

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: 34116

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04973 I Daves 5/16/12	W06-008	B1K2T6	J6H030358-2	JALKX1AD	9JALKX10	6319353

Comments:

**STL Richland**  
2800 George Washington Way  
Richland, WA 99354

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

## Certificate of Analysis

Pacific Northwest National Laboratories  
Sigma V Building  
Richland, WA 99352

January 2, 2007

Attention: Dot Stewart

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SAF Number	:	W06-008
Date SDG Closed	:	August 11, 2006
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W04973
Data Deliverable	:	45-Day / Summary

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### CASE NARRATIVE

#### I. Introduction

On August 2, 2006 one water sample was received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID numbers to correspond with the Pacific Northwest National Laboratories (PGW) specific IDs:

<u>PGW ID#</u>	<u>STLR ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
B1K2T6	JALKX	WATER	8/2/06

#### II. Sample Receipt

The sample was received in good condition and no anomalies were noted during check-in.

#### III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

**Gamma Spectroscopy**  
Iodine-129 (LL) by method RICH-RC-5025

#### IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

#### V. Comments

##### Gamma Spectroscopy

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

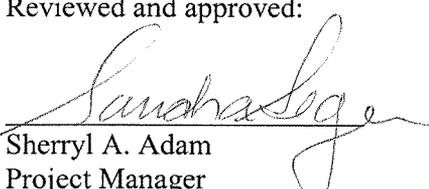
Sample B1K2T6 was originally analyzed by method I129LL\_ETVDSK\_SEP\_GS which failed. On November 14, 2006 STL Richland sent Issue Resolution Form (PNNL No.:06-047) asking permission to analyze sample B1K2T6 by method I129LL\_SEP\_LEPS\_GS instead of I129LL\_ETVDSK\_SEP\_GS. The proposed resolution was accepted on November 14, 2006 (IRF PNNL Tracking Number 06-067).

Sample B1K2T6 was analyzed by method I129LL\_SEP\_LEPS\_GS; however there was insufficient volume for a duplicate and the LCS had a 65% recovery. A recount of the LCS did not improve the recovery. There was no sample remaining for a reanalysis. On December 13, 2006 STL proposed to report this data. Proposal was accepted on December 18, 2006 (IRF PNNL Tracking Number 06-063).

The batch blank and sample result are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

  
Sherryl A. Adam  
Project Manager

**STL RICHLAND ISSUE RESOLUTION FORM  
FOR CONTRACT 615 WITH BHI/FH/PNNL**

PNNL No.: 06-047

SAF No.: W06-008

Date: November 14, 2006

SDG: W04973

Sample No.(s) B1K2T6

Submitted By: Sherryl Adam

Submitted To: **Dot Stewart (PNNL)**

Phone No. 509-375-3131 x164

Phone No. **509-376-5056**

Fax No. 509-375-5590

Fax No. 509-372-1704

**ISSUE**

I129LL\_ETVDSK\_SEP\_GS

**PROPOSED RESOLUTION**

Analyze as I129LL\_SEP\_GS instead of  
I129LL\_ETVDSK\_SEP\_GS

**BHI/FH/PNNL COMMENTS -**

Accept proposed resolution.

Heidi Hampt for Dot Stewart 11/14/06

Signature and date

**Seger, Sandra**

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**From:** Adam, Sherryl  
**Sent:** Wednesday, November 15, 2006 8:13 AM  
**To:** Seger, Sandra  
**Subject:** FW: IRFs  
**Attachments:** 06-047.DOC; 06-048.DOC

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**From:** Hampt, Heidi [mailto:heidi.hampt@pnl.gov]  
**Sent:** Tuesday, November 14, 2006 1:52 PM  
**To:** Adam, Sherryl; Stewart, Dorothy L  
**Cc:** Waters-Husted, Karen S; Felmy, Diana  
**Subject:** RE: IRFs

Sherryl,

Here is the response.

Thanks,  
Heidi

---

**From:** Adam, Sherryl [mailto:SAdam@stl-inc.com]  
**Sent:** Tuesday, November 14, 2006 10:53 AM  
**To:** Stewart, Dorothy L  
**Cc:** Hampt, Heidi; Waters-Husted, Karen S  
**Subject:** IRFs

Dot,  
Here are some IRFs. Thanks.

