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Analytical Data Package Prepared For

Brown and Caldwell

Yerington Air Quality - Event 74

Radiochemical Analysis By

STL Richland

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

Assigned Laboratory Code: STLR

Data Package Contains _____ Pages

Report No.: 32362

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31509		000423	J6D270397-1	H39LT1AG	9H39LT10	6118461
		000423	J6D270397-1	H39LT1AA	9H39LT10	6118462
		000423	J6D270397-1	H39LT1AE	9H39LT10	6118463
		000423	J6D270397-1	H39LT1AF	9H39LT10	6118464
		000423	J6D270397-1	H39LT1AC	9H39LT10	6118465
		000423	J6D270397-1	H39LT1AD	9H39LT10	6118466
		000424	J6D270397-2	H39L21AG	9H39L210	6118461
		000424	J6D270397-2	H39L21AA	9H39L210	6118462
		000424	J6D270397-2	H39L21AE	9H39L210	6118463
		000424	J6D270397-2	H39L21AF	9H39L210	6118464
		000424	J6D270397-2	H39L21AC	9H39L210	6118465
		000424	J6D270397-2	H39L21AD	9H39L210	6118466
		000425	J6D270397-3	H39L31AG	9H39L310	6118461
		000425	J6D270397-3	H39L31AA	9H39L310	6118462
		000425	J6D270397-3	H39L31AE	9H39L310	6118463
		000425	J6D270397-3	H39L31AF	9H39L310	6118464
		000425	J6D270397-3	H39L31AC	9H39L310	6118465
		000425	J6D270397-3	H39L31AD	9H39L310	6118466
		000426	J6D270397-4	H39L41AG	9H39L410	6118461
		000426	J6D270397-4	H39L41AA	9H39L410	6118462
		000426	J6D270397-4	H39L41AE	9H39L410	6118463
		000426	J6D270397-4	H39L41AF	9H39L410	6118464
		000426	J6D270397-4	H39L41AC	9H39L410	6118465
		000426	J6D270397-4	H39L41AD	9H39L410	6118466
		000427	J6D270397-5	H39L61AG	9H39L610	6118461
		000427	J6D270397-5	H39L61AA	9H39L610	6118462

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31509		000427	J6D270397-5	H39L61AE	9H39L610	6118463
		000427	J6D270397-5	H39L61AF	9H39L610	6118464
		000427	J6D270397-5	H39L61AC	9H39L610	6118465
		000427	J6D270397-5	H39L61AD	9H39L610	6118466
		000428	J6D270397-6	H39L71AG	9H39L710	6118461
		000428	J6D270397-6	H39L71AA	9H39L710	6118462
		000428	J6D270397-6	H39L71AE	9H39L710	6118463
		000428	J6D270397-6	H39L71AF	9H39L710	6118464
		000428	J6D270397-6	H39L71AC	9H39L710	6118465
		000428	J6D270397-6	H39L71AD	9H39L710	6118466
		000429	J6D270397-7	H39L81AG	9H39L810	6118461
		000429	J6D270397-7	H39L81AA	9H39L810	6118462
		000429	J6D270397-7	H39L81AE	9H39L810	6118463
		000429	J6D270397-7	H39L81AF	9H39L810	6118464
		000429	J6D270397-7	H39L81AC	9H39L810	6118465
		000429	J6D270397-7	H39L81AD	9H39L810	6118466
		P-0591	J6D270397-8	H39MC1AG	9H39MC10	6118461
		P-0591	J6D270397-8	H39MC1AA	9H39MC10	6118462
		P-0591	J6D270397-8	H39MC1AE	9H39MC10	6118463
		P-0591	J6D270397-8	H39MC1AF	9H39MC10	6118464
		P-0591	J6D270397-8	H39MC1AC	9H39MC10	6118465
		P-0591	J6D270397-8	H39MC1AD	9H39MC10	6118466
		P-0592	J6D270397-9	H39MD1AG	9H39MD10	6118461
		P-0592	J6D270397-9	H39MD1AA	9H39MD10	6118462
		P-0592	J6D270397-9	H39MD1AE	9H39MD10	6118463
		P-0592	J6D270397-9	H39MD1AF	9H39MD10	6118464
		P-0592	J6D270397-9	H39MD1AC	9H39MD10	6118465
		P-0592	J6D270397-9	H39MD1AD	9H39MD10	6118466
		P-0593	J6D270397-10	H39MF1AG	9H39MF10	6118461
		P-0593	J6D270397-10	H39MF1AA	9H39MF10	6118462
		P-0593	J6D270397-10	H39MF1AE	9H39MF10	6118463
		P-0593	J6D270397-10	H39MF1AF	9H39MF10	6118464
		P-0593	J6D270397-10	H39MF1AC	9H39MF10	6118465
		P-0593	J6D270397-10	H39MF1AD	9H39MF10	6118466
		P-0594	J6D270397-11	H39MH1AG	9H39MH10	6118461
		P-0594	J6D270397-11	H39MH1AA	9H39MH10	6118462
		P-0594	J6D270397-11	H39MH1AE	9H39MH10	6118463
		P-0594	J6D270397-11	H39MH1AF	9H39MH10	6118464
		P-0594	J6D270397-11	H39MH1AC	9H39MH10	6118465

Report No.: 32362

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31509		P-0594	J6D270397-11	H39MH1AD	9H39MH10	6118466
		P-0595	J6D270397-12	H39MJ1AG	9H39MJ10	6118461
		P-0595	J6D270397-12	H39MJ1AA	9H39MJ10	6118462
		P-0595	J6D270397-12	H39MJ1AE	9H39MJ10	6118463
		P-0595	J6D270397-12	H39MJ1AF	9H39MJ10	6118464
		P-0595	J6D270397-12	H39MJ1AC	9H39MJ10	6118465
		P-0595	J6D270397-12	H39MJ1AD	9H39MJ10	6118466
		P-0596	J6D270397-13	H39ML1AG	9H39ML10	6118461
		P-0596	J6D270397-13	H39ML1AA	9H39ML10	6118462
		P-0596	J6D270397-13	H39ML1AE	9H39ML10	6118463
		P-0596	J6D270397-13	H39ML1AF	9H39ML10	6118464
		P-0596	J6D270397-13	H39ML1AC	9H39ML10	6118465
		P-0596	J6D270397-13	H39ML1AD	9H39ML10	6118466
		P-0597	J6D270397-14	H39MN1AG	9H39MN10	6118461
		P-0597	J6D270397-14	H39MN1AA	9H39MN10	6118462
		P-0597	J6D270397-14	H39MN1AE	9H39MN10	6118463
		P-0597	J6D270397-14	H39MN1AF	9H39MN10	6118464
		P-0597	J6D270397-14	H39MN1AC	9H39MN10	6118465
		P-0597	J6D270397-14	H39MN1AD	9H39MN10	6118466

SEVERN TRENT STL

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Certificate of Analysis

June 12, 2006

Brown & Caldwell
2701 Prospect Park Drive
Rancho Cordova, CA 95670

Attention: Guy Graening

Date Received at Lab	:	April 27, 2006
Project Name	:	Air Quality Monitoring Yerington Mine
Project Number	:	121243
Event Number	:	74
PO Number	:	129682.001
Sample Type	:	Fourteen (14) Filters
SDG Number	:	31509

CASE NARRATIVE

I. Introduction

On April 27, 2006, fourteen filter samples were received at the STL Richland (STLR) laboratory for radiochemical analysis. Upon receipt, the samples were assigned the STLR identification numbers as described on the cover page of the Analytical Data Package report form. The samples were assigned to Lot Number J6D270397.

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 uncertainties.

The analysis requested was:

Alpha Spectroscopy
Thorium-228, -230, -232 by method RICH-RC-5087
Uranium-234, -235, -238 by method RICH-RC-5067
Gas Proportional Counters
Gross Alpha by method STL-RICHRC5016/5014
Gross Beta by method STL-RICHRC5016/5014
Radium-228 by method STL RICH-RC-5005
Alpha Scintillation Counter
Radium-226 by method STL RICH-RC-5005

IV. Quality Control

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

V. Comments

Thorium-228, -230, -232:
The LCS, batch blank and sample results are within analytical requirements.

Uranium-234, -235, -238:
The LCS, batch blank and sample results are within analytical requirements.

Gross Alpha Analysis:
The LCS, batch blank and sample results are within analytical requirements.

Gross Beta Analysis:
All of the samples had MDCs of 6 pCi/SA compared to the CRDL of 5 pCi/SA. Except for samples 000429 and P-0592 all of the samples had results greater than the MDC. Data is accepted. Except as noted, the LCS, batch blank and sample results are within acceptance limits.

Radium-228 Analysis:
The LCS, batch blank and sample results are within analytical requirements.

Radium-226 Analysis:
The LCS, batch blank and sample results are within analytical 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. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Sherryl A Adam
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 = 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/vn), 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 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/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((BkgrndCnt/BkgrndCntMin)/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.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 12-Jun-06

Report No. : 32362

SDG No: 31509

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000423	H39LT1AG	U-234	0.0931 +- 0.187	ND	pCi/sample	101%	0.252	
		U-235	0.186 +- 0.265	ND	pCi/sample	101%	0.252	
		U-238	0.0931 +- 0.187	ND	pCi/sample	101%	0.252	
000423	H39LT1AA	TH-228	-0.0450 +- 0.0642	ND	pCi/sample	86%	0.332	
		TH-230	0.386 +- 0.266	=	pCi/sample	86%	0.116	
		TH-232	0.00000072 +- 0.105	ND	pCi/sample	86%	0.315	
000423	H39LT1AE	ALPHA	4.37 +- 4.01	ND	pCi/sample	100%	6.56	
000423	H39LT1AF	BETA	10.4 +- 3.93	=	pCi/sample	100%	5.66	
000423	H39LT1AC	RA-226	0.104 +- 0.290	ND	pCi/sample	101%	0.532	
000423	H39LT1AD	RA-228	0.332 +- 0.950	ND	pCi/sample	90%	2.17	
000424	H39L21AG	U-234	0.170 +- 0.339	ND	pCi/sample	82%	0.732	
		U-235	-0.0568 +- 0.0473	ND	pCi/sample	82%	0.702	
		U-238	0.218 +- 0.337	ND	pCi/sample	82%	0.54	
000424	H39L21AA	TH-228	0.111 +- 0.158	ND	pCi/sample	103%	0.273	
		TH-230	0.317 +- 0.219	=	pCi/sample	103%	0.0955	
		TH-232	0.0705 +- 0.100	ND	pCi/sample	103%	0.0955	
000424	H39L21AE	ALPHA	1.73 +- 3.04	ND	pCi/sample	100%	6.38	
000424	H39L21AF	BETA	8.24 +- 3.57	=	pCi/sample	100%	6.16	
000424	H39L21AC	RA-226	-0.0843 +- 0.305	ND	pCi/sample	96%	0.631	
000424	H39L21AD	RA-228	2.34 +- 1.12	=	pCi/sample	84%	2.12	
000425	H39L31AG	U-234	0.217 +- 0.337	ND	pCi/sample	88%	0.54	
		U-235	-0.0284 +- 0.0331	ND	pCi/sample	88%	0.59	
		U-238	-0.0284 +- 0.0331	ND	pCi/sample	88%	0.59	
000425	H39L31AA	TH-228	0.0439 +- 0.139	ND	pCi/sample	108%	0.323	
		TH-230	0.376 +- 0.259	=	pCi/sample	108%	0.113	
		TH-232	0.00000 +- 0.102	ND	pCi/sample	108%	0.113	
000425	H39L31AE	ALPHA	4.89 +- 3.89	ND	pCi/sample	100%	5.34	
000425	H39L31AF	BETA	11.4 +- 4.03	=	pCi/sample	100%	6.41	
000425	H39L31AC	RA-226	0.267 +- 0.266	ND	pCi/sample	93%	0.407	
000425	H39L31AD	RA-228	2.31 +- 1.25	ND	pCi/sample	82%	2.46	

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RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 12-Jun-06

Report No. : 32362

SDG No: 31509

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000426	H39L41AG	U-234	-0.00825 +- 0.0165	ND	pCi/sample	105%	0.415	
		U-235	0.0866 +- 0.208	ND	pCi/sample	105%	0.471	
		U-238	0.103 +- 0.207	ND	pCi/sample	105%	0.279	
000426	H39L41AA	TH-228	0.136 +- 0.159	ND	pCi/sample	100%	0.123	
		TH-230	0.173 +- 0.175	ND	pCi/sample	100%	0.117	
		TH-232	0.0432 +- 0.0867	ND	pCi/sample	100%	0.117	
000426	H39L41AE	ALPHA	4.84 +- 4.10	ND	pCi/sample	100%	6.54	
000426	H39L41AF	BETA	11.9 +- 4.17	=	pCi/sample	100%	6.64	
000426	H39L41AC	RA-226	0.222 +- 0.289	ND	pCi/sample	107%	0.484	
000426	H39L41AD	RA-228	2.29 +- 0.962	=	pCi/sample	96%	1.75	
000427	H39L61AG	U-234	0.295 +- 0.457	ND	pCi/sample	87%	0.732	
		U-235	-0.0385 +- 0.0449	ND	pCi/sample	87%	0.799	
		U-238	-0.0385 +- 0.0449	ND	pCi/sample	87%	0.799	
000427	H39L61AA	TH-228	0.0956 +- 0.139	ND	pCi/sample	100%	0.229	
		TH-230	0.127 +- 0.152	ND	pCi/sample	100%	0.218	
		TH-232	0.0182 +- 0.0814	ND	pCi/sample	100%	0.218	
000427	H39L61AE	ALPHA	2.82 +- 3.12	ND	pCi/sample	100%	5.23	
000427	H39L61AF	BETA	17.5 +- 5.06	=	pCi/sample	100%	6.68	
000427	H39L61AC	RA-226	0.162 +- 0.274	ND	pCi/sample	98%	0.479	
000427	H39L61AD	RA-228	-0.1910 +- 0.811	ND	pCi/sample	88%	2.0	
000428	H39L71AG	U-234	0.00000 +- 0.276	ND	pCi/sample	83%	0.305	
		U-235	0.00000 +- 0.276	ND	pCi/sample	83%	0.305	
		U-238	0.00000 +- 0.276	ND	pCi/sample	83%	0.305	
000428	H39L71AA	TH-228	0.132 +- 0.189	ND	pCi/sample	89%	0.325	
		TH-230	0.294 +- 0.228	=	pCi/sample	89%	0.114	
		TH-232	0.126 +- 0.147	ND	pCi/sample	89%	0.114	
000428	H39L71AE	ALPHA	3.28 +- 3.65	ND	pCi/sample	100%	6.56	
000428	H39L71AF	BETA	10.6 +- 4.14	=	pCi/sample	100%	6.56	
000428	H39L71AC	RA-226	-0.2060 +- 0.364	ND	pCi/sample	91%	0.746	
000428	H39L71AD	RA-228	2.06 +- 1.05	=	pCi/sample	82%	2.01	

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RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 12-Jun-06

Report No. : 32362

SDG No: 31509

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000429	H39L81AG	U-234	0.149 +- 0.297	ND	pCi/sample	93%	0.641	
		U-235	0.0538 +- 0.211	ND	pCi/sample	93%	0.614	
		U-238	-0.00829 +- 0.0166	ND	pCi/sample	93%	0.417	
000429	H39L81AA	TH-228	0.0433 +- 0.0869	ND	pCi/sample	111%	0.117	
		TH-230	-0.0206 +- 0.0414	ND	pCi/sample	111%	0.247	
		TH-232	0.00000 +- 0.101	ND	pCi/sample	111%	0.112	
000429	H39L81AE	ALPHA	0.107 +- 2.34	ND	pCi/sample	100%	6.32	
000429	H39L81AF	BETA	2.35 +- 3.09	ND	pCi/sample	100%	6.44	
000429	H39L81AC	RA-226	0.105 +- 0.335	ND	pCi/sample	93%	0.636	
000429	H39L81AD	RA-228	2.57 +- 1.02	=	pCi/sample	82%	1.64	
P-0591	H39MC1AG	U-234	-0.0180 +- 0.0256	ND	pCi/sample	92%	0.514	
		U-235	0.0855 +- 0.228	ND	pCi/sample	92%	0.561	
		U-238	-0.0270 +- 0.0315	ND	pCi/sample	92%	0.561	
P-0591	H39MC1AA	TH-228	0.00000064 +- 0.0934	ND	pCi/sample	94%	0.281	
		TH-230	0.109 +- 0.127	ND	pCi/sample	94%	0.0983	
		TH-232	0.0363 +- 0.0728	ND	pCi/sample	94%	0.0983	
P-0591	H39MC1AE	ALPHA	1.55 +- 2.60	ND	pCi/sample	100%	5.31	
P-0591	H39MC1AF	BETA	11.4 +- 4.02	=	pCi/sample	100%	5.95	
P-0591	H39MC1AC	RA-226	0.0665 +- 0.390	ND	pCi/sample	86%	0.735	
P-0591	H39MC1AD	RA-228	1.78 +- 0.947	=	pCi/sample	77%	1.74	
P-0592	H39MD1AG	U-234	-0.00833 +- 0.0167	ND	pCi/sample	100%	0.419	
		U-235	-0.0167 +- 0.0237	ND	pCi/sample	100%	0.476	
		U-238	0.00000 +- 0.255	ND	pCi/sample	100%	0.282	
P-0592	H39MD1AA	TH-228	0.0000273 +- 0.218	ND	pCi/sample	56%	0.585	
		TH-230	0.0599 +- 0.120	ND	pCi/sample	56%	0.162	
		TH-232	0.0300 +- 0.134	ND	pCi/sample	56%	0.36	
P-0592	H39MD1AE	ALPHA	0.207 +- 2.52	ND	pCi/sample	100%	6.56	
P-0592	H39MD1AF	BETA	6.34 +- 3.53	ND	pCi/sample	100%	6.56	
P-0592	H39MD1AC	RA-226	0.311 +- 0.315	ND	pCi/sample	100%	0.49	
P-0592	H39MD1AD	RA-228	1.61 +- 0.854	=	pCi/sample	87%	1.58	

STL Richland

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V4.15.0 A97

RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 12-Jun-06

Report No. : 32362

SDG No: 31509

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
P-0593	H39MF1AG	U-234	-0.0268 +- 0.0382	ND	pCi/sample	84%	0.766	
		U-235	-0.0536 +- 0.0544	ND	pCi/sample	84%	0.895	
		U-238	-0.0402 +- 0.0470	ND	pCi/sample	84%	0.836	
P-0593	H39MF1AA	TH-228	-0.1470 +- 0.114	ND	pCi/sample	80%	0.48	
		TH-230	0.120 +- 0.140	ND	pCi/sample	80%	0.108	
		TH-232	0.0400 +- 0.0803	ND	pCi/sample	80%	0.108	
P-0593	H39MF1AE	ALPHA	2.25 +- 2.88	ND	pCi/sample	100%	5.21	
P-0593	H39MF1AF	BETA	8.59 +- 3.69	=	pCi/sample	100%	6.29	
P-0593	H39MF1AC	RA-226	0.338 +- 0.308	ND	pCi/sample	103%	0.471	
P-0593	H39MF1AD	RA-228	1.69 +- 0.791	=	pCi/sample	90%	1.36	
P-0594	H39MH1AG	U-234	0.0708 +- 0.246	ND	pCi/sample	90%	0.667	
		U-235	0.00000 +- 0.289	ND	pCi/sample	90%	0.32	
		U-238	0.00000 +- 0.289	ND	pCi/sample	90%	0.32	
P-0594	H39MH1AA	TH-228	0.00000376 +- 0.111	ND	pCi/sample	97%	0.332	
		TH-230	0.129 +- 0.151	ND	pCi/sample	97%	0.116	
		TH-232	0.00000 +- 0.105	ND	pCi/sample	97%	0.116	
P-0594	H39MH1AE	ALPHA	-1.7300 +- 2.81	ND	pCi/sample	100%	8.66	
P-0594	H39MH1AF	BETA	9.53 +- 3.87	=	pCi/sample	100%	6.52	
P-0594	H39MH1AC	RA-226	-0.1260 +- 0.263	ND	pCi/sample	98%	0.61	
P-0594	H39MH1AD	RA-228	1.92 +- 0.843	=	pCi/sample	85%	1.4	
P-0595	H39MJ1AG	U-234	0.0649 +- 0.225	ND	pCi/sample	98%	0.611	
		U-235	0.00000 +- 0.265	ND	pCi/sample	98%	0.293	
		U-238	0.00000 +- 0.265	ND	pCi/sample	98%	0.293	
P-0595	H39MJ1AA	TH-228	0.0675 +- 0.108	ND	pCi/sample	89%	0.18	
		TH-230	0.164 +- 0.163	ND	pCi/sample	89%	0.202	
		TH-232	-0.00714 +- 0.0143	ND	pCi/sample	89%	0.171	
P-0595	H39MJ1AE	ALPHA	1.29 +- 2.54	ND	pCi/sample	100%	5.48	
P-0595	H39MJ1AF	BETA	9.52 +- 3.80	=	pCi/sample	100%	6.35	
P-0595	H39MJ1AC	RA-226	0.436 +- 0.380	ND	pCi/sample	106%	0.576	
P-0595	H39MJ1AD	RA-228	1.50 +- 0.744	=	pCi/sample	92%	1.34	

STL Richland

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ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 12-Jun-06

Report No. : 32362

SDG No: 31509

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
P-0596	H39ML1AG	U-234	-0.0432 +- 0.0616	ND	pCi/sample	98%	0.611	
		U-235	0.00000 +- 0.265	ND	pCi/sample	98%	0.293	
		U-238	0.108 +- 0.217	ND	pCi/sample	98%	0.293	
P-0596	H39ML1AA	TH-228	0.192 +- 0.169	ND	pCi/sample	99%	0.213	
		TH-230	0.159 +- 0.148	ND	pCi/sample	99%	0.186	
		TH-232	0.00000 +- 0.0722	ND	pCi/sample	99%	0.0799	
P-0596	H39ML1AE	ALPHA	0.782 +- 2.38	ND	pCi/sample	100%	5.7	
P-0596	H39ML1AF	BETA	9.88 +- 3.89	=	pCi/sample	100%	6.02	
P-0596	H39ML1AC	RA-226	0.203 +- 0.237	ND	pCi/sample	98%	0.379	
P-0596	H39ML1AD	RA-228	0.949 +- 0.688	ND	pCi/sample	88%	1.39	
P-0597	H39MN1AG	U-234	0.263 +- 0.358	ND	pCi/sample	98%	0.572	
		U-235	-0.0607 +- 0.0708	ND	pCi/sample	98%	0.638	
		U-238	0.0607 +- 0.210	ND	pCi/sample	98%	0.572	
P-0597	H39MN1AA	TH-228	-0.00000303 +- 0.111	ND	pCi/sample	106%	0.334	
		TH-230	0.0865 +- 0.123	ND	pCi/sample	106%	0.117	
		TH-232	0.0432 +- 0.0868	ND	pCi/sample	106%	0.117	
P-0597	H39MN1AE	ALPHA	2.00 +- 3.55	ND	pCi/sample	100%	7.52	
P-0597	H39MN1AF	BETA	11.7 +- 4.37	=	pCi/sample	100%	7.18	
P-0597	H39MN1AC	RA-226	0.0507 +- 0.229	ND	pCi/sample	98%	0.441	
P-0597	H39MN1AD	RA-228	1.71 +- 0.784	=	pCi/sample	87%	1.34	

Number of Results: 140

STL Richland

rptSTLRchSaSum
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RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

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QC Results Summary
STL Richland STLR

Ordered by QC Type, Batch No.

Date: 12-Jun-06

Report No. : 32362

SDG No.: 31509

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
BLANK QC	H4C8V1AA	U-234	0.0105 +- 0.0218	N	pCi/sample	83%			0.0472
		U-235	0.00000 +- 0.0183	N	pCi/sample	83%			0.0203
		U-238	-0.00598 +- 0.00606	N	pCi/sample	83%			0.0514
BLANK QC	H4C831AA	TH-228	0.00787 +- 0.0148	N	pCi/sample	107%			0.029
		TH-230	0.00748 +- 0.0107	N	pCi/sample	107%			0.0101
		TH-232	0.00374 +- 0.00751	N	pCi/sample	107%			0.0101
BLANK QC	H4C9C1AA	ALPHA	0.0280 +- 0.0551	N	pCi/sample	100%			0.119
BLANK QC	H4C9L1AA	BETA	-0.0178 +- 0.269	N	pCi/sample	100%			0.6
BLANK QC	H4C9R1AA	RA-226	0.0930 +- 0.0642	=	pCi/sample	97%			0.0749
BLANK QC	H4C901AA	RA-228	0.0709 +- 0.172	N	pCi/sample	87%			0.408
LCS	H4C8V1AC	U-234	1.06 +- 0.235	=	pCi/sample	91%	107%	0.1	0.0483
		U-238	0.838 +- 0.198	=	pCi/sample	91%	81%	-0.2	0.0314
LCS	H4C831AC	TH-229	1.79 +- 0.349	=	pCi/sample	106%	98%	0.0	0.0212
LCS	H4C9C1AC	ALPHA	2.68 +- 0.653	=	pCi/sample	100%	112%	0.1	0.182
LCS	H4C9L1AC	BETA	10.7 +- 1.60	=	pCi/sample	100%	79%	-0.2	0.555
LCS	H4C9R1AC	RA-226	1.29 +- 0.330	=	pCi/sample	103%	93%	-0.1	0.108
LCS	H4C901AC	RA-228	4.34 +- 0.671	=	pCi/sample	92%	86%	-0.1	0.356

Number of Results: 17

STL Richland

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Bias - (Result/Expected)-1 as defined by ANSI N13.30.

= ERPIMS - Equal To, Analyte Detected

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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6D270397-1
Client Sample ID: 000423
Yerington Air Quality - Event 74

SDG: 31509
Report No. : 32362
COC No. :

Collection Date: 4/14/2006 9:15:00 AM
Received Date: 4/27/2006 10:30:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39LT1AG			**Report DB ID:** 9H39LT10								
U-234	0.0931	ND	0.19	0.19	0.252	pCi/sample	101%	*0.37*	5/29/06 11:33 a	1.0	0.06191	E908.0
							1.0	*1.*		Sample	Sample	ALP8
U-235	0.186	ND	0.26	0.27	0.252	pCi/sample	101%	*0.74*	5/29/06 11:33 a	1.0	0.06191	E908.0
							1.0	*(1.4)*		Sample	Sample	ALP8
U-238	0.0931	ND	0.19	0.19	0.252	pCi/sample	101%	*0.37*	5/29/06 11:33 a	1.0	0.06191	E908.0
							1.0	*1.*		Sample	Sample	ALP8
								Ratio U-234/238 = 1.0				
Batch: 6118462	**Work Order:** H39LT1AA			**Report DB ID:** 9H39LT10								
TH-228	-0.0450	ND	0.064	0.064	0.332	pCi/sample	86%	*-0.14*	5/28/06 05:02 p	1.0	0.08437	ISOTH
						0.105	1.0	*-(1.4)*		Sample	Sample	ALP171
TH-230	0.386	=	0.26	0.27	0.116	pCi/sample	86%	*(3.3)*	5/28/06 05:02 p	1.0	0.08437	ISOTH
							1.0	*(2.9)*		Sample	Sample	ALP171
TH-232	0.00000072	ND	0.10	0.10	0.315	pCi/sample	86%	*0.*	5/28/06 05:02 p	1.0	0.08437	ISOTH
						0.0997	1.0	*0.*		Sample	Sample	ALP171
Batch: 6118463	**Work Order:** H39LT1AE			**Report DB ID:** 9H39LT10								
ALPHA	4.37	ND	3.9	4.0	6.56	pCi/sample	100%	*0.67*	5/29/06 10:28 a	1.0	0.02085	E900.0
						2.54	20.0	*(2.2)*		Sample	Sample	GPC10A
Batch: 6118464	**Work Order:** H39LT1AF			**Report DB ID:** 9H39LT10								
BETA	10.4	=	3.3	3.9	5.66	pCi/sample	100%	*(1.8)*	5/27/06 12:07 p	1.0	0.08289	E900.0
						2.69	5.0	*(5.3)*		Sample	Sample	GPC27B
Batch: 6118465	**Work Order:** H39LT1AC			**Report DB ID:** 9H39LT10								

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
SDG: 31509
Collection Date: 4/14/2006 9:15:00 AM
Lot-Sample No.: J6D270397-1
Report No. : 32362
Received Date: 4/27/2006 10:30:00 AM
Client Sample ID: 000423
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.104	ND	0.29	0.29	0.532	pCi/sample	101%	*0.2*	6/8/06 02:48 p	0.833	0.24745	E903.1
						0.232	1.0	*0.72*		Sample	Sample	ASC1HB
Batch: 6118466	**Work Order:** H39LT1AD			**Report DB ID:** 9H39LT10								
RA-228	0.332	ND	0.95	0.95	2.17	pCi/sample	90%	*0.15*	6/10/06 06:54 a	1.0	0.24745	E904.0
						0.994	3.1	*0.7*		Sample	Sample	GPC7A

Number of Results: 10

Comments:

STL Richland
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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland | **SDG:** 31509 | **Collection Date:** 4/14/2006 9:20:00 AM

Lot-Sample No.: J6D270397-2 | **Report No. :** 32362 | **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: 000424 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39L21AG			**Report DB ID:** 9H39L210								
U-234	**0.170**	ND	0.34	0.34	0.732	pCi/sample	82%	*0.23*	5/29/06 11:33 a	1.0	0.06234	E908.0
						0.206	1.0	*(1.)*		Sample	Sample	ALP69
U-235	**-0.0568**	ND	0.046	0.047	0.702	pCi/sample	82%	*-0.08*	5/29/06 11:33 a	1.0	0.06234	E908.0
						0.191	1.0	*-(2.4)*		Sample	Sample	ALP69
U-238	**0.218**	ND	0.34	0.34	0.54	pCi/sample	82%	*0.4*	5/29/06 11:33 a	1.0	0.06234	E908.0
						0.11	1.0	*(1.3)*		Sample	Sample	ALP69
								Ratio U-234/238 = 0.8				
Batch: 6118462	**Work Order:** H39L21AA			**Report DB ID:** 9H39L210								
TH-228	**0.111**	ND	0.16	0.16	0.273	pCi/sample	103%	*0.41*	5/28/06 05:02 p	1.0	0.08543	ISOTH
						0.0862	1.0	*(1.4)*		Sample	Sample	ALP172
TH-230	**0.317**	=	0.21	0.22	0.0955	pCi/sample	103%	*(3.3)*	5/28/06 05:02 p	1.0	0.08543	ISOTH
							1.0	*(2.9)*		Sample	Sample	ALP172
TH-232	**0.0705**	ND	0.10	0.10	0.0955	pCi/sample	103%	*0.74*	5/28/06 05:02 p	1.0	0.08543	ISOTH
							1.0	*(1.4)*		Sample	Sample	ALP172
Batch: 6118463	**Work Order:** H39L21AE			**Report DB ID:** 9H39L210								
ALPHA	**1.73**	ND	3.0	3.0	6.38	pCi/sample	100%	*0.27*	5/29/06 10:28 a	1.0	0.02075	E900.0
						2.46	20.0	*(1.1)*		Sample	Sample	GPC10B
Batch: 6118464	**Work Order:** H39L21AF			**Report DB ID:** 9H39L210								
BETA	**8.24**	=	3.4	3.6	6.16	pCi/sample	100%	*(1.3)*	5/27/06 12:07 p	1.0	0.08443	E900.0
						2.92	5.0	*(4.6)*		Sample	Sample	GPC27C
Batch: 6118465	**Work Order:** H39L21AC			**Report DB ID:** 9H39L210								

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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland | **SDG:** 31509 | **Collection Date:** 4/14/2006 9:20:00 AM

Lot-Sample No.: J6D270397-2 | **Report No. :** 32362 | **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: 000424 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	-0.0843	ND	0.30	0.31	0.631	pCi/sample	96%	*-0.13*	6/8/06 02:47 p	0.833	0.25118	E903.1
						0.275	1.0	*-0.55*		Sample	Sample	ASC2RC
Batch: 6118466	**Work Order:** H39L21AD			**Report DB ID:** 9H39L210								
RA-228	2.34	=	1.1	1.1	2.12	pCi/sample	84%	*(1.1)*	6/10/06 06:54 a	1.0	0.25118	E904.0
						0.963	3.1	*(4.2)*		Sample	Sample	GPC7B

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland | **SDG:** 31509 | **Collection Date:** 4/14/2006 9:40:00 AM

Lot-Sample No.: J6D270397-3 | **Report No. :** 32362 | **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: 000425 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39L31AG			**Report DB ID:** 9H39L310								
U-234	**0.217**	ND	0.34	0.34	0.54	pCi/sample	88%	*0.4*	5/29/06 11:33 a	1.0	0.06241	E908.0
						0.11	1.0	*(1.3)*		Sample	Sample	ALP83
U-235	**-0.0284**	ND	0.033	0.033	0.59	pCi/sample	88%	*-0.05*	5/29/06 11:33 a	1.0	0.06241	E908.0
						0.135	1.0	*-(1.7)*		Sample	Sample	ALP83
U-238	**-0.0284**	ND	0.033	0.033	0.59	pCi/sample	88%	*-0.05*	5/29/06 11:33 a	1.0	0.06241	E908.0
						0.135	1.0	*-(1.7)*		Sample	Sample	ALP83
								Ratio U-234/238 = -7.7				
Batch: 6118462	**Work Order:** H39L31AA			**Report DB ID:** 9H39L310								
TH-228	**0.0439**	ND	0.14	0.14	0.323	pCi/sample	108%	*0.14*	5/28/06 05:02 p	1.0	0.08517	ISOTH
						0.102	1.0	*0.63*		Sample	Sample	ALP173
TH-230	**0.376**	=	0.25	0.26	0.113	pCi/sample	108%	*(3.3)*	5/28/06 05:02 p	1.0	0.08517	ISOTH
							1.0	*(2.9)*		Sample	Sample	ALP173
TH-232	**0.00000**	ND	0.0000	0.10	0.113	pCi/sample	108%	*0.*	5/28/06 05:02 p	1.0	0.08517	ISOTH
							1.0	*0.*		Sample	Sample	ALP173
Batch: 6118463	**Work Order:** H39L31AE			**Report DB ID:** 9H39L310								
ALPHA	**4.89**	ND	3.8	3.9	5.34	pCi/sample	100%	*0.92*	5/29/06 10:28 a	1.0	0.02085	E900.0
						1.92	20.0	*(2.5)*		Sample	Sample	GPC10C
Batch: 6118464	**Work Order:** H39L31AF			**Report DB ID:** 9H39L310								
BETA	**11.4**	=	3.7	4.0	6.41	pCi/sample	100%	*(1.8)*	5/27/06 12:07 p	1.0	0.08406	E900.0
						3.04	5.0	*(5.7)*		Sample	Sample	GPC27D
Batch: 6118465	**Work Order:** H39L31AC			**Report DB ID:** 9H39L310								

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland **SDG:** 31509 **Collection Date:** 4/14/2006 9:40:00 AM

Lot-Sample No.: J6D270397-3 **Report No. :** 32362 **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: 000425 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.267	ND	0.26	0.27	0.407	pCi/sample	93%	*0.66*	6/8/06 02:50 p	0.833	0.25063	E903.1
						0.164	1.0	*(2.)*		Sample	Sample	ASC3RC
Batch: 6118466	**Work Order:** H39L31AD			**Report DB ID:** 9H39L310								
RA-228	2.31	ND	1.2	1.3	2.46	pCi/sample	82%	*0.94*	6/10/06 06:54 a	1.0	0.25063	E904.0
						1.13	3.1	*(3.7)*		Sample	Sample	GPC7C

Number of Results: 10

Comments:

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland | **SDG:** 31509 | **Collection Date:** 4/14/2006 10:00:00 AM

Lot-Sample No.: J6D270397-4 | **Report No. :** 32362 | **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: 000426 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39L41AG			**Report DB ID:** 9H39L410								
U-234	-0.00825	ND	0.016	0.017	0.415	pCi/sample	105%	*-0.02*	5/29/06 11:33 a	1.0	0.0627	E908.0
						0.0678	1.0	*-1.*		Sample	Sample	ALP84
U-235	0.0866	ND	0.21	0.21	0.471	pCi/sample	105%	*0.18*	5/29/06 11:33 a	1.0	0.0627	E908.0
						0.0959	1.0	*0.83*		Sample	Sample	ALP84
U-238	0.103	ND	0.21	0.21	0.279	pCi/sample	105%	*0.37*	5/29/06 11:33 a	1.0	0.0627	E908.0
							1.0	*1.*		Sample	Sample	ALP84
								Ratio U-234/238 = -0.1				
Batch: 6118462	**Work Order:** H39L41AA			**Report DB ID:** 9H39L410								
TH-228	0.136	ND	0.16	0.16	0.123	pCi/sample	100%	*(1.1)*	5/28/06 05:02 p	1.0	0.08427	ISOTH
							1.0	*(1.7)*		Sample	Sample	ALP174
TH-230	0.173	ND	0.17	0.18	0.117	pCi/sample	100%	*(1.5)*	5/28/06 05:02 p	1.0	0.08427	ISOTH
							1.0	*(2.)*		Sample	Sample	ALP174
TH-232	0.0432	ND	0.086	0.087	0.117	pCi/sample	100%	*0.37*	5/28/06 05:02 p	1.0	0.08427	ISOTH
							1.0	*1.*		Sample	Sample	ALP174
Batch: 6118463	**Work Order:** H39L41AE			**Report DB ID:** 9H39L410								
ALPHA	4.84	ND	4.0	4.1	6.54	pCi/sample	100%	*0.74*	5/29/06 10:28 a	1.0	0.02109	E900.0
						2.57	20.0	*(2.4)*		Sample	Sample	GPC10D
Batch: 6118464	**Work Order:** H39L41AF			**Report DB ID:** 9H39L410								
BETA	11.9	=	3.8	4.2	6.64	pCi/sample	100%	*(1.8)*	5/27/06 12:07 p	1.0	0.08359	E900.0
						3.15	5.0	*(5.7)*		Sample	Sample	GPC28B
Batch: 6118465	**Work Order:** H39L41AC			**Report DB ID:** 9H39L410								

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland **SDG:** 31509 **Collection Date:** 4/14/2006 10:00:00 AM

Lot-Sample No.: J6D270397-4 **Report No. :** 32362 **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: 000426 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.222	ND	0.29	0.29	0.484	pCi/sample	107%	*0.46*	6/8/06 02:48 p	0.833	0.25131	E903.1
						0.204	1.0	*(1.5)*		Sample	Sample	ASC4UA
Batch: 6118466	**Work Order:** H39L41AD			**Report DB ID:** 9H39L410								
RA-228	2.29	=	0.92	0.96	1.75	pCi/sample	96%	*(1.3)*	6/10/06 06:54 a	1.0	0.25131	E904.0
						0.789	3.1	*(4.8)*		Sample	Sample	GPC1A

Number of Results: 10

Comments:

STL Richland
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= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland | **SDG:** 31509 | **Collection Date:** 4/14/2006 10:15:00 AM

