

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 17 Pages

Report Nbr: 29151

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04581A	W05-003	B1CC97	J5E310220-1	HCMA81AA	9HCMA810	5152118

Comments:

Certificate of Analysis
RECHECK, RECOUNT, OR REANALYSIS ORDER
ORDER NUMBER 050525STLRL-R2968

Certificate of Analysis

Pacific Northwest National Laboratories
Sigma V Building
Richland, WA 99352

June 16, 2005

Attention: Dot Stewart

SAF Number : W05-003
Date SDG Closed : May 25, 2005
Number of Samples : One (1)
Sample Type : Water
SDG Number : W04581A
Data Deliverable : 15-Day / Priority

CASE NARRATIVE

I. Introduction

On May 25, 2005, a request for reanalysis of one water sample was received at STL Richland (STLR). Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Pacific Northwest National Laboratories (PGW) specific ID:

<u>PGW ID#</u>	<u>STLR ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
B1CC97	HCMA8 (G5XQ9)	WATER	5/25/05

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 analysis was: **Liquid Scintillation Counting**
Technetium-99 by method RICH-RC-5065

IV. Quality Control

The analytical results for each analysis performed under SDG W04581A 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

Technetium-99 by method RICH-RC-5065:

The reanalysis result is not within RER acceptance criteria. The achieved MDAs for samples B1CC97 and B1CC97 duplicate are greater than the CRDL due to sample matrix effects; reduced volumes were analyzed based elevated on sample screen results. The detected activities for all samples exceed the achieved MDAs; the results are accepted for reporting with the MDAs achieved. Except as noted, the LCS, batch blank, samples, sample duplicate (B1CC97) and sample matrix spike (B1CC97) 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

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) u_c - Combined Uncertainty.	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, u_c the combined uncertainty. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgrndCnt}/\text{BkgrndCntMin})/\text{SCntMin})) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. 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.

6/16/2005 8:21:39 AM

STL Richland Report

Lab Code: STLRL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 29151 File Name: h:\Reportdb\edd\Fead\Rad\W04581A.Edd, h:\Reportdb\edd\Fead\Rad\29151.E

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9HCMA810	B1CC97		MW6-SBB-A1	W05-003	W04581A					03/09/2005 09:54				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5152118	TC-99	14133-76-7	6.94E+04	pCi/L	2.3E+02	4.3E+03		2.69E+01	100.0	TC99_ETVDSK_LS	5.11E-02	L	06/03/200 13:57	I

Thursday, June 16, 2005

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04581A.Edd, h:\Reportdb\edd\Fead\Rad\29151.E

Lab Sample Id: HCMQN1AB

Sdg/Rept Nbr: W04581A 29151

Collection Date: 03/09/2005 09:54

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BLK

Received Date: 05/25/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AD	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5152118 BLK	TC-99 14133-76-7	-4.02E+00	pCi/L	6.2E+00 4.3E+00	U	1.06E+01	100.0		TC99_ETVDSK	1.284E-01 L	06/03/2005 17:04				D

Thursday, June 16, 2005

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04581A.Edd, h:\Reportdb\edd\FeadIV\Rad\29151.E

Lab Sample Id: HCMQN1CS

Sdg/Rept Nbr: W04581A 29151

Collection Date: 03/09/2005 09:54

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BS

Received Date: 05/25/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AE	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5152118 BS	TC-99 14133-76-7	4.84E+02	pCi/L	3.6E+01 1.3E+01		1.08E+01	100.0	5.48E+02 88.4	TC99_ETVDSK	1.251E-01 L	06/03/2005 18:07			70 130	D

Thursday, June 16, 2005

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W04581A.Edd, h:\Reportdb\edd\Fead\VRad\29151.E

Lab Sample Id: HCMA81DR

Sdg/Rept Nbr: W04581A 29151

Collection Date: 03/09/2005 09:54

Client Id: B1CC97

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: DUP

Received Date: 05/25/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
W05-003	MW6-SBB-A19981								AC	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5152118	TC-99	6.91E+04	pCi/L	4.3E+03		2.61E+01	100.0		TC99_ETVDSK	5.27E-02	06/03/2005	.5	0.1		D
DUP	14133-76-7	6.94E+04		2.2E+02						L	16:02	20.0	3		

Thursday, June 16, 2005

STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W04581A.Edd, h:\Reportdb\edd\Fead\VRad\29151.E

Lab Sample Id: HCMA81CW

Sdg/Rept Nbr: W04581A 29151

Collection Date: 03/09/2005 09:54

Client Id: B1CC97

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: MS

Received Date: 05/25/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
W05-003	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/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5152118 MS	TC-99 14133-76-7	7.48E+04	pCi/L	4.7E+03 2.4E+02		2.67E+01	100.0	8.93E+03 837.6	TC99_ETVDSK	5.07E-02 L	06/03/2005 15:00			60 140	D

Lot No., Due Date: J5E310220; 06/09/2005
 Client, Site: 384868; PGW 615HANFORD HANFORD
 QC Batch No., Method Test: 5152118; RTC99 Tc-99 by LSC
 SDG, Matrix: W04581A; 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 did not meet the RDL
however the activity detected was greater than the MDC.