<<IRFW04973\_14NOV06.DOC>> <<IRFW04974\_14NOV06.DOC>>

*Sherryl A. Adam*  
Project Manager  
Severn Trent Laboratories Richland  
(509) 375 - 3131 ext. 164

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11/15/2006

**STL RICHLAND ISSUE RESOLUTION FORM  
FOR CONTRACT 615 WITH BHI/FH/PNNL**

PNNL Tracking Number: 06-063

SAF No.: W06-008

Date: December 13, 2006

SDG: W04973

Sample No.(s) B1K2T6

Submitted By: Sherryl Adam

Submitted To: Dot Stewart (PNNL)

Phone No. 509-375-3131 x164

Phone No. 509-376-5056

Fax No. 509-375-5590

Fax No. 509-372-1704

**ISSUE**

The COC requested method I129LL\_ETVDSK\_SEP\_GS for sample B1K2T6. On 11/14/06 STL Richland proposed and was given permission to analyze sample B1K2T6 by method I129LL\_SEP\_LEPS\_GS.

Sample B1K2T6 was analyzed by method I129LL\_SEP\_LEPS\_GS; however there was insufficient volume for a duplicate and the LCS has a 65% recovery. There is no sample remaining for reanalysis.

**PROPOSED RESOLUTION**

Report I129LL\_SEP\_LEPS\_GS method results.

**BHI/FH/PNNL COMMENTS -**

Accept proposed resolution once the P&Ds associated with W04973 and W04974 have been resolved.

Heidi Hampt for Dot Stewart 12/18/06

Signature and date

**Seger, Sandra**

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**From:** Hampt, Heidi [heidi.hampt@pnl.gov]  
**Sent:** Monday, December 18, 2006 2:46 PM  
**To:** Seger, Sandra; Stewart, Dorothy L  
**Cc:** Felmy, Diana; Adam, Sherryl  
**Subject:** RE: W04973 I129 IRF  
**Attachments:** 06-063.DOC; P&D W04974 PD Rad\_2.doc; P&D W04973 PD Rad\_2.doc

Sandra,

Here is the response as well as two associated P&Ds that need to be resolved before the IRF can be resolved.

Thanks,  
Heidi

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**From:** Seger, Sandra [mailto:SSeger@stl-inc.com]  
**Sent:** Wednesday, December 13, 2006 10:13 AM  
**To:** Stewart, Dorothy L  
**Cc:** Felmy, Diana; Hampt, Heidi; Adam, Sherryl  
**Subject:** W04973 I129 IRF

Dot,

Please see the attached IRF regarding I129 for W04973.

Thanks,  
Sandra

<<IRFW04973\_13DEC06.DOC>>

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## 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

<b>Action Lev</b>	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.
<b>Batch</b>	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
<b>Bias</b>	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
<b>COC No</b>	Chain of Custody Number assigned by the Client or STL Richland.
<b>Count Error (#s)</b>	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.
<b>Total Uncert (#s) <i>u<sub>c</sub> - Combined Uncertainty.</i></b>	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<sub>c</sub> the combined uncertainty</i> . The uncertainty is absolute and in the same units as the result.
<b>(#s), Coverage Factor</b>	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
<b>CRDL (RL)</b>	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)
<b>Lc</b>	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.
<b>Lot-Sample No</b>	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.
<b>MDC MDA</b>	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.
<b>Primary Detector</b>	The instrument identifier associated with the analysis of the sample aliquot.
<b>Ratio U-234/U-238</b>	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.
<b>Rst/MDC</b>	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.
<b>Rst/TotUncert</b>	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.
<b>Report DB No</b>	Sample Identifier used by the report system. The number is based upon the first five digits of the <b>Work Order</b> Number.
<b>RER</b>	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.
<b>SDG</b>	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
<b>Sum Rpt Alpha Spec Rst(s)</b>	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.
<b>Work Order</b>	The LIMS software assign test specific identifier.
<b>Yield</b>	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