Lot-Sample No.: J6D270397-5 | **Report No. :** 32362 | **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: 000427 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39L61AG			**Report DB ID:** 9H39L610								
U-234	**0.295**	ND	0.45	0.46	0.732	pCi/sample	87%	*0.4*	5/29/06 11:33 a	1.0	0.06224	E908.0
						0.149	1.0	*(1.3)*		Sample	Sample	ALP85
U-235	**-0.0385**	ND	0.044	0.045	0.799	pCi/sample	87%	*-0.05*	5/29/06 11:33 a	1.0	0.06224	E908.0
						0.183	1.0	*-(1.7)*		Sample	Sample	ALP85
U-238	**-0.0385**	ND	0.044	0.045	0.799	pCi/sample	87%	*-0.05*	5/29/06 11:33 a	1.0	0.06224	E908.0
						0.183	1.0	*-(1.7)*		Sample	Sample	ALP85
								Ratio U-234/238 = -7.7				
Batch: 6118462	**Work Order:** H39L61AA			**Report DB ID:** 9H39L610								
TH-228	**0.0956**	ND	0.14	0.14	0.229	pCi/sample	100%	*0.42*	5/28/06 05:02 p	1.0	0.08452	ISOTH
						0.0629	1.0	*(1.4)*		Sample	Sample	ALP175
TH-230	**0.127**	ND	0.15	0.15	0.218	pCi/sample	100%	*0.58*	5/28/06 05:02 p	1.0	0.08452	ISOTH
						0.0599	1.0	*(1.7)*		Sample	Sample	ALP175
TH-232	**0.0182**	ND	0.081	0.081	0.218	pCi/sample	100%	*0.08*	5/28/06 05:02 p	1.0	0.08452	ISOTH
						0.0599	1.0	*0.45*		Sample	Sample	ALP175
Batch: 6118463	**Work Order:** H39L61AE			**Report DB ID:** 9H39L610								
ALPHA	**2.82**	ND	3.1	3.1	5.23	pCi/sample	100%	*0.54*	5/29/06 10:28 a	1.0	0.02078	E900.0
						1.85	20.0	*(1.8)*		Sample	Sample	GPC10E
Batch: 6118464	**Work Order:** H39L61AF			**Report DB ID:** 9H39L610								
BETA	**17.5**	=	4.2	5.1	6.68	pCi/sample	100%	*(2.6)*	5/27/06 12:07 p	1.0	0.08364	E900.0
						3.17	5.0	*(6.9)*		Sample	Sample	GPC28C
Batch: 6118465	**Work Order:** H39L61AC			**Report DB ID:** 9H39L610								

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= ERPIMS - Equal To, Analyte Detected
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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6D270397-5
Client Sample ID: 000427
Yerington Air Quality - Event 74

SDG: 31509
Report No. : 32362
COC No. :

Collection Date: 4/14/2006 10:15:00 AM
Received Date: 4/27/2006 10:30:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.162	ND	0.27	0.27	0.479	pCi/sample	98%	*0.34*	6/8/06 02:49 p	0.833	0.24974	E903.1
						0.207	1.0	*(1.2)*		Sample	Sample	ASC6RD
Batch: 6118466	**Work Order:** H39L61AD			**Report DB ID:** 9H39L610								
RA-228	-0.1910	ND	0.81	0.81	2.0	pCi/sample	88%	*-0.1*	6/10/06 06:54 a	1.0	0.24974	E904.0
						0.906	3.1	*-0.47*		Sample	Sample	GPC1C

Number of Results: 10

Comments:

STL Richland
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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6D270397-6
Client Sample ID: 000428
Yerington Air Quality - Event 74

SDG: 31509
Report No. : 32362
COC No. :

Collection Date: 4/14/2006 10:35:00 AM
Received Date: 4/27/2006 10:30:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39L71AG			**Report DB ID:** 9H39L710								
U-234	0.00000	ND	0.0000	0.28	0.305	pCi/sample	83%	*0.*	5/29/06 07:59 a	1.0	0.06206	E908.0
							1.0	*0.*		Sample	Sample	ALP8
U-235	0.00000	ND	0.0000	0.28	0.305	pCi/sample	83%	*0.*	5/29/06 07:59 a	1.0	0.06206	E908.0
							1.0	*0.*		Sample	Sample	ALP8
U-238	0.00000	ND	0.0000	0.28	0.305	pCi/sample	83%	*0.*	5/29/06 07:59 a	1.0	0.06206	E908.0
							1.0	*0.*		Sample	Sample	ALP8
Batch: 6118462	**Work Order:** H39L71AA			**Report DB ID:** 9H39L710								
TH-228	0.132	ND	0.19	0.19	0.325	pCi/sample	89%	*0.41*	5/28/06 05:02 p	1.0	0.08322	ISOTH
						0.103	1.0	*(1.4)*		Sample	Sample	ALP176
TH-230	0.294	=	0.22	0.23	0.114	pCi/sample	89%	*(2.6)*	5/28/06 05:02 p	1.0	0.08322	ISOTH
							1.0	*(2.6)*		Sample	Sample	ALP176
TH-232	0.126	ND	0.15	0.15	0.114	pCi/sample	89%	*(1.1)*	5/28/06 05:02 p	1.0	0.08322	ISOTH
							1.0	*(1.7)*		Sample	Sample	ALP176
Batch: 6118463	**Work Order:** H39L71AE			**Report DB ID:** 9H39L710								
ALPHA	3.28	ND	3.6	3.7	6.56	pCi/sample	100%	*0.5*	5/29/06 12:20 p	1.0	0.02084	E900.0
						2.54	20.0	*(1.8)*		Sample	Sample	GPC10A
Batch: 6118464	**Work Order:** H39L71AF			**Report DB ID:** 9H39L710								
BETA	10.6	=	3.7	4.1	6.56	pCi/sample	100%	*(1.6)*	5/27/06 12:07 p	1.0	0.08263	E900.0
						3.11	5.0	*(5.1)*		Sample	Sample	GPC28D
Batch: 6118465	**Work Order:** H39L71AC			**Report DB ID:** 9H39L710								

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
SDG: 31509
Collection Date: 4/14/2006 10:35:00 AM
Lot-Sample No.: J6D270397-6
Report No. : 32362
Received Date: 4/27/2006 10:30:00 AM
Client Sample ID: 000428
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	-0.2060	ND	0.36	0.36	0.746	pCi/sample	91%	*-0.28*	6/8/06 02:49 p	0.833	0.24877	E903.1
						0.336	1.0	*-(1.1)*		Sample	Sample	ASC7HA
Batch: 6118466	**Work Order:** H39L71AD			**Report DB ID:** 9H39L710								
RA-228	2.06	=	0.99	1.0	2.01	pCi/sample	82%	*(1.)*	6/10/06 06:54 a	1.0	0.24877	E904.0
						0.905	3.1	*(3.9)*		Sample	Sample	GPC1D

Number of Results: 10

Comments:

STL Richland
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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6D270397-7
Client Sample ID: 000429
Yerington Air Quality - Event 74

SDG: 31509
Report No. : 32362
COC No. :

Collection Date: 4/14/2006 10:05:00 AM
Received Date: 4/27/2006 10:30:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39L81AG			**Report DB ID:** 9H39L810								
U-234	0.149	ND	0.30	0.30	0.641	pCi/sample	93%	*0.23*	5/29/06 07:59 a	1.0	0.06272	E908.0
						0.18	1.0	*(1.)*		Sample	Sample	ALP69
U-235	0.0538	ND	0.21	0.21	0.614	pCi/sample	93%	*0.09*	5/29/06 07:59 a	1.0	0.06272	E908.0
						0.167	1.0	*0.51*		Sample	Sample	ALP69
U-238	-0.00829	ND	0.017	0.017	0.417	pCi/sample	93%	*-0.02*	5/29/06 07:59 a	1.0	0.06272	E908.0
						0.0681	1.0	*-1.*		Sample	Sample	ALP69
								Ratio U-234/238 = -18.0				
Batch: 6118462	**Work Order:** H39L81AA			**Report DB ID:** 9H39L810								
TH-228	0.0433	ND	0.087	0.087	0.117	pCi/sample	111%	*0.37*	5/28/06 05:02 p	1.0	0.08378	ISOTH
							1.0	*1.*		Sample	Sample	ALP177
TH-230	-0.0206	ND	0.041	0.041	0.247	pCi/sample	111%	*-0.08*	5/28/06 05:02 p	1.0	0.08378	ISOTH
						0.0678	1.0	*-1.*		Sample	Sample	ALP177
TH-232	0.00000	ND	0.0000	0.10	0.112	pCi/sample	111%	*0.*	5/28/06 05:02 p	1.0	0.08378	ISOTH
							1.0	*0.*		Sample	Sample	ALP177
Batch: 6118463	**Work Order:** H39L81AE			**Report DB ID:** 9H39L810								
ALPHA	0.107	ND	2.3	2.3	6.32	pCi/sample	100%	*0.02*	5/29/06 12:20 p	1.0	0.02089	E900.0
						2.44	20.0	*0.09*		Sample	Sample	GPC10B
Batch: 6118464	**Work Order:** H39L81AF			**Report DB ID:** 9H39L810								
BETA	2.35	ND	3.1	3.1	6.44	pCi/sample	100%	*0.37*	5/27/06 12:07 p	1.0	0.08341	E900.0
						3.06	5.0	*(1.5)*		Sample	Sample	GPC31A
Batch: 6118465	**Work Order:** H39L81AC			**Report DB ID:** 9H39L810								

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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
SDG: 31509
Collection Date: 4/14/2006 10:05:00 AM
Lot-Sample No.: J6D270397-7
Report No. : 32362
Received Date: 4/27/2006 10:30:00 AM
Client Sample ID: 000429
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.105	ND	0.33	0.33	0.636	pCi/sample	93%	*0.17*	6/8/06 02:48 p	0.833	0.24998	E903.1
						0.265	1.0	*0.63*		Sample	Sample	ASC8RD
Batch: 6118466	**Work Order:** H39L81AD			**Report DB ID:** 9H39L810								
RA-228	2.57	=	0.95	1.0	1.64	pCi/sample	82%	*(1.6)*	6/10/06 06:54 a	1.0	0.24998	E904.0
						0.695	3.1	*(5.1)*		Sample	Sample	GPC2A

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland **SDG:** 31509 **Collection Date:** 4/14/2006 9:05:00 AM

Lot-Sample No.: J6D270397-8 **Report No. :** 32362 **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: P-0591 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39MC1AG			**Report DB ID:** 9H39MC10								
U-234	-0.0180	ND	0.025	0.026	0.514	pCi/sample	92%	*-0.04*	5/29/06 07:59 a	1.0	0.06247	E908.0
						0.105	1.0	*-(1.4)*		Sample	Sample	ALP83
U-235	0.0855	ND	0.23	0.23	0.561	pCi/sample	92%	*0.15*	5/29/06 07:59 a	1.0	0.06247	E908.0
						0.128	1.0	*0.75*		Sample	Sample	ALP83
U-238	-0.0270	ND	0.031	0.031	0.561	pCi/sample	92%	*-0.05*	5/29/06 07:59 a	1.0	0.06247	E908.0
						0.128	1.0	*-(1.7)*		Sample	Sample	ALP83
								Ratio U-234/238 = 0.7				
Batch: 6118462	**Work Order:** H39MC1AA			**Report DB ID:** 9H39MC10								
TH-228	0.00000064	ND	0.093	0.093	0.281	pCi/sample	94%	*0.*	5/28/06 05:02 p	1.0	0.08433	ISOTH
						0.0887	1.0	*0.*		Sample	Sample	ALP178
TH-230	0.109	ND	0.13	0.13	0.0983	pCi/sample	94%	*(1.1)*	5/28/06 05:02 p	1.0	0.08433	ISOTH
							1.0	*(1.7)*		Sample	Sample	ALP178
TH-232	0.0363	ND	0.073	0.073	0.0983	pCi/sample	94%	*0.37*	5/28/06 05:02 p	1.0	0.08433	ISOTH
							1.0	*1.*		Sample	Sample	ALP178
Batch: 6118463	**Work Order:** H39MC1AE			**Report DB ID:** 9H39MC10								
ALPHA	1.55	ND	2.6	2.6	5.31	pCi/sample	100%	*0.29*	5/29/06 12:20 p	1.0	0.02097	E900.0
						1.91	20.0	*(1.2)*		Sample	Sample	GPC10C
Batch: 6118464	**Work Order:** H39MC1AF			**Report DB ID:** 9H39MC10								
BETA	11.4	=	3.5	4.0	5.95	pCi/sample	100%	*(1.9)*	5/27/06 12:07 p	1.0	0.08466	E900.0
						2.82	5.0	*(5.7)*		Sample	Sample	GPC31B
Batch: 6118465	**Work Order:** H39MC1AC			**Report DB ID:** 9H39MC10								

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
SDG: 31509
Collection Date: 4/14/2006 9:05:00 AM
Lot-Sample No.: J6D270397-8
Report No. : 32362
Received Date: 4/27/2006 10:30:00 AM
Client Sample ID: P-0591
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	**0.0665**	ND	0.39	0.39	0.735	pCi/sample	86%	*0.09*	6/8/06 02:46 p	0.833	0.24969	E903.1
						0.326	1.0	*0.34*		Sample	Sample	ASC9RA
Batch: 6118466	**Work Order:** H39MC1AD			**Report DB ID:** 9H39MC10								
RA-228	**1.78**	=	0.92	0.95	1.74	pCi/sample	77%	*(1.)*	6/10/06 06:54 a	1.0	0.24969	E904.0
						0.742	3.1	*(3.8)*		Sample	Sample	GPC2B

Number of Results: 10

Comments:

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland | **SDG:** 31509 | **Collection Date:** 4/14/2006 9:25:00 AM

Lot-Sample No.: J6D270397-9 | **Report No. :** 32362 | **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: P-0592 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39MD1AG			**Report DB ID:** 9H39MD10								
U-234	-0.00833	ND	0.017	0.017	0.419	pCi/sample	100%	*-0.02*	5/29/06 07:59 a	1.0	0.06234	E908.0
						0.0685	1.0	*-1.*		Sample	Sample	ALP84
U-235	-0.0167	ND	0.024	0.024	0.476	pCi/sample	100%	*-0.04*	5/29/06 07:59 a	1.0	0.06234	E908.0
						0.0969	1.0	*-(1.4)*		Sample	Sample	ALP84
U-238	0.00000	ND	0.0000	0.25	0.282	pCi/sample	100%	*0.*	5/29/06 07:59 a	1.0	0.06234	E908.0
							1.0	*0.*		Sample	Sample	ALP84
Batch: 6118462	**Work Order:** H39MD1AA			**Report DB ID:** 9H39MD10								
TH-228	0.0000273	ND	0.22	0.22	0.585	pCi/sample	56%	*0.*	5/28/06 05:03 p	1.0	0.08458	ISOTH
						0.207	1.0	*0.*		Sample	Sample	ALP113
TH-230	0.0599	ND	0.12	0.12	0.162	pCi/sample	56%	*0.37*	5/28/06 05:03 p	1.0	0.08458	ISOTH
							1.0	*1.*		Sample	Sample	ALP113
TH-232	0.0300	ND	0.13	0.13	0.36	pCi/sample	56%	*0.08*	5/28/06 05:03 p	1.0	0.08458	ISOTH
						0.0986	1.0	*0.45*		Sample	Sample	ALP113
Batch: 6118463	**Work Order:** H39MD1AE			**Report DB ID:** 9H39MD10								
ALPHA	0.207	ND	2.5	2.5	6.56	pCi/sample	100%	*0.03*	5/29/06 12:20 p	1.0	0.02101	E900.0
						2.58	20.0	*0.16*		Sample	Sample	GPC10D
Batch: 6118464	**Work Order:** H39MD1AF			**Report DB ID:** 9H39MD10								
BETA	6.34	ND	3.4	3.5	6.56	pCi/sample	100%	*0.97*	5/27/06 12:07 p	1.0	0.08343	E900.0
						3.12	5.0	*(3.6)*		Sample	Sample	GPC31C
Batch: 6118465	**Work Order:** H39MD1AC			**Report DB ID:** 9H39MD10								

STL Richland
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V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
SDG: 31509
Collection Date: 4/14/2006 9:25:00 AM
Lot-Sample No.: J6D270397-9
Report No. : 32362
Received Date: 4/27/2006 10:30:00 AM
Client Sample ID: P-0592
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.311	ND	0.31	0.32	0.49	pCi/sample	100%	*0.63*	6/8/06 03:27 p	0.833	0.24921	E903.1
						0.2	1.0	*(2.)*		Sample	Sample	ASCDSA
Batch: 6118466	**Work Order:** H39MD1AD			**Report DB ID:** 9H39MD10								
RA-228	1.61	=	0.81	0.85	1.58	pCi/sample	87%	*(1.)*	6/10/06 06:54 a	1.0	0.24921	E904.0
						0.674	3.1	*(3.8)*		Sample	Sample	GPC2C

Number of Results: 10

Comments:

STL Richland
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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland | **SDG:** 31509 | **Collection Date:** 4/14/2006 9:35:00 AM

Lot-Sample No.: J6D270397-10 | **Report No. :** 32362 | **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: P-0593 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39MF1AG			**Report DB ID:** 9H39MF10								
U-234	-0.0268	ND	0.038	0.038	0.766	pCi/sample	84%	*-0.04*	5/29/06 07:59 a	1.0	0.06218	E908.0
						0.156	1.0	*-(1.4)*		Sample	Sample	ALP85
U-235	-0.0536	ND	0.054	0.054	0.895	pCi/sample	84%	*-0.06*	5/29/06 07:59 a	1.0	0.06218	E908.0
						0.221	1.0	*-(2.)*		Sample	Sample	ALP85
U-238	-0.0402	ND	0.046	0.047	0.836	pCi/sample	84%	*-0.05*	5/29/06 07:59 a	1.0	0.06218	E908.0
						0.191	1.0	*-(1.7)*		Sample	Sample	ALP85
								Ratio U-234/238 = 0.7				
Batch: 6118462	**Work Order:** H39MF1AA			**Report DB ID:** 9H39MF10								
TH-228	-0.1470	ND	0.11	0.11	0.48	pCi/sample	80%	*-0.31*	5/28/06 05:03 p	1.0	0.08511	ISOTH
						0.183	1.0	*-(2.6)*		Sample	Sample	ALP114
TH-230	0.120	ND	0.14	0.14	0.108	pCi/sample	80%	*(1.1)*	5/28/06 05:03 p	1.0	0.08511	ISOTH
							1.0	*(1.7)*		Sample	Sample	ALP114
TH-232	0.0400	ND	0.080	0.080	0.108	pCi/sample	80%	*0.37*	5/28/06 05:03 p	1.0	0.08511	ISOTH
							1.0	*1.*		Sample	Sample	ALP114
Batch: 6118463	**Work Order:** H39MF1AE			**Report DB ID:** 9H39MF10								
ALPHA	2.25	ND	2.8	2.9	5.21	pCi/sample	100%	*0.43*	5/29/06 12:20 p	1.0	0.0208	E900.0
						1.85	20.0	*(1.6)*		Sample	Sample	GPC10E
Batch: 6118464	**Work Order:** H39MF1AF			**Report DB ID:** 9H39MF10								
BETA	8.59	=	3.5	3.7	6.29	pCi/sample	100%	*(1.4)*	5/27/06 12:07 p	1.0	0.08275	E900.0
						2.98	5.0	*(4.7)*		Sample	Sample	GPC31D
Batch: 6118465	**Work Order:** H39MF1AC			**Report DB ID:** 9H39MF10								

STL Richland
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V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland **SDG:** 31509 **Collection Date:** 4/14/2006 9:35:00 AM

Lot-Sample No.: J6D270397-10 **Report No. :** 32362 **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: P-0593 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.338	ND	0.30	0.31	0.471	pCi/sample	103%	*0.72*	6/8/06 03:24 p	0.833	0.2491	E903.1
						0.201	1.0	*(2.2)*		Sample	Sample	ASCEHA
Batch: 6118466	**Work Order:** H39MF1AD			**Report DB ID:** 9H39MF10								
RA-228	1.69	=	0.75	0.79	1.36	pCi/sample	90%	*(1.2)*	6/10/06 06:54 a	1.0	0.2491	E904.0
						0.568	3.1	*(4.3)*		Sample	Sample	GPC2D

Number of Results: 10

Comments:

STL Richland

rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland **SDG:** 31509 **Collection Date:** 4/14/2006 9:55:00 AM

Lot-Sample No.: J6D270397-11 **Report No. :** 32362 **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: P-0594 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39MH1AG			**Report DB ID:** 9H39MH10								
U-234	0.0708	ND	0.25	0.25	0.667	pCi/sample	90%	*0.11*	5/29/06 07:59 a	1.0	0.06224	E908.0
						0.174	1.0	*0.58*		Sample	Sample	ALP87
U-235	0.00000	ND	0.0000	0.29	0.32	pCi/sample	90%	*0.*	5/29/06 07:59 a	1.0	0.06224	E908.0
							1.0	*0.*		Sample	Sample	ALP87
U-238	0.00000	ND	0.0000	0.29	0.32	pCi/sample	90%	*0.*	5/29/06 07:59 a	1.0	0.06224	E908.0
							1.0	*0.*		Sample	Sample	ALP87
Batch: 6118462	**Work Order:** H39MH1AA			**Report DB ID:** 9H39MH10								
TH-228	0.00000376	ND	0.11	0.11	0.332	pCi/sample	97%	*0.*	5/28/06 05:04 p	1.0	0.0851	ISOTH
						0.105	1.0	*0.*		Sample	Sample	ALP116
TH-230	0.129	ND	0.15	0.15	0.116	pCi/sample	97%	*(1.1)*	5/28/06 05:04 p	1.0	0.0851	ISOTH
							1.0	*(1.7)*		Sample	Sample	ALP116
TH-232	0.00000	ND	0.0000	0.11	0.116	pCi/sample	97%	*0.*	5/28/06 05:04 p	1.0	0.0851	ISOTH
							1.0	*0.*		Sample	Sample	ALP116
Batch: 6118463	**Work Order:** H39MH1AE			**Report DB ID:** 9H39MH10								
ALPHA	-1.7300	ND	2.8	2.8	8.66	pCi/sample	100%	*-0.2*	5/30/06 06:26 a	1.0	0.02107	E900.0
						3.6	20.0	*-(1.2)*		Sample	Sample	GPC10A
Batch: 6118464	**Work Order:** H39MH1AF			**Report DB ID:** 9H39MH10								
BETA	9.53	=	3.6	3.9	6.52	pCi/sample	100%	*(1.5)*	5/27/06 12:07 p	1.0	0.08397	E900.0
						3.09	5.0	*(4.9)*		Sample	Sample	GPC32A
Batch: 6118465	**Work Order:** H39MH1AC			**Report DB ID:** 9H39MH10								

STL Richland
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V4.15.0 A97

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= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
SDG: 31509
Collection Date: 4/14/2006 9:55:00 AM
Lot-Sample No.: J6D270397-11
Report No. : 32362
Received Date: 4/27/2006 10:30:00 AM
Client Sample ID: P-0594
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	-0.1260	ND	0.26	0.26	0.61	pCi/sample	98%	*-0.21*	6/8/06 03:25 p	0.833	0.24885	E903.1
						0.254	1.0	*-0.96*		Sample	Sample	ASCFSA
Batch: 6118466	**Work Order:** H39MH1AD			**Report DB ID:** 9H39MH10								
RA-228	1.92	=	0.78	0.84	1.4	pCi/sample	85%	*(1.4)*	6/10/06 06:49 a	1.0	0.24885	E904.0
						0.593	3.1	*(4.6)*		Sample	Sample	GPC3A

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland | **SDG:** 31509 | **Collection Date:** 4/14/2006 10:20:00 AM

Lot-Sample No.: J6D270397-12 | **Report No. :** 32362 | **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: P-0595 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39MJ1AG			**Report DB ID:** 9H39MJ10								
U-234	0.0649	ND	0.22	0.23	0.611	pCi/sample	98%	*0.11*	5/29/06 03:07 p	1.0	0.0624	E908.0
						0.159	1.0	*0.58*		Sample	Sample	ALP87
U-235	0.00000	ND	0.0000	0.27	0.293	pCi/sample	98%	*0.*	5/29/06 03:07 p	1.0	0.0624	E908.0
							1.0	*0.*		Sample	Sample	ALP87
U-238	0.00000	ND	0.0000	0.27	0.293	pCi/sample	98%	*0.*	5/29/06 03:07 p	1.0	0.0624	E908.0
							1.0	*0.*		Sample	Sample	ALP87
Batch: 6118462	**Work Order:** H39MJ1AA			**Report DB ID:** 9H39MJ10								
TH-228	0.0675	ND	0.11	0.11	0.18	pCi/sample	89%	*0.38*	5/28/06 05:04 p	1.0	0.08417	ISOTH
						0.039	1.0	*(1.3)*		Sample	Sample	ALP117
TH-230	0.164	ND	0.16	0.16	0.202	pCi/sample	89%	*0.81*	5/28/06 05:04 p	1.0	0.08417	ISOTH
						0.0525	1.0	*(2.)*		Sample	Sample	ALP117
TH-232	-0.00714	ND	0.014	0.014	0.171	pCi/sample	89%	*-0.04*	5/28/06 05:04 p	1.0	0.08417	ISOTH
						0.0371	1.0	*-1.*		Sample	Sample	ALP117
Batch: 6118463	**Work Order:** H39MJ1AE			**Report DB ID:** 9H39MJ10								
ALPHA	1.29	ND	2.5	2.5	5.48	pCi/sample	100%	*0.24*	5/30/06 06:26 a	1.0	0.02089	E900.0
						2.01	20.0	*(1.)*		Sample	Sample	GPC10B
Batch: 6118464	**Work Order:** H39MJ1AF			**Report DB ID:** 9H39MJ10								
BETA	9.52	=	3.6	3.8	6.35	pCi/sample	100%	*(1.5)*	5/27/06 12:07 p	1.0	0.08351	E900.0
						3.01	5.0	*(5.)*		Sample	Sample	GPC32B
Batch: 6118465	**Work Order:** H39MJ1AC			**Report DB ID:** 9H39MJ10								

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6D270397-12
Client Sample ID: P-0595
Yerington Air Quality - Event 74

SDG: 31509
Report No. : 32362
COC No. :

Collection Date: 4/14/2006 10:20:00 AM
Received Date: 4/27/2006 10:30:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.436	ND	0.37	0.38	0.576	pCi/sample	106%	*0.76*	6/8/06 03:25 p	0.833	0.24932	E903.1
						0.248	1.0	*(2.3)*		Sample	Sample	ASCGSB
Batch: 6118466	**Work Order:** H39MJ1AD			**Report DB ID:** 9H39MJ10								
RA-228	1.50	=	0.70	0.74	1.34	pCi/sample	92%	*(1.1)*	6/10/06 06:49 a	1.0	0.24932	E904.0
						0.572	3.1	*(4.)*		Sample	Sample	GPC3B

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland | **SDG:** 31509 | **Collection Date:** 4/14/2006 10:30:00 AM

Lot-Sample No.: J6D270397-13 | **Report No. :** 32362 | **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: P-0596 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39ML1AG			**Report DB ID:** 9H39ML10								
U-234	-0.0432	ND	0.061	0.062	0.611	pCi/sample	98%	*-0.07*	5/29/06 03:07 p	1.0	0.06225	E908.0
						0.159	1.0	*-(1.4)*		Sample	Sample	ALP87
U-235	0.00000	ND	0.0000	0.26	0.293	pCi/sample	98%	*0.*	5/29/06 03:07 p	1.0	0.06225	E908.0
							1.0	*0.*		Sample	Sample	ALP87
U-238	0.108	ND	0.22	0.22	0.293	pCi/sample	98%	*0.37*	5/29/06 03:07 p	1.0	0.06225	E908.0
							1.0	*1.*		Sample	Sample	ALP87
								Ratio U-234/238 = -0.4				
Batch: 6118462	**Work Order:** H39ML1AA			**Report DB ID:** 9H39ML10								
TH-228	0.192	ND	0.17	0.17	0.213	pCi/sample	99%	*0.9*	5/28/06 05:04 p	1.0	0.08457	ISOTH
						0.0645	1.0	*(2.3)*		Sample	Sample	ALP118
TH-230	0.159	ND	0.15	0.15	0.186	pCi/sample	99%	*0.86*	5/28/06 05:04 p	1.0	0.08457	ISOTH
						0.0531	1.0	*(2.1)*		Sample	Sample	ALP118
TH-232	0.00000	ND	0.0000	0.072	0.0799	pCi/sample	99%	*0.*	5/28/06 05:04 p	1.0	0.08457	ISOTH
							1.0	*0.*		Sample	Sample	ALP118
Batch: 6118463	**Work Order:** H39ML1AE			**Report DB ID:** 9H39ML10								
ALPHA	0.782	ND	2.4	2.4	5.7	pCi/sample	100%	*0.14*	5/30/06 06:26 a	1.0	0.02079	E900.0
						2.1	20.0	*0.66*		Sample	Sample	GPC10C
Batch: 6118464	**Work Order:** H39ML1AF			**Report DB ID:** 9H39ML10								
BETA	9.88	=	3.5	3.9	6.02	pCi/sample	100%	*(1.6)*	5/27/06 12:07 p	1.0	0.08435	E900.0
						2.85	5.0	*(5.1)*		Sample	Sample	GPC32C
Batch: 6118465	**Work Order:** H39ML1AC			**Report DB ID:** 9H39ML10								

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland | **SDG:** 31509 | **Collection Date:** 4/14/2006 10:30:00 AM

Lot-Sample No.: J6D270397-13 | **Report No. :** 32362 | **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: P-0596 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	**0.203**	ND	0.23	0.24	0.379	pCi/sample	98%	*0.53*	6/8/06 03:22 p	0.833	0.24988	E903.1
						0.151	1.0	*(1.7)*		Sample	Sample	ASCJSB
Batch: 6118466	**Work Order:** H39ML1AD			**Report DB ID:** 9H39ML10								
RA-228	**0.949**	ND	0.68	0.69	1.39	pCi/sample	88%	*0.68*	6/10/06 06:49 a	1.0	0.24988	E904.0
						0.59	3.1	*(2.8)*		Sample	Sample	GPC3C

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland | **SDG:** 31509 | **Collection Date:** 4/14/2006 9:10:00 AM

Lot-Sample No.: J6D270397-14 | **Report No. :** 32362 | **Received Date:** 4/27/2006 10:30:00 AM

Client Sample ID: P-0597 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	**Work Order:** H39MN1AG			**Report DB ID:** 9H39MN10								
U-234	0.263	ND	0.36	0.36	0.572	pCi/sample	98%	*0.46*	5/30/06 07:42 a	1.0	0.0621	E908.0
						0.149	1.0	*(1.5)*		Sample	Sample	ALP1
U-235	-0.0607	ND	0.070	0.071	0.638	pCi/sample	98%	*-0.1*	5/30/06 07:42 a	1.0	0.0621	E908.0
						0.182	1.0	*-(1.7)*		Sample	Sample	ALP1
U-238	0.0607	ND	0.21	0.21	0.572	pCi/sample	98%	*0.11*	5/30/06 07:42 a	1.0	0.0621	E908.0
						0.149	1.0	*0.58*		Sample	Sample	ALP1
								Ratio U-234/238 = 4.3				
Batch: 6118462	**Work Order:** H39MN1AA			**Report DB ID:** 9H39MN10								
TH-228	-0.00000303	ND	0.11	0.11	0.334	pCi/sample	106%	*0.*	5/28/06 05:05 p	1.0	0.08282	ISOTH
						0.106	1.0	*0.*		Sample	Sample	ALP119
TH-230	0.0865	ND	0.12	0.12	0.117	pCi/sample	106%	*0.74*	5/28/06 05:05 p	1.0	0.08282	ISOTH
							1.0	*(1.4)*		Sample	Sample	ALP119
TH-232	0.0432	ND	0.086	0.087	0.117	pCi/sample	106%	*0.37*	5/28/06 05:05 p	1.0	0.08282	ISOTH
							1.0	*1.*		Sample	Sample	ALP119
Batch: 6118463	**Work Order:** H39MN1AE			**Report DB ID:** 9H39MN10								
ALPHA	2.00	ND	3.5	3.6	7.52	pCi/sample	100%	*0.27*	5/30/06 06:26 a	1.0	0.02073	E900.0
						3.05	20.0	*(1.1)*		Sample	Sample	GPC10D
Batch: 6118464	**Work Order:** H39MN1AF			**Report DB ID:** 9H39MN10								
BETA	11.7	=	4.0	4.4	7.18	pCi/sample	100%	*(1.6)*	5/27/06 12:07 p	1.0	0.08274	E900.0
						3.42	5.0	*(5.3)*		Sample	Sample	GPC32D
Batch: 6118465	**Work Order:** H39MN1AC			**Report DB ID:** 9H39MN10								

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 12-Jun-06

Lab Name: STL Richland
SDG: 31509
Collection Date: 4/14/2006 9:10:00 AM
Lot-Sample No.: J6D270397-14
Report No. : 32362
Received Date: 4/27/2006 10:30:00 AM
Client Sample ID: P-0597
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event 74

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.0507	ND	0.23	0.23	0.441	pCi/sample	98%	*0.11*	6/8/06 03:23 p	0.833	0.24842	E903.1
						0.186	1.0	*0.44*		Sample	Sample	ASCLMC
Batch: 6118466	**Work Order:** H39MN1AD			**Report DB ID:** 9H39MN10								
RA-228	1.71	=	0.75	0.78	1.34	pCi/sample	87%	*(1.3)*	6/10/06 06:49 a	1.0	0.24842	E904.0
						0.563	3.1	*(4.4)*		Sample	Sample	GPC3D

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 12-Jun-06

Lab Name: STL Richland **SDG:** 31509

Lot-Sample No.: J6D280000-461 **Report No. :** 32362 **Matrix:** FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	Work Order: H4C8V1AA			Report DB ID: H4C8V1AB								
U-234	0.0105	ND	0.022	0.022	0.0472	pCi/sample	83%	0.22	5/30/06 07:42 a	1.0	1.0	E908.0
					0.0135	1.0		0.96		Sample	Sample	ALP2
U-235	0.00000	ND	0.0000	0.018	0.0203	pCi/sample	83%	0.	5/30/06 07:42 a	1.0	1.0	E908.0
						1.0		0.		Sample	Sample	ALP2
U-238	-0.00598	ND	0.0060	0.0061	0.0514	pCi/sample	83%	-0.12	5/30/06 07:42 a	1.0	1.0	E908.0
					0.0156	1.0		-(2.)		Sample	Sample	ALP2

Ratio U-234/238 = -1.8

Number of Results: 3

Comments:

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 12-Jun-06

Lab Name: STL Richland

SDG: 31509

Lot-Sample No.: J6D280000-462

Report No. : 32362

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118462	Work Order: H4C831AA			Report DB ID: H4C831AB								
TH-228	0.00787	ND	0.015	0.015	0.029	pCi/sample	107%	0.27	5/28/06 05:05 p	1.0	1.0	ISOTH
					0.00915	1.0		(1.1)		Sample	Sample	ALP120
TH-230	0.00748	ND	0.011	0.011	0.0101	pCi/sample	107%	0.74	5/28/06 05:05 p	1.0	1.0	ISOTH
						1.0		(1.4)		Sample	Sample	ALP120
TH-232	0.00374	ND	0.0075	0.0075	0.0101	pCi/sample	107%	0.37	5/28/06 05:05 p	1.0	1.0	ISOTH
						1.0		1.		Sample	Sample	ALP120

Number of Results: 3

Comments:

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 12-Jun-06

Lab Name: STL Richland **SDG:** 31509

Lot-Sample No.: J6D280000-463 **Report No. :** 32362 **Matrix:** FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118463	Work Order: H4C9C1AA			Report DB ID: H4C9C1AB								
ALPHA	0.0280	ND	0.055	0.055	0.119	pCi/sample	100%	0.24	5/30/06 06:26 a	1.0	1.0	E900.0
					0.0438	20.0		(1.)		Sample	Sample	GPC10E

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 12-Jun-06

Lab Name: STL Richland

SDG: 31509

Lot-Sample No.: J6D280000-464

Report No. : 32362

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118464	Work Order: H4C9L1AA			Report DB ID: H4C9L1AB								
BETA	-0.0178	ND	0.27	0.27	0.6	pCi/sample	100%	-0.03	5/27/06 02:03 p	1.0	1.0	E900.0
					0.287	5.0		-0.13		Sample	Sample	GPC26A

Number of Results: 1

Comments:

STL Richland

rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 12-Jun-06

Lab Name: STL Richland **SDG:** 31509

Lot-Sample No.: J6D280000-465 **Report No. :** 32362 **Matrix:** FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118465	Work Order: H4C9R1AA			Report DB ID: H4C9R1AB								
RA-226	0.0930	=	0.062	0.064	0.0749	pCi/sample	97%	(1.2)	6/8/06 03:20 p	1.0	1.0	E903.1
					0.0274	1.0		(2.9)		Sample	Sample	ASCQMB

Number of Results: 1

Comments:

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected

FORM II

BLANK RESULTS

Date: 12-Jun-06

Lab Name: STL Richland

SDG: 31509

Lot-Sample No.: J6D280000-466

Report No. : 32362

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6118466	Work Order: H4C901AA			Report DB ID: H4C901AB								
RA-228	0.0709	ND	0.16	0.17	0.408	pCi/sample	87%	0.17	6/10/06 06:50 a	1.0	1.0	E904.0
					0.178	3.1		0.82		Sample	Sample	GPC4A

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 12-Jun-06

Lab Name: STL Richland

SDG: 31509

Lot-Sample No.: J6D280000-461

Report No. : 32362

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6118461	Work Order: H4C8V1AC			Report DB ID: H4C8V1CS									
U-234	1.06	=	0.17	0.24	0.0483	pCi/sample	91.20%	0.989	0.0057	107%	5/30/06 07:42 a	1.0	E908.0
						Rec Limits:				0.1		Sample	ALP3
U-238	0.838	=	0.15	0.20	0.0314	pCi/sample	91.20%	1.04	0.006	81%	5/30/06 07:42 a	1.0	E908.0
						Rec Limits:				-0.2		Sample	ALP3

Number of Results: 2

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 12-Jun-06

Lab Name: STL Richland **SDG:** 31509

Lot-Sample No.: J6D280000-462 **Report No. :** 32362 **Matrix:** FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6118462	Work Order: H4C831AC			Report DB ID: H4C831CS									
TH-229	1.79	=	0.16	0.35	0.0212	pCi/sample	105.56%	1.84	0.058	98%	5/29/06 10:28 a	1.0	ISOTH
						Rec Limits:				0.0		Sample	ALP116

Number of Results: 1

Comments:

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 12-Jun-06

Lab Name: STL Richland

SDG: 31509

Lot-Sample No.: J6D280000-463

Report No. : 32362

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6118463	Work Order: H4C9C1AC			Report DB ID: H4C9C1CS									
ALPHA	2.68	=	0.36	0.65	0.182	pCi/sample	100.00%	2.40	0.075	112%	5/30/06 08:19 a	1.0	E900.0
							Rec Limits:			0.1		Sample	GPC10A

Number of Results: 1

Comments:

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 12-Jun-06

Lab Name: STL Richland

SDG: 31509

Lot-Sample No.: J6D280000-464

Report No. : 32362

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6118464	Work Order: H4C9L1AC			Report DB ID: H4C9L1CS									
BETA	10.7	=	0.71	1.6	0.555	pCi/sample	100.00%	13.6	0.11	79%	5/27/06 02:03 p	1.0	E900.0
							Rec Limits:			-0.2		Sample	GPC26B

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 12-Jun-06

Lab Name: STL Richland

SDG: 31509

Lot-Sample No.: J6D280000-465

Report No. : 32362

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6118465	Work Order: H4C9R1AC			Report DB ID: H4C9R1CS									
RA-226	1.29	=	0.20	0.33	0.108	pCi/sample	103.44%	1.38	0.35	93%	6/8/06 03:26 p	1.0	E903.1
							Rec Limits:	70.	130.	-0.1		Sample	ASCPMA

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 12-Jun-06

Lab Name: STL Richland

SDG: 31509

Lot-Sample No.: J6D280000-466

Report No. : 32362

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6118466	Work Order: H4C901AC			Report DB ID: H4C901CS									
RA-228	4.34	=	0.45	0.67	0.356	pCi/sample	92.31%	5.06	0.022	86%	6/10/06 06:50 a	1.0	E904.0
							Rec Limits:	70.	130.	-0.1		Sample	GPC4B

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

CHAIN OF CUSTODY

BROWN AND CALDWELL JLD270397 31509 Due 5.25.06

CHAIN OF CUSTODY RECORD

COC No._____

☒ 3264 Goni Road / Suite 153
Carson City, NV 89706
775-883-4118 / FAX 775-883-5108

☐ 4425 W. Spring Mountain Road / Suite 225
Las Vegas, NV 89102
702-938-4080 / FAX 702-938-4082

☐ 201 East Washington Street / Suite 500
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

PROJECT NAME: Navajo Nation Air Qlty

PROJECT NUMBER: 171143

LABORATORY NAME & ADDRESS: SPECTRUM LABS, WEST SACRAMENTO SACRAMENTO

1/6 OF THE EXPOSED FILTER WAS UTILIZED FOR THE METALS ANALYSIS LOT # G6D19017 0

LINE NO.	SAMPLE – I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESER-VATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC – REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN END	PID READING (ppm)
01	00423	4/14/06	9:15	MIS	1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H39LT		----	
02	00424		9:20		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H39L2		----	
03	00425		9:40		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H39L3		----	
04	00426		10:00		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H39L4		----	
05	00427		10:15		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H39L6		----	
06	00428		10:35		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H39L7		----	
07	00429		10:05		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H39L8		----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: [signature] DATE 4/14/06 TIME 11:00

RECEIVED BY: [signature] DATE 4/19/06 TIME 09:45

RELINQUISHED BY: Steve Ochmors DATE 4/26/06 TIME 1600

S. Welch 4.27.06 10:30

RECORD RETURNED BY: DATE / / TIME :

COURIER: FEDEX

SHIPPING NUMBER: 7803 7768 6474

COOLER I.D.:

COMMENTS (see note on back):

RECEIVED FROM DOCUMENTATION UNDER DOC

APR 19 2006

INI: W

DISTRIBUTION: WHITE – PROJECT FILE • CANARY – LAB RECEIPT • PINK – DATA MANAGEMENT • GOLDENROD – FIELD

USE A BALLPOINT PEN, BLACK INK, AND PRESS FIRMLY. INSTRUCTIONS ARE ON THE BACK.

