScottM 6/25/2005 9:24:26	
SC		heidelbergt	IsBatched 5/24/2005 8:20:39 AM	ICOC_RADCALC v4.8.08
SC		ScottM	InPrep 6/25/2005 9:24:26 AM	RICH-RC-5014 Revision 6
SC		BlackCL	InCnt1 6/27/2005 10:36:04 AM	RICH-RD-0003 REVISION 4
SC		DAWKINSO	CalcC 6/27/2005 4:57:44 PM	RICH-RD-0003 REVISION 4
SC		BlackCL	CalcC 6/28/2005 9:19:17 AM	RICH-RD-0003 REVISION 4
AC		BlackCL	6/27/2005 10:36:04	
AC		DAWKINSO	6/27/2005 4:57:44 PM	
AC		BlackCL	6/28/2005 9:19:17	

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

5/24/2005 8:20:18 AM

Sample Preparation/Analysis

Balance Id: *17425*

384868, Pacific Northwest National Laboratories ,
Pacific Northwest National Lab

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

Pipet #: _____

Report Due: 07/01/2005

Sep1 DT/Tm Tech: *6-22-05 PM*

Batch: 5144172 WATER

pCi/L

PM, Quote: SS , 57671

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

WO4660

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 HAPCW-1-AA								
J5E170311-1-SAMP								
05/17/2005 11:25		AmtRec: 20ML,LP,2X4LP	#Containers: 4				Scr Rst: Alpha: 2.35E+02 pCi/L	Beta: 1.16E+02 pCi/L

2 HAPCW-1-AD-X								
J5E170311-1-DUP								
05/17/2005 11:25		AmtRec: 20ML,LP,2X4LP	#Containers: 4				Scr Rst: Alpha: 2.35E+02 pCi/L	Beta: 1.16E+02 pCi/L

3 HA5F3-1-AA-B								
J5E240000-172-BLK								
05/17/2005 11:25		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:

4 HA5F3-1-AC-C								
J5E240000-172-LCS								
05/17/2005 11:25		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:

5 HA5F3-1-AD-BX								
J5E240000-172-MBLK								
05/17/2005 11:25		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:

6 HA5F3-1-AE-CM								
J5E240000-172-MLCS								
05/17/2005 11:25		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:

7 HA5F3-1-AF-BN								
J5E240000-172-IBLK								
05/17/2005 11:25		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:

5/24/2005 8:20:20 AM

Sample Preparation/Analysis

Balance Id: 12425

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

Pipet #: _____

Report Due: 07/01/2005

Sep1 DT/Tm Tech: 6-22-05 sw

Batch: 5144172

pCi/L

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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Comments:

All Clients for Batch:

384868, Pacific Northwest National Laboratories Pacific Northwest National Lab, SS , 57671

HAPCW1AA-SAMP Constituent List:

H-3	RDL:400	pCi/L	LCL:70	UCL:130	RPD:20			
HA5F31AA-BLK:								
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:			
HA5F31AC-LCS:								
H-3	RDL:400	pCi/L	LCL:70	UCL:130	RPD:20			
HA5F31AD-MBLK:								
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:			
HA5F31AE-MLCS:								
H-3	RDL:400	pCi/L	LCL:70	UCL:130	RPD:20			
HA5F31AF-IBLK:								
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:			
HAPCW1AA-SAMP Calc Info:								
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B			
HA5F31AA-BLK:								
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B			
HA5F31AC-LCS:								
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B			
HA5F31AD-MBLK:								
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B			
HA5F31AE-MLCS:								
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B			
HA5F31AF-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: 6/28/2004, 7/3/2005, Batch: '5144172', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
5144172				
AC	CalcC	McDowellID	6/22/2005 10:55:43	
SC		heidelbergt	IsBatched	5/24/2005 8:20:39 AM
SC		McDowellID	InSep1	6/22/2005 10:55:43 AM
SC		McDowellID	Sep1C	6/22/2005 3:22:18 PM
SC		DAWKINSO	InCnt1	6/22/2005 3:28:13 PM
SC		StringerR	CalcC	6/24/2005 10:03:54 AM
AC		McDowellID	6/22/2005 3:22:18 PM	ICOC_RADCALC v4.8.08
AC		DAWKINSO	6/22/2005 3:28:13 PM	RICH-RC-5007 REVISION 5
AC		StringerR	6/24/2005 10:03:54	RICH-RC-5007 REVISION 5
				RICH-RD-0001 REVISION 3
				RICH-RD-0001 REVISION 3