First Level Review John Hostas

Date 6-6-5



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 5752118

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: sample B1CC97, dup & ms activity > MDA
> CRDL > 1.6/16/05

Second Level Review: Jodie A Date: 6/16/05

Clouseau Nonconformance Memo



NCM #: 10-05896	Classification: Anomaly
NCM Initiated By: John Norton	Status: GLREVIEW
Date Opened: 06/06/2005	Production Area: Environmental - Nona
Date Closed:	Tests: Tc-99 by LSC
	Lot #'s (Sample #'s): J5E310220 (1), J5F010000 (118),
	QC Batches: 5152118
Nonconformance: MDA not met	
Subcategory: Data accepted	

Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
John Norton	06/06/2005	The CRDL was not met.

Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
John Norton	06/06/2005	The activity found was greater than the MDC.

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>
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05/25/2005
RECHECK, RECOUNT, OR REANALYSIS ORDER
CONTRACT NO MW6-SBB-A19981

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

Battelle PNNL Order Number: 050525STLRL-R2968

Sample Delivery Group: W04581

Special Instructions None

Samples(s)

Lab Sample ID	PNNL Sample	Action	TAT	METHOD_NAME:
9G5XQ910	B1CC97	Reanalysis	15/15	TC99_ETVDSK_LSC

Plw 57671

~~HCMAS~~ JA 053105
HCMAS

Original Lot J5C100177

SDG W04581A

J5E310220

Due 06 09 05

Deliver Report Results to: Dorothy L. Stewart, K6-96
c/o Secretary
3110 Port of Benton Blvd.
Richland, WA 99352

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

6/2/2005 9:10:37 PM

Sample Preparation/Analysis

Balance Id:n/a

384868, Pacific Northwest National Laboratories ,
Pacific Northwest National Lab

FP Tc-99 Prp/SepRC5065
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

Pipet #: _____

Report Due: 06/09/2005

Sep1 DT/Tm Tech:

Batch: 5152118 WATER pCi/L PM, Quote: SS , 57671
SEQ Batch, Test: None All Tests: 5152118 FPS5,

Sep2 DT/Tm Tech:

Prep Tech: ,FinchA



Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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1 HCMA8-1-AA J5E310220-1-SAMP 			51.10g,in	51.10g						
03/09/2005 09:54		AmtRec: 500P	#Containers: 1					Scr Rst:	Alpha:	Beta:

2 HCMA8-1-AC-S J5E310220-1-MS 			50.70g,in	50.70g	TCSG1114 04/19/05,pd 02/15/05,r					
03/09/2005 09:54		AmtRec: 500P	#Containers: 1					Scr Rst:	Alpha:	Beta:

3 HCMA8-1-AD-X J5E310220-1-DUP 			52.70g,in	52.70g						
03/09/2005 09:54		AmtRec: 500P	#Containers: 1					Scr Rst:	Alpha:	Beta:

4 HCMQN-1-AA-B J5F010000-118-BLK 			128.40g,in	128.40g						
03/09/2005 09:54		AmtRec:	#Containers: 1					Scr Rst:	Alpha:	Beta:

5 HCMQN-1-AC-C J5F010000-118-LCS 			125.1	TCSE 1739						
03/09/2005 09:54		AmtRec:	#Containers: 1					Scr Rst:	Alpha:	Beta:

6 HCMQN-1-AD-BN J5F010000-118-IBLK 										
03/09/2005 09:54		AmtRec:	#Containers: 1					Scr Rst:	Alpha:	Beta:

6/2/2005 9:10:48 PM

Sample Preparation/Analysis

Balance Id: _____

FP Tc-99 Prp/SepRC5065
S5 Technetium-99 by Liquid Scint
SI CLIENT: HANFORD

Pipet #: _____

Report Due: 06/09/2005

Sep1 DT/Tm Tech: _____

Batch: 5152118
SEQ Batch, Test: None

pCi/L

Sep2 DT/Tm Tech: _____

Prep Tech: _____



Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	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

HCMAS1AA-SAMP Constituent List:

Tc-99 RDL:15 pCi/L LCL:70 UCL:130 RPD:20

HCMAS1AC-MS Constituent List:

HCMQN1AA-BLK:

Tc-99 RDL:15 pCi/L LCL: UCL: RPD:

HCMQN1AC-LCS:

Tc-99 RDL:15 pCi/L LCL:70 UCL:130 RPD:20

HCMQN1AD-IBLK:

Tc-99 RDL:15 pCi/L LCL: UCL: RPD:

HCMAS1AA-SAMP Calc Info:

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

HCMAS1AC-MS Calc Info:

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

HCMQN1AA-BLK:

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

HCMQN1AC-LCS:

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

HCMQN1AD-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: 6/6/2004, 6/11/2005, Batch: '5152118', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
5152118				
AC		CalcC	FinchA	6/2/2005 9:08:41 PM
SC			heidelberg	IsBatched 6/1/2005 7:30:34 AM
SC			FinchA	InPrep 6/2/2005 9:08:41 PM
SC			FinchA	Sep1C 6/2/2005 9:51:14 PM
SC			DAWKINSO	InCnt1 6/2/2005 10:01:08 PM
SC			StringerR	CalcC 6/5/2005 1:26:40 PM
AC			FinchA	6/2/2005 9:51:14 PM
AC			DAWKINSO	6/2/2005 10:01:08 PM
AC			StringerR	6/5/2005 1:26:40 PM

AC: Accepting Entry; SC: Status Change