STL RICHLAND

55

STL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No._____

☒ 3264 Goni Road / Suite 153
Carson City, NV 89706
775-883-4118 / FAX 775-883-5108

☐ 4425 W. Spring Mountain Road / Suite 225
Las Vegas, NV 89102
702-938-4080 / FAX 702-938-4082

☐ 201 East Washington Street / Suite 500
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

PROJECT NAME: Yerington Air City

PROJECT NUMBER: [illegible]

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, WEST SACRAMENTO, SACRAMENTO

1/6 OF THE ~~META~~ EXPOSED FILTER WAS UTILIZED FOR THE METALS ANALYSIS. LOT # G6D190170

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESER-VATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	~~TAT~~	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	P-0591	4/14/06	9:05	MS	1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			~~H39L1~~		H39MC	
02	P-0592		9:25		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			~~H39L2~~		H39MD	
03	P-0593		9:35		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			~~H39L3~~		H39MF	
04	P-0594		9:55		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H39L4		H39MH	
05	P-0595		10:20		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H39L6		H39MJ	
06	P-0596		10:30		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H39L7		H39ML	
07	P-0597		0910		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			~~H39L8~~		H39MN	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE	TIME	COOLER I.D.:	DATE	TIME
Marni Sherman	4/18/06	16:00			
RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME
C Long Vue	4/19/06	09:45	S Vahnoy	4/22/06	600
S. Nichol	4-27-06	10:30			
RECORD RETURNED BY:	DATE	TIME			
COURIER: FED EX			SHIPPING NUMBER: 7[illegible]		

COMMENTS (see note on back):

RECEIVED IN GOOD CONDITION UNDER COC
APR 19 2006
INI: [illegible]

DISTRIBUTION: WHITE - PROJECT FILE • CANARY - LAB RECEIPT • PINK - DATA MANAGEMENT • GOLDENROD - FIELD

USE A BALLPOINT PEN, BLACK INK, AND PRESS FIRMLY. INSTRUCTIONS ARE ON THE BACK.

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 4-27-06 10:30

Client: BRN 3 Caldwell SDG #: 31509 NA [ ] SAF #: _____ NA [ ]

Work Order Number: J6D270397 Chain of Custody # _____

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: 14
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 [ ] 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): _____

Sample Custodian: S. Welch Date: 4-27-06 10:30

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 12/05, Rev. 6

URANIUM ISOTOPIC

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/1/2006 4:03:00 PM

Lot No., Due Date: J6D270397; 05/25/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6118461; RUSIO Uiso by ALP

SDG, Matrix: 31509; FILTER

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** 6-1-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6118461

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: Sheryl A Adam Date: 6-2-06

STL RICHLAND

5/18/2006 11:10:25 AM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

7Y Uiso PrpRC5016/5086, SepRC5067(5039)
SR Uranium-234,235,238 by Alpha Spec
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 05/24/2006

Sep1 DT/Tm Tech:

Batch: 6118461 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech: 5-28-06 MF

SEQ Batch, Test: None

Prep Tech: HansenM

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:
8 1 H39LT-1-AG J6D270397-1-SAMP 04/14/2006 09:15	0.833sa,g	505.11sa,g	37.54g,in	0.0619g	UITC15581 05/10/06,pd 01/20/04,r	2000 min				
		AmtRec: FILTER	#Containers: 1					Scr:	Alpha:	Beta:
69 2 H39L2-1-AG J6D270397-2-SAMP 04/14/2006 09:20	0.833sa,g	501.89sa,g	37.56g,in	0.0623g	UITC15582 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1					Scr:	Alpha:	Beta:
83 3 H39L3-1-AG J6D270397-3-SAMP 04/14/2006 09:40	0.833sa,g	501.04sa,g	37.54g,in	0.0624g	UITC15583 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1					Scr:	Alpha:	Beta:
84 4 H39L4-1-AG J6D270397-4-SAMP 04/14/2006 10:00	0.833sa,g	500.35sa,g	37.66g,in	0.0627g	UITC15584 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1					Scr:	Alpha:	Beta:
85 5 H39L6-1-AG J6D270397-5-SAMP 04/14/2006 10:15	0.833sa,g	501.86sa,g	37.50g,in	0.0622g	UITC15585 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1					Scr:	Alpha:	Beta:
8 6 H39L7-1-AG J6D270397-6-SAMP 04/14/2006 10:35	0.833sa,g	504.79sa,g	37.61g,in	0.0621g	UITC15586 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1					Scr:	Alpha:	Beta:
69 7 H39L8-1-AG J6D270397-7-SAMP 04/14/2006 10:05	0.833sa,g	500.81sa,g	37.71g,in	0.0627g	UITC15587 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1					Scr:	Alpha:	Beta:

STL RICHLAND

5/18/2006 11:10:26 AM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

7Y Ulso PrpRC5016/5086, SepRC5067(5039)
SR Uranium-234,235,238 by Alpha Spec
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 05/24/2006

Sep1 DT/Tm Tech:

Batch: 6118461 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

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:
8 H39MC-1-AG J6D270397-8-SAMP 04/14/2006 09:05	0.833sa,g	501.22sa,g	37.59g,in	0.0625g	UITC15588 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
9 H39MD-1-AG J6D270397-9-SAMP 04/14/2006 09:25	0.833sa,g	501.49sa,g	37.53g,in	0.0623g	UITC15589 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
10 H39MF-1-AG J6D270397-10-SAMP 04/14/2006 09:35	0.833sa,g	503.84sa,g	37.61g,in	0.0622g	UITC15590 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
11 H39MH-1-AG J6D270397-11-SAMP 04/14/2006 09:55	0.833sa,g	502.45sa,g	37.54g,in	0.0622g	UITC15591 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
12 H39MJ-1-AG J6D270397-12-SAMP 04/14/2006 10:20	0.833sa,g	501.66sa,g	37.58g,in	0.0624g	UITC15592 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
13 H39ML-1-AG J6D270397-13-SAMP 04/14/2006 10:30	0.833sa,g	502.05sa,g	37.52g,in	0.0623g	UITC15593 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
14 H39MN-1-AG J6D270397-14-SAMP 04/14/2006 09:10	0.833sa,g	503.99sa,g	37.57g,in	0.0621g	UITC15594 05/10/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:

62

STL RICHLAND

5/18/2006 11:10:26 AM

Sample Preparation/Analysis

7Y Uiso PrpRC5016/5086, SepRC5067(5039)
SR Uranium-234,235,238 by Alpha Spec
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,HansenM

AnalyDueDate: 05/24/2006

Batch: 6118461 pCi/sampl
SEQ Batch, Test: None

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:
15H4C8V-1-AA-B J6D280000-461-BLK 04/14/2006 09:15			1.00sa,in	1.00sa	UITC15595 05/10/06,pd 01/20/04,r					
	AmtRec:		#Containers: 1				Scr:	Alpha:		Beta:
16H4C8V-1-AC-C J6D280000-461-LCS 04/14/2006 09:15			1.00sa,in	1.00sa	UISF0453 04/25/06,pd 01/20/04,r					
	AmtRec:		#Containers: 1				Scr:	Alpha:		Beta:

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H39LT1AG-SAMP Constituent List:

U-232	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	U-234	RDL:1	pCi/sam	LCL:	UCL:	RPD:
U-235	RDL:1	pCi/sam	LCL:	UCL:	RPD:	U-238	RDL:1	pCi/sam	LCL:	UCL:	RPD:

H4C8V1AA-BLK:

U-232	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	U-234	RDL:1	pCi/sam	LCL:	UCL:	RPD:
U-235	RDL:1	pCi/sam	LCL:	UCL:	RPD:	U-238	RDL:1	pCi/sam	LCL:	UCL:	RPD:

H4C8V1AC-LCS:

U-232	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	Uranium	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20

H39LT1AG-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C8V1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C8V1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

63

6/1/2006 3:38:39 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/1/2005, 6/6/2006, Batch: '6118461', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6118461						
AC		**CalcC**	**HansenM**	5/19/2006 7:54:44		
SC			wagarr	IsBatched	4/28/2006 2:39:32 PM	ICOC_RADCALC v4.8.22
SC			HansenM	Prep2C	5/19/2006 7:54:44 AM	RICH-RC-5016 REVISION 5
SC			ManisD	Sep1C	5/24/2006 5:30:55 PM	RICH-RC-5067 REV 6
SC			FABREM	Sep2C	5/28/2006 11:54:33 AM	RICH-RC-5039 REV 4
SC			StringerR	InCnt1	5/28/2006 12:02:16 PM	RICH-RD-0008 REVISION 4
SC			StringerR	InCnt1	5/28/2006 2:42:21 PM	RICH-RD-0008 REVISION 4
SC			BlackCL	CalcC	5/30/2006 9:53:21 AM	RICH-RD-0008 REVISION 4
AC			**ManisD**	5/24/2006 5:30:55 PM		
AC			**FABREM**	5/28/2006 11:54:33		
AC			**StringerR**	5/28/2006 12:02:16		
AC			**StringerR**	5/28/2006 2:42:21 PM		
AC			**BlackCL**	5/30/2006 9:53:21		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 6

ICOCFractions v4.8.18

6/1/2006 3:38:38 PM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Mda	Sample Date / Units	Expected	Yield	Volumes
31509	**9H39L210**			**J6D2703972**	000424	FILTER	4/27/2006 10:30:00		4/14/2006 9:20:00 AM			
ALPHA	BAS7		0	5/29/2006 10:28:04	**1.7348E+00**	1.51E+00	1.521E+00	6.383E+00	PCI/SA	1.0	1.0E+0	2.075E-2
BETA	BDS8		0	5/27/2006 12:07:31 PM	**8.2447E+00**	1.694E+00	1.786E+00	6.161E+00	PCI/SA	1.0	1.0E+0	3.443E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.1117E-01**	7.861E-02	7.921E-02	2.727E-01	PCI/SA	1.028	1.0E+0	3.543E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**3.1725E-01**	1.058E-01	1.093E-01	9.553E-02	PCI/SA	1.028	1.0E+0	3.543E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**7.0501E-02**	4.985E-02	5.023E-02	9.553E-02	PCI/SA	1.028	1.0E+0	3.543E-2
U-234	7YSR		0	5/29/2006 11:33:23	**1.7024E-01**	1.691E-01	1.697E-01	7.32E-01	PCI/SA	0.816	1.0E+0	3.234E-2
U-235	7YSR		0	5/29/2006 11:33:23	**-5.6791E-02**	2.318E-02	2.365E-02	7.015E-01	PCI/SA	0.816	1.0E+0	3.234E-2
U-238	7YSR		0	5/29/2006 11:33:23	**2.1756E-01**	1.678E-01	1.687E-01	5.405E-01	PCI/SA	0.816	1.0E+0	3.234E-2
31509	**9H39L310**			**J6D2703973**	000425	FILTER	4/27/2006 10:30:00		4/14/2006 9:40:00 AM			
ALPHA	BAS7		0	5/29/2006 10:28:04	**4.891E+00**	1.88E+00	1.947E+00	5.34E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	5/27/2006 12:07:31 PM	**1.1426E+01**	1.851E+00	2.014E+00	6.408E+00	PCI/SA	1.0	1.0E+0	3.406E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**4.3868E-02**	6.936E-02	6.947E-02	3.229E-01	PCI/SA	1.075	1.0E+0	3.517E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**3.7557E-01**	1.252E-01	1.296E-01	1.131E-01	PCI/SA	1.075	1.0E+0	3.517E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**0.0E+00**	0.0E+00	5.111E-02	1.131E-01	PCI/SA	1.075	1.0E+0	3.517E-2
U-234	7YSR		0	5/29/2006 11:33:28	**2.1744E-01**	1.677E-01	1.686E-01	5.402E-01	PCI/SA	0.878	1.0E+0	3.241E-2
U-235	7YSR		0	5/29/2006 11:33:28	**-2.8384E-02**	1.639E-02	1.655E-02	5.896E-01	PCI/SA	0.878	1.0E+0	3.241E-2
U-238	7YSR		0	5/29/2006 11:33:28	**-2.8384E-02**	1.639E-02	1.655E-02	5.896E-01	PCI/SA	0.878	1.0E+0	3.241E-2
31509	**9H39L410**			**J6D2703974**	000426	FILTER	4/27/2006 10:30:00		4/14/2006 10:00:00 AM			
ALPHA	BAS7		0	5/29/2006 10:28:04	**4.845E+00**	1.991E+00	2.052E+00	6.537E+00	PCI/SA	1.0	1.0E+0	2.109E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.188E+01**	1.917E+00	2.087E+00	6.639E+00	PCI/SA	1.0	1.0E+0	3.359E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.361E-01**	7.858E-02	7.952E-02	1.229E-01	PCI/SA	0.999	1.0E+0	3.427E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**1.7263E-01**	8.631E-02	8.77E-02	1.17E-01	PCI/SA	0.999	1.0E+0	3.427E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**4.3157E-02**	4.316E-02	4.333E-02	1.17E-01	PCI/SA	0.999	1.0E+0	3.427E-2
U-234	7YSR		0	5/29/2006 11:33:30	**-8.2472E-03**	8.247E-03	8.274E-03	4.148E-01	PCI/SA	1.047	1.0E+0	3.27E-2
U-235	7YSR		0	5/29/2006 11:33:30	**8.6551E-02**	1.037E-01	1.039E-01	4.71E-01	PCI/SA	1.047	1.0E+0	3.27E-2
U-238	7YSR		0	5/29/2006 11:33:30	**1.0305E-01**	1.03E-01	1.034E-01	2.793E-01	PCI/SA	1.047	1.0E+0	3.27E-2
31509	**9H39L610**			**J6D2703975**	000427	FILTER	4/27/2006 10:30:00		4/14/2006 10:15:00 AM			
ALPHA	BAS7		0	5/29/2006 10:28:04	**2.8178E+00**	1.533E+00	1.56E+00	5.233E+00	PCI/SA	1.0	1.0E+0	2.078E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.7494E+01**	2.091E+00	2.528E+00	6.677E+00	PCI/SA	1.0	1.0E+0	3.364E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**9.5632E-02**	6.896E-02	6.947E-02	2.294E-01	PCI/SA	0.999	1.0E+0	3.452E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**1.2736E-01**	7.502E-02	7.585E-02	2.183E-01	PCI/SA	0.999	1.0E+0	3.452E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**1.8195E-02**	4.068E-02	4.072E-02	2.183E-01	PCI/SA	0.999	1.0E+0	3.452E-2
U-234	7YSR		0	5/29/2006 11:33:38	**2.9481E-01**	2.273E-01	2.287E-01	7.323E-01	PCI/SA	0.873	1.0E+0	3.224E-2
U-235	7YSR		0	5/29/2006 11:33:38	**-3.8476E-02**	2.221E-02	2.246E-02	7.993E-01	PCI/SA	0.873	1.0E+0	3.224E-2
U-238	7YSR		0	5/29/2006 11:33:38	**-3.8476E-02**	2.221E-02	2.246E-02	7.993E-01	PCI/SA	0.873	1.0E+0	3.224E-2
31509	**9H39L710**			**J6D2703976**	000428	FILTER	4/27/2006 10:30:00		4/14/2006 10:35:00 AM			
ALPHA	BAS7		0	5/29/2006 12:20:19 PM	**3.2765E+00**	1.795E+00	1.827E+00	6.559E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.0598E+01**	1.871E+00	2.069E+00	6.56E+00	PCI/SA	1.0	1.0E+0	3.263E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.3245E-01**	9.366E-02	9.44E-02	3.249E-01	PCI/SA	0.885	1.0E+0	3.322E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**2.9401E-01**	1.111E-01	1.142E-01	1.138E-01	PCI/SA	0.885	1.0E+0	3.322E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**1.26E-01**	7.275E-02	7.361E-02	1.138E-01	PCI/SA	0.885	1.0E+0	3.322E-2
U-234	7YSR		0	5/29/2006 7:59:40 AM	**0.0E+00**	0.0E+00	1.378E-01	3.049E-01	PCI/SA	0.826	1.0E+0	3.206E-2
U-235	7YSR		0	5/29/2006 7:59:40 AM	**0.0E+00**	0.0E+00	1.378E-01	3.049E-01	PCI/SA	0.826	1.0E+0	3.206E-2
U-238	7YSR		0	5/29/2006 7:59:40 AM	**0.0E+00**	0.0E+00	1.378E-01	3.049E-01	PCI/SA	0.826	1.0E+0	3.206E-2
31509	**9H39L810**			**J6D2703977**	000429	FILTER	4/27/2006 10:30:00		4/14/2006 10:05:00 AM			
ALPHA	BAS7		0	5/29/2006 12:20:19 PM	**1.0743E-01**	1.172E+00	1.172E+00	6.325E+00	PCI/SA	1.0	1.0E+0	2.089E-2
BETA	BDS8		0	5/27/2006 12:07:13 PM	**2.3544E+00**	1.536E+00	1.545E+00	6.442E+00	PCI/SA	1.0	1.0E+0	3.341E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**4.3305E-02**	4.331E-02	4.347E-02	1.174E-01	PCI/SA	1.109	1.0E+0	3.378E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**-2.0598E-02**	2.06E-02	2.068E-02	2.471E-01	PCI/SA	1.109	1.0E+0	3.378E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**0.0E+00**	0.0E+00	5.045E-02	1.116E-01	PCI/SA	1.109	1.0E+0	3.378E-2
U-234	7YSR		0	5/29/2006 7:59:37 AM	**1.4904E-01**	1.48E-01	1.485E-01	6.409E-01	PCI/SA	0.927	1.0E+0	3.272E-2

6118461, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 47 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H4C8V1AA=> , mat:FILTER | Air *wo:H4C8V1AA=> , mat:FILTER | Air *wo:H4C8V1AC=> , mat:FILTER | Air *wo:H4C8V1AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
U-235	7YSR	0		5/29/2006 7:59:37 AM	**5.3808E-02**	1.055E-01	1.056E-01	6.141E-01	PCI/SA	0.927	1.0E+0	3.272E-2
U-238	7YSR	0		5/29/2006 7:59:37 AM	**-8.2859E-03**	8.286E-03	8.313E-03	4.167E-01	PCI/SA	0.927	1.0E+0	3.272E-2
31509	**9H39LT10**			**J6D2703971**	000423	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM				
ALPHA	BAS7	0		5/29/2006 10:28:04	**4.3704E+00**	1.954E+00	2.007E+00	6.561E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8	0		5/27/2006 12:07:31 PM	**1.0432E+01**	1.652E+00	1.964E+00	5.664E+00	PCI/SA	1.0	1.0E+0	3.289E-2
TH-228	9NS1	0		5/28/2006 5:02:33 PM	**-4.5049E-02**	3.185E-02	3.211E-02	3.316E-01	PCI/SA	0.858	1.0E+0	3.437E-2
TH-230	9NS1	0		5/28/2006 5:02:33 PM	**3.8568E-01**	1.286E-01	1.331E-01	1.161E-01	PCI/SA	0.858	1.0E+0	3.437E-2
TH-232	9NS1	0		5/28/2006 5:02:33 PM	**7.1498E-07**	5.248E-02	5.248E-02	3.154E-01	PCI/SA	0.858	1.0E+0	3.437E-2
U-234	7YSR	0		5/29/2006 11:33:38	**9.3115E-02**	9.312E-02	9.341E-02	2.523E-01	PCI/SA	1.005	1.0E+0	3.191E-2
U-235	7YSR	0		5/29/2006 11:33:38	**1.8623E-01**	1.317E-01	1.325E-01	2.523E-01	PCI/SA	1.005	1.0E+0	3.191E-2
U-238	7YSR	0		5/29/2006 11:33:38	**9.3115E-02**	9.311E-02	9.341E-02	2.523E-01	PCI/SA	1.005	1.0E+0	3.191E-2
31509	**9H39MC10**			**J6D2703978**	P-0591	FILTER	4/27/2006 10:30:00	4/14/2006 9:05:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**1.5469E+00**	1.289E+00	1.299E+00	5.308E+00	PCI/SA	1.0	1.0E+0	2.097E-2
BETA	BDS8	0		5/27/2006 12:07:13 PM	**1.1377E+01**	1.764E+00	2.012E+00	5.95E+00	PCI/SA	1.0	1.0E+0	3.466E-2
TH-228	9NS1	0		5/28/2006 5:02:33 PM	**6.3589E-07**	4.668E-02	4.668E-02	2.805E-01	PCI/SA	0.941	1.0E+0	3.433E-2
TH-230	9NS1	0		5/28/2006 5:02:33 PM	**1.0877E-01**	6.28E-02	6.352E-02	9.825E-02	PCI/SA	0.941	1.0E+0	3.433E-2
TH-232	9NS1	0		5/28/2006 5:02:33 PM	**3.6255E-02**	3.626E-02	3.64E-02	9.825E-02	PCI/SA	0.941	1.0E+0	3.433E-2
U-234	7YSR	0		5/29/2006 7:59:29 AM	**-1.7998E-02**	1.273E-02	1.281E-02	5.141E-01	PCI/SA	0.922	1.0E+0	3.247E-2
U-235	7YSR	0		5/29/2006 7:59:29 AM	**8.5484E-02**	1.136E-01	1.138E-01	5.611E-01	PCI/SA	0.922	1.0E+0	3.247E-2
U-238	7YSR	0		5/29/2006 7:59:29 AM	**-2.6998E-02**	1.559E-02	1.574E-02	5.611E-01	PCI/SA	0.922	1.0E+0	3.247E-2
31509	**9H39MD10**			**J6D2703979**	P-0592	FILTER	4/27/2006 10:30:00	4/14/2006 9:25:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**2.0697E-01**	1.259E+00	1.259E+00	6.562E+00	PCI/SA	1.0	1.0E+0	2.101E-2
BETA	BDS8	0		5/27/2006 12:07:13 PM	**6.3374E+00**	1.711E+00	1.766E+00	6.564E+00	PCI/SA	1.0	1.0E+0	3.343E-2
TH-228	9NS1	0		5/28/2006 5:03:34 PM	**2.73E-05**	1.091E-01	1.091E-01	5.851E-01	PCI/SA	0.559	1.0E+0	3.458E-2
TH-230	9NS1	0		5/28/2006 5:03:34 PM	**5.9945E-02**	5.995E-02	6.021E-02	1.625E-01	PCI/SA	0.559	1.0E+0	3.458E-2
TH-232	9NS1	0		5/28/2006 5:03:34 PM	**2.9979E-02**	6.702E-02	6.708E-02	3.595E-01	PCI/SA	0.559	1.0E+0	3.458E-2
U-234	7YSR	0		5/29/2006 7:59:43 AM	**-8.3293E-03**	8.329E-03	8.356E-03	4.189E-01	PCI/SA	0.996	1.0E+0	3.234E-2
U-235	7YSR	0		5/29/2006 7:59:43 AM	**-1.6659E-02**	1.178E-02	1.186E-02	4.756E-01	PCI/SA	0.996	1.0E+0	3.234E-2
U-238	7YSR	0		5/29/2006 7:59:43 AM	**0.0E+00**	0.0E+00	1.274E-01	2.82E-01	PCI/SA	0.996	1.0E+0	3.234E-2
31509	**9H39MF10**			**J6D27039710**	P-0593	FILTER	4/27/2006 10:30:00	4/14/2006 9:35:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**2.2454E+00**	1.42E+00	1.439E+00	5.213E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8	0		5/27/2006 12:07:13 PM	**8.5854E+00**	1.743E+00	1.844E+00	6.29E+00	PCI/SA	1.0	1.0E+0	3.275E-2
TH-228	9NS1	0		5/28/2006 5:03:56 PM	**-1.4722E-01**	5.564E-02	5.717E-02	4.799E-01	PCI/SA	0.805	1.0E+0	3.511E-2
TH-230	9NS1	0		5/28/2006 5:03:56 PM	**1.2004E-01**	6.93E-02	7.012E-02	1.084E-01	PCI/SA	0.805	1.0E+0	3.511E-2
TH-232	9NS1	0		5/28/2006 5:03:56 PM	**4.0012E-02**	4.001E-02	4.017E-02	1.084E-01	PCI/SA	0.805	1.0E+0	3.511E-2
U-234	7YSR	0		5/29/2006 7:59:45 AM	**-2.6824E-02**	1.897E-02	1.911E-02	7.66E-01	PCI/SA	0.836	1.0E+0	3.218E-2
U-235	7YSR	0		5/29/2006 7:59:45 AM	**-5.3648E-02**	2.682E-02	2.722E-02	8.952E-01	PCI/SA	0.836	1.0E+0	3.218E-2
U-238	7YSR	0		5/29/2006 7:59:45 AM	**-4.0236E-02**	2.323E-02	2.349E-02	8.361E-01	PCI/SA	0.836	1.0E+0	3.218E-2
31509	**9H39MH10**			**J6D27039711**	P-0594	FILTER	4/27/2006 10:30:00	4/14/2006 9:55:00 AM				
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**-1.7294E+00**	1.393E+00	1.404E+00	8.661E+00	PCI/SA	1.0	1.0E+0	2.107E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5329E+00**	1.82E+00	1.935E+00	6.522E+00	PCI/SA	1.0	1.0E+0	3.397E-2
TH-228	9NS1	0		5/28/2006 5:04:17 PM	**3.7622E-06**	5.53E-02	5.53E-02	3.323E-01	PCI/SA	0.966	1.0E+0	3.51E-2
TH-230	9NS1	0		5/28/2006 5:04:17 PM	**1.2885E-01**	7.439E-02	7.529E-02	1.164E-01	PCI/SA	0.966	1.0E+0	3.51E-2
TH-232	9NS1	0		5/28/2006 5:04:17 PM	**0.0E+00**	0.0E+00	5.26E-02	1.164E-01	PCI/SA	0.966	1.0E+0	3.51E-2
U-234	7YSR	0		5/29/2006 7:59:52 AM	**7.0785E-02**	1.226E-01	1.228E-01	6.669E-01	PCI/SA	0.899	1.0E+0	3.224E-2
U-235	7YSR	0		5/29/2006 7:59:52 AM	**0.0E+00**	0.0E+00	1.445E-01	3.198E-01	PCI/SA	0.899	1.0E+0	3.224E-2
U-238	7YSR	0		5/29/2006 7:59:52 AM	**0.0E+00**	0.0E+00	1.445E-01	3.198E-01	PCI/SA	0.899	1.0E+0	3.224E-2
31509	**9H39MJ10**			**J6D27039712**	P-0595	FILTER	4/27/2006 10:30:00	4/14/2006 10:20:00 AM				
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**1.2881E+00**	1.261E+00	1.268E+00	5.479E+00	PCI/SA	1.0	1.0E+0	2.089E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5189E+00**	1.783E+00	1.901E+00	6.353E+00	PCI/SA	1.0	1.0E+0	3.351E-2
TH-228	9NS1	0		5/28/2006 5:04:41 PM	**6.7544E-02**	5.36E-02	5.392E-02	1.797E-01	PCI/SA	0.892	1.0E+0	3.417E-2
TH-230	9NS1	0		5/28/2006 5:04:41 PM	**1.6421E-01**	8.046E-02	8.174E-02	2.017E-01	PCI/SA	0.892	1.0E+0	3.417E-2
TH-232	9NS1	0		5/28/2006 5:04:41 PM	**-7.1407E-03**	7.141E-03	7.168E-03	1.71E-01	PCI/SA	0.892	1.0E+0	3.417E-2
U-234	7YSR	0		5/29/2006 3:07:05 PM	**6.4911E-02**	1.124E-01	1.126E-01	6.114E-01	PCI/SA	0.978	1.0E+0	3.24E-2

6118461, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 47 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H4C8V1AA=> , mat:FILTER | Air *wo:H4C8V1AA=> , mat:FILTER | Air *wo:H4C8V1AC=> , mat:FILTER | Air *wo:H4C8V1AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes	
U-235	7YSR	0		5/29/2006 3:07:05 PM	**0.0E+00**	0.0E+00	1.325E-01	2.932E-01	PCI/SA		0.978	1.0E+0	3.24E-2
U-238	7YSR	0		5/29/2006 3:07:05 PM	**0.0E+00**	0.0E+00	1.325E-01	2.932E-01	PCI/SA		0.978	1.0E+0	3.24E-2
31509	**9H39ML10**			**J6D27039713**	P-0596	FILTER	4/27/2006 10:30:00	4/14/2006 10:30:00 AM					
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**7.8233E-01**	1.188E+00	1.191E+00	5.704E+00	PCI/SA		1.0	1.0E+0	2.079E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.8848E+00**	1.729E+00	1.944E+00	6.023E+00	PCI/SA		1.0	1.0E+0	3.435E-2
TH-228	9NS1	0		5/28/2006 5:04:53 PM	**1.9206E-01**	8.289E-02	8.454E-02	2.128E-01	PCI/SA		0.993	1.0E+0	3.457E-2
TH-230	9NS1	0		5/28/2006 5:04:53 PM	**1.5914E-01**	7.291E-02	7.419E-02	1.86E-01	PCI/SA		0.993	1.0E+0	3.457E-2
TH-232	9NS1	0		5/28/2006 5:04:53 PM	**0.0E+00**	0.0E+00	3.609E-02	7.986E-02	PCI/SA		0.993	1.0E+0	3.457E-2
U-234	7YSR	0		5/29/2006 3:07:05 PM	**-4.3241E-02**	3.058E-02	3.078E-02	6.108E-01	PCI/SA		0.981	1.0E+0	3.225E-2
U-235	7YSR	0		5/29/2006 3:07:05 PM	**0.0E+00**	0.0E+00	1.324E-01	2.929E-01	PCI/SA		0.981	1.0E+0	3.225E-2
U-238	7YSR	0		5/29/2006 3:07:05 PM	**1.081E-01**	1.081E-01	1.085E-01	2.929E-01	PCI/SA		0.981	1.0E+0	3.225E-2
31509	**9H39MN10**			**J6D27039714**	P-0597	FILTER	4/27/2006 10:30:00	4/14/2006 9:10:00 AM					
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**1.9987E+00**	1.763E+00	1.775E+00	7.515E+00	PCI/SA		1.0	1.0E+0	2.073E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**1.1678E+01**	2.019E+00	2.186E+00	7.182E+00	PCI/SA		1.0	1.0E+0	3.274E-2
TH-228	9NS1	0		5/28/2006 5:05:13 PM	**-3.0288E-06**	5.566E-02	5.566E-02	3.345E-01	PCI/SA		1.057	1.0E+0	3.282E-2
TH-230	9NS1	0		5/28/2006 5:05:13 PM	**8.6453E-02**	6.113E-02	6.161E-02	1.171E-01	PCI/SA		1.057	1.0E+0	3.282E-2
TH-232	9NS1	0		5/28/2006 5:05:13 PM	**4.3227E-02**	4.323E-02	4.34E-02	1.171E-01	PCI/SA		1.057	1.0E+0	3.282E-2
U-234	7YSR	0		5/30/2006 7:42:31 AM	**2.63E-01**	1.775E-01	1.788E-01	5.716E-01	PCI/SA		0.98	1.0E+0	3.21E-2
U-235	7YSR	0		5/30/2006 7:42:31 AM	**-6.0691E-02**	3.504E-02	3.538E-02	6.385E-01	PCI/SA		0.98	1.0E+0	3.21E-2
U-238	7YSR	0		5/30/2006 7:42:31 AM	**6.0693E-02**	1.051E-01	1.052E-01	5.716E-01	PCI/SA		0.98	1.0E+0	3.21E-2
31509	**H4C8V1AB**			**J6D280000461**	INTRA-LAB BLANK	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM					
U-234	7YSR	0	B	5/30/2006 7:42:35 AM	**1.0472E-02**	1.089E-02	1.092E-02	4.721E-02	PCI/SA		0.832	1.0E+0	1.0E+0
U-235	7YSR	0	B	5/30/2006 7:42:35 AM	**0.0E+00**	0.0E+00	9.161E-03	2.027E-02	PCI/SA		0.832	1.0E+0	1.0E+0
U-238	7YSR	0	B	5/30/2006 7:42:35 AM	**-5.9831E-03**	2.992E-03	3.029E-03	5.138E-02	PCI/SA		0.832	1.0E+0	1.0E+0
31509	**H4C8V1CS**			**J6D280000461**	INTRA-LAB CHECK	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM					
U-234	7YSR	0	S	5/30/2006 7:42:39 AM	**1.0623E+00**	8.377E-02	1.177E-01	4.826E-02	PCI/SA	9.8895E-01	0.912	1.0E+0	1.0E+0
U-238	7YSR	0	S	5/30/2006 7:42:39 AM	**8.3801E-01**	7.42E-02	9.877E-02	3.141E-02	PCI/SA	1.0357E+00	0.912	1.0E+0	1.0E+0

6118461, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 47 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H4C8V1AA=> , mat:FILTER | Air *wo:H4C8V1AA=> , mat:FILTER | Air *wo:H4C8V1AC=> , mat:FILTER | Air *wo:H4C8V1AC=> , mat:FILTER | Air.