1/2/2007 10:10:20 AM

# STL Richland Report

Lab Code: STLRL

FormNbr: R      FormatType: FEAD      Version: 05      Rpt Nbr: 34116      File Name: h:\Reportdb\edd\FeadIVRad\W04973.Edd, h:\Reportdb\edd\FeadIVRad\34116.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:				
9JALKX10	B1K2T6		MW6-SBB-A1	W06-008	W04973					08/02/2006 09:27				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6319353	I-129L	15046-84-1	4.16E+01	pCi/L	4.4E+00	4.4E+00		6.22E-01	101.9	I129LL_SEP_LEPS	3.8658E+00	L	11/21/2006 15:39	I

Tuesday, January 02, 2007

# STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W04973.Edd, h:\Reportdb\edd\Fead\VRad\34116.Edd

Lab Sample Id: JJP5P1AB

Sdg/Rept Nbr: W04973 34116

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	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
6319353 BLK	I-129L 15046-84-1	-4.13E-02	pCi/L	1.5E-01 1.5E-01	U	2.61E-01	100.3		I129LL_SEP_L	3.9012E+00 L	11/21/2006 15:40				D

Tuesday, January 02, 2007

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\W04973.Edd, h:\Reportdb\ledd\Fead\W04973.Edd, h:\Reportdb\ledd\Fead\W04973.Edd, h:\Reportdb\ledd\Fead\W04973.Edd

Lab Sample Id: JJP5P2CS

Sdg/Rept Nbr: W04973 34116

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType					
	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
6319353 BS	I-129L 15046-84-1	6.89E+00	pCi/L	1.0E+00 1.0E+00		3.73E-01	93.3	1.00E+01 68.7	I129LL_SEP_L	3.85E+00 L	11/24/2006 10:00			70 130	D

Lot No., Due Date: J6H030358; 09/25/2006  
 Client, Site: 384868; PGW 615HANFORD HANFORD  
 QC Batch No., Method Test: 6319353; RGAMLEPS Gamma by LEPS  
 SDG, Matrix: W04973; 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

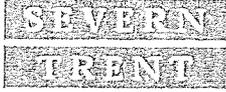
5.5 Were all calculations checked at a minimum frequency?  Yes  No  N/A

5.6 Are worksheet entries complete and correct?  Yes  No  N/A

6.0 Comments on any No response:  
See NCM. 10-09136

First Level Review Pam Anderson

Date 12-19-06



STL

Data Review Checklist  
RADIOCHEMISTRY  
Second Level Review

QC Batch Number: 6319353  
W04973

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: See NCM

Second Level Review: Sheryl A Adams

Date: 12-20-06

# Clouseau Nonconformance Memo



NCM #: <b>10-09136</b>	Classification: <b>Anomaly</b>
NCM Initiated By: Pam Anderson	Status: <b>GLREVIEW</b>
Date Opened: 12/19/2006	Production Area: Environmental - Sep
Date Closed:	Tests: Gamma by LEPS
	Lot #'s (Sample #'s): J6H030358 (2), J6K150000 (353),
	QC Batches: 6319353
Nonconformance: LCS result out of limits	
Subcategory: Analyte was recovered low in the LCS	

### Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Pam Anderson	12/19/2006	This is a client requested reanalysis for I 129. The LCS result in the batch has a low recovery of 65%. A recount did not help. There is no more sample that is not acidified to do a reanalysis. The client was contacted and they asked that the data be reported.

### Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Pam Anderson	12/19/2006	Report the data.

### 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>
----------------------	--------------------	-----------------





# STL

### Sample Check-in List

Date/Time Received: 8/2/06 14:55

Client: DURATEK

SDG #: W04973

NA  SAF #: W06-008 NA

Work Order Number: J6H030358

Chain of Custody # W06-008-234

Shipping Container ID: SANS-H100

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? NA  Yes  No
4. Cooler temperature: \_\_\_\_\_ NA  5. Vermiculite/packing materials is NA  Wet  Dry
6. Number of samples in shipping container: 27
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? YES NA  pH < 2  pH > 2  adjusted pH
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): \_\_\_\_\_ Yes  No

Sample Custodian: [Signature]

Date: 8/2/06 14:55

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on \_\_\_\_\_ by \_\_\_\_\_ Person contacted \_\_\_\_\_

[ ] No action necessary; process as is.