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

5/23/2005 7:48:48 AM

Sample Preparation/Analysis

Balance Id:

384868, Pacific Northwest National Laboratories ,
Pacific Northwest National Lab

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
IZ COLIFORM BY METHOD 9223

Pipet #: _____

Report Due: 07/01/2005

W04660

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 5143175 WATER

PM, Quote: SS , 57671

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 88IZ, 5143175 88IZ,

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 HAN8V-1-AA								
J5E170297-1-SAMP								
05/17/2005 12:41		AmtRec: 20ML,500P	#Containers: 2				Scr Rst:	Alpha: Beta:

2 HAN8V-1-AC-X								
J5E170297-1-DUP								
05/17/2005 12:41		AmtRec: 20ML,500P	#Containers: 2				Scr Rst:	Alpha: Beta:

3 HAN84-1-AA								
J5E170297-2-SAMP								
05/17/2005 11:31		AmtRec: 20ML,500P	#Containers: 2				Scr Rst:	Alpha: Beta:

4 HAN9C-1-AA								
J5E170297-3-SAMP								
05/17/2005 10:46		AmtRec: 20ML,500P	#Containers: 2				Scr Rst:	Alpha: Beta:

5 HAN9J-1-AA								
J5E170297-4-SAMP								
05/17/2005 08:10		AmtRec: 20ML,500P	#Containers: 2				Scr Rst:	Alpha: Beta:

6 HAN9N-1-AA								
J5E170297-5-SAMP								
05/17/2005 09:52		AmtRec: 20ML,500P	#Containers: 2				Scr Rst:	Alpha: Beta:

5/23/2005 7:48:49 AM

Sample Preparation/Analysis

Balance Id:

384868, Pacific Northwest National Laboratories ,
Pacific Northwest National Lab

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
IZ COLIFORM BY METHOD 9223

Pipet #: _____

Report Due: 07/01/2005

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 5143175 WATER

PM, Quote: SS , 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:
7 HAN94-1-AA								
J5E170297-6-SAMP								
05/17/2005 07:45		AmtRec: 20ML,500P	#Containers: 2				Scr Rst: Alpha: Beta:	
8 HAPAC-1-AA								
J5E170297-7-SAMP								
05/17/2005 10:42		AmtRec: 20ML,500P	#Containers: 2				Scr Rst: Alpha: Beta:	
9 HAPAE-1-AA								
J5E170297-8-SAMP								
05/17/2005 11:34		AmtRec: 20ML,500P	#Containers: 2				Scr Rst: Alpha: Beta:	
10 HAPAJ-1-AA								
J5E170297-9-SAMP								
05/17/2005 08:59		AmtRec: 20ML,500P	#Containers: 2				Scr Rst: Alpha: Beta:	
11 HAPAM-1-AA								
J5E170297-10-SAMP								
05/17/2005 09:53		AmtRec: 20ML,500P	#Containers: 2				Scr Rst: Alpha: Beta:	
12 HA3XH-1-AA-B								
J5E230000-175-BLK								
05/17/2005 12:41		AmtRec:	#Containers: 1				Scr Rst: Alpha: Beta:	

5/23/2005 7:48:49 AM

Sample Preparation/Analysis

Balance Id: _____

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
IZ COLIFORM BY METHOD 9223
5I CLIENT: HANFORD

Pipet #: _____

Report Due: 07/01/2005

Sep1 DT/Tm Tech: _____

Batch: 5143175

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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13HA3XH-1-AC-C

J5E230000-175-LCS



05/17/2005 12:41

AmtRec:

#Containers: 1

Scr Rst:

Alpha:

Beta:

Comments:

All Clients for Batch:

384868, Pacific Northwest National Laboratories Pacific Northwest National Lab, SS , 57671

HAN8V1AA-SAMP Constituent List:

HA3XH1AA-BLK:

HA3XH1AC-LCS:

HAN8V1AA-SAMP Calc Info:

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

HA3XH1AA-BLK:

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

HA3XH1AC-LCS:

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

Approved By _____

Date: _____