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	MLcC	MDC	QC	Yield	RYld
Ulso by ALP				Richland Standard AlpIso Wo Blk Subt.										
Calc	SR	FILTER	**H39LT1AG**	U-234	**9.31E-02**	**(9.34E-02)**	**U4**	PCI/SA	R		2.52E-01		101%	
Calc	SR	FILTER	**H39LT1AG**	U-235	**1.86E-01**	**(1.33E-01)**	**U4**	PCI/SA	R		2.52E-01		101%	
Calc	SR	FILTER	**H39LT1AG**	U-238	**9.31E-02**	**(9.34E-02)**	**U4**	PCI/SA	R		2.52E-01		101%	
Calc	SR	FILTER	**H39L21AG**	U-234	**1.70E-01**	**(1.70E-01)**	**U4**	PCI/SA	R	2.06E-01	7.32E-01		82%	
Calc	SR	FILTER	**H39L21AG**	U-235	**-5.68E-02**	**(2.36E-02)**	**U4**	PCI/SA	R	1.91E-01	7.02E-01		82%	
Calc	SR	FILTER	**H39L21AG**	U-238	**2.18E-01**	**(1.69E-01)**	**U4**	PCI/SA	R	1.10E-01	5.40E-01		82%	
Calc	SR	FILTER	**H39L31AG**	U-234	**2.17E-01**	**(1.69E-01)**	**U4**	PCI/SA	R	1.10E-01	5.40E-01		88%	
Calc	SR	FILTER	**H39L31AG**	U-235	**-2.84E-02**	**(1.66E-02)**	**U4**	PCI/SA	R	1.35E-01	5.90E-01		88%	
Calc	SR	FILTER	**H39L31AG**	U-238	**-2.84E-02**	**(1.66E-02)**	**U4**	PCI/SA	R	1.35E-01	5.90E-01		88%	
Calc	SR	FILTER	**H39L41AG**	U-234	**-8.25E-03**	**(8.27E-03)**	**U4**	PCI/SA	R	6.78E-02	4.15E-01		105%	
Calc	SR	FILTER	**H39L41AG**	U-235	**8.66E-02**	**(1.04E-01)**	**U4**	PCI/SA	R	9.59E-02	4.71E-01		105%	
Calc	SR	FILTER	**H39L41AG**	U-238	**1.03E-01**	**(1.03E-01)**	**U4**	PCI/SA	R		2.79E-01		105%	
Calc	SR	FILTER	**H39L61AG**	U-234	**2.95E-01**	**(2.29E-01)**	**U4**	PCI/SA	R	1.49E-01	7.32E-01		87%	
Calc	SR	FILTER	**H39L61AG**	U-235	**-3.85E-02**	**(2.25E-02)**	**U4**	PCI/SA	R	1.83E-01	7.99E-01		87%	
Calc	SR	FILTER	**H39L61AG**	U-238	**-3.85E-02**	**(2.25E-02)**	**U4**	PCI/SA	R	1.83E-01	7.99E-01		87%	
Calc	SR	FILTER	**H39L71AG**	U-234	**0.00E+00**	**(1.38E-01)**	**U4**	PCI/SA	R		3.05E-01		83%	
Calc	SR	FILTER	**H39L71AG**	U-235	**0.00E+00**	**(1.38E-01)**	**U4**	PCI/SA	R		3.05E-01		83%	
Calc	SR	FILTER	**H39L71AG**	U-238	**0.00E+00**	**(1.38E-01)**	**U4**	PCI/SA	R		3.05E-01		83%	
Calc	SR	FILTER	**H39L81AG**	U-234	**1.49E-01**	**(1.49E-01)**	**U4**	PCI/SA	R	1.80E-01	6.41E-01		93%	
Calc	SR	FILTER	**H39L81AG**	U-235	**5.38E-02**	**(1.06E-01)**	**U4**	PCI/SA	R	1.67E-01	6.14E-01		93%	
Calc	SR	FILTER	**H39L81AG**	U-238	**-8.29E-03**	**(8.31E-03)**	**U4**	PCI/SA	R	6.81E-02	4.17E-01		93%	
Calc	SR	FILTER	**H39MC1AG**	U-234	**-1.80E-02**	**(1.28E-02)**	**U4**	PCI/SA	R	1.05E-01	5.14E-01		92%	
Calc	SR	FILTER	**H39MC1AG**	U-235	**8.55E-02**	**(1.14E-01)**	**U4**	PCI/SA	R	1.28E-01	5.61E-01		92%	
Calc	SR	FILTER	**H39MC1AG**	U-238	**-2.70E-02**	**(1.57E-02)**	**U4**	PCI/SA	R	1.28E-01	5.61E-01		92%	
Calc	SR	FILTER	**H39MD1AG**	U-234	**-8.33E-03**	**(8.36E-03)**	**U4**	PCI/SA	R	6.85E-02	4.19E-01		100%	
Calc	SR	FILTER	**H39MD1AG**	U-235	**-1.67E-02**	**(1.19E-02)**	**U4**	PCI/SA	R	9.69E-02	4.76E-01		100%	
Calc	SR	FILTER	**H39MD1AG**	U-238	**0.00E+00**	**(1.27E-01)**	**U4**	PCI/SA	R		2.82E-01		100%	
Calc	SR	FILTER	**H39MF1AG**	U-234	**-2.68E-02**	**(1.91E-02)**	**U4**	PCI/SA	R	1.56E-01	7.66E-01		84%	
Calc	SR	FILTER	**H39MF1AG**	U-235	**-5.36E-02**	**(2.72E-02)**	**U4**	PCI/SA	R	2.21E-01	8.95E-01		84%	
Calc	SR	FILTER	**H39MF1AG**	U-238	**-4.02E-02**	**(2.35E-02)**	**U4**	PCI/SA	R	1.91E-01	8.36E-01		84%	
Calc	SR	FILTER	**H39MH1AG**	U-234	**7.08E-02**	**(1.23E-01)**	**U4**	PCI/SA	R	1.74E-01	6.67E-01		90%	
Calc	SR	FILTER	**H39MH1AG**	U-235	**0.00E+00**	**(1.45E-01)**	**U4**	PCI/SA	R		3.20E-01		90%	
Calc	SR	FILTER	**H39MH1AG**	U-238	**0.00E+00**	**(1.45E-01)**	**U4**	PCI/SA	R		3.20E-01		90%	
Calc	SR	FILTER	**H39MJ1AG**	U-234	**6.49E-02**	**(1.13E-01)**	**U4**	PCI/SA	R	1.59E-01	6.11E-01		98%	
Calc	SR	FILTER	**H39MJ1AG**	U-235	**0.00E+00**	**(1.33E-01)**	**U4**	PCI/SA	R		2.93E-01		98%	
Calc	SR	FILTER	**H39MJ1AG**	U-238	**0.00E+00**	**(1.33E-01)**	**U4**	PCI/SA	R		2.93E-01		98%	
Calc	SR	FILTER	**H39ML1AG**	U-234	**-4.32E-02**	**(3.08E-02)**	**U4**	PCI/SA	R	1.59E-01	6.11E-01		98%	

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:51
RADCALC v4.8.18
STL Richland

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	SR	FILTER	**H39ML1AG**	U-235	**0.00E+00**	**(1.32E-01)**	**U4**	PCI/SA	R		2.93E-01		98%	
Calc	SR	FILTER	**H39ML1AG**	U-238	**1.08E-01**	**(1.08E-01)**	**U4**	PCI/SA	R		2.93E-01		98%	
Calc	SR	FILTER	**H39MN1AG**	U-234	**2.63E-01**	**(1.79E-01)**	**U4**	PCI/SA	R	1.49E-01	5.72E-01		98%	
Calc	SR	FILTER	**H39MN1AG**	U-235	**-6.07E-02**	**(3.54E-02)**	**U4**	PCI/SA	R	1.82E-01	6.38E-01		98%	
Calc	SR	FILTER	**H39MN1AG**	U-238	**6.07E-02**	**(1.05E-01)**	**U4**	PCI/SA	R	1.49E-01	5.72E-01		98%	
Calc	SR	FILTER	**H4C8V1AA**	U-234	**1.05E-02**	**(1.09E-02)**	**U4**	PCI/SA	R	1.35E-02	4.72E-02	**B**	83%	
Calc	SR	FILTER	**H4C8V1AA**	U-235	**0.00E+00**	**(9.16E-03)**	**U4**	PCI/SA	R		2.03E-02	**B**	83%	
Calc	SR	FILTER	**H4C8V1AA**	U-238	**-5.98E-03**	**(3.03E-03)**	**U4**	PCI/SA	R	1.56E-02	5.14E-02	**B**	83%	
Calc	SR	FILTER	**H4C8V1AC**	U-234	**1.06E+00**	**(1.18E-01)**		PCI/SA	R	1.53E-02	4.83E-02	**S**	91%	107%
Calc	SR	FILTER	**H4C8V1AC**	U-235	**2.36E-02**	**(1.34E-02)**		PCI/SA	R	9.65E-03	3.71E-02	**S**	91%	52%
Calc	SR	FILTER	**H4C8V1AC**	U-238	**8.38E-01**	**(9.88E-02)**		PCI/SA	R	6.82E-03	3.14E-02	**S**	91%	81%

PAnderson
6-1-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:64
RADCALC v4.8.18
STL Richland

Batch Nbr: 6118461

Alpha Spec, UIso by ALP , Calculated Results
Detailed Report

6/1/2006 3:05:36 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	SR	FILTER	*STLE	AlpIsoWoBS	H39LT1AG	PCI/SA		04/14/06 09:15	05/29/06 11:33			1	1.00 SA	
536403,000423					,J6D270397-1 v4.8.18		FILTER					UITC15581 Alq		0.061909 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 09:53	U-232	792	3	ALP8	ED	Y	N	3.9047E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0166			Y		(1.171E-02)						(0.000E+00)	16.152758		
1	05/29/06 09:53	U-234	1	0	ALP8	ED	N	N	3.9047E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0166			Y		(1.171E-02)			5%			(0.000E+00)	16.152758		
2	05/29/06 09:53	U-235	2	0	ALP8	ED	N	N	3.9047E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0166			Y		(1.171E-02)			5%			(0.000E+00)	16.152758		
3	05/29/06 09:53	U-238	1	0	ALP8	ED	N	N	3.9047E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0166			Y		(1.171E-02)			5%			(0.000E+00)	16.152758		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**73.691172**		3.95469E+00	10.127965	10.127965	1.00 SA	101%				
				(5.447535)		(1.4064E-01)	(0.471221)	(0.471221)	(0.028284)					
	05/30/06	U-234	R	**0.093115**	**U4**	4.99709E-03	0.012798	0.012798	1.00 SA	101%		0.252342		
				(0.093411)		(4.9971E-03)	(0.012817)	(0.012817)	(0.028284)					
	05/30/06	U-235	R	**0.18623**	**U4**	9.99417E-03	0.025595	0.025595	1.00 SA	101%		0.252342		
				(0.13252)		(7.0669E-03)	(0.018154)	(0.018154)	(0.028284)					
	05/30/06	U-238	R	**0.093115**	**U4**	4.99709E-03	0.012798	0.012798	1.00 SA	101%		0.252342		
				(0.093411)		(4.9971E-03)	(0.012817)	(0.012817)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	SR	FILTER	*STLE	AlpIsoWoBS	H39L21AG	PCI/SA		04/14/06 09:20	05/29/06 11:33			1	1.00 SA	
536403,000424					,J6D270397-2 v4.8.18		FILTER					UITC15582 Alq		0.062339 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 09:53	U-232	619	33	ALP69	ED	Y	N	3.7411E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	2500.0333			Y		(1.122E-02)						(0.000E+00)	16.041241		
1	05/29/06 09:53	U-234	2	7	ALP69	ED	N	N	3.7411E-01		N	82%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	2500.0333			Y		(1.122E-02)			4%			(0.000E+00)	16.041241		
2	05/29/06 09:53	U-235	0	6	ALP69	ED	N	N	3.7411E-01		N	82%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	2500.0333			Y		(1.122E-02)			4%			(0.000E+00)	16.041241		
3	05/29/06 09:53	U-238	2	2	ALP69	ED	N	N	3.7411E-01		N	82%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	2500.0333			Y		(1.122E-02)			4%			(0.000E+00)	16.041241		

RecCnt:2 RADCALC v4.8.18
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118461

Alpha Spec, UIso by ALP , Calculated Results

6/1/2006 3:05:36 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**59.488584**		3.08000E+00	8.232829	8.232829	1.00 SA	82%				
				(4.542195)		(1.2435E-01)	(0.414099)	(0.414099)	(0.028284)					
	05/30/06	U-234	R	**0.170239**	U4	7.19421E-03	0.02356	0.02356	1.00 SA	82%		0.732038		
				(0.169668)		(7.1457E-03)	(0.023442)	(0.023442)	(0.028284)			0.205916		
	05/30/06	U-235	R	**-0.056791**	U4	-2.39997E-03	-0.00786	-0.00786	1.00 SA	82%		0.701507		
				(0.023648)		(9.7978E-04)	(0.003241)	(0.003241)	(0.028284)			0.190641		
	05/30/06	U-238	R	**0.217564**	U4	9.19418E-03	0.030109	0.030109	1.00 SA	82%		0.540453		
				(0.168709)		(7.0895E-03)	(0.023284)	(0.023284)	(0.028284)			0.110067		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39L31AG**	**PCI/SA**		04/14/06 09:40	05/29/06 11:33			1	1.00 SA	
536403,000425					,J6D270397-3 v4.8.18		FILTER					UITC15583 Alq		0.062412 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 09:53	U-232	616	18	ALP83	ED	Y	N	3.4771E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	2500.0166			Y		(1.043E-02)						(0.000E+00)	16.022605		
1	05/29/06 09:53	U-234	2	2	ALP83	ED	N	N	3.4771E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	2500.0166			Y		(1.043E-02)			4%			(0.000E+00)	16.022605		
2	05/29/06 09:53	U-235	0	3	ALP83	ED	N	N	3.4771E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	2500.0166			Y		(1.043E-02)			4%			(0.000E+00)	16.022605		
3	05/29/06 09:53	U-238	0	3	ALP83	ED	N	N	3.4771E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	2500.0166			Y		(1.043E-02)			4%			(0.000E+00)	16.022605		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**63.734787**		3.07049E+00	8.830734	8.830734	1.00 SA	88%				
				(4.866978)		(1.2402E-01)	(0.444293)	(0.444293)	(0.028284)					
	05/30/06	U-234	R	**0.217436**	U4	9.19251E-03	0.030127	0.030127	1.00 SA	88%		0.540161		
				(0.168612)		(7.0884E-03)	(0.023298)	(0.023298)	(0.028284)			0.110013		
	05/30/06	U-235	R	**-0.028384**	U4	-1.19999E-03	-0.003933	-0.003933	1.00 SA	88%		0.589582		
				(0.016552)		(6.9282E-04)	(0.002282)	(0.002282)	(0.028284)			0.134738		
	05/30/06	U-238	R	**-0.028384**	U4	-1.19999E-03	-0.003933	-0.003933	1.00 SA	88%		0.589582		
				(0.016552)		(6.9282E-04)	(0.002282)	(0.002282)	(0.028284)			0.134738		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39L41AG**	**PCI/SA**		04/14/06 10:00	05/29/06 11:33			1	1.00 SA	
536403,000426					,J6D270397-4 v4.8.18		FILTER					UITC15584 Alq		0.062698 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 09:53	U-232	736	9	ALP84	ED	Y	N	3.4843E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	2500.1666			Y		(1.045E-02)						(0.000E+00)	15.949556		

RecCnt:4 RADCALC v4.8.18
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118461 Alpha Spec, UIso by ALP , Calculated Results 6/1/2006 3:05:36 PM

1	05/29/06 09:53	U-234	0	1	ALP84	ED	N	N	3.4843E-01	N	105%	N		1.0000E+00	4.5045E-01	1.0000E+00
			200.1	2500.1666			Y		(1.045E-02)		5%			(0.000E+00)	15.949556	
2	05/29/06 09:53	U-235	1	2	ALP84	ED	N	N	3.4843E-01	N	105%	N		1.0000E+00	4.5045E-01	1.0000E+00
			200.1	2500.1666			Y		(1.045E-02)		5%			(0.000E+00)	15.949556	
3	05/29/06 09:53	U-238	1	0	ALP84	ED	N	N	3.4843E-01	N	105%	N		1.0000E+00	4.5045E-01	1.0000E+00
			200.1	2500.1666			Y		(1.045E-02)		5%			(0.000E+00)	15.949556	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**75.76743**		3.67456E+00	10.545991	10.545991	1.00 SA	105%				
				(5.650374)		(1.3558E-01)	(0.501513)	(0.501513)	(0.028284)					
	05/30/06	U-234	R	**-0.008247**	**U4**	-3.99973E-04	-0.001148	-0.001148	1.00 SA	105%		0.414811		
				(0.008274)		(3.9997E-04)	(0.00115)	(0.00115)	(0.028284)			0.067819		
	05/30/06	U-235	R	**0.086551**	**U4**	4.19755E-03	0.012047	0.012047	1.00 SA	105%		0.47096		
				(0.103937)		(5.0294E-03)	(0.01445)	(0.01445)	(0.028284)			0.09591		
	05/30/06	U-238	R	**0.103046**	**U4**	4.99750E-03	0.014343	0.014343	1.00 SA	105%		0.279254		
				(0.103378)		(4.9975E-03)	(0.014365)	(0.014365)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39L61AG**	**PCI/SA**		04/14/06 10:15	05/29/06 11:33			1	1.00 SA	
536403,000427					,J6D270397-5 v4.8.18		FILTER					UITC15585 Alq		0.062243 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 09:53	U-232	462	76	ALP85	ED	Y	N	2.5840E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	2500.1			Y		(7.752E-03)						(0.000E+00)	16.065946		
1	05/29/06 09:53	U-234	2	2	ALP85	ED	N	N	2.5840E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	2500.1			Y		(7.752E-03)			5%			(0.000E+00)	16.065946		
2	05/29/06 09:53	U-235	0	3	ALP85	ED	N	N	2.5840E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	2500.1			Y		(7.752E-03)			5%			(0.000E+00)	16.065946		
3	05/29/06 09:53	U-238	0	3	ALP85	ED	N	N	2.5840E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	2500.1			Y		(7.752E-03)			5%			(0.000E+00)	16.065946		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**63.806674**		2.27825E+00	8.816845	8.816845	1.00 SA	87%				
				(5.114491)		(1.0746E-01)	(0.492876)	(0.492876)	(0.028284)					
	05/30/06	U-234	R	**0.294811**	**U4**	9.19420E-03	0.040737	0.040737	1.00 SA	87%		0.732335		
				(0.228721)		(7.0895E-03)	(0.031518)	(0.031518)	(0.028284)			0.149144		
	05/30/06	U-235	R	**-0.038476**	**U4**	-1.19995E-03	-0.005317	-0.005317	1.00 SA	87%		0.799334		
				(0.022457)		(6.9279E-04)	(0.003088)	(0.003088)	(0.028284)			0.182663		
	05/30/06	U-238	R	**-0.038476**	**U4**	-1.19995E-03	-0.005317	-0.005317	1.00 SA	87%		0.799334		
				(0.022457)		(6.9279E-04)	(0.003088)	(0.003088)	(0.028284)			0.182663		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
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RecCnt:6 RADCALC v4.8.18
STL Richland

Batch Nbr: 6118461 Alpha Spec, UIso by ALP , Calculated Results 6/1/2006 3:05:37 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39L71AG**	**PCI/SA**		04/14/06 10:35	05/29/06 07:59			1	1.00 SA	
536403,000428					,J6D270397-6 v4.8.18		FILTER					UITC15586 Alq		0.062064 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 06:19	U-232	651	3	ALP8	ED	Y	N	3.9047E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.0166			Y		(1.171E-02)						(0.000E+00)	16.112481		
1	05/29/06 06:19	U-234	0	0	ALP8	ED	N	N	3.9047E-01		N	83%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.0166			Y		(1.171E-02)			4%			(0.000E+00)	16.112481		
2	05/29/06 06:19	U-235	0	0	ALP8	ED	N	N	3.9047E-01		N	83%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.0166			Y		(1.171E-02)			4%			(0.000E+00)	16.112481		
3	05/29/06 06:19	U-238	0	0	ALP8	ED	N	N	3.9047E-01		N	83%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.0166			Y		(1.171E-02)			4%			(0.000E+00)	16.112481		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**60.446216**		3.25200E+00	8.328372	8.328372	1.00 SA	83%				
				(4.579262)		(1.2759E-01)	(0.411325)	(0.411325)	(0.028284)					
	05/30/06	U-234	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	83%		0.30485		
				(0.137773)		(0.0000E+00)	(0.018983)	(0.018983)	(0.028284)					
	05/30/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	83%		0.30485		
				(0.137773)		(0.0000E+00)	(0.018983)	(0.018983)	(0.028284)					
	05/30/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	83%		0.30485		
				(0.137773)		(0.0000E+00)	(0.018983)	(0.018983)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39L81AG**	**PCI/SA**		04/14/06 10:05	05/29/06 07:59			1	1.00 Sa	
536403,000429					,J6D270397-7 v4.8.18		FILTER					UITC15587 Alq		0.062723 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 06:19	U-232	701	33	ALP69	ED	Y	N	3.7411E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	2500.0333			Y		(1.122E-02)						(0.000E+00)	15.943052		
1	05/29/06 06:19	U-234	2	7	ALP69	ED	N	N	3.7411E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	2500.0333			Y		(1.122E-02)			4%			(0.000E+00)	15.943052		
2	05/29/06 06:19	U-235	1	6	ALP69	ED	N	N	3.7411E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	2500.0333			Y		(1.122E-02)			4%			(0.000E+00)	15.943052		
3	05/29/06 06:19	U-238	0	1	ALP69	ED	N	N	3.7411E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	2500.0333			Y		(1.122E-02)			4%			(0.000E+00)	15.943052		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:7 RADCALC v4.8.18 STL Richland

Batch Nbr: 6118461 Alpha Spec, Uiso by ALP , Calculated Results 6/1/2006 3:05:37 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**66.995939**		3.49005E+00	9.3289	9.3289	1.00 Sa	93%				
				(5.030399)		(1.3234E-01)	(0.451058)	(0.451058)	(0.028284)					
	05/30/06	U-234	R	**0.149045**	U4	7.19504E-03	0.020754	0.020754	1.00 Sa	93%		0.640867		
				(0.148525)		(7.1463E-03)	(0.020647)	(0.020647)	(0.028284)			0.180267		
	05/30/06	U-235	R	**0.053808**	U4	2.59753E-03	0.007492	0.007492	1.00 Sa	93%		0.614138		
				(0.105583)		(5.0926E-03)	(0.014696)	(0.014696)	(0.028284)			0.166895		
	05/30/06	U-238	R	**-0.008286**	U4	-3.99995E-04	-0.001154	-0.001154	1.00 Sa	93%		0.416735		
				(0.008313)		(3.9999E-04)	(0.001156)	(0.001156)	(0.028284)			0.068135		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39MC1AG**	**PCI/SA**		04/14/06 09:05	05/29/06 07:59			1	1.00 SA	
536403,P-0591					,J6D270397-8 v4.8.18		FILTER					UITC15588 Alq		0.062473 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 06:19	U-232	646	18	ALP83	ED	Y	N	3.4771E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.0166			Y		(1.043E-02)						(0.000E+00)	16.007041		
1	05/29/06 06:19	U-234	0	2	ALP83	ED	N	N	3.4771E-01		N	92%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.0166			Y		(1.043E-02)			5%			(0.000E+00)	16.007041		
2	05/29/06 06:19	U-235	1	3	ALP83	ED	N	N	3.4771E-01		N	92%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.0166			Y		(1.043E-02)			5%			(0.000E+00)	16.007041		
3	05/29/06 06:19	U-238	0	3	ALP83	ED	N	N	3.4771E-01		N	92%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.0166			Y		(1.043E-02)			5%			(0.000E+00)	16.007041		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**66.825717**		3.22253E+00	9.267999	9.267999	1.00 SA	92%				
				(5.069597)		(1.2708E-01)	(0.459228)	(0.459228)	(0.028284)					
	05/30/06	U-234	R	**-0.017998**	U4	-7.99995E-04	-0.002496	-0.002496	1.00 SA	92%		0.51405		
				(0.012811)		(5.6568E-04)	(0.001771)	(0.001771)	(0.028284)			0.104674		
	05/30/06	U-235	R	**0.085484**	U4	3.79959E-03	0.011856	0.011856	1.00 SA	92%		0.561072		
				(0.113771)		(5.0474E-03)	(0.015764)	(0.015764)	(0.028284)			0.128199		
	05/30/06	U-238	R	**-0.026998**	U4	-1.19999E-03	-0.003744	-0.003744	1.00 SA	92%		0.561072		
				(0.015742)		(6.9282E-04)	(0.002173)	(0.002173)	(0.028284)			0.128199		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39MD1AG**	**PCI/SA**		04/14/06 09:25	05/29/06 07:59			1	1.00 SA	
536403,P-0592					,J6D270397-9 v4.8.18		FILTER					UITC15589 Alq		0.062339 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 06:19	U-232	703	15	ALP84	ED	Y	N	3.4843E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	2500.1666			Y		(1.045E-02)						(0.000E+00)	16.041269		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh.mm, 24hr Time

RecCnt:9 RADCALC v4.8.18 STL Richland

Batch Nbr: 6118461 Alpha Spec, UIso by ALP , Calculated Results 6/1/2006 3:05:37 PM

1	05/29/06 06:19	U-234	0	1	ALP84	ED	N	N	3.4843E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1333333	2500.1666			Y		(1.045E-02)		5%		(0.000E+00)	16.041269	
2	05/29/06 06:19	U-235	0	2	ALP84	ED	N	N	3.4843E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1333333	2500.1666			Y		(1.045E-02)		5%		(0.000E+00)	16.041269	
3	05/29/06 06:19	U-238	0	0	ALP84	ED	N	N	3.4843E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1333333	2500.1666			Y		(1.045E-02)		5%		(0.000E+00)	16.041269	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**72.721142**		3.50666E+00	10.06411	10.06411	1.00 SA	100%				
				(5.455318)		(1.3249E-01)	(0.485539)	(0.485539)	(0.028284)					
	05/30/06	U-234	R	**-0.008329**	**U4**	-3.99973E-04	-0.001153	-0.001153	1.00 SA	100%		0.418881		
				(0.008356)		(3.9997E-04)	(0.001155)	(0.001155)	(0.028284)			0.068488		
	05/30/06	U-235	R	**-0.016659**	**U4**	-7.99947E-04	-0.002305	-0.002305	1.00 SA	100%		0.475585		
				(0.011856)		(5.6565E-04)	(0.001635)	(0.001635)	(0.028284)			0.096857		
	05/30/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	100%		0.281986		
				(0.12744)		(0.0000E+00)	(0.017637)	(0.017637)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39MF1AG**	**PCI/SA**		04/14/06 09:35	05/29/06 07:59			1	1.00 SA	
536403,P-0593					,J6D270397-10 v4.8.18		FILTER					UITC15590 Alq		0.062181 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 06:19	U-232	441	76	ALP85	ED	Y	N	2.5840E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.1			Y		(7.752E-03)						(0.000E+00)	16.082157		
1	05/29/06 06:19	U-234	0	2	ALP85	ED	N	N	2.5840E-01		N	84%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.1			Y		(7.752E-03)			5%			(0.000E+00)	16.082157		
2	05/29/06 06:19	U-235	0	4	ALP85	ED	N	N	2.5840E-01		N	84%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.1			Y		(7.752E-03)			5%			(0.000E+00)	16.082157		
3	05/29/06 06:19	U-238	0	3	ALP85	ED	N	N	2.5840E-01		N	84%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.1			Y		(7.752E-03)			5%			(0.000E+00)	16.082157		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**60.949678**		2.17405E+00	8.413574	8.413574	1.00 SA	84%				
				(4.926756)		(1.0503E-01)	(0.478466)	(0.478466)	(0.028284)					
	05/30/06	U-234	R	**-0.026824**	**U4**	-7.99968E-04	-0.003703	-0.003703	1.00 SA	84%		0.766028		
				(0.019108)		(5.6566E-04)	(0.002629)	(0.002629)	(0.028284)			0.15599		
	05/30/06	U-235	R	**-0.053648**	**U4**	-1.59994E-03	-0.007406	-0.007406	1.00 SA	84%		0.895178		
				(0.02722)		(7.9997E-04)	(0.003733)	(0.003733)	(0.028284)			0.220603		
	05/30/06	U-238	R	**-0.040236**	**U4**	-1.19995E-03	-0.005554	-0.005554	1.00 SA	84%		0.836102		
				(0.023488)		(6.9279E-04)	(0.003227)	(0.003227)	(0.028284)			0.191048		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:11 RADCALC v4.8.18 STL Richland

Batch Nbr: 6118461

Alpha Spec, Uiso by ALP , Calculated Results

6/1/2006 3:05:37 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39MH1AG**	**PCI/SA**		04/14/06 09:55	05/29/06 07:59			1	1.00 SA	
536403,P-0594					,J6D270397-11 v4.8.18		FILTER					UITC15591 Alq		0.062237 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 06:19	U-232	620	6	ALP87	ED	Y	N	3.4106E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.1166			Y		(1.023E-02)						(0.000E+00)	16.067695		
1	05/29/06 06:19	U-234	1	2	ALP87	ED	N	N	3.4106E-01		N	90%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.1166			Y		(1.023E-02)			5%			(0.000E+00)	16.067695		
2	05/29/06 06:19	U-235	0	0	ALP87	ED	N	N	3.4106E-01		N	90%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.1166			Y		(1.023E-02)			5%			(0.000E+00)	16.067695		
3	05/29/06 06:19	U-238	0	0	ALP87	ED	N	N	3.4106E-01		N	90%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.1166			Y		(1.023E-02)			5%			(0.000E+00)	16.067695		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**65.630132**		3.09271E+00	9.067824	9.067824	1.00 SA	90%				
				(5.006764)		(1.2447E-01)	(0.455183)	(0.455183)	(0.028284)					
	05/30/06	U-234	R	**0.070785**	**U4**	2.99815E-03	0.00978	0.00978	1.00 SA	90%		0.666853		
				(0.122768)		(5.1941E-03)	(0.016953)	(0.016953)	(0.028284)			0.173641		
	05/30/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	90%		0.319776		
				(0.144518)		(0.0000E+00)	(0.019967)	(0.019967)	(0.028284)					
	05/30/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	90%		0.319776		
				(0.144518)		(0.0000E+00)	(0.019967)	(0.019967)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39MJ1AG**	**PCI/SA**		04/14/06 10:20	05/29/06 15:07			1	1.00 SA	
536403,P-0595					,J6D270397-12 v4.8.18		FILTER					UITC15592 Alq		0.062401 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 13:27	U-232	674	7	ALP87	ED	Y	N	3.4106E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1166			Y		(1.023E-02)						(0.000E+00)	16.025356		
1	05/29/06 13:27	U-234	1	2	ALP87	ED	N	N	3.4106E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1166			Y		(1.023E-02)			5%			(0.000E+00)	16.025356		
2	05/29/06 13:27	U-235	0	0	ALP87	ED	N	N	3.4106E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1166			Y		(1.023E-02)			5%			(0.000E+00)	16.025356		
3	05/29/06 13:27	U-238	0	0	ALP87	ED	N	N	3.4106E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1166			Y		(1.023E-02)			5%			(0.000E+00)	16.025356		

RecCnt:12 RADCALC v4.8.18
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118461

Alpha Spec, Uiso by ALP , Calculated Results

6/1/2006 3:05:37 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/01/06	U-232	R	**71.166023**		3.36244E+00	9.858672	9.858672	1.00 SA	98%				
				(5.368429)		(1.2981E-01)	(0.482016)	(0.482016)	(0.028284)					
	06/01/06	U-234	R	**0.064911**	**U4**	2.99940E-03	0.008992	0.008992	1.00 SA	98%		0.611375		
				(0.112557)		(5.1953E-03)	(0.015584)	(0.015584)	(0.028284)			0.159186		
	06/01/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	98%		0.293192		
				(0.132504)		(0.0000E+00)	(0.018356)	(0.018356)	(0.028284)					
	06/01/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	98%		0.293192		
				(0.132504)		(0.0000E+00)	(0.018356)	(0.018356)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39ML1AG**	**PCI/SA**		04/14/06 10:30	05/29/06 15:07			1	1.00 SA	
536403,P-0596					,J6D270397-13 v4.8.18		FILTER					UITC15593 Alq		0.062253 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 13:27	U-232	679	6	ALP87	ED	Y	N	3.4106E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1166			Y		(1.023E-02)						(0.000E+00)	16.063462		
1	05/29/06 13:27	U-234	0	2	ALP87	ED	N	N	3.4106E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1166			Y		(1.023E-02)			5%			(0.000E+00)	16.063462		
2	05/29/06 13:27	U-235	0	0	ALP87	ED	N	N	3.4106E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1166			Y		(1.023E-02)			5%			(0.000E+00)	16.063462		
3	05/29/06 13:27	U-238	1	0	ALP87	ED	N	N	3.4106E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1166			Y		(1.023E-02)			5%			(0.000E+00)	16.063462		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**71.88675**		3.38843E+00	9.934891	9.934891	1.00 SA	98%				
				(5.417083)		(1.3029E-01)	(0.484523)	(0.484523)	(0.028284)					
	05/30/06	U-234	R	**-0.043241**	**U4**	-1.99977E-03	-0.005976	-0.005976	1.00 SA	98%		0.61085		
				(0.030776)		(1.4140E-03)	(0.004239)	(0.004239)	(0.028284)			0.159049		
	05/30/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	98%		0.29294		
				(0.13239)		(0.0000E+00)	(0.018297)	(0.018297)	(0.028284)					
	05/30/06	U-238	R	**0.108096**	**U4**	4.99917E-03	0.014939	0.014939	1.00 SA	98%		0.29294		
				(0.108451)		(4.9992E-03)	(0.014964)	(0.014964)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H39MN1AG**	**PCI/SA**		04/14/06 09:10	05/30/06 07:42			1	1.00 SA	
536403,P-0597					,J6D270397-14 v4.8.18		FILTER					UITC15594 Alq		0.062096 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/30/06 06:02	U-232	726	12	ALP1	ED	Y	N	3.6576E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.1			Y		(1.097E-02)						(0.000E+00)	16.104073		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:14 RADCALC v4.8.18

STL Richland

Batch Nbr: 6118461 Alpha Spec, Uiso by ALP , Calculated Results 6/1/2006 3:05:37 PM

1	05/30/06 06:02	U-234	3	2	ALP1	ED	N	N	3.6576E-01	N	98%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0166666	1000.1			Y		(1.097E-02)		5%		(0.000E+00)	16.104073	
2	05/30/06 06:02	U-235	0	3	ALP1	ED	N	N	3.6576E-01	N	98%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0166666	1000.1			Y		(1.097E-02)		5%		(0.000E+00)	16.104073	
3	05/30/06 06:02	U-238	1	2	ALP1	ED	N	N	3.6576E-01	N	98%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0166666	1000.1			Y		(1.097E-02)		5%		(0.000E+00)	16.104073	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**71.748565**		3.61770E+00	9.890788	9.890788	1.00 SA	98%				
				(5.363165)		(1.3476E-01)	(0.473053)	(0.473053)	(0.028284)					
	05/30/06	U-234	R	**0.263001**	**U4**	1.29990E-02	0.036256	0.036256	1.00 SA	98%		0.571611		
				(0.178784)		(8.7742E-03)	(0.024558)	(0.024558)	(0.028284)			0.14883		
	05/30/06	U-235	R	**-0.060691**	**U4**	-2.99970E-03	-0.008367	-0.008367	1.00 SA	98%		0.638469		
				(0.03538)		(1.7319E-03)	(0.004853)	(0.004853)	(0.028284)			0.182279		
	05/30/06	U-238	R	**0.060693**	**U4**	2.99978E-03	0.008367	0.008367	1.00 SA	98%		0.571611		
				(0.105236)		(5.1957E-03)	(0.014499)	(0.014499)	(0.028284)			0.14883		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H4C8V1AA**	**PCI/SA**	**B**	04/14/06 09:15	05/30/06 07:42			1	1.00 SA	
0,INTRA-LAB BLANK					,J6D280000-461		FILTER					UITC15595 Alq		1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/30/06 06:02	U-232	612	14	ALP2	ED	Y	N	3.6206E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.1			Y		(1.086E-02)						(0.000E+00)	1.00		
1	05/30/06 06:02	U-234	2	3	ALP2	ED	N	N	3.6206E-01		N	83%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.1			Y		(1.086E-02)			4%			(0.000E+00)	1.00		
2	05/30/06 06:02	U-235	0	0	ALP2	ED	N	N	3.6206E-01		N	83%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.1			Y		(1.086E-02)			4%			(0.000E+00)	1.00		
3	05/30/06 06:02	U-238	0	4	ALP2	ED	N	N	3.6206E-01		N	83%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.1			Y		(1.086E-02)			4%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**3.789661**		3.04600E+00	8.413056	8.413056	1.00 SA	83%				
				(0.277204)		(1.2375E-01)	(0.424884)	(0.424884)	(0.017321)					
	05/30/06	U-234	R	**0.010472**	**U4**	7.00030E-03	0.023248	0.023248	1.00 SA	83%		0.047209		
				(0.010922)		(7.2801E-03)	(0.024215)	(0.024215)	(0.017321)			0.013478		
	05/30/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	83%		0.02027		
				(0.009161)		(0.0000E+00)	(0.020337)	(0.020337)	(0.017321)					
	05/30/06	U-238	R	**-0.005983**	**U4**	-3.99960E-03	-0.013283	-0.013283	1.00 SA	83%		0.051377		
				(0.003029)		(1.9998E-03)	(0.006687)	(0.006687)	(0.017321)			0.015563		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16 RADCALC v4.8.18 STL Richland

Batch Nbr: 6118461

Alpha Spec, Uiso by ALP , Calculated Results

6/1/2006 3:05:37 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H4C8V1AC**	**PCI/SA**	**S**	04/14/06 09:15	05/30/06 07:42		UISF0453	1	1.00 SA	
0,INTRA-LAB CHECK					,J6D280000-461		FILTER					UISF0453 Alq		1.00 sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/30/06 06:02	U-232	694	11	ALP3	ED	Y	N	3.7651E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0833			Y		(1.130E-02)						(0.000E+00)	1.00		
1	05/30/06 06:02	U-234	163	5	ALP3	ED	N	N	3.7651E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0833			Y		(1.130E-02)			4%			(0.000E+00)	1.00		
2	05/30/06 06:02	U-235	4	2	ALP3	ED	N	N	3.7651E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0833			Y		(1.130E-02)			4%			(0.000E+00)	1.00		
3	05/30/06 06:02	U-238	128	1	ALP3	ED	N	N	3.7651E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0833			Y		(1.130E-02)			4%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	U-232	R	**4.137294**		3.45813E+00	9.184803	9.184803	1.00 sa	91%				
				(0.296936)		(1.3173E-01)	(0.445347)	(0.445347)	(0.017321)					
	05/30/06	U-234	R	**1.06227**		8.09797E-01	2.358242	2.358242	1.00 sa	91%	107%	0.048264		
				(0.117666)		(6.3859E-02)	(0.229486)	(0.229486)	(0.017321)			0.015256		
	05/30/06	U-235	R	**0.023606**		1.79952E-02	0.052404	0.052404	1.00 sa	91%	52%	0.037056		
				(0.013372)		(1.0097E-02)	(0.029555)	(0.029555)	(0.017321)			0.009649		
	05/30/06	U-238	R	**0.838014**		6.38840E-01	1.860392	1.860392	1.00 sa	91%	81%	0.031407		
				(0.098767)		(5.6563E-02)	(0.195921)	(0.195921)	(0.017321)			0.006823		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16

RADCALC v4.8.18
STL Richland

STL RICHLAND

SEVERN TRENT **STL**

URANIUM ISOTOPIC COUNTING REQUEST 13+

C.R. Technician CS

Date Counted 5/29/06

Counting Time
Sample 200 Minutes
Background **See Alpha Regions Report**

BRC 4/14

SOP's
Operating: RICHRD008
Review: RICHRD0016
6118461

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H39LT1AG	See Counting Room Printout for ROI information				8	
H39L21AG	See Counting Room Printout for ROI information				209	
H39L31AG	See Counting Room Printout for ROI information				83	
H39L41AG	See Counting Room Printout for ROI information				84	
H39L61AG	See Counting Room Printout for ROI information				85	
	See Counting Room Printout for ROI information				~~8~~ 5/25/06	
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					

Comments:

Form No: RC-011, 7/02, Rev 8

Approved by: S

Date: 5/29/06

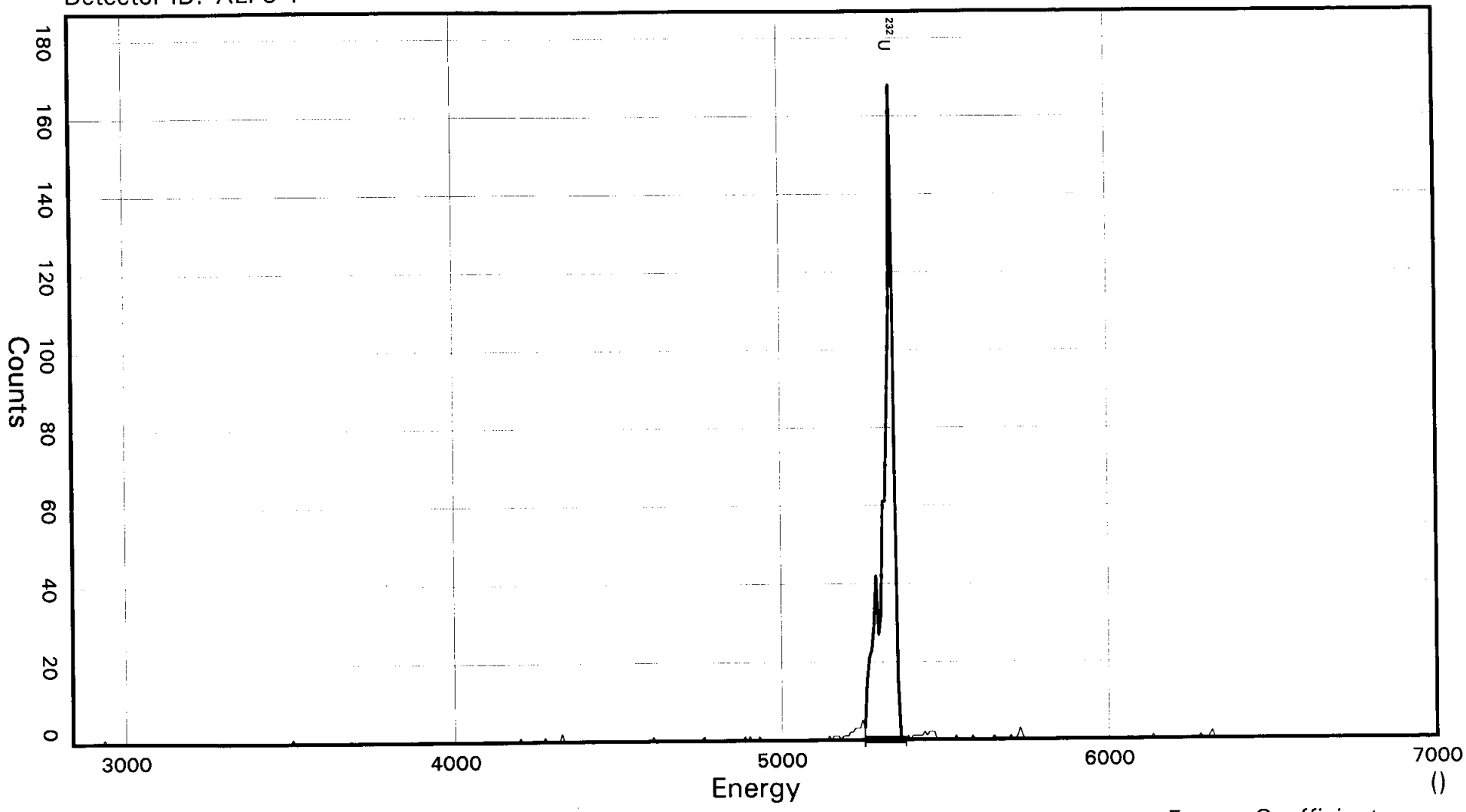
STL Richland WA.