Project Manager \_\_\_\_\_ Date \_\_\_\_\_

11/21/2006 3:27:15 PM

### Sample Preparation/Analysis

Balance Id:2113224201

384868, Pacific Northwest National Laboratory ,  
Pacific Northwest National Lab

BN I-129 Prp/SepRC5025  
TB Gamma by LEPD  
5I CLIENT: HANFORD

Pipet #: \_\_\_\_\_

AnalyDueDate: 09/15/2006

Sep1 DT/Tm Tech: \_\_\_\_\_

Batch: 6319353 WATER pCi/L PM, Quote: HC , 57671

Sep2 DT/Tm Tech: \_\_\_\_\_

SEQ Batch, Test: None

Prep Tech: BostedD

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:
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1 JALKX-1-AD J6H030358-2-SAMP 08/02/2006 09:27	3865.80g,in	ITA5832 11/10/06			37.1	100	L2	1719	11/21/06 DR	
AmtRec: 20ML, 2X4000ML			#Containers: 3			Scr: Alpha: 9.43E-04 uCi/Sa			Beta: -2.06E-04 uCi/Sa	

2 JALKX-1-AE-X J6H030358-2-DUP 08/02/2006 09:27	Insufficient volume for DUP DB 11-16-06									
AmtRec: 20ML, 2X4000ML			#Containers: 3			Scr: Alpha: 9.43E-04 uCi/Sa			Beta: -2.06E-04 uCi/Sa	

3 JJP5P-1-AA-B J6K150000-353-BLK 08/02/2006 09:27	3901.20g,in	ITA5823 11/10/06			37.1		L4	1720		
AmtRec:			#Containers: 1			Scr: Alpha:			Beta:	

4 JJP5P-1-AC-C J6K150000-353-LCS 08/02/2006 09:27	3850.00g,in	ISD0693 08/30/06			37.2		L5			
AmtRec:			#Containers: 1			Scr: Alpha:			Beta:	

**Comments:**

All Clients for Batch:  
384868, Pacific Northwest National Laboratory Pacific Northwest National Lab, HC , 57671

JALKX1AD-SAMP Constituent List:

I-129	RDL:1.00E+00	pCi/L	LCL:	UCL:	RPD:
JJP5P1AA-BLK:					
I-129	RDL:1.00E+00	pCi/L	LCL:	UCL:	RPD:
JJP5P1AC-LCS:					
I-129	RDL:5	pCi/L	LCL:70	UCL:130	RPD:20

JALKX1AD-SAMP Calc Info:

**Sample Preparation/Analysis**

Balance Id:2113224201

BN I-129 Prp/SepRC5025  
 TB Gamma by LEPD  
 5I CLIENT: HANFORD

Pipet #: \_\_\_\_\_

AnalyDueDate: 09/15/2006

Sep1 DT/Tm Tech:

Batch: 6319353  
 SEQ Batch, Test: None

pCi/L

Sep2 DT/Tm Tech:

Prep Tech: ,BostedD



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:
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Uncert Level (#s) : 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B						
JJP5P1AA-BLK:										
Uncert Level (#s) : 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B						
JJP5P1AC-LCS:										
Uncert Level (#s) : 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B						

Approved By \_\_\_\_\_ Date: \_\_\_\_\_



# STL

\*\*\* RE-COUNT REQUEST \*\*\*

DUE DATE 9-15-06

CUSTOMER PGW

ANALYSIS I129

MATRIX water

LOT NUMBER JLH030358

SAMPLE DELIVERY GROUP W04973

OLD BATCH NUMBER 6319353

LAB SAMPLE ID	REASON FOR REQUEST & ANALYSIS COMMENTS
1) JJPSP1AC C	Low LCS
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	
16)	
17)	
18)	
19)	
20)	

11/24/2006 8:31:06 AM

### Sample Preparation/Analysis

Balance Id:2113224201

384868, Pacific Northwest National Laboratory  
Pacific Northwest National Lab

BN I-129 Prp/SepRC5025  
TB Gamma by LEPD

Pipet #: \_\_\_\_\_

AnalyDueDate: 09/15/2006

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 6319353 WATER pCi/L PM, Quote: HC, 57671  
SEQ Batch, Test: None All Tests: 6227285 FPS5, 6227320 ARS6, 6227330 H3TB, 6261533 H3TB, 6319353 BNTB,