U BRC

Sample ID: H39LT1AG

Detector ID: ALP8 1

Batch ID: 6118461



Acquisition Start: 29-MAY-2006 09:53:34.43

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:07.00

Energy Coefficients:

Offset: 2.81666E+03

Slope: 7.41956E+00

Quadrature: -1.74278E-04

SAMPLE IDENTIITY: H39LT1AG

TITLE : U BRC

DETECTOR : ALP8 1
CONFIGURATION NAME : $DISK1:[ALP8.SAMPLE]H39LT1AG_290560953.CNF;1

ACQUIRE DATE of BACKGROUND: 02-MAY-2006 07:21:51

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 09:53:34 CALIB DATE : 01-MAY-2006 22:43:02

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:07

OFFSET : 2816.66 keV CONSTANT FWHM : 8.83333 Channels
SLOPE : 7.41956 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.174278E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39LT1AG

Detector: ALP8 1
Report Date: 29-May-06 01:14 PM
Acquire Date: 29-MAY-2006 09:53:34.43
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	792	3	0	3.955	5334.0	124.1	331	348	0.00	0.00	P
U-234	1	0	0	0.005	4788.4	124.6	256	273	0.00	0.00	
U-235	2	0	0	0.010	4411.6	124.9	205	222	0.00	0.00	
U-238	1	0	0	0.005	4211.8	125.0	178	195	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39LT1AG
Detector: ALP8 1
Report Date: 29-May-06 01:14 PM
Acquire Date: 29-MAY-2006 09:53:34.43

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0		251	0		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	0		302	1		352	0		402	1		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	0		304	1		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	2	+	205	0		255	0		305	1		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	2		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	1		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	2		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	2		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	2		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	1	+	264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0	+	215	0	+	265	0		315	0		365	0		415	0		465			
1		16	0		66	0		116	0		166	0	+	216	0	+	266	1		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0	+	217	0	+	267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0	+	218	0	+	268	1		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0	+	219	0	+	269	1		319	1		369	0		419	0		469			
0		20	0		70	0		120	0		170	0	+	220	0	+	270	1		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0	+	221	0	+	271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0	+	222	0	+	272	1		322	0		372	0		422	1		472			
0		23	0		73	0		123	0		173	0		223	0	+	273	1		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	0		274	1		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	0		275	2		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	0		276	2		326	1		376	0		426	1		476			
0		27	0		77	0		127	0		177	0		227	0		277	3		327	0		377	0		427	2		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	3		328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	3		329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	5		330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	1		281	3	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	15	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	1		283	21	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	23	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	29	+	335	1		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	42	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	1	+	187	0		237	1		287	27	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	32	+	338	0		388	0		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	61	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	61	+	340	0		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	85	+	341	0		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0		242	0		292	110	+	342	1		392	0		442	0		492			
0		43	1		93	0		143	0	+	193	1		243	0		293	168	+	343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	82	+	344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	15	+	345	1		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	0		296	1	+	346	3		396	0		446	0		496			
0		47	0		97	0		147	0		197	0		247	0		297	0	+	347	1		397	0		447	0		497			
0		48	0		98	0		148	1		198	0		248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	1		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 13:13:57

Configuration	: $DISK1:[ALP8.SAMPLE]H39LT1AG_290560953.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: U BRC		
Sample date	: 14-APR-2006 12:00:00	Acquisition date	: 29-MAY-2006 09:53:34
Sample ID	: H39LT1AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP8	Detector geometry	:
Elapsed live time	: 0 03:20:07.00	Elapsed real time	: 0 03:20:07.00 0.0%
Start energy	: 2838.91	End energy	: 6569.78
Sensitivity	: 4.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5334.01	792	0	37.10	342.03	331	17	6.60E-02	3.6	

VMS Nuclide Identification Report V3.0 Generated 29-MAY-2006 13:13:59

```
Configuration     : $DISK1:[ALP8.SAMPLE]H39LT1AG_290560953.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 09:53:34
Sample ID         : H39LT1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP8                 Detector geometry:
Elapsed live time: 0 03:20:07.00         Elapsed real time: 0 03:20:07.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			
Grand Total Activity :			0.000E+00	0.000E+00			

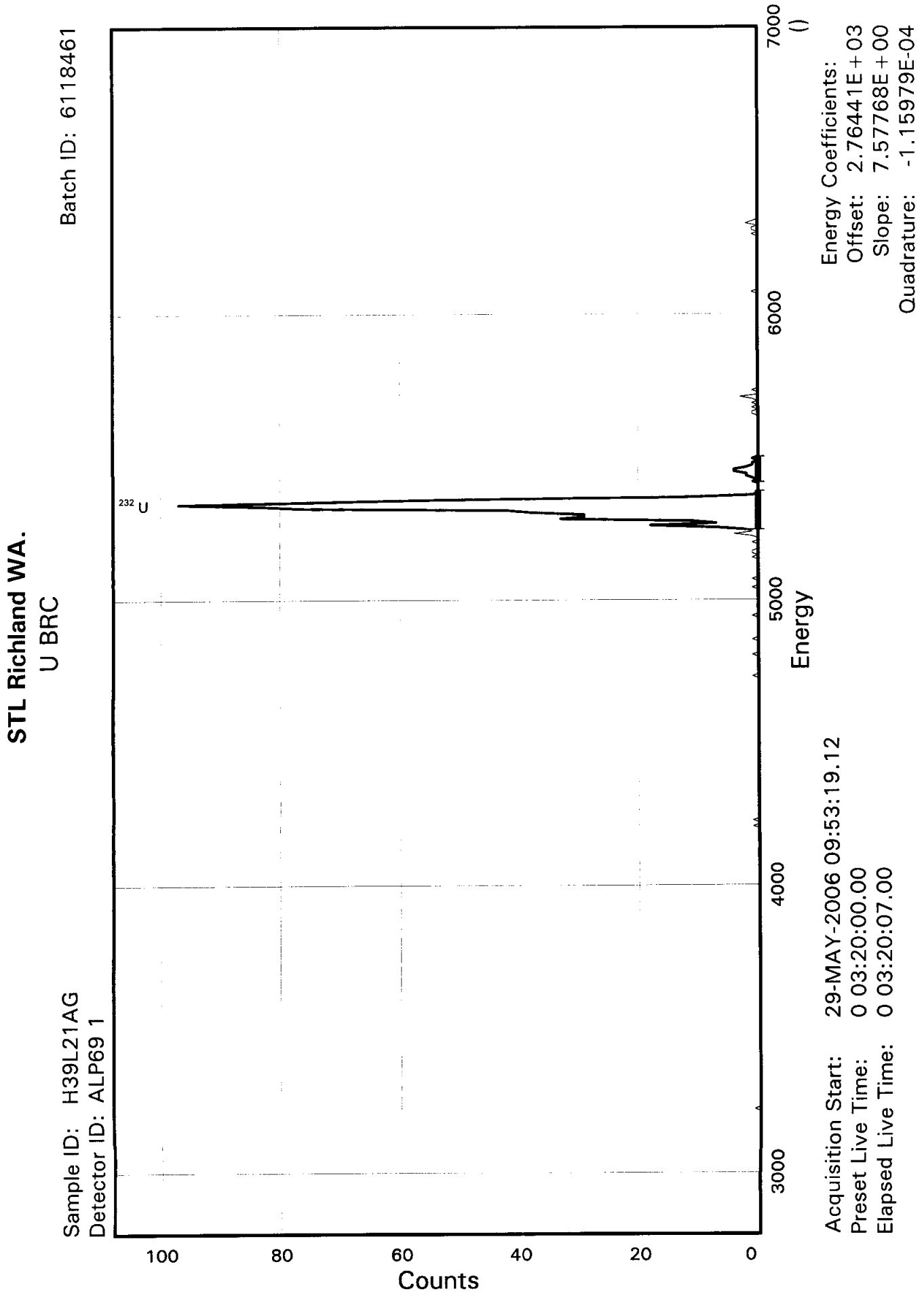
Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP8.SAMPLE]H39LT1AG_290560953.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5334.00	331	348	792	775	0.60		

End of Report


STL Richland WA.
U BRC
Batch ID: 6118461
Sample ID: H39L21AG
Detector ID: ALP69 1
232 U
Counts
100
80
60
40
20
0
Energy
3000
4000
5000
6000
7000
()
Acquisition Start: 29-MAY-2006 09:53:19.12
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:07.00
Energy Coefficients:
Offset: 2.76441E+03
Slope: 7.57768E+00
Quadrature: -1.15979E-04

SAMPLE IDENTITY: H39L21AG

TITLE : U BRC

DETECTOR : ALP69 1
CONFIGURATION NAME : RDND06$DKA100:[ALP69.SAMPLE]H39L21AG_2905609
53.CNF;1
ACQUIRE DATE of BACKGROUND: 24-MAY-2006 08:56:13

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 09:53:19 CALIB DATE : 22-MAY-2006 02:26:07

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:07

OFFSET : 2764.41 keV CONSTANT FWHM : 7.50000 Channels
SLOPE : 7.57768 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.115979E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L21AG

Detector: ALP69 1
Report Date: 29-May-06 01:13 PM
Acquire Date: 29-MAY-2006 09:53:19.12
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	619	33	0	3.080	5331.2	135.0	329	347	0.00	0.00	P
U-234	2	7	0	0.007	4785.6	135.3	256	274	0.00	0.00	
U-235	0	6	0	-0.002	4408.8	135.5	206	224	0.00	0.00	
U-238	2	2	0	0.009	4209.0	135.6	180	198	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L21AG
Detector: ALP69 1
Report Date: 29-May-06 01:13 PM
Acquire Date: 29-MAY-2006 09:53:19.12

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0		251	0		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	1		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	0		304	2		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	0		255	0		305	2		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	1		306	4		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	4		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	2		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	1		359	0		409	0		459	0		509
0		10	1		60	0		110	0		160	0	+	210	0	+	260	0		310	1		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	1	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	1		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0	+	215	0	+	265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0	+	216	0	+	266	1		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0	+	217	0	+	267	0		317	0		367	0		417	1		467			
0		18	0		68	0		118	0		168	0	+	218	0	+	268	1		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0	+	219	0	+	269	1		319	0		369	0		419	1		469			
0		20	0		70	0		120	0		170	0	+	220	0	+	270	0		320	0		370	0		420	1		470			
0		21	0		71	0		121	0		171	0	+	221	1	+	271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0	+	222	0	+	272	0		322	0		372	0		422	2		472			
0		23	0		73	0		123	0		173	0	+	223	0	+	273	1		323	0		373	0		423	1		473			
0		24	0		74	0		124	0		174	0	+	224	0	+	274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	0		275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	0		276	1		326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	0		277	4		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	1		278	1		328	0		378	0		428	0		478			
0		29	0		79	0		129	0		179	0		229	0		279	2	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	7	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	18	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	7	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	11	+	333	1		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	33	+	334	1		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	29	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	29	+	336	1		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	38	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	42	+	338	1		388	0		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	1		289	76	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	83	+	340	1		390	1		440	0		490			
0		41	0		91	0		141	1	+	191	0		241	0		291	97	+	341	3		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0		242	0		292	74	+	342	0		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	53	+	343	0		393	0		443	0		493			
0		44	0		94	0		144	1	+	194	0		244	0		294	13	+	344	1		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	1	+	345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	0	+	346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0		247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0		248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 13:13:44

Configuration	: RDND06$DKA100:[ALP69.SAMPLE]H39L21AG_290560953.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: U BRC		
Sample date	: 14-APR-2006 12:00:00	Acquisition date	: 29-MAY-2006 09:53:19
Sample ID	: H39L21AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP69	Detector geometry	:
Elapsed live time	: 0 03:20:07.00	Elapsed real time	: 0 03:20:07.00 0.0%
Start energy	: 2787.14	End energy	: 6613.78
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5331.20	619	0	45.47	340.50	329	18	5.16E-02	4.0	
2	0	5448.44	19	0	37.89	356.14	351	12	1.58E-03	22.9	

VMS Nuclide Identification Report V3.1 Generated 29-MAY-2006 13:13:46

```
Configuration     : RDND06$DKA100:[ALP69.SAMPLE]H39L21AG_290560953.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 09:53:19
Sample ID         : H39L21AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP69                Detector geometry:
Elapsed live time: 0 03:20:07.00         Elapsed real time: 0 03:20:07.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP69.SAMPLE]H39L21AG_290560953.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5331.20	329	347	619	613	0.24		
5448.43	351	363	19	19	0.00		

End of Report

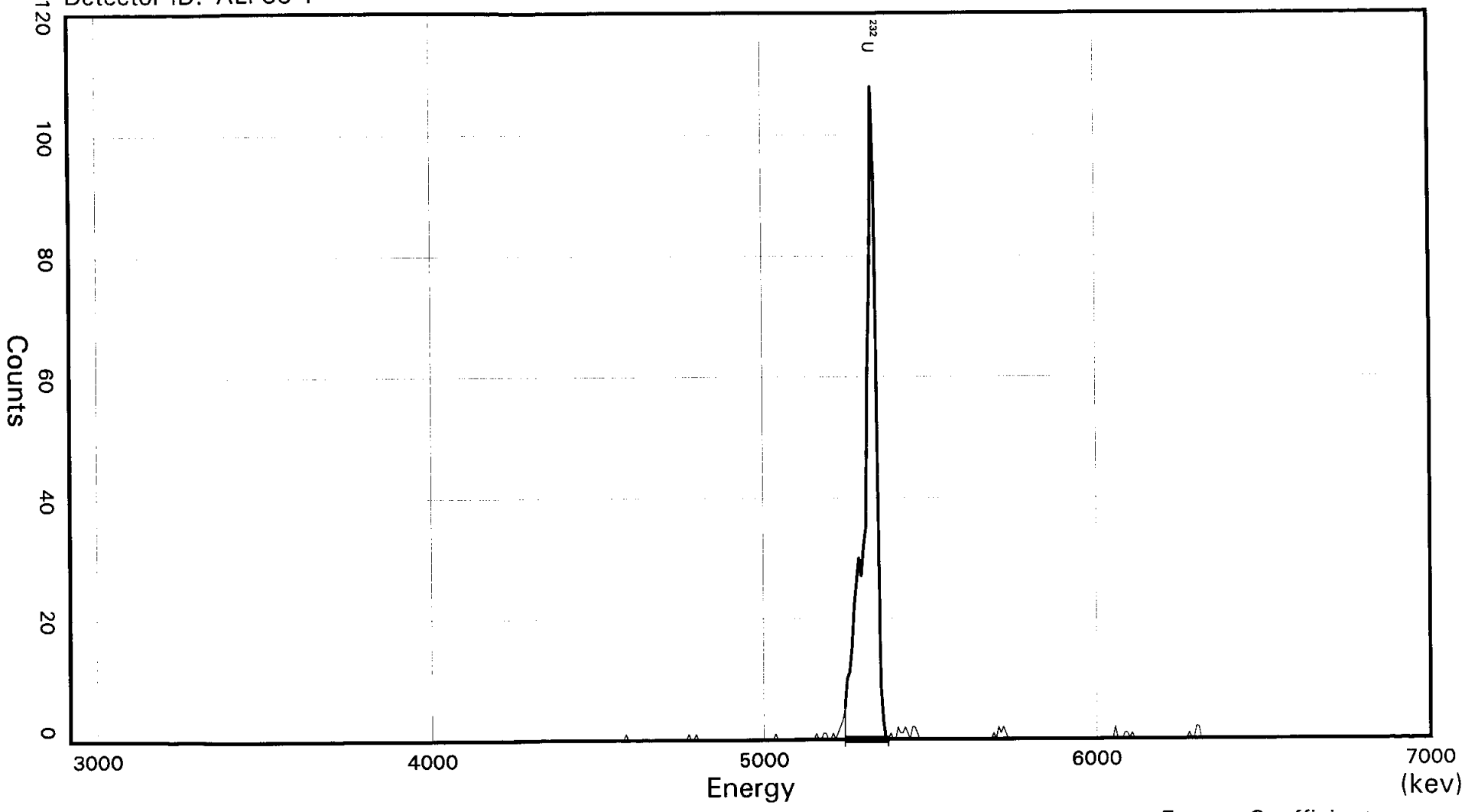
STL Richland WA.

U BRC

Sample ID: H39L31AG

Detector ID: ALP83 1

Batch ID: 6118461



Acquisition Start: 29-MAY-2006 09:53:23.88

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:09.00

Energy Coefficients:

Offset: 2.89751E+03

Slope: 7.31909E+00

Quadrature: -1.70511E-04

SAMPLE IDENTIITY: H39L31AG

TITLE : U BRC

DETECTOR : ALP83 1
CONFIGURATION NAME : RDND06$DKA100:[ALP83.SAMPLE]H39L31AG_290560953.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:39:32

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 09:53:23 CALIB DATE : 15-MAY-2006 02:17:24

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:09

OFFSET : 2897.51 keV CONSTANT FWHM : 8.75000 Channels
SLOPE : 7.31909 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.170511E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L31AG

Detector: ALP83 1
Report Date: 29-May-06 01:13 PM
Acquire Date: 29-MAY-2006 09:53:23.88
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	616	18	0	3.070	5327.2	129.7	323	341	0.00	0.00	P
U-234	2	2	0	0.009	4781.7	130.2	247	265	0.00	0.00	
U-235	0	3	0	-0.001	4404.9	130.5	195	213	0.00	0.00	
U-238	0	3	0	-0.001	4205.1	130.7	168	186	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L31AG
Detector: ALP83 1
Report Date: 29-May-06 01:13 PM
Acquire Date: 29-MAY-2006 09:53:23.88

Flags Key

Intersect Region: @
Non-Intersect Region: +, ·

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	2		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	2		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	1	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	1	+	261	1		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0	+	264	1		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0	+	265	1		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	0		266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	0		267	0		317	0		367	0		417	1		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	1		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	1		320	0		370	0		420	2		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	2		321	0		371	0		421	2		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	3		322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	5	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	10	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	11	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	15	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	22	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	26	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	30	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	27	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	32	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	1		232	0		282	35	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	62	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	77	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	108	+	335	1		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	92	+	336	0		386	2		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	46	+	337	2		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	9	+	338	1		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	3	+	339	2		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	0	+	340	1		390	1		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	0		341	0		391	1		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	1		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	0		343	0		393	1		443	0		493			
0		44	0		94	0		144	0		194	0		244	1		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	2		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	1		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	1		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	2		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	1		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 13:13:41

```
Configuration     : RDND06$DKA100:[ALP83.SAMPLE]H39L31AG_290560953.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 09:53:23
Sample ID         : H39L31AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP83                Detector geometry:
Elapsed live time: 0 03:20:09.00         Elapsed real time: 0 03:20:09.00   0.0%
Start energy      :  2919.46 kev         End energy       :  6600.19 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5327.24	616	0	43.91	334.58	323	18	5.13E-02	4.0	

VMS Nuclide Identification Report V3.1 Generated 29-MAY-2006 13:13:42

Configuration	: RDND06$DKA100:[ALP83.SAMPLE]H39L31AG_290560953.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.4		
Sample title	: U BRC		
Sample date	: 14-APR-2006 12:00:00	Acquisition date	: 29-MAY-2006 09:53:23
Sample ID	: H39L31AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP83	Detector geometry	:
Elapsed live time	: 0 03:20:09.00	Elapsed real time	: 0 03:20:09.00 0.0%
Energy tolerance	: 80.00 kev	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 70.00		

Summary of Nuclide Activity

Total number of lines in spectrum	1	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	1	100.00%

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			
Grand Total Activity :			0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP83.SAMPLE]H39L31AG_290560953.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5327.24	323	341	616	610	0.24		

End of Report

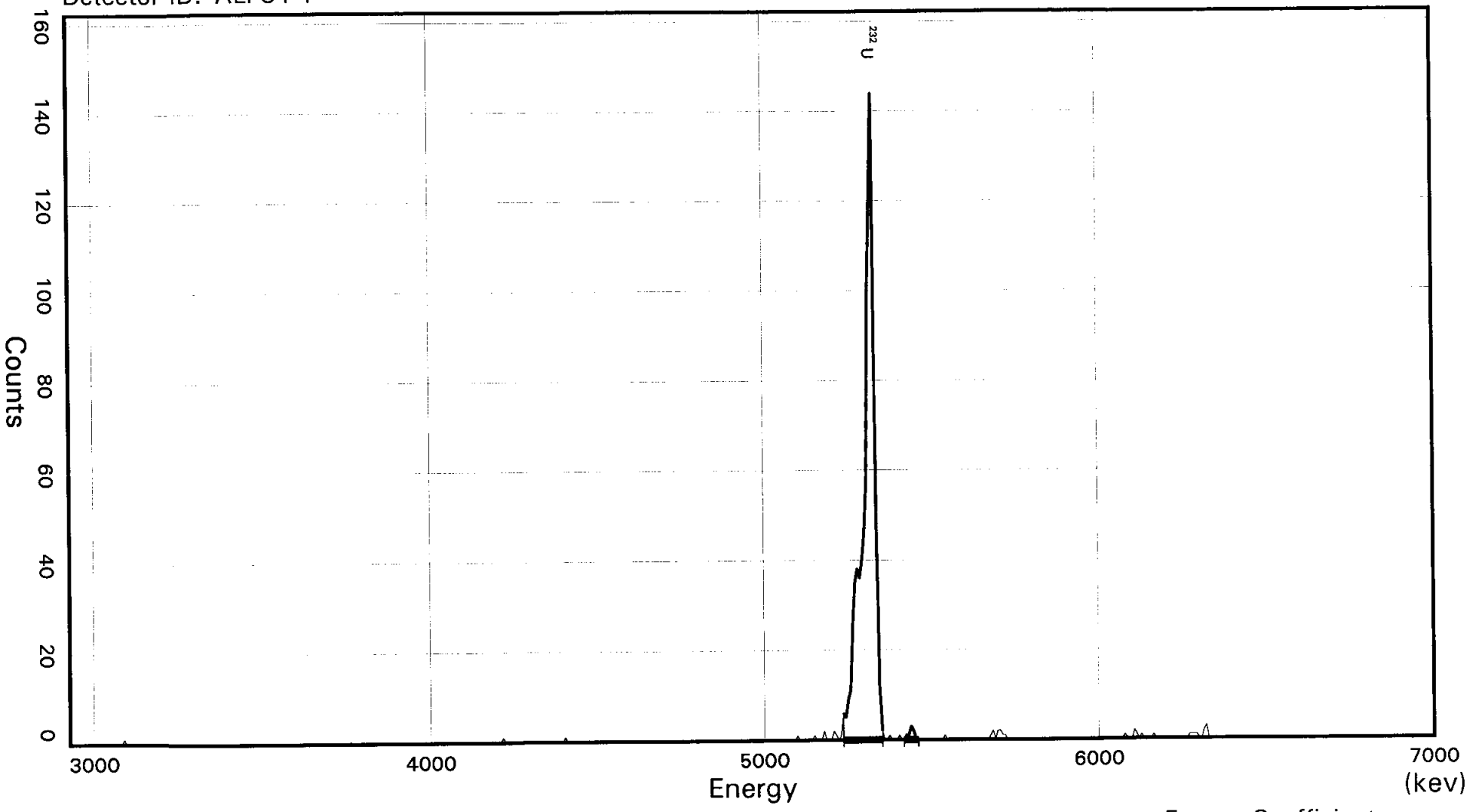
STL Richland WA.

U BRC

Sample ID: H39L41AG

Detector ID: ALP84 1

Batch ID: 6118461



Acquisition Start: 29-MAY-2006 09:53:27.27

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:06.00

Energy Coefficients:

Offset: 2.90703E+03

Slope: 7.29946E+00

Quadrature: -1.39979E-04

SAMPLE IDENTIITY: H39L41AG

TITLE : U BRC

DETECTOR : ALP84 1
CONFIGURATION NAME : RDND06$DKA100:[ALP84.SAMPLE]H39L41AG_2905609
53.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:39:36

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 09:53:27 CALIB DATE : 15-MAY-2006 02:17:42

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:06

OFFSET : 2907.03 keV CONSTANT FWHM : 4.50000 Channels
SLOPE : 7.29946 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.139979E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L41AG

Detector: ALP84 1
Report Date: 29-May-06 01:13 PM
Acquire Date: 29-MAY-2006 09:53:27.27
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	736	9	0	3.675	5325.0	115.3	321	337	0.00	0.00	P
U-234	0	1	0	0.000	4779.5	115.7	245	261	0.00	0.00	
U-235	1	2	0	0.004	4402.7	115.9	193	209	0.00	0.00	
U-238	1	0	0	0.005	4202.9	116.0	166	182	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L41AG
Detector: ALP84 1
Report Date: 29-May-06 01:13 PM
Acquire Date: 29-MAY-2006 09:53:27.27

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	1		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	1	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	1		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0		210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	2		313	1		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0		264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0		265	0		315	0		365	0		415	1		465			
0		16	0		66	0		116	0	+	166	0		216	0		266	0		316	0		366	0		416	1		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	2		317	0		367	0		417	1		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	1		318	0		368	0		418	1		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	1		320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	6	+	321	0		371	0		421	2		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	5	+	322	0		372	0		422	3		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	9	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	11	+	324	0		374	0		424	0		474			
1		25	0		75	0		125	0	+	175	0		225	0		275	25	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	35	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	38	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	36	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	40	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	1	+	180	0		230	0		280	46	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	58	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	99	+	332	1		382	0		432	0		482			
0		33	0		83	0		133	0		183	0		233	0		283	121	+	333	2		383	0		433	0		483			
0		34	0		84	0		134	0		184	0		234	0		284	144	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	50	+	335	2		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	12	+	336	2		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	2		337	1		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	0		338	1		388	1		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	1		340	0		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	0		342	0		392	2		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	0		343	0		393	1		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	1		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0	+	245	0		295	0		345	0		395	1		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	1		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	1		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	3		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	2		350	0		400	1		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 13:13:37

```
Configuration     : RDND06$DKA100:[ALP84.SAMPLE]H39L41AG_290560953.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 09:53:27
Sample ID         : H39L41AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP84                Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   0.0%
Start energy      :  2928.93 kev         End energy       :  6607.66 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5325.03	736	0	29.20	333.39	321	16	6.13E-02	3.7	
2	0	5435.44	7	0	29.20	348.71	346	6	5.83E-04	37.8	

VMS Nuclide Identification Report V3.1 Generated 29-MAY-2006 13:13:39

```
Configuration     : RDND06$DKA100:[ALP84.SAMPLE]H39L41AG_290560953.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 09:53:27
Sample ID         : H39L41AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP84                Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   0.0%
Energy tolerance :    80.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP84.SAMPLE]H39L41AG_290560953.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5325.02	321	337	736	737	-0.04		
5435.43	346	352	7	7	0.00		

End of Report

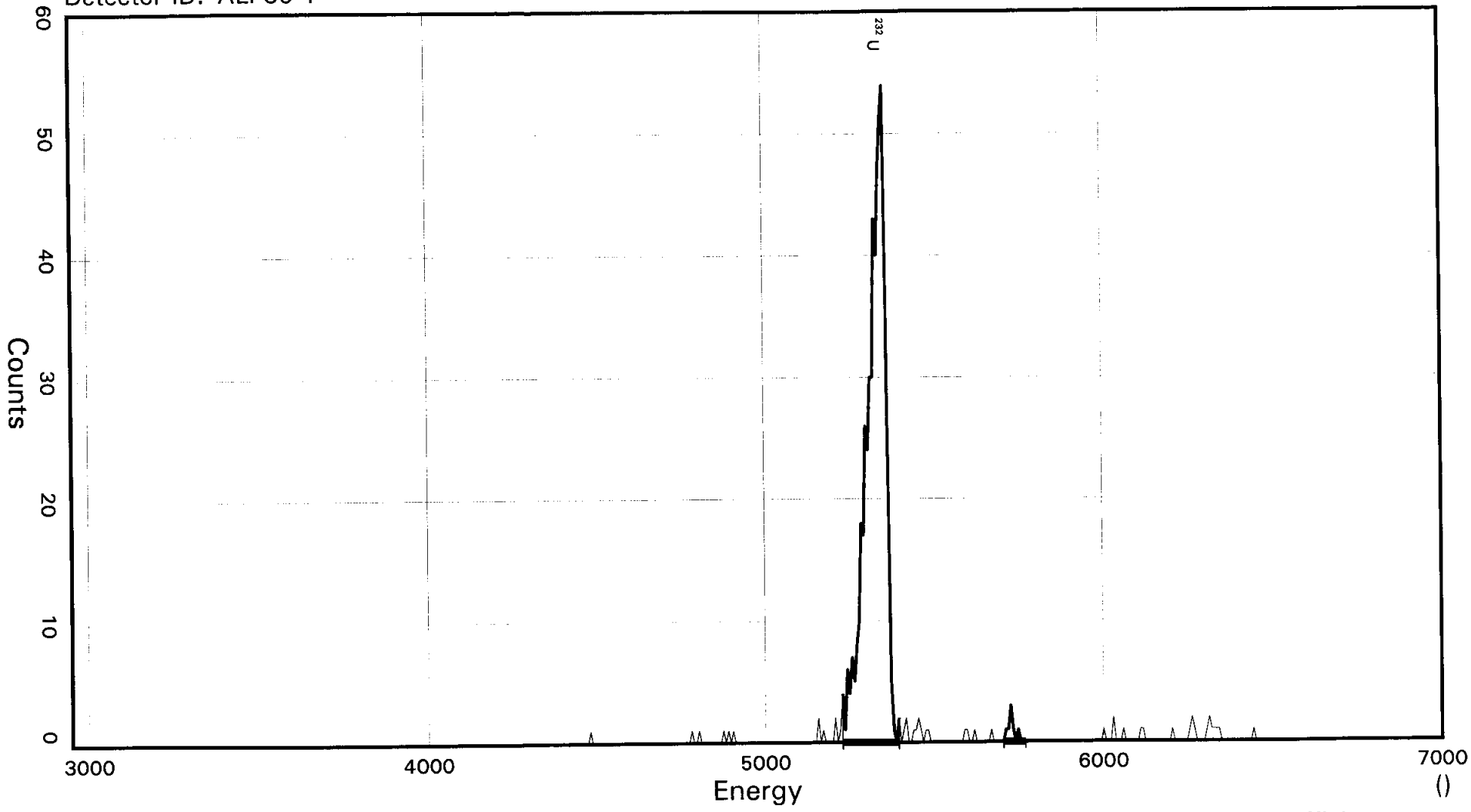
STL Richland WA.

U BRC

Sample ID: H39L61AG

Detector ID: ALP85 1

Batch ID: 6118461



Acquisition Start: 29-MAY-2006 09:53:34.22

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:07.00

Energy Coefficients:

Offset: 2.93106E+03

Slope: 7.02794E+00

Quadrature: 2.59751E-04

SAMPLE IDENTITY: H39L61AG

TITLE : U BRC

DETECTOR : ALP85 1
CONFIGURATION NAME : RDND06$DKA100:[ALP85.SAMPLE]H39L61AG_2905609
53.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:39:39

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 09:53:34 CALIB DATE : 15-MAY-2006 02:17:47

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:07

OFFSET : 2931.06 keV CONSTANT FWHM : 10.33330 Channels
SLOPE : 7.02794 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 2.597510E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L61AG

Detector: ALP85 1
Report Date: 29-May-06 01:13 PM
Acquire Date: 29-MAY-2006 09:53:34.22
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	462	76	0	2.278	5338.0	165.6	323	346	0.00	0.00	P
U-234	2	2	0	0.009	4792.4	164.7	247	270	0.00	0.00	
U-235	0	3	0	-0.001	4415.6	164.1	194	217	0.00	0.00	
U-238	0	3	0	-0.001	4215.8	163.8	166	189	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L61AG
Detector: ALP85 1
Report Date: 29-May-06 01:13 PM
Acquire Date: 29-MAY-2006 09:53:34.22

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	1		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	2		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	1		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	1		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	1		358	0		408	1		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	1	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	2		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	1	+	264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0	+	215	0	+	265	1		315	0		365	0		415	1		465			
0		16	0		66	0		116	0	+	166	0	+	216	0	+	266	0		316	0		366	0		416	2		466			
0		17	0		67	0		117	0	+	167	0	+	217	0	+	267	0		317	0		367	0		417	1		467			
0		18	0		68	0		118	0	+	168	0		218	0	+	268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	1		219	0	+	269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0	+	270	2		320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	1		322	0		372	0		422	1		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	4	+	323	1		373	0		423	2		473			
0		24	0		74	0		124	0	+	174	0		224	1		274	1	+	324	1		374	0		424	1		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	6	+	325	0		375	0		425	1		475			
0		26	0		76	0		126	0	+	176	0		226	1		276	4	+	326	0		376	0		426	1		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	7	+	327	1		377	0		427	1		477			
0		28	0		78	0		128	0	+	178	0		228	1		278	5	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	8	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	10	+	330	0		380	1		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	18	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	17	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	26	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	24	+	334	1		384	2		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	30	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	30	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	43	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	40	+	338	0		388	1		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	47	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	51	+	340	1		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	54	+	341	1		391	0		441	1		491			
0		42	0		92	0		142	0		192	0		242	0		292	28	+	342	3		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	5	+	343	1		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	1	+	344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	0	+	345	1		395	1		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	2		346	0		396	1		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	1		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	2		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 13:13:48

```
Configuration     : RDND06$DKA100:[ALP85.SAMPLE]H39L61AG_290560953.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 09:53:34
Sample ID         : H39L61AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP85                Detector geometry:
Elapsed live time: 0 03:20:07.00         Elapsed real time: 0 03:20:07.00   0.0%
Start energy      :  2952.15             End energy       :  6597.46
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5337.98	462	0	63.25	338.25	323	23	3.85E-02	4.7	
2	0	5729.54	6	0	42.17	392.50	389	9	5.00E-04	40.8	

VMS Nuclide Identification Report V3.1 Generated 29-MAY-2006 13:13:49

```
Configuration     : RDND06$DKA100:[ALP85.SAMPLE]H39L61AG_290560953.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 09:53:34
Sample ID         : H39L61AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP85                Detector geometry:
Elapsed live time: 0 03:20:07.00         Elapsed real time: 0 03:20:07.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP85.SAMPLE]H39L61AG_290560953.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5337.98	323	346	462	461	0.05		
5729.54	389	398	6	7	-0.41		

End of Report

STL RICHLAND

SEVERN TRENT **STL**

URANIUM ISOTOPIC COUNTING REQUEST

0939

C.R. Technician: SB

Date Counted: 7/29/05

Counting Time
Sample: 200 Minutes
Background: See Alpha Regions Report

BRC 8/18

SOP's
Operating: RICHRD008
Review: RICHRD0016

6118461

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H3927AG	See Counting Room Printout for ROI information				8	
173528AG	See Counting Room Printout for ROI information				69	
H39MCIAG	See Counting Room Printout for ROI information				83	
1739MDIAG	See Counting Room Printout for ROI information				84	Chd
1739MFIAG	See Counting Room Printout for ROI information				85	
1739m HIAG	See Counting Room Printout for ROI information				87	
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					

Comments:

Form No: RC-011, 7/02, Rev 8

Approved by: S

Date: 7/29/05

120

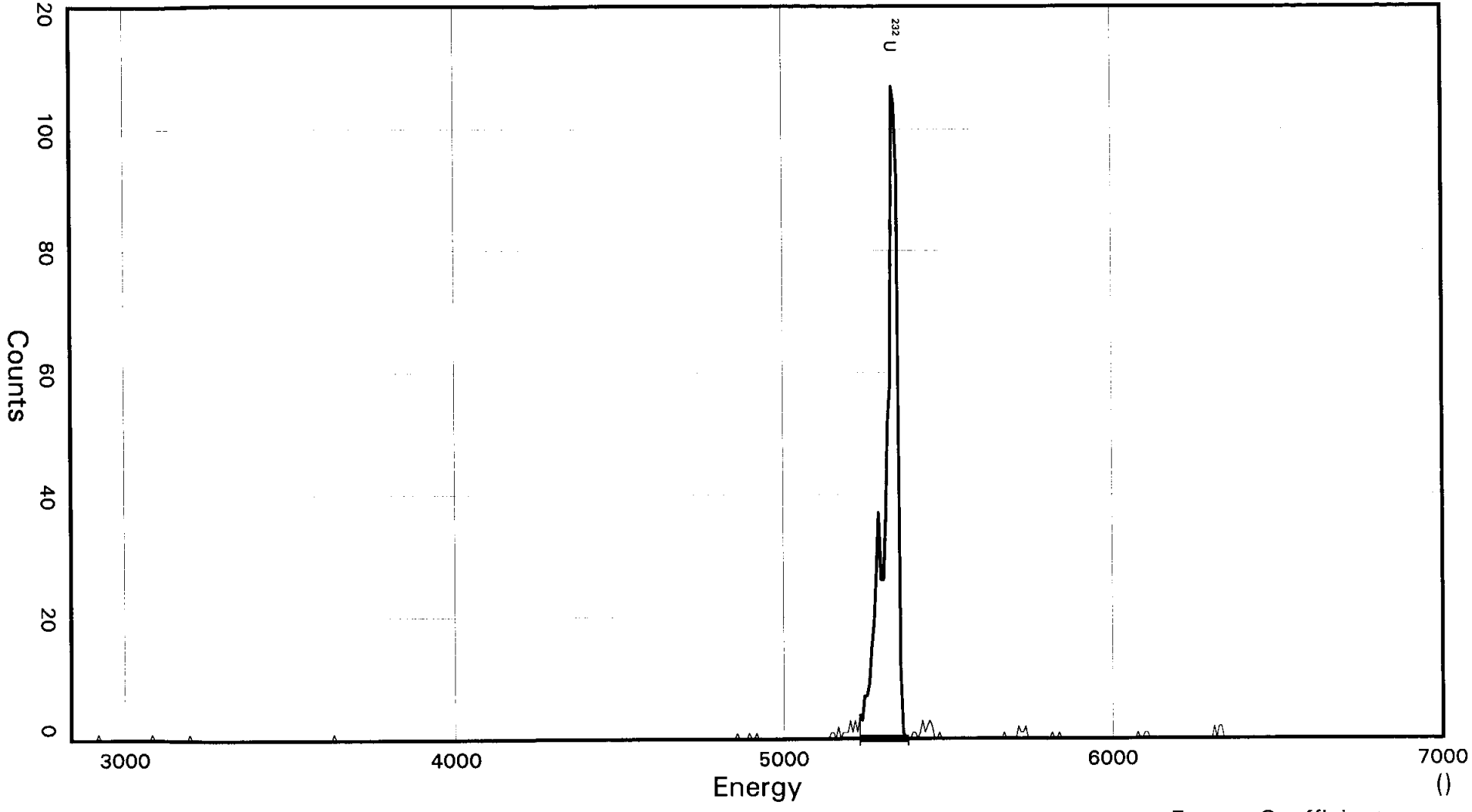
STL Richland WA.

U BRC

Sample ID: H39L71AG

Detector ID: ALP8 1

Batch ID: 6118461



Acquisition Start: 29-MAY-2006 06:19:40.04

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:00.00

Energy Coefficients:

Offset: 2.81666E+03

Slope: 7.41956E+00

Quadrature: -1.74278E-04

SAMPLE IDENTIITY: H39L71AG

TITLE : U BRC

DETECTOR : ALP8 1
CONFIGURATION NAME : $DISK1:[ALP8.SAMPLE]H39L71AG_290560619.CNF;1

ACQUIRE DATE of BACKGROUND: 02-MAY-2006 07:21:51

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 06:19:40 CALIB DATE : 01-MAY-2006 22:43:02

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:00

OFFSET : 2816.66 keV CONSTANT FWHM : 8.83333 Channels
SLOPE : 7.41956 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.174278E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L71AG

Detector: ALP8 1
Report Date: 29-May-06 09:39 AM
Acquire Date: 29-MAY-2006 06:19:40.04
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	651	3	0	3.252	5334.4	146.0	328	348	0.00	0.00	P
U-234	0	0	0	0.000	4788.9	146.6	253	273	0.00	0.00	
U-235	0	0	0	0.000	4412.1	146.9	202	222	0.00	0.00	
U-238	0	0	0	0.000	4212.3	147.1	175	195	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L71AG
Detector: ALP8 1
Report Date: 29-May-06 09:40 AM
Acquire Date: 29-MAY-2006 06:19:40.04

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	1		51	0		101	0		151	0		201	0		251	0		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0		252	0		302	0		352	0		402	0		452	0		502
	0	3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	1		353	0		403	0		453	0		503
	0	4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	3		354	0		404	0		454	0		504
	0	5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	1		355	0		405	0		455	0		505
	0	6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	2		356	0		406	0		456	0		506
	0	7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	3		357	0		407	0		457	0		507
	0	8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	2		358	1		408	0		458	0		508
	0	9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	0		459	0		509
	0	10	0		60	1		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	0		460	0		510
	0	11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	1		361	1		411	0		461	0		511
	0	12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	0		462	0		512
	0	13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
	1	14	0		64	0		114	0		164	0	+	214	0	+	264	0		314	0		364	0		414	0		464			
	0	15	0		65	0		115	0		165	0	+	215	0	+	265	0		315	0		365	0		415	0		465			
	0	16	0		66	0		116	0		166	0	+	216	0	+	266	1		316	0		366	0		416	0		466			
	0	17	0		67	0		117	0		167	0	+	217	0	+	267	1		317	0		367	0		417	0		467			
	0	18	0		68	0		118	0		168	0	+	218	0	+	268	0		318	0		368	0		418	0		468			
	0	19	0		69	0		119	0		169	0	+	219	0	+	269	2		319	0		369	0		419	0		469			
	0	20	0		70	0		120	0		170	0	+	220	0	+	270	0		320	0		370	0		420	0		470			
	0	21	0		71	0		121	0		171	0	+	221	0	+	271	1		321	0		371	0		421	0		471			
	0	22	0		72	0		122	0		172	0	+	222	0	+	272	1		322	0		372	0		422	0		472			
	0	23	0		73	0		123	0		173	0		223	0	+	273	1		323	0		373	0		423	0		473			
	0	24	0		74	0		124	0		174	0		224	0		274	3		324	0		374	0		424	0		474			
	0	25	0		75	0		125	0	+	175	0		225	0		275	1		325	0		375	0		425	0		475			
	0	26	0		76	0		126	0	+	176	0		226	0		276	3		326	0		376	0		426	2		476			
	0	27	0		77	0		127	0	+	177	0		227	1		277	1		327	0		377	0		427	0		477			
	0	28	0		78	0		128	0	+	178	0		228	0		278	4	+	328	0		378	0		428	2		478			
	0	29	0		79	0		129	0	+	179	0		229	0		279	3	+	329	0		379	0		429	2		479			
	0	30	0		80	0		130	0	+	180	0		230	0		280	7	+	330	0		380	0		430	0		480			
	0	31	0		81	0		131	0	+	181	0		231	0		281	7	+	331	0		381	0		431	0		481			
	0	32	0		82	0		132	0	+	182	0		232	1		282	9	+	332	0		382	0		432	0		482			
	0	33	0		83	0		133	0	+	183	0		233	0		283	15	+	333	0		383	0		433	0		483			
	0	34	0		84	0		134	0	+	184	0		234	0		284	19	+	334	0		384	0		434	0		484			
	0	35	0		85	0		135	0	+	185	0		235	1		285	27	+	335	0		385	0		435	0		485			
	1	36	0		86	0		136	0	+	186	0		236	0		286	37	+	336	0		386	0		436	0		486			
	0	37	0		87	0		137	0	+	187	0		237	0		287	26	+	337	0		387	0		437	0		487			
	0	38	0		88	0		138	0	+	188	0		238	0		288	26	+	338	1		388	0		438	0		488			
	0	39	0		89	0		139	0	+	189	0		239	0		289	36	+	339	0		389	0		439	0		489			
	0	40	0		90	0		140	0	+	190	0		240	0		290	52	+	340	0		390	0		440	0		490			
	0	41	0		91	0		141	0	+	191	0		241	0		291	58	+	341	0		391	0		441	0		491			
	0	42	0		92	0		142	0	+	192	0		242	0		292	107	+	342	0		392	0		442	0		492			
	0	43	0		93	0		143	0	+	193	0		243	0		293	104	+	343	0		393	0		443	0		493			
	0	44	0		94	0		144	0	+	194	0		244	0		294	92	+	344	2		394	1		444	0		494			
	0	45	0		95	0		145	0	+	195	0		245	0		295	12	+	345	1		395	0		445	0		495			
	0	46	0		96	0		146	0		196	0		246	0		296	1	+	346	1		396	0		446	0		496			
	0	47	0		97	0		147	0		197	0		247	0		297	0	+	347	2		397	1		447	0		497			
	0	48	0		98	0		148	0		198	0		248	0		298	0		348	0		398	1		448	0		498			
	0	49	0		99	0		149	0		199	0		249	0		299	0		349	0		399	0		449	0		499			
	0	50	0		100	0		150	0		200	0		250	0		300	1		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 09:39:57

Configuration	: $DISK1:[ALP8.SAMPLE]H39L71AG_290560619.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: U BRC		
Sample date	: 14-APR-2006 12:00:00	Acquisition date	: 29-MAY-2006 06:19:40
Sample ID	: H39L71AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP8	Detector geometry	:
Elapsed live time	: 0 03:20:00.00	Elapsed real time	: 0 03:20:00.00 0.0%
Start energy	: 2838.91	End energy	: 6569.78
Sensitivity	: 4.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5334.42	651	0	37.10	342.09	328	20	5.42E-02	3.9	

VMS Nuclide Identification Report V3.0 Generated 29-MAY-2006 09:39:59

```
Configuration     : $DISK1:[ALP8.SAMPLE]H39L71AG_290560619.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:19:40
Sample ID         : H39L71AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP8                 Detector geometry:
Elapsed live time: 0 03:20:00.00         Elapsed real time: 0 03:20:00.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type   : Spline               Efficiencies at  : Peak Energy
Abundance limit   :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP8.SAMPLE]H39L71AG_290560619.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5334.42	328	348	651	642	0.35		

End of Report

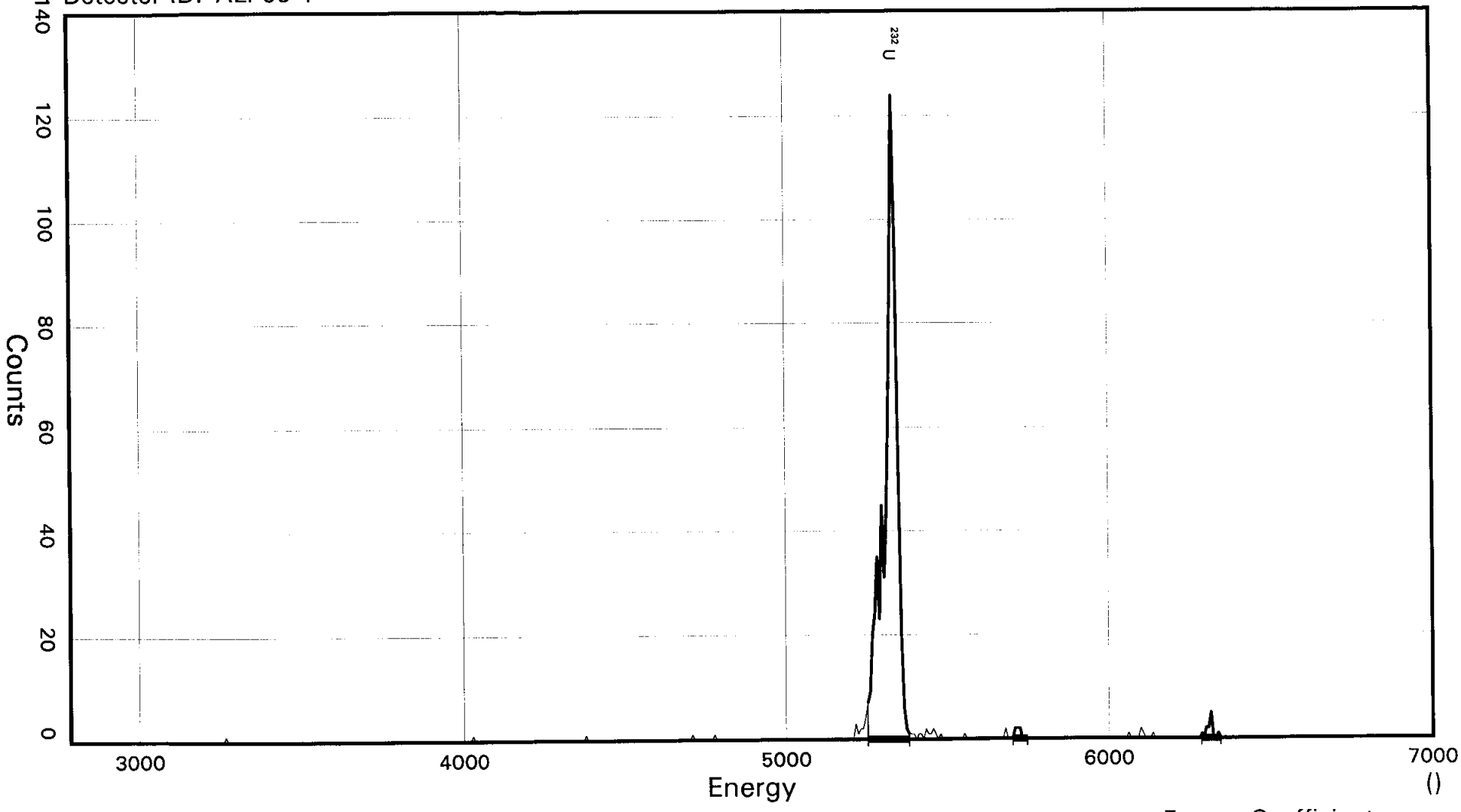
STL Richland WA.

U BRC

Sample ID: H39L81AG

Detector ID: ALP69 1

Batch ID: 6118461



Acquisition Start: 29-MAY-2006 06:19:34.19

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:06.00

Energy Coefficients:

Offset: 2.76441E+03

Slope: 7.57768E+00

Quadrature: -1.15979E-04

SAMPLE IDENTITY: H39L81AG

TITLE : U BRC

DETECTOR : ALP69 1
CONFIGURATION NAME : RDND06$DKA100:[ALP69.SAMPLE]H39L81AG_2905606
19.CNF;1
ACQUIRE DATE of BACKGROUND: 24-MAY-2006 08:56:13

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 06:19:34 CALIB DATE : 22-MAY-2006 02:26:07

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:06

OFFSET : 2764.41 keV CONSTANT FWHM : 7.50000 Channels
SLOPE : 7.57768 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.115979E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L81AG

Detector: ALP69 1
Report Date: 29-May-06 09:39 AM
Acquire Date: 29-MAY-2006 06:19:34.19
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	701	33	0	3.490	5334.5	127.5	330	347	0.00	0.00	P
U-234	2	7	0	0.007	4788.9	127.8	257	274	0.00	0.00	
U-235	1	6	0	0.003	4412.1	128.0	207	224	0.00	0.00	
U-238	0	1	0	0.000	4212.3	128.1	181	198	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L81AG
Detector: ALP69 1
Report Date: 29-May-06 09:39 AM
Acquire Date: 29-MAY-2006 06:19:34.19

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0		251	0		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	0		302	1		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	0		304	2		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	0		255	0		305	1		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	0		256	0		306	1		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	2		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	1	+	258	0		308	1		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	1		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	1	+	214	0	+	264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0	+	215	0	+	265	0		315	0		365	0		415	0		465			
0		16	1		66	0		116	0		166	0	+	216	0	+	266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	1		167	0	+	217	1	+	267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0	+	218	0	+	268	0		318	0		368	0		418	1		468			
0		19	0		69	0		119	0		169	0	+	219	0	+	269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0		170	0	+	220	0	+	270	0		320	1		370	0		420	2		470			
0		21	0		71	0		121	0		171	0	+	221	0	+	271	0		321	0		371	0		421	2		471			
0		22	0		72	0		122	0		172	0	+	222	0	+	272	0		322	0		372	0		422	5		472			
0		23	0		73	0		123	0		173	0	+	223	0	+	273	0		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0	+	224	0	+	274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	0		275	3		325	0		375	0		425	1		475			
0		26	0		76	0		126	0		176	0		226	0		276	1		326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	0		277	2		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	0		278	2		328	0		378	0		428	0		478			
0		29	0		79	0		129	0		179	0		229	0		279	4		329	0		379	0		429	0		479			
0		30	0		80	0		130	0		180	0		230	0		280	7	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	9	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	20	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	24	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	35	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	23	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	45	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	31	+	337	2		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	44	+	338	0		388	1		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	64	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	95	+	340	0		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	124	+	341	2		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0		242	0		292	96	+	342	2		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	54	+	343	2		393	2		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	20	+	344	0		394	1		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	6	+	345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	2	+	346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0		247	0		297	1		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0		248	0		298	1		348	0		398	1		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	1		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 09:39:56

```
Configuration     : RDND06$DKA100:[ALP69.SAMPLE]H39L81AG_290560619.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:19:34
Sample ID         : H39L81AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP69                Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   0.0%
Start energy      :  2787.14             End energy       :  6613.78
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5334.49	701	0	37.89	340.94	330	17	5.84E-02	3.8	
2	0	5717.04	7	0	22.73	392.00	390	6	5.83E-04	37.8	
3	0	6311.09	11	0	30.31	471.44	468	8	9.16E-04	30.2	

VMS Nuclide Identification Report V3.1 Generated 29-MAY-2006 09:39:58

```
Configuration     : RDND06$DKA100:[ALP69.SAMPLE]H39L81AG_290560619.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:19:34
Sample ID         : H39L81AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP69                Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                3
 Number of unidentified lines                     2
 Number of lines tentatively identified by NID    1       33.33%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			
	Grand Total Activity :		0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP69.SAMPLE]H39L81AG_290560619.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5334.49	330	347	701	700	0.04		
5717.04	390	396	7	6	0.38		
6311.09	468	476	11	11	0.00		

End of Report

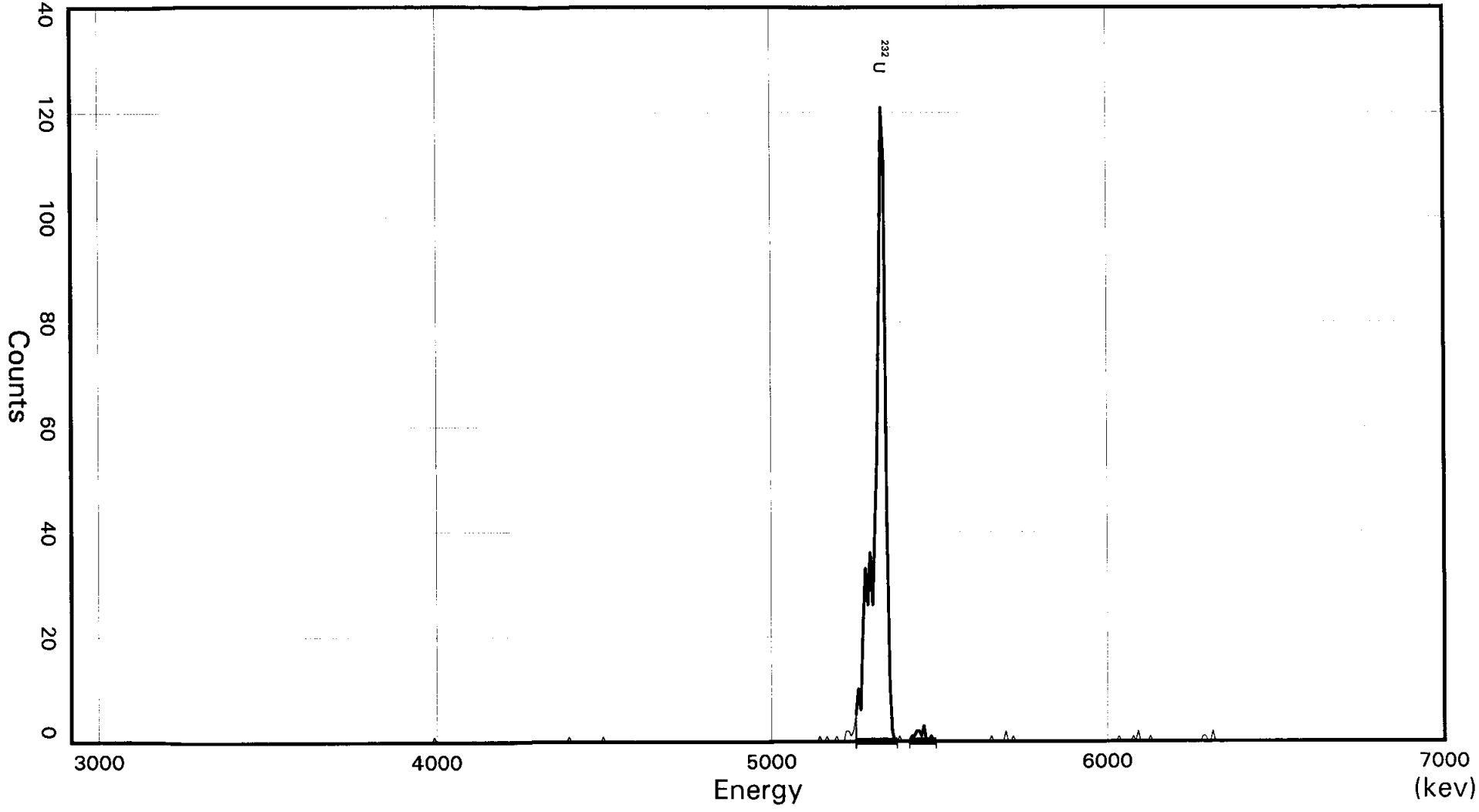
STL Richland WA.

U BRC

Sample ID: H39MC1AG

Detector ID: ALP83 1

Batch ID: 6118461



Acquisition Start: 29-MAY-2006 06:19:28.55

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:01.00

Energy Coefficients:

Offset: 2.89751E+03

Slope: 7.31909E+00

Quadrature: -1.70511E-04

SAMPLE IDENTIITY: H39MC1AG

TITLE : U BRC

DETECTOR : ALP83 1
CONFIGURATION NAME : RDND06$DKA100:[ALP83.SAMPLE]H39MC1AG_2905606
19.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:39:32

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 06:19:28 CALIB DATE : 15-MAY-2006 02:17:24

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:01

OFFSET : 2897.51 keV CONSTANT FWHM : 8.75000 Channels
SLOPE : 7.31909 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.170511E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39MC1AG

Detector: ALP83 1
Report Date: 29-May-06 09:39 AM
Acquire Date: 29-MAY-2006 06:19:28.55
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	646	18	0	3.223	5329.8	122.5	324	341	0.00	0.00	P
U-234	0	2	0	-0.001	4784.2	122.9	248	265	0.00	0.00	
U-235	1	3	0	0.004	4407.4	123.2	196	213	0.00	0.00	
U-238	0	3	0	-0.001	4207.6	123.4	169	186	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39MC1AG
Detector: ALP83 1
Report Date: 29-May-06 09:39 AM
Acquire Date: 29-MAY-2006 06:19:28.55

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	3		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	1		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	1	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	1		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	1		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0	+	264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0	+	265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	0		266	1		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	0		267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	0		268	0		318	0		368	0		418	1		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	0		319	0		369	0		419	1		469			
0		20	0		70	0		120	0	+	170	1		220	0		270	2		320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	2		321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	1		322	0		372	0		422	2		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	2		323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	5	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	10	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	6	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	22	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	33	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	26	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	36	+	330	1		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	26	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	41	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	55	+	333	0		383	1		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	87	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	121	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	111	+	336	2		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	42	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	12	+	338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	2	+	339	1		389	1		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	0	+	340	0		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	0		341	0		391	2		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	1		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	0		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	0		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	0		346	0		396	1		446	0		496			
0		47	0		97	0		147	0	+	197	0		247	0		297	1		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	1		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	2		349	0		399	0		449	0		499			
0		50	0		100	1		150	0	+	200	0	+	250	0		300	2		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 09:39:34

Configuration : RDND06$DKA100:[ALP83.SAMPLE]H39MC1AG_290560619.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:19:28
Sample ID : H39MC1AG Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP83 Detector geometry:
Elapsed live time: 0 03:20:01.00 Elapsed real time: 0 03:20:01.00 0.0%
Start energy : 2919.46 kev End energy : 6600.19 kev
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5329.76	646	0	36.60	334.93	324	17	5.38E-02	3.9	
2	0	5433.80	11	0	36.60	349.38	346	11	9.17E-04	30.2	

VMS Nuclide Identification Report V3.1 Generated 29-MAY-2006 09:39:35

```
Configuration     : RDND06$DKA100:[ALP83.SAMPLE]H39MC1AG_290560619.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:19:28
Sample ID         : H39MC1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP83                Detector geometry:
Elapsed live time: 0 03:20:01.00         Elapsed real time: 0 03:20:01.00   0.0%
Energy tolerance :    80.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                  2
 Number of unidentified lines                       1
 Number of lines tentatively identified by NID      1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP83.SAMPLE]H39MC1AG_290560619.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5329.76	324	341	646	635	0.43		
5433.80	346	357	11	11	0.00		

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39MD1AG

Detector: ALP84 1
Report Date: 29-May-06 09:55 AM
Acquire Date: 29-MAY-2006 06:19:38.62
Tracer Nuclide: U-232
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
U-232	703	15	3.507	5320.2	165.8	315	338
U-234	0	1	0.000	4774.6	144.6	242	262
U-235	0	2	-0.001	4397.8	144.9	190	210
U-238	0	0	0.000	4198.0	145.0	162	182

End of Alpha Region Report
(Produced by ANAL Report)

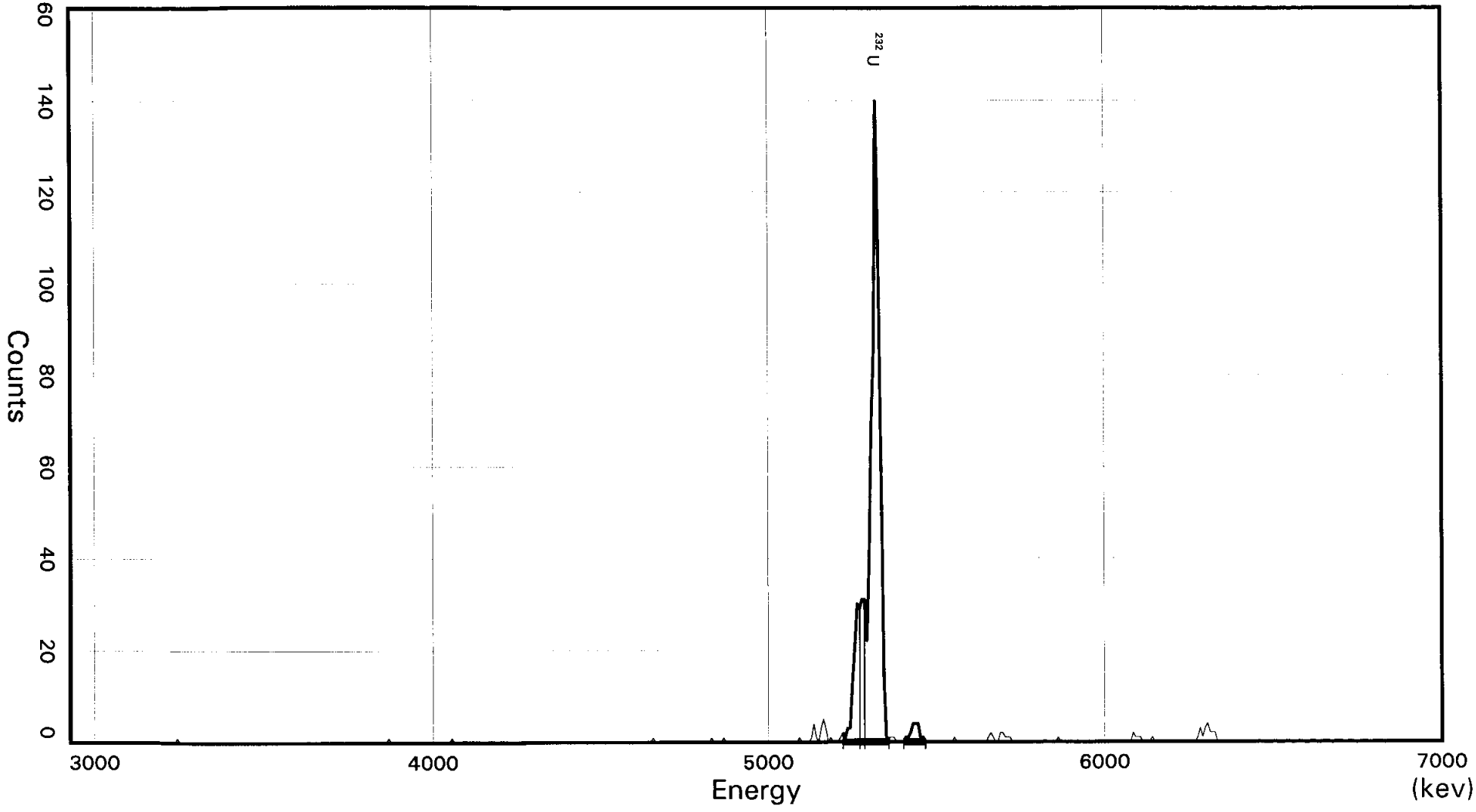
STL Richland WA.

U BRC

Sample ID: H39MD1AG

Detector ID: ALP84 1

Batch ID: 6118461



Acquisition Start: 29-MAY-2006 06:19:38.62

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:08.00

Energy Coefficients:

Offset: 2.90703E+03

Slope: 7.29946E+00

Quadrature: -1.39979E-04

SAMPLE IDENTIITY: H39MD1AG

TITLE : U BRC

DETECTOR : ALP84 1
CONFIGURATION NAME : RDND06$DKA100:[ALP84.SAMPLE]H39MD1AG_2905606
19.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:39:36

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 06:19:38 CALIB DATE : 15-MAY-2006 02:17:42

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:08

OFFSET : 2907.03 keV CONSTANT FWHM : 4.50000 Channels
SLOPE : 7.29946 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.139979E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39MD1AG

Detector: ALP84 1
Report Date: 29-May-06 09:39 AM
Acquire Date: 29-MAY-2006 06:19:38.62
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	536	8	0	2.675	5320.2	86.5	326	338	0.00	0.00	P
U-234	0	0	0	0.000	4774.6	86.7	250	262	0.00	0.00	
U-235	0	2	0	-0.001	4397.8	86.9	198	210	0.00	0.00	
U-238	0	0	0	0.000	4198.0	87.0	171	183	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39MD1AG
Detector: ALP84 1
Report Date: 29-May-06 09:39 AM
Acquire Date: 29-MAY-2006 06:19:38.62

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	1		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	1		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	1		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	4		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	1		158	0	+	208	0	+	258	1		308	0		358	1		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	3		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	0	+	261	5		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	0	+	262	3		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0		264	1		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	1		265	0		315	1		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	0		266	0		316	0		366	0		416	1		466			
0		17	0		67	0		117	0		167	0		217	0		267	0		317	0		367	0		417	3		467			
0		18	0		68	0		118	0		168	0		218	0		268	1		318	0		368	0		418	1		468			
0		19	0		69	0		119	0		169	0		219	0		269	2		319	0		369	0		419	3		469			
0		20	0		70	0		120	0		170	0		220	1		270	1		320	0		370	0		420	4		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	3		321	0		371	0		421	2		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	3		322	0		372	0		422	2		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	13		323	0		373	0		423	2		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	21		324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	30		325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	29	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	31	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	31	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	22	+	329	1		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	39	+	330	2		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	68	+	331	1		381	0		431	0		481			
0		32	0		82	1		132	0	+	182	0		232	0		282	85	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	140	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0		184	0		234	0		284	106	+	334	2		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	63	+	335	2		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	14	+	336	1		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	0	+	337	1		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	1		338	1		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	1		339	0		389	2		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	1		340	0		390	1		440	0		490			
0		41	0		91	0		141	0		191	1		241	0		291	0		341	0		391	1		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	0		342	0		392	1		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	0		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	0		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	0		295	1		345	0		395	0		445	0		495			
1		46	0		96	0		146	0		196	0		246	0		296	1		346	0		396	0		446	0		496			
0		47	0		97	0		147	0		197	0		247	0		297	2		347	0		397	1		447	0		497			
0		48	0		98	0		148	0	+	198	0		248	0		298	4		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0		249	0		299	4		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	4		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 09:39:52

Configuration	: RDND06$DKA100:[ALP84.SAMPLE]H39MD1AG_290560619.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: U BRC		
Sample date	: 14-APR-2006 12:00:00	Acquisition date	: 29-MAY-2006 06:19:38
Sample ID	: H39MD1AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP84	Detector geometry	:
Elapsed live time	: 0 03:20:08.00	Elapsed real time	: 0 03:20:08.00 0.0%
Start energy	: 2928.93 kev	End energy	: 6607.66 kev
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5267.76	167	0	29.20	325.44	319	9	1.39E-02	7.7	
2	0	5320.21	536	0	29.20	332.72	326	12	4.46E-02	4.3	
3	0	5434.72	17	0	29.20	348.62	344	9	1.42E-03	24.3	

VMS Nuclide Identification Report V3.1 Generated 29-MAY-2006 09:39:54

```
Configuration     : RDND06$DKA100:[ALP84.SAMPLE]H39MD1AG_290560619.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:19:38
Sample ID         : H39MD1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP84                Detector geometry:
Elapsed live time: 0 03:20:08.00         Elapsed real time: 0 03:20:08.00   0.0%
Energy tolerance :    80.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                3
 Number of unidentified lines                     2
 Number of lines tentatively identified by NID    1       33.33%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			
Grand Total Activity :			0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP84.SAMPLE]H39MD1AG_290560619.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5267.75	319	328	167	164	0.23		
5320.21	326	338	536	629	-4.02	91	0.04
5434.72	344	353	17	18	-0.24		

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

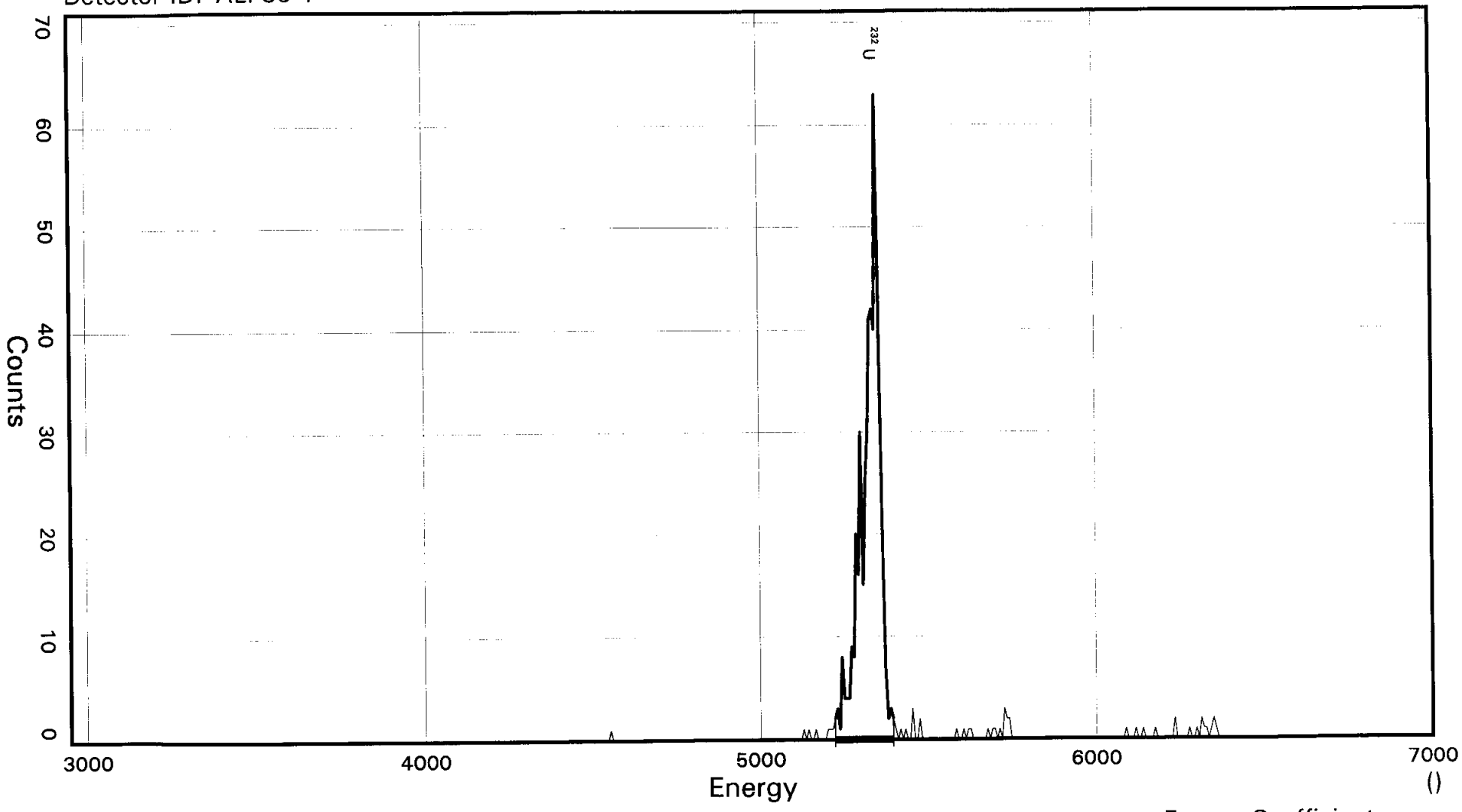
STL Richland WA.

U BRC

Sample ID: H39MF1AG

Detector ID: ALP85 1

Batch ID: 6118461



Acquisition Start: 29-MAY-2006 06:19:43.85

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:

Offset: 2.93106E+03

Slope: 7.02794E+00

Quadrature: 2.59751E-04

SAMPLE IDENTIITY: H39MF1AG

TITLE : U BRC

DETECTOR : ALP85 1
CONFIGURATION NAME : RDND06$DKA100:[ALP85.SAMPLE]H39MF1AG_2905606
19.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:39:39

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 06:19:43 CALIB DATE : 15-MAY-2006 02:17:47

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:03

OFFSET : 2931.06 keV CONSTANT FWHM : 10.33330 Channels
SLOPE : 7.02794 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 2.597510E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39MF1AG

Detector: ALP85 1
Report Date: 29-May-06 09:39 AM
Acquire Date: 29-MAY-2006 06:19:43.85
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	441	76	0	2.174	5340.4	172.8	322	346	0.00	0.00	P
U-234	0	2	0	-0.001	4794.8	171.9	246	270	0.00	0.00	
U-235	0	4	0	-0.002	4418.0	171.2	193	217	0.00	0.00	
U-238	0	3	0	-0.001	4218.2	170.9	165	189	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39MF1AG
Detector: ALP85 1
Report Date: 29-May-06 09:39 AM
Acquire Date: 29-MAY-2006 06:19:43.85

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	3		354	0		404	1		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	2		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	1		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	1		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	2		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	1		314	0		364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0	+	215	0	+	265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0	+	216	0	+	266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0	+	217	0	+	267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0	+	268	0		318	0		368	0		418	1		468			
0		19	0		69	0		119	0	+	169	0		219	0	+	269	1		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0	+	270	1		320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	1		321	0		371	0		421	1		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	2	+	322	1		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	3	+	323	0		373	0		423	2		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	1	+	324	0		374	0		424	1		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	8	+	325	1		375	0		425	1		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	4	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	4	+	327	1		377	0		427	1		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	4	+	328	1		378	0		428	2		478			
0		29	0		79	0		129	0	+	179	1		229	0		279	9	+	329	0		379	0		429	1		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	8	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	20	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	16	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	30	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	15	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	25	+	335	1		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	30	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	41	+	337	1		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	42	+	338	1		388	0		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	40	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	63	+	340	1		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	40	+	341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	21	+	342	3		392	1		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	7	+	343	2		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	2	+	344	2		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	3	+	345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	2		346	0		396	1		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	1		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	1		349	0		399	1		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 09:39:49

```
Configuration     : RDND06$DKA100:[ALP85.SAMPLE]H39MF1AG_290560619.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:19:43
Sample ID         : H39MF1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP85                Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   0.0%
Start energy      :  2952.15             End energy       :  6597.46
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5340.39	441	0	56.22	338.58	322	24	3.67E-02	4.8	

VMS Nuclide Identification Report V3.1 Generated 29-MAY-2006 09:39:50

```
Configuration     : RDND06$DKA100:[ALP85.SAMPLE]H39MF1AG_290560619.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:19:43
Sample ID         : H39MF1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP85                Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                  1
 Number of unidentified lines                       0
 Number of lines tentatively identified by NID      1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP85.SAMPLE]H39MF1AG_290560619.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5340.38	322	346	441	440	0.05		

End of Report

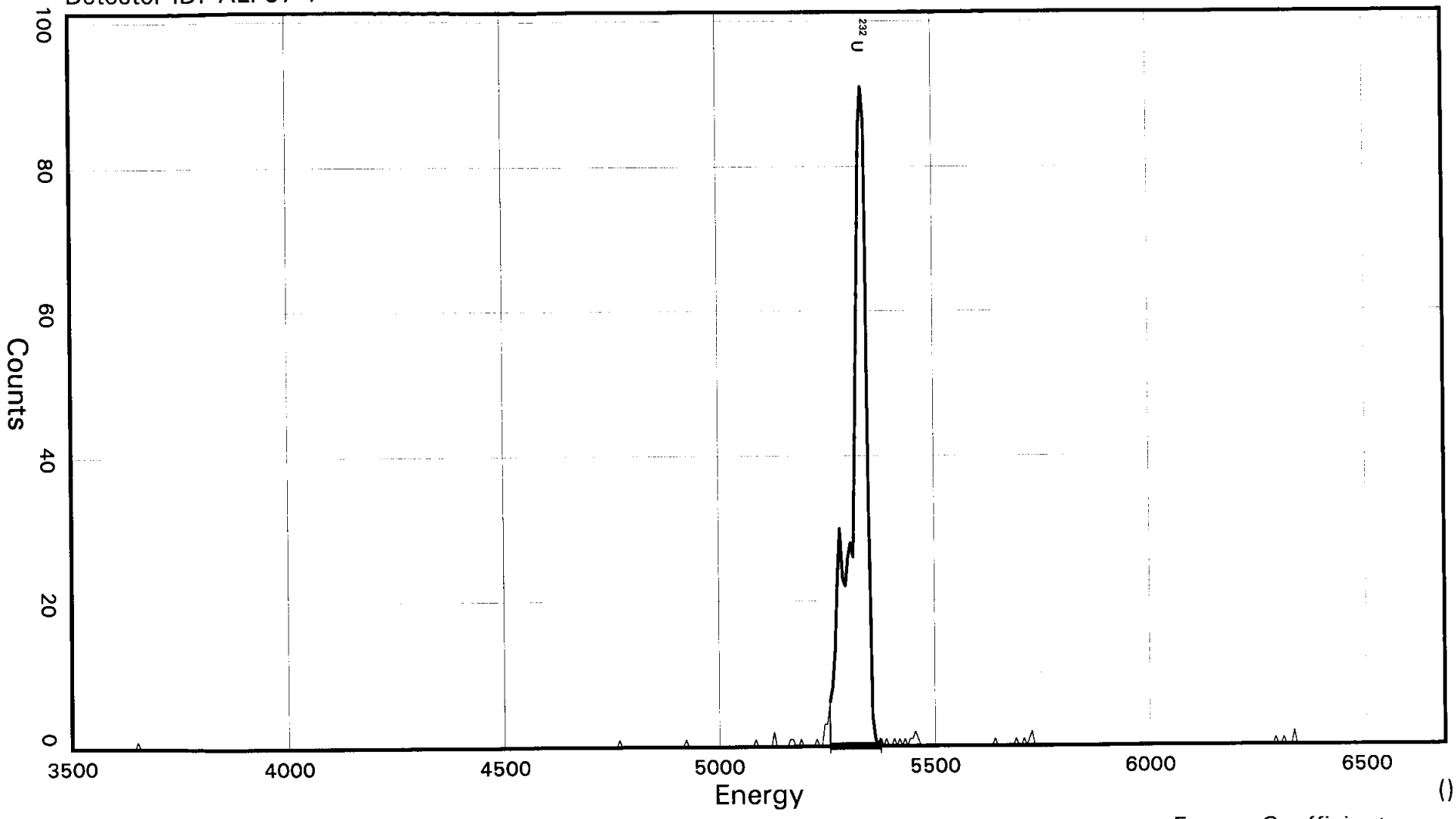
STL Richland WA.