Sep2 DT/Tm Tech:

Prep Tech: BostedD

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:
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1 JALKX-1-AD J6H030358-2-SAMP 08/02/2006 09:27	3865.80g.in		ITA5832 11/10/06							
										
AmtRec: 20ML, 2X4000ML			#Containers: 3		Scr:		Alpha: 9.43E-04 uCi/Sa		Beta: -2.06E-04 uCi/Sa	

2 JALKX-1-AE-X J6H030358-2-DUP 08/02/2006 09:27										
										
AmtRec: 20ML, 2X4000ML			#Containers: 3		Scr:		Alpha: 9.43E-04 uCi/Sa		Beta: -2.06E-04 uCi/Sa	

3 JJP5P-1-AA-B J6K150000-353-BLK 08/02/2006 09:27	3901.20g.in		ITA5823 11/10/06							
										
AmtRec:			#Containers: 1		Scr:		Alpha:		Beta:	

4 JJP5P-1-AC-C J6K150000-353-LCS 08/02/2006 09:27	3850.00g.in		ISD0693 08/30/06							
										
AmtRec:			#Containers: 1		Scr:		Alpha:		Beta:	

5 JJP5P-2-AC-C J6K150000-353-LCS 08/02/2006 09:27	3850.0		ISD 0693	37.2 mg	100min	L4		1140	11/24/06	
										
AmtRec:			#Containers: 1		Scr:		Alpha:		Beta:	

#### Comments:

All Clients for Batch:  
384868, Pacific Northwest National Laboratory Pacific Northwest National Lab, HC, 57671

JALKX1AD-SAMP Constituent List:  
I-129 RDL:1.00E+00 pCi/L LCL: UCL: RPD:

11/24/2006 8:31:10 AM

### Sample Preparation/Analysis

Balance Id: \_\_\_\_\_

BN I-129 Prp/SepRC5025

Pipet #: \_\_\_\_\_

TB Gamma by LEPD

Sep1 DT/Tm Tech: \_\_\_\_\_

5I CLIENT: HANFORD

AnalyDueDate: 09/15/2006

Sep2 DT/Tm Tech: \_\_\_\_\_

Batch: 6319353

pCi/L

Prep Tech: \_\_\_\_\_

SEQ Batch, Test: None



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:
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JJP5P1AA-BLK:										
I-129	RDL:1.00E+00	pCi/L	LCL:	UCL:	RPD:					
JJP5P1AC-LCS:										
I-129	RDL:5	pCi/L	LCL:70	UCL:130	RPD:20					
JJP5P2AC-LCS:										
I-129	RDL:5	pCi/L	LCL:70	UCL:130	RPD:20					
JALKX1AD-SAMP Calc Info:										
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B					
JJP5P1AA-BLK:										
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B					
JJP5P1AC-LCS:										
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B					
JJP5P2AC-LCS:										
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: 12/19/2005, 12/24/2006, Batch: '6319353', User: \*ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
6319353				
AC	CalcC	BostedD	11/16/2006 10:59:03	
SC		wagarr	IsBatched 11/15/2006 10:22:39 AM	ICOC_RADCALC v4.8.24
SC		BostedD	InSep1 11/16/2006 10:59:03 AM	RICHRC5025 REV3
SC		BostedD	Sep1C 11/21/2006 3:29:03 PM	RICHRC5025 REV3
SC		AntonsonL	Sep1C 11/21/2006 3:29:41 PM	RICHRC5025 REV3
SC		DAWKINSO	InCnt1 11/21/2006 3:38:25 PM	RICH-RD-0007 REVISION 5
SC		DAWKINSO	CalcC 11/21/2006 8:09:45 PM	RICH-RD-0007 REVISION 5
SC		DAWKINSO	CalcC 11/24/2006 1:17:09 PM	RICH-RD-0007 REVISION 5
AC		BostedD	11/21/2006 3:29:03	
AC		AntonsonL	11/21/2006 3:29:41	
AC		DAWKINSO	11/21/2006 3:38:25	
AC		DAWKINSO	11/21/2006 8:09:45	
AC		DAWKINSO	11/24/2006 1:17:09	

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.