U BRC

Sample ID: H39MH1AG

Detector ID: ALP87 1

Batch ID: 6118461



Acquisition Start: 29-MAY-2006 06:19:49.82

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:05.00

Energy Coefficients:

Offset: 3.52157E+03

Slope: 6.22480E+00

Quadrature: -1.00623E-04

SAMPLE IDENTIITY: H39MH1AG

TITLE : U BRC

DETECTOR : ALP87 1
CONFIGURATION NAME : RDND06$DKA100:[ALP87.SAMPLE]H39MH1AG_2905606
19.CNF;1
ACQUIRE DATE of BACKGROUND: 17-MAY-2006 06:21:00

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 06:19:49 CALIB DATE : 17-MAY-2006 01:38:36

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:05

OFFSET : 3521.57 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 6.22480 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.100623E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39MH1AG

Detector: ALP87 1
Report Date: 29-May-06 09:40 AM
Acquire Date: 29-MAY-2006 06:19:49.82
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	620	6	0	3.093	5333.5	117.2	280	299	0.00	0.00	P
U-234	1	2	0	0.003	4787.9	117.5	192	211	0.00	0.00	
U-235	0	0	0	0.000	4411.1	117.7	131	150	0.00	0.00	
U-238	0	0	0	0.000	4211.3	117.9	99	118	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39MH1AG
Detector: ALP87 1
Report Date: 29-May-06 09:40 AM
Acquire Date: 29-MAY-2006 06:19:49.82

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0		151	1	+	201	0		251	1		301	0		351	0		401	1		451	0		501
		2	0		52	0	+	102	0		152	0	+	202	1		252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0	+	103	0		153	0	+	203	0		253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0	+	104	0		154	0	+	204	0		254	1		304	0		354	0		404	0		454	0		504
0		5	0		55	0	+	105	0		155	0	+	205	0		255	0		305	1		355	0		405	2		455	0		505
0		6	0		56	0	+	106	0		156	0	+	206	0		256	1		306	2		356	0		406	0		456	0		506
0		7	0		57	0	+	107	0		157	0	+	207	0		257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0	+	108	0		158	0	+	208	0		258	1		308	0		358	0		408	0		458	0		508
0		9	0		59	0	+	109	0		159	0	+	209	2		259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0	+	110	0		160	0	+	210	0		260	1		310	0		360	0		410	0		460	0		510
0		11	0		61	0	+	111	0		161	0	+	211	0		261	1		311	0		361	0		411	0		461	0		511
0		12	0		62	0	+	112	0		162	0		212	0		262	2		312	0		362	0		412	0		462	0		512
0		13	0		63	0	+	113	0		163	0		213	0		263	1		313	0		363	0		413	0		463			
0		14	0		64	0	+	114	0		164	0		214	0		264	0		314	0		364	0		414	0		464			
0		15	0		65	0	+	115	0		165	0		215	1		265	0		315	0		365	0		415	0		465			
0		16	0		66	0	+	116	0		166	0		216	1		266	0		316	0		366	0		416	0		466			
0		17	0		67	0	+	117	0		167	0		217	0		267	0		317	0		367	0		417	0		467			
0		18	0		68	0	+	118	0		168	0		218	0		268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0		219	1		269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0		170	0		220	0		270	0		320	0		370	0		420	0		470			
1		21	0		71	0		121	0		171	0		221	0		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	0		272	0		322	0		372	0		422	0		472			
0		23	0		73	0		123	0		173	0		223	0		273	0		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	0		274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	1		275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	1		226	0		276	0		326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	0		277	0		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	3		278	0		328	0		378	0		428	0		478			
0		29	0		79	0		129	0		179	0		229	3		279	0		329	0		379	0		429	0		479			
0		30	0		80	0		130	0		180	0		230	6	+	280	0		330	0		380	0		430	0		480			
0		31	0		81	0	+	131	0		181	0		231	8	+	281	0		331	0		381	0		431	0		481			
0		32	0		82	0	+	132	0		182	0		232	13	+	282	0		332	0		382	0		432	0		482			
0		33	0		83	0	+	133	0		183	0		233	23	+	283	0		333	0		383	0		433	0		483			
0		34	0		84	0	+	134	0		184	0		234	30	+	284	0		334	0		384	0		434	0		484			
0		35	0		85	0	+	135	0		185	0		235	23	+	285	0		335	0		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0		236	22	+	286	0		336	0		386	0		436	0		486			
0		37	0		87	0	+	137	0		187	0		237	26	+	287	0		337	0		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	0		238	28	+	288	0		338	0		388	0		438	0		488			
0		39	0		89	0	+	139	0		189	0		239	26	+	289	0		339	0		389	0		439	0		489			
0		40	0		90	0	+	140	0		190	0		240	43	+	290	0		340	0		390	0		440	0		490			
0		41	0		91	0	+	141	0		191	0		241	64	+	291	0		341	0		391	0		441	0		491			
0		42	0		92	0	+	142	0	+	192	0		242	85	+	292	1		342	0		392	0		442	0		492			
0		43	0		93	0	+	143	0	+	193	0		243	91	+	293	0		343	0		393	0		443	0		493			
0		44	0		94	0	+	144	0	+	194	0		244	86	+	294	0		344	0		394	0		444	0		494			
0		45	0		95	0	+	145	0	+	195	0		245	33	+	295	0		345	0		395	0		445	0		495			
0		46	0		96	0	+	146	0	+	196	0		246	4	+	296	0		346	0		396	0		446	0		496			
0		47	0		97	0	+	147	0	+	197	0		247	1	+	297	0		347	0		397	0		447	0		497			
0		48	0		98	0	+	148	0	+	198	0		248	0	+	298	0		348	0		398	1		448	0		498			
0		49	0	+	99	0	+	149	0	+	199	0		249	1		299	0		349	0		399	0		449	0		499			
0		50	0	+	100	0	+	150	0	+	200	0		250	0		300	1		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 09:40:00

```
Configuration     : RDND06$DKA100:[ALP87.SAMPLE]H39MH1AG_290560619.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:19:49
Sample ID         : H39MH1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP87                Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Start energy      :  3540.24             End energy       :  6682.29
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5333.51	620	0	37.35	292.47	280	19	5.16E-02	4.0	

VMS Nuclide Identification Report V3.1 Generated 29-MAY-2006 09:40:01

```
Configuration     : RDND06$DKA100:[ALP87.SAMPLE]H39MH1AG_290560619.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:19:49
Sample ID         : H39MH1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP87                Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                 1
 Number of unidentified lines                      0
 Number of lines tentatively identified by NID     1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP87.SAMPLE]H39MH1AG_290560619.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.50	280	299	620	613	0.28		

End of Report

STL RICHLAND

SEVERN TRENT **STL**

URANIUM ISOTOPIC COUNTING REQUEST

BB

C.R. Technician: CS

Date Counted: 5/29/02

Counting Time
Sample: 300 Minutes
Background: See Alpha Regions Report

BRC 4/4

SOP's
Operating: RICHRD008
Review: RICHRD0016 6/18/01

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H39MJAG	See Counting Room Printout for ROI information				87	
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					

Comments:

Approved by: S

Date: 5/29/02

Form No: RC-011, 7/02, Rev 8

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39MJ1AG

Detector: ALP87 1
Report Date: 01-Jun-06 02:54 PM
Acquire Date: 29-MAY-2006 09:53:47.18
Tracer Nuclide: U-232
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
U-232	674	7	3.362	5320.2	166.5	272	299
U-234	1	2	0.003	4774.6	123.7	187	207
U-235	0	0	0.000	4397.8	123.9	126	146
U-238	0	0	0.000	4198.0	124.1	94	114

End of Alpha Region Report
(Produced by ANAL Report)

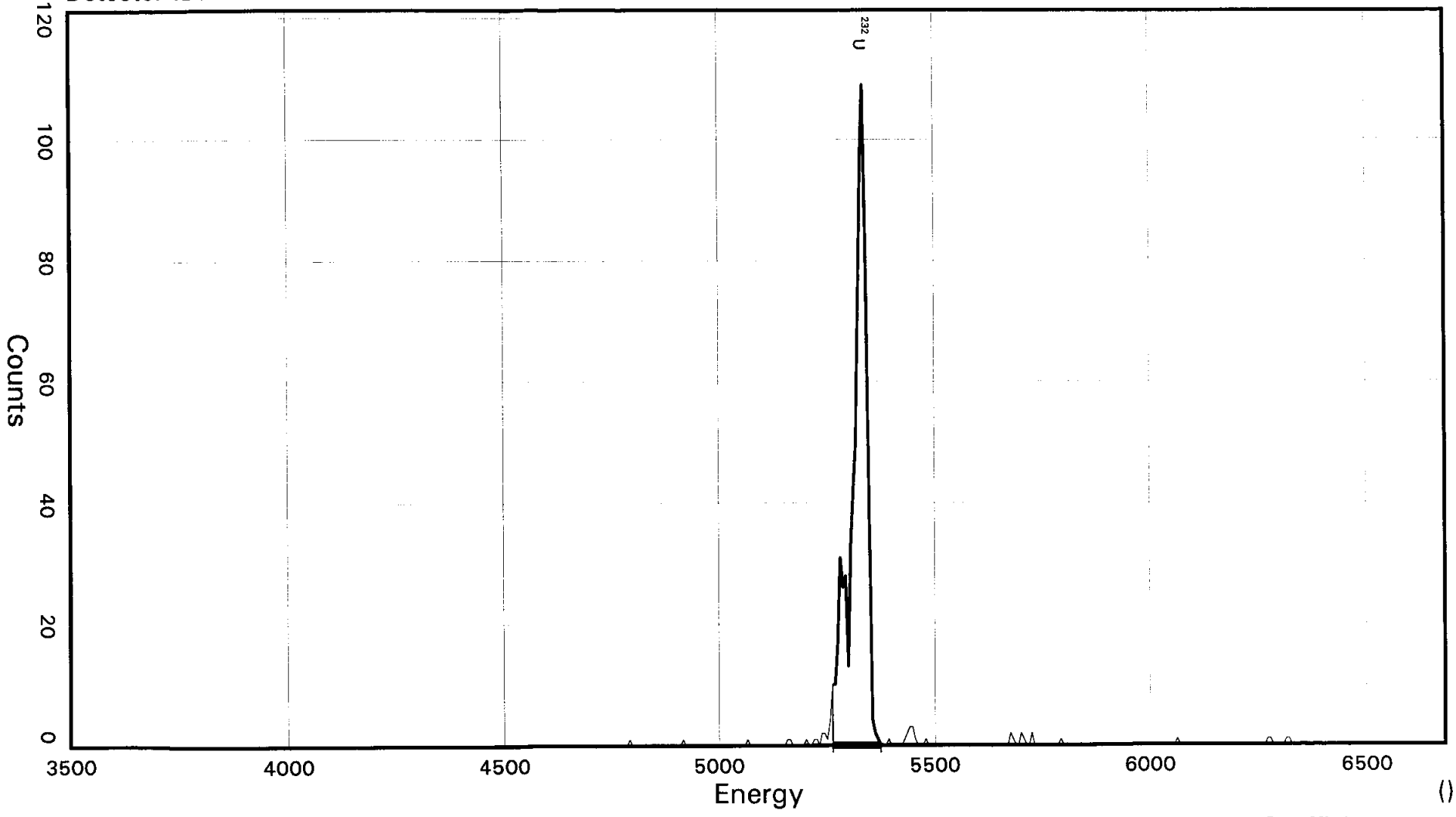
STL Richland WA.

U BRC

Sample ID: H39MJ1AG

Detector ID: ALP87 1

Batch ID: 6118461



Acquisition Start: 29-MAY-2006 09:53:47.18

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:02.00

Energy Coefficients:

Offset: 3.52157E+03

Slope: 6.22480E+00

Quadrature: -1.00623E-04

SAMPLE IDENTITY: H39MJ1AG

TITLE : U BRC

DETECTOR : ALP87 1
CONFIGURATION NAME : RDND06$DKA100:[ALP87.SAMPLE]H39MJ1AG_2905609
53.CNF;1
ACQUIRE DATE of BACKGROUND: 17-MAY-2006 06:21:00

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 09:53:47 CALIB DATE : 17-MAY-2006 01:38:36

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:02

OFFSET : 3521.57 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 6.22480 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.100623E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39MJ1AG

Detector: ALP87 1
Report Date: 29-May-06 01:13 PM
Acquire Date: 29-MAY-2006 09:53:47.18
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	669	6	0	3.338	5333.0	111.0	281	299	0.00	0.00	P
U-234	1	2	0	0.003	4787.4	111.3	193	211	0.00	0.00	
U-235	0	0	0	0.000	4410.6	111.5	132	150	0.00	0.00	
U-238	0	0	0	0.000	4210.8	111.7	100	118	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39MJ1AG
Detector: ALP87 1
Report Date: 29-May-06 01:13 PM
Acquire Date: 29-MAY-2006 09:53:47.18

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0		151	0	+	201	0		251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0	+	102	0		152	0	+	202	0		252	1		302	2		352	0		402	1		452	0		502
0		3	0		53	0	+	103	0		153	0	+	203	0		253	0		303	1		353	0		403	1		453	0		503
0		4	0		54	0	+	104	0		154	0	+	204	0		254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0	+	105	0		155	1	+	205	0		255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0	+	106	0		156	0	+	206	0		256	0		306	2		356	0		406	0		456	0		506
0		7	0		57	0	+	107	0		157	0	+	207	0		257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0	+	108	0		158	0	+	208	0		258	1		308	0		358	0		408	0		458	0		508
0		9	0		59	0	+	109	0		159	0	+	209	0		259	2		309	0		359	0		409	0		459	0		509
0		10	0		60	0	+	110	0		160	0	+	210	0		260	3		310	0		360	0		410	0		460	0		510
0		11	0		61	0	+	111	0		161	0	+	211	0		261	3		311	0		361	1		411	0		461	0		511
0		12	0		62	0	+	112	0		162	0		212	0		262	1		312	0		362	0		412	0		462	0		512
0		13	0		63	0	+	113	0		163	0		213	0		263	0		313	0		363	0		413	0		463			
0		14	0		64	0	+	114	0		164	0		214	1		264	0		314	0		364	0		414	0		464			
0		15	0		65	0	+	115	0		165	0		215	1		265	0		315	0		365	0		415	0		465			
0		16	0		66	0	+	116	0		166	0		216	0		266	1		316	0		366	0		416	0		466			
0		17	0		67	0	+	117	0		167	0		217	0		267	0		317	1		367	0		417	0		467			
0		18	0		68	0	+	118	0		168	0		218	0		268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0		219	0		269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0		170	0		220	0		270	0		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	1		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	0		272	0		322	0		372	0		422	0		472			
0		23	0		73	0		123	0		173	0		223	0		273	0		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	1		274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	1		225	1		275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	0		276	0		326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	2		277	0		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	2		278	0		328	0		378	0		428	0		478			
0		29	0		79	0		129	0		179	0		229	1		279	0		329	0		379	0		429	0		479			
0		30	0		80	0		130	0		180	0		230	4		280	0		330	0		380	0		430	0		480			
0		31	0		81	0		131	0		181	0		231	10	+	281	0		331	0		381	0		431	0		481			
0		32	0		82	0	+	132	0		182	0		232	10	+	282	0		332	0		382	0		432	0		482			
0		33	0		83	0	+	133	0		183	0		233	17	+	283	0		333	0		383	0		433	0		483			
0		34	0		84	0	+	134	0		184	0		234	31	+	284	0		334	0		384	0		434	0		484			
0		35	0		85	0	+	135	0		185	0		235	26	+	285	0		335	0		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0		236	28	+	286	0		336	0		386	0		436	0		486			
0		37	0		87	0	+	137	0		187	0		237	13	+	287	0		337	0		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	0		238	33	+	288	0		338	0		388	0		438	0		488			
0		39	0		89	0	+	139	0		189	0		239	42	+	289	0		339	0		389	0		439	0		489			
0		40	0		90	0	+	140	0		190	0		240	50	+	290	0		340	0		390	0		440	0		490			
0		41	0		91	0	+	141	0		191	0		241	75	+	291	0		341	0		391	0		441	0		491			
0		42	0		92	0	+	142	0		192	0		242	97	+	292	0		342	0		392	0		442	0		492			
0		43	0		93	0	+	143	0	+	193	0		243	109	+	293	0		343	0		393	0		443	0		493			
0		44	0		94	0	+	144	0	+	194	0		244	77	+	294	0		344	0		394	0		444	0		494			
0		45	0		95	0	+	145	0	+	195	0		245	38	+	295	0		345	0		395	1		445	0		495			
0		46	0		96	0	+	146	0	+	196	0		246	4	+	296	0		346	0		396	1		446	0		496			
0		47	0		97	0	+	147	0	+	197	0		247	2	+	297	0		347	0		397	0		447	0		497			
0		48	0		98	0	+	148	0	+	198	0		248	1	+	298	2		348	0		398	0		448	0		498			
0		49	0		99	0	+	149	0	+	199	1		249	0		299	1		349	0		399	0		449	0		499			
0		50	0	+	100	0	+	150	0	+	200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 13:13:52

```
Configuration     : RDND06$DKA100:[ALP87.SAMPLE]H39MJ1AG_290560953.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 09:53:47
Sample ID         : H39MJ1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP87                Detector geometry:
Elapsed live time: 0 03:20:02.00         Elapsed real time: 0 03:20:02.00   0.0%
Start energy      :  3540.24             End energy       :  6682.29
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5333.01	669	0	37.35	292.39	281	18	5.57E-02	3.9	

VMS Nuclide Identification Report V3.1 Generated 29-MAY-2006 13:13:53

```
Configuration     : RDND06$DKA100:[ALP87.SAMPLE]H39MJ1AG_290560953.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 09:53:47
Sample ID         : H39MJ1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP87                Detector geometry:
Elapsed live time: 0 03:20:02.00         Elapsed real time: 0 03:20:02.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                 1
 Number of unidentified lines                      0
 Number of lines tentatively identified by NID     1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			
Grand Total Activity :			0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP87.SAMPLE]H39MJ1AG_290560953.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.01	281	299	669	663	0.23		

End of Report

STL RICHLAND

SEVERN TRENT **STL**

URANIUM ISOTOPIC COUNTING REQUEST

1647

C.R. Technician CS

Date Counted 5/29/14

Counting Time
Sample 200 Minutes
Background See Alpha Regions Report

BRC 4/14

SOP's
Operating: RICHRD008
Review: RICHRD0016

6118461

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
1739m21AG	See Counting Room Printout for ROI information				87	
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					

Comments:

Form No: RC-011, 7/02, Rev 8

Approved by: S

Date: 5/30/14

179

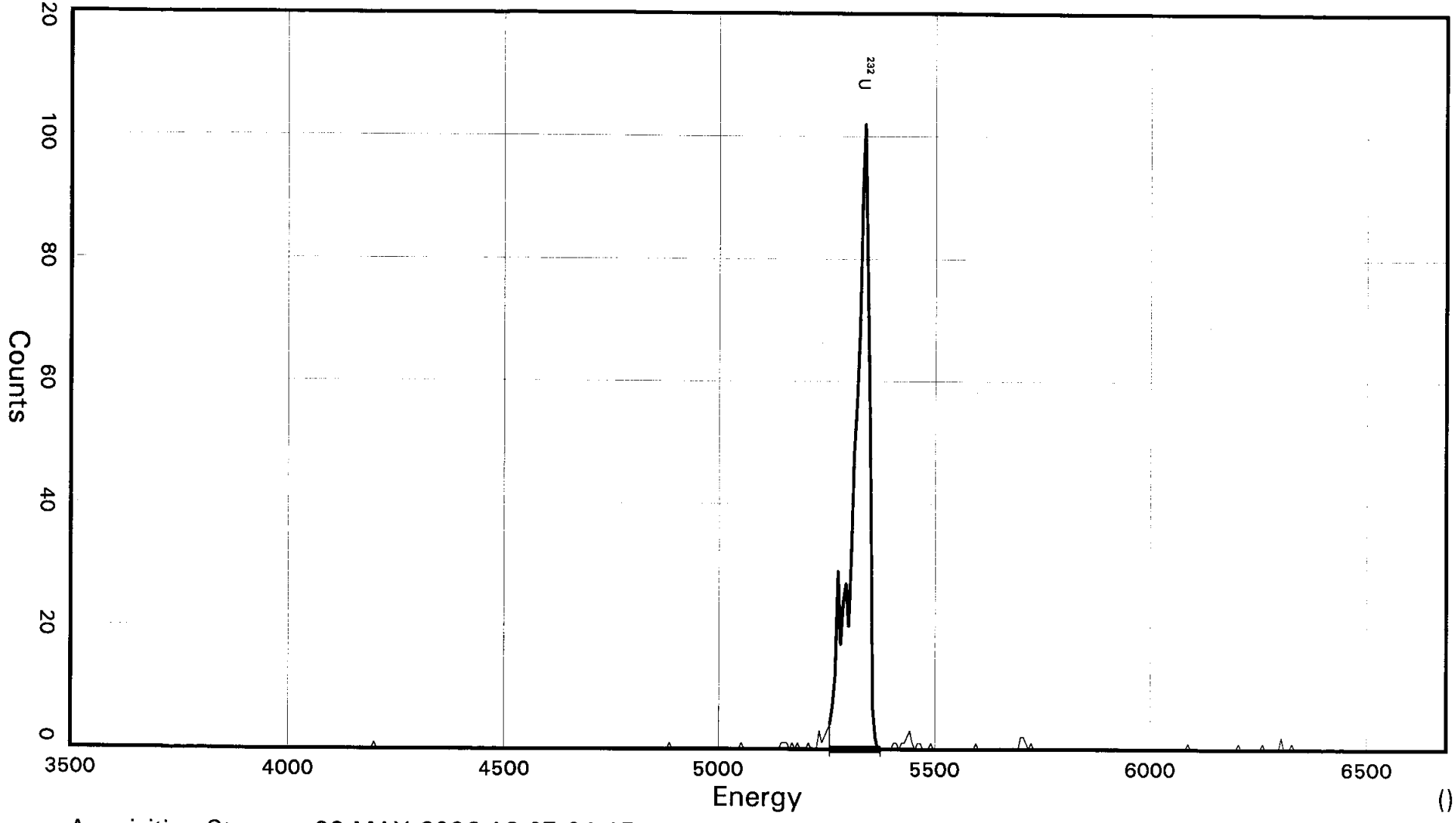
STL Richland WA.

U BRC

Sample ID: H39ML1AG

Detector ID: ALP87 1

Batch ID: 6118461



()

Acquisition Start: 29-MAY-2006 13:27:04.15

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:02.00

Energy Coefficients:

Offset: 3.52157E+03

Slope: 6.22480E+00

Quadrature: -1.00623E-04

SAMPLE IDENTIITY: H39ML1AG

TITLE : U BRC

DETECTOR : ALP87 1
CONFIGURATION NAME : RDND06$DKA100:[ALP87.SAMPLE]H39ML1AG_2905613
27.CNF;1
ACQUIRE DATE of BACKGROUND: 17-MAY-2006 06:21:00

REPORT DATE : 30-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 13:27:04 CALIB DATE : 17-MAY-2006 01:38:36

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:02

OFFSET : 3521.57 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 6.22480 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.100623E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39ML1AG

Detector: ALP87 1
Report Date: 30-May-06 05:48 AM
Acquire Date: 29-MAY-2006 13:27:04.15
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	679	6	0	3.388	5333.1	117.2	280	299	0.00	0.00	P
U-234	0	2	0	-0.002	4787.6	117.5	192	211	0.00	0.00	
U-235	0	0	0	0.000	4410.8	117.7	131	150	0.00	0.00	
U-238	1	0	0	0.005	4211.0	117.9	99	118	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39ML1AG
Detector: ALP87 1
Report Date: 30-May-06 05:48 AM
Acquire Date: 29-MAY-2006 13:27:04.15

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0		151	0	+	201	0		251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0	+	102	0		152	0	+	202	0		252	0		302	2		352	0		402	0		452	0		502
0		3	0		53	0	+	103	0		153	0	+	203	0		253	0		303	2		353	0		403	0		453	0		503
0		4	0		54	0	+	104	0		154	0	+	204	0		254	1		304	1		354	0		404	1		454	0		504
0		5	0		55	0	+	105	0		155	0	+	205	0		255	1		305	0		355	0		405	0		455	0		505
0		6	0		56	0	+	106	0		156	0	+	206	0		256	0		306	1		356	0		406	0		456	0		506
0		7	0		57	0	+	107	0		157	0	+	207	0		257	1		307	0		357	0		407	0		457	0		507
0		8	0		58	0	+	108	0		158	0	+	208	0		258	1		308	0		358	0		408	0		458	0		508
0		9	0		59	1	+	109	0		159	0	+	209	0		259	2		309	0		359	0		409	0		459	0		509
0		10	0		60	0	+	110	0		160	0	+	210	0		260	3		310	0		360	0		410	0		460	0		510
0		11	0		61	0	+	111	0		161	0	+	211	0		261	1		311	0		361	0		411	0		461	0		511
0		12	0		62	0	+	112	0		162	0		212	1		262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0	+	113	0		163	0		213	1		263	1		313	0		363	0		413	0		463			
0		14	0		64	0	+	114	0		164	0		214	1		264	1		314	0		364	0		414	0		464			
0		15	0		65	0	+	115	0		165	0		215	0		265	0		315	0		365	1		415	0		465			
0		16	0		66	0	+	116	0		166	0		216	1		266	0		316	0		366	0		416	0		466			
0		17	0		67	0	+	117	0		167	0		217	0		267	0		317	0		367	0		417	0		467			
0		18	0		68	0	+	118	0		168	0		218	1		268	1		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0		219	0		269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0		170	1		220	0		270	0		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	0		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	1		272	0		322	0		372	0		422	0		472			
0		23	0		73	0		123	0		173	0		223	0		273	0		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	0		274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	0		275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	3		276	0		326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	1		277	0		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	2		278	0		328	0		378	0		428	0		478			
0		29	0		79	0		129	0		179	0		229	3		279	0		329	0		379	0		429	0		479			
0		30	0		80	0		130	0		180	0		230	4	+	280	0		330	0		380	0		430	0		480			
0		31	0		81	0	+	131	0		181	0		231	7	+	281	0		331	0		381	0		431	0		481			
0		32	0		82	0	+	132	0		182	0		232	12	+	282	0		332	0		382	0		432	0		482			
0		33	0		83	0	+	133	0		183	0		233	29	+	283	0		333	0		383	0		433	0		483			
0		34	0		84	0	+	134	0		184	0		234	17	+	284	0		334	0		384	1		434	0		484			
0		35	0		85	0	+	135	0		185	0		235	24	+	285	1		335	0		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0		236	27	+	286	0		336	0		386	0		436	0		486			
0		37	0		87	0	+	137	0		187	0		237	20	+	287	0		337	0		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	0		238	32	+	288	0		338	0		388	0		438	0		488			
0		39	0		89	0	+	139	0		189	0		239	48	+	289	0		339	0		389	0		439	0		489			
0		40	0		90	0	+	140	0		190	0		240	56	+	290	0		340	0		390	0		440	0		490			
0		41	0		91	0	+	141	0		191	0		241	68	+	291	0		341	0		391	0		441	0		491			
0		42	0		92	0	+	142	0	+	192	0		242	90	+	292	0		342	0		392	0		442	0		492			
0		43	0		93	0	+	143	0	+	193	0		243	102	+	293	0		343	0		393	1		443	0		493			
0		44	0		94	0	+	144	0	+	194	0		244	74	+	294	0		344	0		394	0		444	0		494			
0		45	0		95	0	+	145	0	+	195	0		245	51	+	295	0		345	0		395	0		445	0		495			
0		46	0		96	0	+	146	0	+	196	0		246	7	+	296	0		346	0		396	0		446	0		496			
0		47	0		97	0	+	147	0	+	197	1		247	2	+	297	0		347	0		397	0		447	0		497			
0		48	0		98	0	+	148	0	+	198	0		248	0	+	298	0		348	0		398	0		448	0		498			
0		49	0	+	99	0	+	149	0	+	199	0		249	0		299	0		349	0		399	0		449	0		499			
0		50	0	+	100	0	+	150	0	+	200	0		250	0		300	0		350	0		400	2		450	0		500			

VMS Peak Search Report V1.9 Generated 30-MAY-2006 05:48:22

Configuration : RDND06$DKA100:[ALP87.SAMPLE]H39ML1AG_290561327.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 13:27:04
Sample ID : H39ML1AG Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP87 Detector geometry:
Elapsed live time: 0 03:20:02.00 Elapsed real time: 0 03:20:02.00 0.0%
Start energy : 3540.24 End energy : 6682.29
Sensitivity : 4.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5333.14	679	0	37.35	292.41	280	19	5.66E-02	3.8	

VMS Nuclide Identification Report V3.1 Generated 30-MAY-2006 05:48:23

```
Configuration     : RDND06$DKA100:[ALP87.SAMPLE]H39ML1AG_290561327.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 13:27:04
Sample ID         : H39ML1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP87                Detector geometry:
Elapsed live time: 0 03:20:02.00         Elapsed real time: 0 03:20:02.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			
	Grand Total Activity :		0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP87.SAMPLE]H39ML1AG_290561327.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.14	280	299	679	670	0.35		

End of Report

STL RICHLAND

SEVERN TRENT **STL**

URANIUM ISOTOPIC COUNTING REQUEST

0922

C.R. Technician CS

Date Counted 5/30/04

Counting Time
Sample 200 Minutes
Background **See Alpha Regions Report**

BRC 4/14

SOP's
Operating: RICHRD008
Review: RICHRD0016

6118461

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H39MN1A6	See Counting Room Printout for ROI information				1	
H4C8V1A2	See Counting Room Printout for ROI information				2	
H4C8V1AC	See Counting Room Printout for ROI information				3	
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					

Comments:

Form No: RC-011, 7/02, Rev 8

Approved by: CS

Date: 5/30/04

188

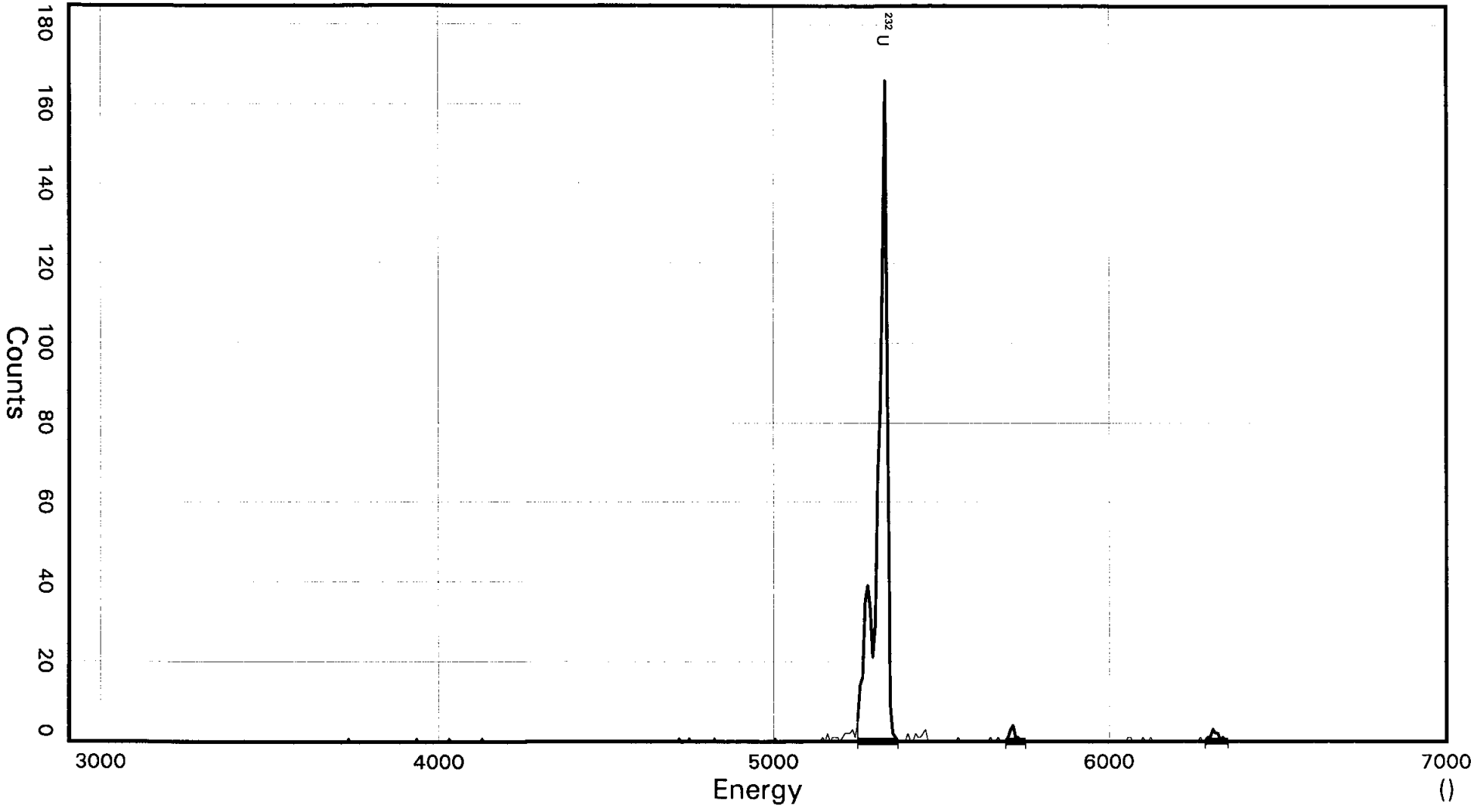
STL Richland WA.

U BRC

Sample ID: H39MN1AG

Detector ID: ALP1 1

Batch ID: 6118461



Acquisition Start: 30-MAY-2006 06:02:30.05

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:01.00

Energy Coefficients:

Offset: 2.88453E+03

Slope: 7.50928E+00

Quadrature: -6.74281E-05

SAMPLE IDENTIITY: H39MN1AG

TITLE : U BRC

DETECTOR : ALP1 1
CONFIGURATION NAME : $DISK1:[ALP1.SAMPLE]H39MN1AG_300560602.CNF;1

ACQUIRE DATE of BACKGROUND: 29-MAY-2006 06:33:25

REPORT DATE : 30-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 30-MAY-2006 06:02:30 CALIB DATE : 01-MAY-2006 22:42:34

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:01

OFFSET : 2884.53 keV CONSTANT FWHM : 8.00000 Channels
SLOPE : 7.50928 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.674281E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39MN1AG

Detector: ALP1 1
Report Date: 30-May-06 09:22 AM
Acquire Date: 30-MAY-2006 06:02:30.05
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	726	12	0	3.618	5328.7	119.4	316	332	0.00	0.00	P
U-234	3	2	0	0.013	4783.2	119.6	243	259	0.00	0.00	
U-235	0	3	0	-0.003	4406.4	119.7	193	209	0.00	0.00	
U-238	1	2	0	0.003	4206.6	119.8	166	182	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39MN1AG
Detector: ALP1 1
Report Date: 30-May-06 09:22 AM
Acquire Date: 30-MAY-2006 06:02:30.05

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	1		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	1		153	0	+	203	0	+	253	0		303	0		353	0		403	1		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	2		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	1		306	1		356	0		406	1		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	1		307	0		357	0		407	1		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	1		308	0		358	0		408	3		458	0		508
0		9	0		59	0		109	0		159	0	+	209	1	+	259	0		309	0		359	0		409	2		459	0		509
0		10	0		60	0		110	0		160	0		210	0		260	1		310	0		360	0		410	2		460	0		510
0		11	0		61	0		111	0		161	0		211	0		261	2		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	2		312	0		362	0		412	1		462	0		512
0		13	0		63	1		113	0		163	0		213	0		263	2		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0		264	3		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0		265	1		315	0		365	0		415	0		465			
0		16	0		66	0		116	1	+	166	0		216	0		266	5	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	14	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	16	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	35	+	319	1		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	39	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	33	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	21	+	322	1		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	29	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	66	+	324	0		374	1		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	83	+	325	0		375	1		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	119	+	326	1		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	166	+	327	3		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	82	+	328	4		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	9	+	329	1		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	2	+	330	1		380	1		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	1	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	0		332	0		382	0		432	0		482			
0		33	0		83	0		133	0		183	0		233	1		283	0		333	0		383	1		433	0		483			
0		34	0		84	0		134	0		184	0		234	0		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	0		335	0		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	2		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	0		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	2		339	0		389	0		439	0		489			
0		40	0		90	1		140	0		190	0		240	0		290	1		340	0		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	1		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	2		342	0		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0	+	243	0		293	3		343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0	+	244	0		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	1	+	245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	1	+	249	0		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 30-MAY-2006 09:22:47

```
Configuration     : $DISK1:[ALP1.SAMPLE]H39MN1AG_300560602.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 30-MAY-2006 06:02:30
Sample ID         : H39MN1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP1                 Detector geometry:
Elapsed live time: 0 03:20:01.00         Elapsed real time: 0 03:20:01.00   0.0%
Start energy      :  2907.06             End energy       :  6711.61
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5328.74	726	0	30.04	326.45	316	16	6.05E-02	3.7	
2	0	5710.09	10	0	30.04	377.56	375	8	8.33E-04	31.6	
3	0	6311.29	10	0	37.55	458.22	455	9	8.33E-04	31.6	

VMS Nuclide Identification Report V3.0 Generated 30-MAY-2006 09:22:49

```
Configuration     : $DISK1:[ALP1.SAMPLE]H39MN1AG_300560602.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 30-MAY-2006 06:02:30
Sample ID         : H39MN1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP1                 Detector geometry:
Elapsed live time: 0 03:20:01.00         Elapsed real time: 0 03:20:01.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                3
 Number of unidentified lines                     2
 Number of lines tentatively identified by NID    1       33.33%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			
Grand Total Activity :			0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP1.SAMPLE]H39MN1AG_300560602.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5328.73	316	332	726	720	0.22		
5710.09	375	383	10	10	0.00		
6311.29	455	464	10	10	0.00		

End of Report

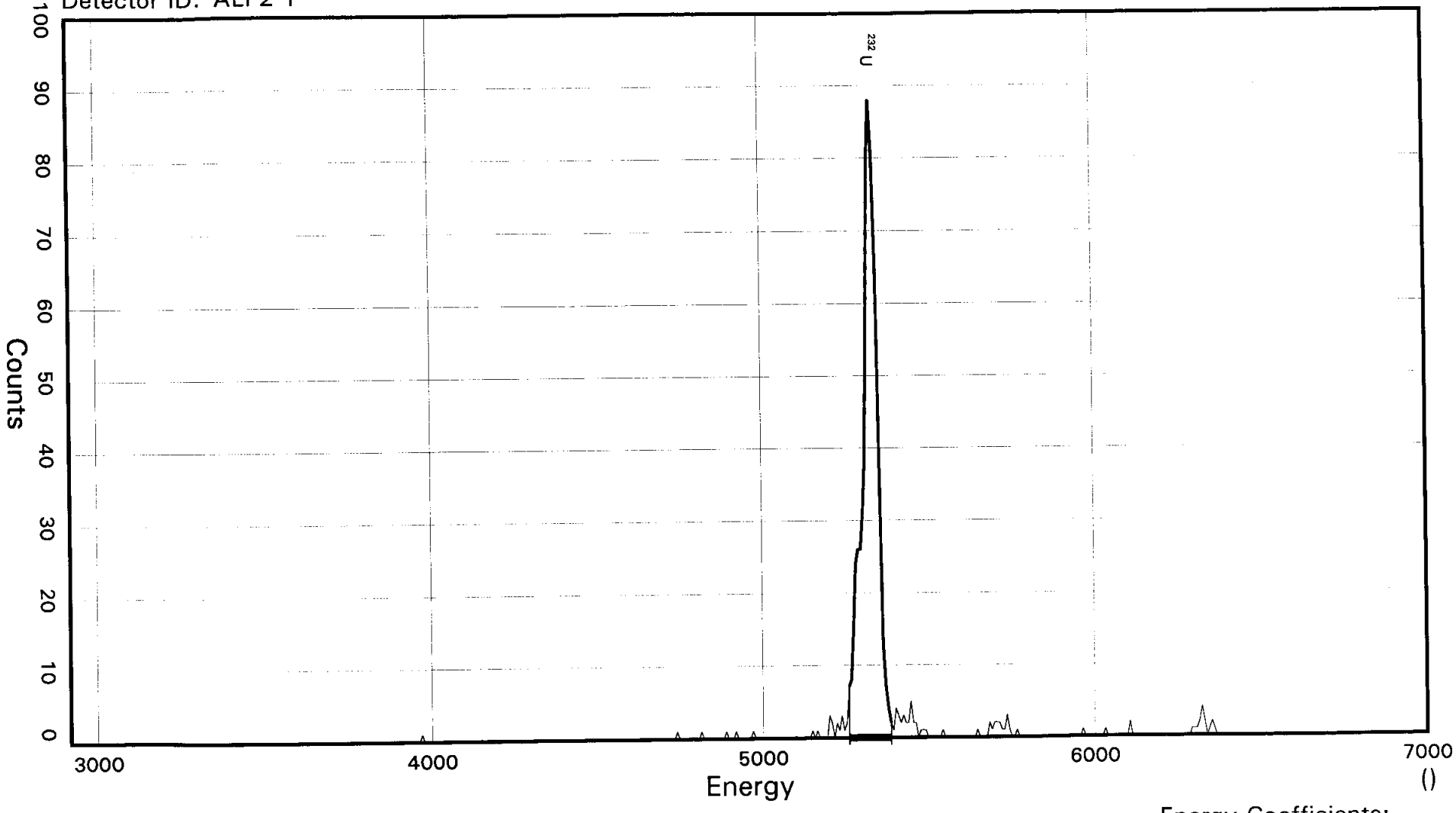
STL Richland WA.

U BRC

Sample ID: H4C8V1AA

Detector ID: ALP2 1

Batch ID: 6118461



Acquisition Start: 30-MAY-2006 06:02:34.57

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:00.00

Energy Coefficients:

Offset: 2.89732E+03

Slope: 7.26105E+00

Quadrature: 2.25354E-04

SAMPLE IDENTIITY: H4C8V1AA

TITLE : U BRC

DETECTOR : ALP2 1
CONFIGURATION NAME : $DISK1:[ALP2.SAMPLE]H4C8V1AA_300560602.CNF;1

ACQUIRE DATE of BACKGROUND: 29-MAY-2006 06:33:28

REPORT DATE : 30-May-06
ACQUIRE DATE: 30-MAY-2006 06:02:34

SAMPLE DATE: 14-APR-2006 12:00:00
CALIB DATE : 01-MAY-2006 23:18:22

PRESET LIVE TIME: 0 03:20:00

ELAPSED LIVE TIME: 0 03:20:00

OFFSET : 2897.32 keV
SLOPE : 7.26105 keV/C
QUAD COEFF : 2.253540E-04 keV/C^2

CONSTANT FWHM : 9.50000 Channels
SENSITIVITY : 4.00000 Std Dev's
SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H4C8V1AA

Detector: ALP2 1
Report Date: 30-May-06 09:38 AM
Acquire Date: 30-MAY-2006 06:02:34.57
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	612	14	0	3.046	5332.7	126.0	322	339	0.00	0.00	P
U-234	2	3	0	0.007	4787.1	125.4	248	265	0.00	0.00	
U-235	0	0	0	0.000	4410.3	125.0	197	214	0.00	0.00	
U-238	0	4	0	-0.004	4210.5	124.8	170	187	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H4C8V1AA
Detector: ALP2 1
Report Date: 30-May-06 09:38 AM
Acquire Date: 30-MAY-2006 06:02:34.57

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	1	+	252	0		302	1		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	1		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	1		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	1		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	1		461	0		511
0		12	0		62	0		112	0		162	0	+	212	1	+	262	0		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	1		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	3		314	0		364	0		414	2		464			
0		15	0		65	0		115	0		165	0		215	0	+	265	2		315	0		365	0		415	4		465			
0		16	0		66	0		116	0		166	0		216	0		266	0		316	0		366	0		416	2		466			
0		17	0		67	0		117	0		167	0		217	0		267	2		317	0		367	1		417	0		467			
0		18	0		68	0		118	0		168	0		218	0		268	1		318	0		368	0		418	1		468			
0		19	0		69	0		119	0		169	0		219	0		269	3		319	0		369	0		419	2		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	1		320	0		370	0		420	1		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	2		321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	1		272	7	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	8	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	15	+	324	1		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	24	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	1		276	26	+	326	0		376	1		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	26	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	31	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	38	+	329	2		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	58	+	330	1		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	79	+	331	2		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	88	+	332	2		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	1		283	81	+	333	2		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	65	+	334	1		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	39	+	335	1		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	13	+	336	3		386	2		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	7	+	337	1		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	4	+	338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	2		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	1		340	1		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	4		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	3		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	2		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	0		294	3		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	0		295	2		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	0		296	2		346	0		396	0		446	0		496			
0		47	0		97	1		147	0	+	197	0		247	0		297	5		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	2		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	2		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 30-MAY-2006 09:38:10

Configuration : $DISK1:[ALP2.SAMPLE]H4C8V1AA_300560602.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 30-MAY-2006 06:02:34
Sample ID : H4C8V1AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP2 Detector geometry:
Elapsed live time: 0 03:20:00.00 Elapsed real time: 0 03:35:18.00 7.1%
Start energy : 2919.10 End energy : 6674.05
Sensitivity : 4.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5332.66	612	0	50.83	331.98	322	17	5.10E-02	4.0	

VMS Nuclide Identification Report V3.0 Generated 30-MAY-2006 09:38:12

Configuration : $DISK1:[ALP2.SAMPLE]H4C8V1AA_300560602.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title : U BRC
Sample date : 14-APR-2006 12:00:00
Sample ID : H4C8V1AA
Sample type : disk
Detector name : ALP2
Elapsed live time: 0 03:20:00.00
Energy tolerance : 40.00
Errors propagated: No
Efficiency type : Spline
Abundance limit : 60.00

Acquisition date : 30-MAY-2006 06:02:34
Sample quantity : 0.00000E+00 SAMPLE
Sample geometry :
Detector geometry:
Elapsed real time: 0 03:35:18.00 7.1%
Half life ratio : 1.00
Systematic Error : 0.00 %
Efficiencies at : Peak Energy

Summary of Nuclide Activity

Total number of lines in spectrum	1	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	1	100.00%

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			
Grand Total Activity :			0.000E+00	0.000E+00			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP2.SAMPLE]H4C8V1AA_300560602.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5332.65	322	339	612	611	0.04		

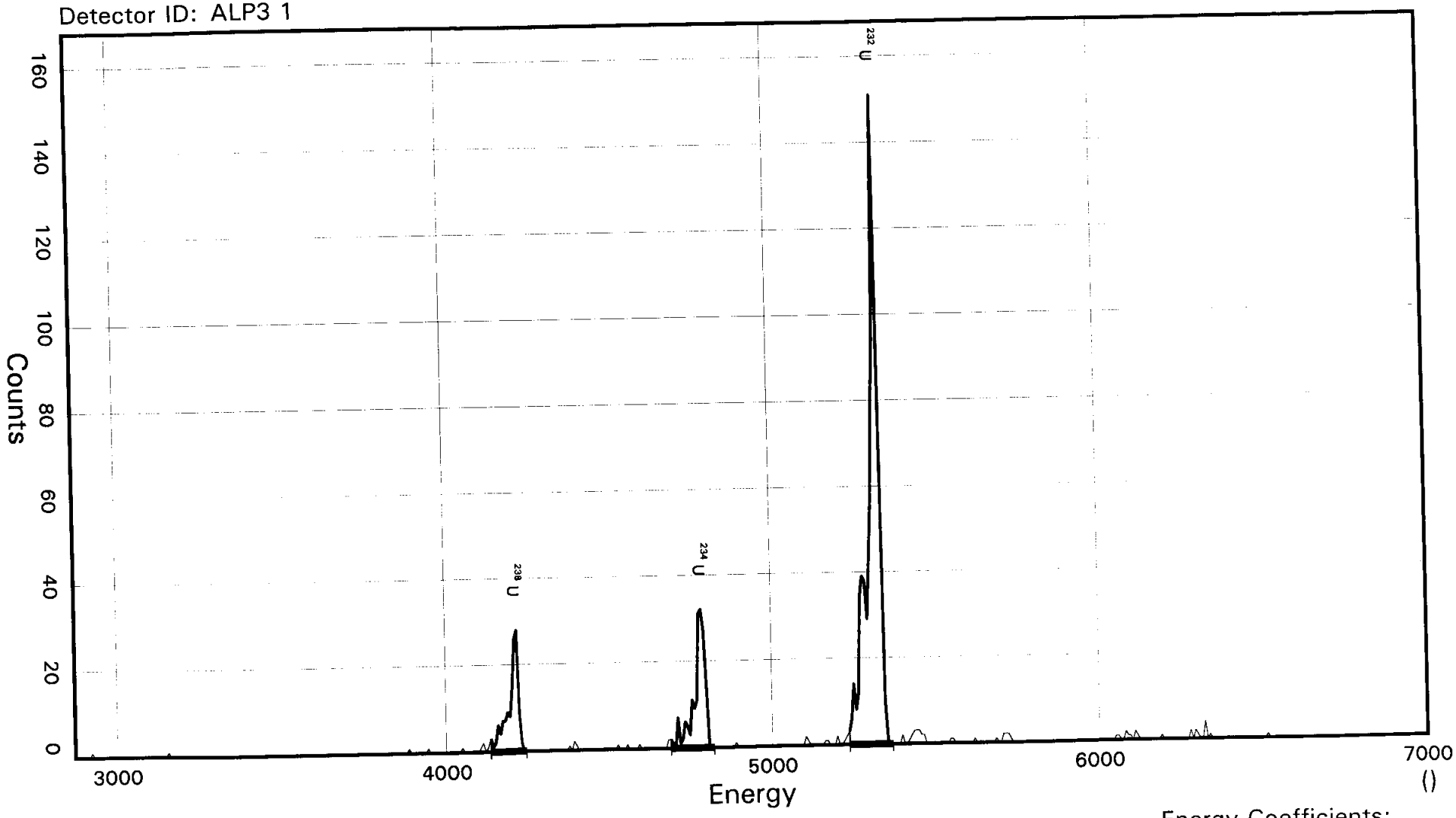
End of Report

STL Richland WA.

U BRC

Batch ID: 6118461

Sample ID: H4C8V1AC
Detector ID: ALP3 1



Acquisition Start: 30-MAY-2006 06:02:37.61
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:
Offset: 2.85003E+03
Slope: 7.40763E+00
Quadrature: -7.19637E-05

SAMPLE IDENTIITY: H4C8V1AC

TITLE : U BRC

DETECTOR : ALP3 1
CONFIGURATION NAME : $DISK1:[ALP3.SAMPLE]H4C8V1AC_300560602.CNF;1

ACQUIRE DATE of BACKGROUND: 29-MAY-2006 06:33:30

REPORT DATE : 30-May-06
ACQUIRE DATE: 30-MAY-2006 06:02:37

SAMPLE DATE: 14-APR-2006 12:00:00
CALIB DATE : 01-MAY-2006 22:42:23

PRESET LIVE TIME: 0 03:20:00

ELAPSED LIVE TIME: 0 03:20:03

OFFSET : 2850.03 keV
SLOPE : 7.40763 keV/C
QUAD COEFF : -.719637E-04 keV/C^2

CONSTANT FWHM : 8.00000 Channels
SENSITIVITY : 4.00000 Std Dev's
SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H4C8V1AC

Detector: ALP3 1
Report Date: 30-May-06 09:23 AM
Acquire Date: 30-MAY-2006 06:02:37.61
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	694	11	0	3.458	5326.8	132.5	323	341	0.00	0.00	P
U-234	163	5	0	0.810	4781.3	132.7	249	267	0.00	0.00	P
U-235	4	2	0	0.018	4404.5	132.8	198	216	0.00	0.00	
U-238	128	1	0	0.639	4204.7	110.7	174	189	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H4C8V1AC
Detector: ALP3 1
Report Date: 30-May-06 09:23 AM
Acquire Date: 30-MAY-2006 06:02:37.61

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1		0	51		0	101		0	151		0+	201		0+	251		0	301		3	351		0	401		0	451		0	501
		2		0	52		0	102		0	152		0+	202		7+	252		0	302		3	352		0	402		0	452		0	502
	0	3		0	53		0	103		0	153		0+	203		1+	253		0	303		2	353		0	403		1	453		0	503
	0	4		0	54		0	104		0	154		0+	204		2+	254		0	304		2	354		0	404		0	454		0	504
	0	5		0	55		0	105		0	155		0+	205		6+	255		2	305		0	355		0	405		0	455		0	505
	0	6		0	56		0	106		0	156		0+	206		5+	256		1	306		0	356		0	406		0	456		0	506
	0	7		0	57		0	107		0	157		1+	207		3+	257		0	307		0	357		0	407		0	457		0	507
	0	8		0	58		0	108		0	158		0+	208		11+	258		0	308		0	358		0	408		0	458		0	508
	0	9		0	59		0	109		0	159		2+	209		9+	259		0	309		0	359		0	409		0	459		0	509
	1	10		0	60		0	110		0	160		1+	210		11+	260		0	310		0	360		0	410		0	460		0	510
	0	11		0	61		0	111		0	161		0+	211		31+	261		0	311		0	361		0	411		0	461		0	511
	0	12		0	62		0	112		1	162		0+	212		32+	262		0	312		0	362		0	412		0	462		0	512
	0	13		0	63		0	113		0	163		0+	213		27+	263		1	313		0	363		0	413		0	463			
	0	14		0	64		0	114		0	164		0+	214		14+	264		1	314		0	364		0	414		0	464			
	0	15		0	65		0	115		0	165		0+	215		0+	265		0	315		1	365		0	415		2	465			
	0	16		0	66		0	116		0	166		0+	216		0+	266		0	316		1	366		0	416		0	466			
	0	17		0	67		0	117		0	167		0	217		0	267		0	317		0	367		0	417		2	467			
	0	18		0	68		0	118		0	168		0	218		0	268		2	318		0	368		0	418		1	468			
	0	19		0	69		0	119		0	169		0	219		0	269		0	319		0	369		0	419		0	469			
	0	20		0	70		0	120		1	170		0	220		0	270		0	320		0	370		0	420		0	470			
	0	21		0	71		0	121		2	171		0	221		0	271		1	321		0	371		0	421		4	471			
	0	22		0	72		0	122		0	172		0	222		0	272		2	322		0	372		0	422		0	472			
	0	23		0	73		0	123		1	173		0	223		0	273		3+	323		0	373		0	423		1	473			
	0	24		0	74		0	124		3+	174		0	224		0	274		6+	324		0	374		0	424		0	474			
	0	25		0	75		0	125		1+	175		0	225		0	275		14+	325		1	375		0	425		0	475			
	0	26		0	76		0	126		2+	176		0	226		1	276		8+	326		0	376		0	426		0	476			
	0	27		0	77		0	127		6+	177		1	227		0	277		12+	327		0	377		0	427		0	477			
	0	28		0	78		0	128		4+	178		0	228		0	278		34+	328		0	378		0	428		0	478			
	0	29		0	79		0	129		7+	179		0	229		0	279		39+	329		0	379		0	429		0	479			
	0	30		0	80		0	130		7+	180		0	230		0	280		38+	330		0	380		0	430		0	480			
	0	31		0	81		0	131		9+	181		1	231		0	281		29+	331		0	381		0	431		0	481			
	0	32		0	82		0	132		8+	182		0	232		0	282		42+	332		0	382		0	432		0	482			
	0	33		0	83		0	133		15+	183		0	233		0	283		55+	333		0	383		0	433		0	483			
	0	34		0	84		0	134		26+	184		0	234		0	284		78+	334		1	384		1	434		0	484			
	0	35		0	85		0	135		28+	185		0	235		0	285		94+	335		0	385		1	435		0	485			
	0	36		0	86		0	136		9+	186		1	236		0	286		151+	336		0	386		0	436		0	486			
	0	37		0	87		0	137		2+	187		0	237		0	287		72+	337		2	387		0	437		0	487			
	0	38		0	88		0	138		0+	188		0	238		0	288		10+	338		2	388		2	438		0	488			
	0	39		0	89		0	139		0	189		0	239		0	289		1+	339		2	389		1	439		0	489			
	0	40		0	90		1	140		0	190		0	240		0	290		0+	340		1	390		1	440		0	490			
	1	41		0	91		0	141		0	191		0	241		0	291		0	341		0	391		0	441		0	491			
	0	42		0	92		0	142		0	192		0	242		0	292		0	342		0	392		2	442		0	492			
	0	43		0	93		0	143		0	193		0	243		0	293		0	343		0	393		1	443		0	493			
	0	44		0	94		0	144		0	194		0	244		0	294		0	344		0	394		0	444		0	494			
	0	45		0	95		0	145		0	195		0	245		0	295		2	345		0	395		0	445		0	495			
	0	46		0	96		0	146		0	196		0	246		0	296		0	346		0	396		0	446		0	496			
	0	47		0	97		0	147		0	197		0	247		0	297		0	347		0	397		0	447		1	497			
	0	48		0	98		1	148		0+	198		2	248		0	298		1	348		0	398		0	448		0	498			
	0	49		0	99		0	149		0+	199		2+	249		0	299		2	349		0	399		0	449		0	499			
	0	50		0	100		0	150		0+	200		1+	250		0	300		3	350		0	400		0	450		0	500			

VMS Peak Search Report V1.9 Generated 30-MAY-2006 09:22:57

Configuration : $DISK1:[ALP3.SAMPLE]H4C8V1AC_300560602.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 30-MAY-2006 06:02:37
Sample ID : H4C8V1AC Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP3 Detector geometry:
Elapsed live time: 0 03:20:03.00 Elapsed real time: 0 03:20:03.00 0.0%
Start energy : 2872.26 End energy : 6623.87
Sensitivity : 4.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4211.37	128	0	37.04	184.10	174	15	1.07E-02	8.8	
2	0	4783.29	163	0	29.63	261.65	249	18	1.36E-02	7.8	
3	0	5326.82	694	0	29.63	335.45	323	18	5.78E-02	3.8	

VMS Nuclide Identification Report V3.0 Generated 30-MAY-2006 09:23:00

Configuration : $DISK1:[ALP3.SAMPLE]H4C8V1AC_300560602.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title : U BRC
Sample date : 14-APR-2006 12:00:00
Sample ID : H4C8V1AC
Sample type : disk
Detector name : ALP3
Elapsed live time: 0 03:20:03.00
Energy tolerance : 40.00
Errors propagated: No
Efficiency type : Spline
Abundance limit : 60.00

Acquisition date : 30-MAY-2006 06:02:37
Sample quantity : 0.00000E+00 SAMPLE
Sample geometry :
Detector geometry:
Elapsed real time: 0 03:20:03.00 0.0%
Half life ratio : 1.00
Systematic Error : 0.00 %
Efficiencies at : Peak Energy

Summary of Nuclide Activity

Total number of lines in spectrum	3	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	3	100.00%

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-238	4.47E+09Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP3.SAMPLE]H4C8V1AC_300560602.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4211.37	174	189	128	127	0.09		
4783.28	249	267	163	162	0.08		
5326.82	323	341	694	686	0.30		

End of Report

THORIUM

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/1/2006 10:25:34 AM

Lot No., Due Date: J6D270397; 05/25/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6118462; RTHISO Thlso by ALP

SDG, Matrix: 31509; FILTER

1.0 COC

	Yes	No	N/A
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		

2.0 QC Batch

	Yes	No	N/A
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?	✓		

3.0 QC & Samples

	Yes	No	N/A
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?			✓
3.5 Are the sample yields and MDAs within contract limits?	✓		

4.0 Raw Data

	Yes	No	N/A
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?	✓		
4.5 Were raw counts reviewed for anomalies?	✓		

5.0 Other

	Yes	No	N/A
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level Review Pam Anderson **Date** 6-1-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6118462

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: Sheryl A Adam Date: 6-1-06

STL RICHLAND

5/18/2006 11:10:27 AM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

9N ThIso PrpRc5016, SepRC~~5084~~(5003) 5087 J.C 5/19/06

S1 Thorium-228,230,232 by Alpha Spec

01 STANDARD TEST SET

AnalyDueDate: 05/24/2006

Batch: 6118462 **FILTER** **pCi/sampl** **PM, Quote: SA , 63174**

SEQ Batch, Test: None

Balance Id:1120373922

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech: 5 28-06 [illegible]

Prep Tech: HansenM

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:
1 H39LT-1-AA J6D270397-1-SAMP 04/14/2006 09:15	0.833sa,g	505.11sa,g	51.16g,in	0.0844g	THTF0504 05/16/06,pd 05/23/05,r	500 min				
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
2 H39L2-1-AA J6D270397-2-SAMP 04/14/2006 09:20	0.833sa,g	501.89sa,g	51.47g,in	0.0854g	THTF0505 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
3 H39L3-1-AA J6D270397-3-SAMP 04/14/2006 09:40	0.833sa,g	501.04sa,g	51.23g,in	0.0852g	THTF0506 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
4 H39L4-1-AA J6D270397-4-SAMP 04/14/2006 10:00	0.833sa,g	500.35sa,g	50.62g,in	0.0843g	THTF0507 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
5 H39L6-1-AA J6D270397-5-SAMP 04/14/2006 10:15	0.833sa,g	501.86sa,g	50.92g,in	0.0845g	THTF0508 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
6 H39L7-1-AA J6D270397-6-SAMP 04/14/2006 10:35	0.833sa,g	504.79sa,g	50.43g,in	0.0832g	THTF0509 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
7 H39L8-1-AA J6D270397-7-SAMP 04/14/2006 10:05	0.833sa,g	500.81sa,g	50.37g,in	0.0838g	THTF0510 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:

STL RICHLAND

5/18/2006 11:10:28 AM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

9N ThIso PrpRc5016, SepRC5084(5003)
S1 Thorium-228,230,232 by Alpha Spec
01 STANDARD TEST SET

Pipet #: _____

Sep1 DT/Tm Tech:

AnalyDueDate: 05/24/2006

Batch: 6118462 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

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:
8 H39MC-1-AA J6D270397-8-SAMP 04/14/2006 09:05	0.833sa,g	501.22sa,g	50.74g,in	0.0843g	THTF0511 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
9 H39MD-1-AA J6D270397-9-SAMP 04/14/2006 09:25	0.833sa,g	501.49sa,g	50.92g,in	0.0846g	THTF0512 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
10H39MF-1-AA J6D270397-10-SAMP 04/14/2006 09:35	0.833sa,g	503.84sa,g	51.48g,in	0.0851g	THTF0513 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
11H39MH-1-AA J6D270397-11-SAMP 04/14/2006 09:55	0.833sa,g	502.45sa,g	51.33g,in	0.0851g	THTF0514 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
12H39MJ-1-AA J6D270397-12-SAMP 04/14/2006 10:20	0.833sa,g	501.66sa,g	50.69g,in	0.0842g	THTF0515 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
13H39ML-1-AA J6D270397-13-SAMP 04/14/2006 10:30	0.833sa,g	502.05sa,g	50.97g,in	0.0846g	THTF0516 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
14H39MN-1-AA J6D270397-14-SAMP 04/14/2006 09:10	0.833sa,g	503.99sa,g	50.11g,in	0.0828g	THTF0517 05/16/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:

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5/18/2006 11:10:28 AM

Sample Preparation/Analysis

9N Thlso PrpRc5016, SepRC5084(5003)
S1 Thorium-228,230,232 by Alpha Spec
01 STANDARD TEST SET

Balance Id:1120373922
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,HansenM

AnalyDueDate: 05/24/2006

Batch: 6118462 pCi/sampl
SEQ Batch, Test: None

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:
15H4C83-1-AA-B J6D280000-462-BLK 04/14/2006 09:15			1.00sa,in	1.00sa	THTF0518 05/16/06,pd 05/23/05,r					
	AmtRec:		#Containers: 1				Scr:	Alpha:		Beta:
16H4C83-1-AC-C J6D280000-462-LCS 04/14/2006 09:15			1.00sa,in	1.00sa	THSO0038 11/01/05,pd 05/23/05,r					
	AmtRec:		#Containers: 1				Scr:	Alpha:		Beta:

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H39LT1AA-SAMP Constituent List:

Th-228	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-230	RDL:1	pCi/sam	LCL:	UCL:	RPD:
Th-232	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-234	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20

H4C831AA-BLK:

Th-228	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-230	RDL:1	pCi/sam	LCL:	UCL:	RPD:
Th-232	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-234	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20

H4C831AC-LCS:

Th-230	RDL:1	pCi/sam	LCL:70	UCL:130	RPD:20	Th-234	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20

H39LT1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C831AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C831AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

STL RICHLAND

215

5/31/2006 4:54:59 PM

ICOC Fraction Transfer/Status Report

ByDate: 5/31/2005, 6/5/2006, Batch: '6118462', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6118462						
AC		**CalcC**	**HansenM**	5/19/2006 7:54:53		
SC			wagarr	IsBatched	4/28/2006 2:39:32 PM	ICOC_RADCALC v4.8.22
SC			HansenM	Prep2C	5/19/2006 7:54:53 AM	RICH-RC-5016 REVISION 5
SC			ManisD	Sep1C	5/23/2006 4:30:08 PM	RICH-RC-5087 REV 0
SC			FABREM	Sep2C	5/28/2006 11:54:21 AM	RICH-RC-5039 REV 4
SC			StringerR	InCnt1	5/28/2006 12:02:09 PM	RICH-RD-0008 REVISION 4
SC			BlackCL	CalcC	5/30/2006 7:32:03 AM	RICH-RD-0008 REVISION 4
AC			**ManisD**	5/23/2006 4:30:08 PM		
AC			**FABREM**	5/28/2006 11:54:21		
AC			**StringerR**	5/28/2006 12:02:09		
AC			**BlackCL**	5/30/2006 7:32:03		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.18

5/31/2006 4:54:58 PM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
31509	**9H39L210**			**J6D2703972**	000424	FILTER	4/27/2006 10:30:00	4/14/2006 9:20:00 AM				
ALPHA	BAS7		0	5/29/2006 10:28:04	**1.7348E+00**	1.51E+00	1.521E+00	6.383E+00	PCI/SA	1.0	1.0E+0	2.075E-2
BETA	BDS8		0	5/27/2006 12:07:31 PM	**8.2447E+00**	1.694E+00	1.786E+00	6.161E+00	PCI/SA	1.0	1.0E+0	3.443E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.1117E-01**	7.861E-02	7.921E-02	2.727E-01	PCI/SA	1.028	1.0E+0	3.543E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**3.1725E-01**	1.058E-01	1.093E-01	9.553E-02	PCI/SA	1.028	1.0E+0	3.543E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**7.0501E-02**	4.985E-02	5.023E-02	9.553E-02	PCI/SA	1.028	1.0E+0	3.543E-2
31509	**9H39L310**			**J6D2703973**	000425	FILTER	4/27/2006 10:30:00	4/14/2006 9:40:00 AM				
ALPHA	BAS7		0	5/29/2006 10:28:04	**4.891E+00**	1.88E+00	1.947E+00	5.34E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	5/27/2006 12:07:31 PM	**1.1426E+01**	1.851E+00	2.014E+00	6.408E+00	PCI/SA	1.0	1.0E+0	3.406E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**4.3868E-02**	6.936E-02	6.947E-02	3.229E-01	PCI/SA	1.075	1.0E+0	3.517E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**3.7557E-01**	1.252E-01	1.296E-01	1.131E-01	PCI/SA	1.075	1.0E+0	3.517E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**0.0E+00**	0.0E+00	5.111E-02	1.131E-01	PCI/SA	1.075	1.0E+0	3.517E-2
31509	**9H39L410**			**J6D2703974**	000426	FILTER	4/27/2006 10:30:00	4/14/2006 10:00:00 AM				
ALPHA	BAS7		0	5/29/2006 10:28:04	**4.845E+00**	1.991E+00	2.052E+00	6.537E+00	PCI/SA	1.0	1.0E+0	2.109E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.188E+01**	1.917E+00	2.087E+00	6.639E+00	PCI/SA	1.0	1.0E+0	3.359E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.361E-01**	7.858E-02	7.952E-02	1.229E-01	PCI/SA	0.999	1.0E+0	3.427E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**1.7263E-01**	8.631E-02	8.77E-02	1.17E-01	PCI/SA	0.999	1.0E+0	3.427E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**4.3157E-02**	4.316E-02	4.333E-02	1.17E-01	PCI/SA	0.999	1.0E+0	3.427E-2
31509	**9H39L610**			**J6D2703975**	000427	FILTER	4/27/2006 10:30:00	4/14/2006 10:15:00 AM				
ALPHA	BAS7		0	5/29/2006 10:28:04	**2.8178E+00**	1.533E+00	1.56E+00	5.233E+00	PCI/SA	1.0	1.0E+0	2.078E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.7494E+01**	2.091E+00	2.528E+00	6.677E+00	PCI/SA	1.0	1.0E+0	3.364E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**9.5632E-02**	6.896E-02	6.947E-02	2.294E-01	PCI/SA	0.999	1.0E+0	3.452E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**1.2736E-01**	7.502E-02	7.585E-02	2.183E-01	PCI/SA	0.999	1.0E+0	3.452E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**1.8195E-02**	4.068E-02	4.072E-02	2.183E-01	PCI/SA	0.999	1.0E+0	3.452E-2
31509	**9H39L710**			**J6D2703976**	000428	FILTER	4/27/2006 10:30:00	4/14/2006 10:35:00 AM				
ALPHA	BAS7		0	5/29/2006 12:20:19 PM	**3.2765E+00**	1.795E+00	1.827E+00	6.559E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.0598E+01**	1.871E+00	2.069E+00	6.56E+00	PCI/SA	1.0	1.0E+0	3.263E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.3245E-01**	9.366E-02	9.44E-02	3.249E-01	PCI/SA	0.885	1.0E+0	3.322E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**2.9401E-01**	1.111E-01	1.142E-01	1.138E-01	PCI/SA	0.885	1.0E+0	3.322E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**1.26E-01**	7.275E-02	7.361E-02	1.138E-01	PCI/SA	0.885	1.0E+0	3.322E-2
31509	**9H39L810**			**J6D2703977**	000429	FILTER	4/27/2006 10:30:00	4/14/2006 10:05:00 AM				
ALPHA	BAS7		0	5/29/2006 12:20:19 PM	**1.0743E-01**	1.172E+00	1.172E+00	6.325E+00	PCI/SA	1.0	1.0E+0	2.089E-2
BETA	BDS8		0	5/27/2006 12:07:13 PM	**2.3544E+00**	1.536E+00	1.545E+00	6.442E+00	PCI/SA	1.0	1.0E+0	3.341E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**4.3305E-02**	4.331E-02	4.347E-02	1.174E-01	PCI/SA	1.109	1.0E+0	3.378E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**-2.0598E-02**	2.06E-02	2.068E-02	2.471E-01	PCI/SA	1.109	1.0E+0	3.378E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**0.0E+00**	0.0E+00	5.045E-02	1.116E-01	PCI/SA	1.109	1.0E+0	3.378E-2
31509	**9H39LT10**			**J6D2703971**	000423	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM				
ALPHA	BAS7		0	5/29/2006 10:28:04	**4.3704E+00**	1.954E+00	2.007E+00	6.561E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	5/27/2006 12:07:31 PM	**1.0432E+01**	1.652E+00	1.964E+00	5.664E+00	PCI/SA	1.0	1.0E+0	3.289E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**-4.5049E-02**	3.185E-02	3.211E-02	3.316E-01	PCI/SA	0.858	1.0E+0	3.437E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**3.8568E-01**	1.286E-01	1.331E-01	1.161E-01	PCI/SA	0.858	1.0E+0	3.437E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**7.1498E-07**	5.248E-02	5.248E-02	3.154E-01	PCI/SA	0.858	1.0E+0	3.437E-2
31509	**9H39MC10**			**J6D2703978**	P-0591	FILTER	4/27/2006 10:30:00	4/14/2006 9:05:00 AM				
ALPHA	BAS7		0	5/29/2006 12:20:19 PM	**1.5469E+00**	1.289E+00	1.299E+00	5.308E+00	PCI/SA	1.0	1.0E+0	2.097E-2
BETA	BDS8		0	5/27/2006 12:07:13 PM	**1.1377E+01**	1.764E+00	2.012E+00	5.95E+00	PCI/SA	1.0	1.0E+0	3.466E-2
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**6.3589E-07**	4.668E-02	4.668E-02	2.805E-01	PCI/SA	0.941	1.0E+0	3.433E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**1.0877E-01**	6.28E-02	6.352E-02	9.825E-02	PCI/SA	0.941	1.0E+0	3.433E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**3.6255E-02**	3.626E-02	3.64E-02	9.825E-02	PCI/SA	0.941	1.0E+0	3.433E-2
31509	**9H39MD10**			**J6D2703979**	P-0592	FILTER	4/27/2006 10:30:00	4/14/2006 9:25:00 AM				
ALPHA	BAS7		0	5/29/2006 12:20:19 PM	**2.0697E-01**	1.259E+00	1.259E+00	6.562E+00	PCI/SA	1.0	1.0E+0	2.101E-2
BETA	BDS8		0	5/27/2006 12:07:13 PM	**6.3374E+00**	1.711E+00	1.766E+00	6.564E+00	PCI/SA	1.0	1.0E+0	3.343E-2
TH-228	9NS1		0	5/28/2006 5:03:34 PM	**2.73E-05**	1.091E-01	1.091E-01	5.851E-01	PCI/SA	0.559	1.0E+0	3.458E-2

6118462, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 46 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H4C831AA=> , mat:FILTER | Air *wo:H4C831AA=> , mat:FILTER | Air *wo:H4C831AA=> , mat:FILTER | Air *wo:H4C831AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Mga	Sample Date / Units	Expected	Yield	Volumes	
TH-230	9NS1	0		5/28/2006 5:03:34 PM	**5.9945E-02**	5.995E-02	6.021E-02	1.625E-01	PCI/SA		0.559	1.0E+0	3.458E-2
TH-232	9NS1	0		5/28/2006 5:03:34 PM	**2.9979E-02**	6.702E-02	6.708E-02	3.595E-01	PCI/SA		0.559	1.0E+0	3.458E-2
31509	**9H39MF10**			**J6D27039710**	P-0593	FILTER	4/27/2006 10:30:00		4/14/2006 9:35:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**2.2454E+00**	1.42E+00	1.439E+00	5.213E+00	PCI/SA		1.0	1.0E+0	2.08E-2
BETA	BDS8	0		5/27/2006 12:07:13 PM	**8.5854E+00**	1.743E+00	1.844E+00	6.29E+00	PCI/SA		1.0	1.0E+0	3.275E-2
TH-228	9NS1	0		5/28/2006 5:03:56 PM	**-1.4722E-01**	5.564E-02	5.717E-02	4.799E-01	PCI/SA		0.805	1.0E+0	3.511E-2
TH-230	9NS1	0		5/28/2006 5:03:56 PM	**1.2004E-01**	6.93E-02	7.012E-02	1.084E-01	PCI/SA		0.805	1.0E+0	3.511E-2
TH-232	9NS1	0		5/28/2006 5:03:56 PM	**4.0012E-02**	4.001E-02	4.017E-02	1.084E-01	PCI/SA		0.805	1.0E+0	3.511E-2
31509	**9H39MH10**			**J6D27039711**	P-0594	FILTER	4/27/2006 10:30:00		4/14/2006 9:55:00 AM				
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**-1.7294E+00**	1.393E+00	1.404E+00	8.661E+00	PCI/SA		1.0	1.0E+0	2.107E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5329E+00**	1.82E+00	1.935E+00	6.522E+00	PCI/SA		1.0	1.0E+0	3.397E-2
TH-228	9NS1	0		5/28/2006 5:04:17 PM	**3.7622E-06**	5.53E-02	5.53E-02	3.323E-01	PCI/SA		0.966	1.0E+0	3.51E-2
TH-230	9NS1	0		5/28/2006 5:04:17 PM	**1.2885E-01**	7.439E-02	7.529E-02	1.164E-01	PCI/SA		0.966	1.0E+0	3.51E-2
TH-232	9NS1	0		5/28/2006 5:04:17 PM	**0.0E+00**	0.0E+00	5.26E-02	1.164E-01	PCI/SA		0.966	1.0E+0	3.51E-2
31509	**9H39MJ10**			**J6D27039712**	P-0595	FILTER	4/27/2006 10:30:00		4/14/2006 10:20:00 AM				
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**1.2881E+00**	1.261E+00	1.268E+00	5.479E+00	PCI/SA		1.0	1.0E+0	2.089E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5189E+00**	1.783E+00	1.901E+00	6.353E+00	PCI/SA		1.0	1.0E+0	3.351E-2
TH-228	9NS1	0		5/28/2006 5:04:41 PM	**6.7544E-02**	5.36E-02	5.392E-02	1.797E-01	PCI/SA		0.892	1.0E+0	3.417E-2
TH-230	9NS1	0		5/28/2006 5:04:41 PM	**1.6421E-01**	8.046E-02	8.174E-02	2.017E-01	PCI/SA		0.892	1.0E+0	3.417E-2
TH-232	9NS1	0		5/28/2006 5:04:41 PM	**-7.1407E-03**	7.141E-03	7.168E-03	1.71E-01	PCI/SA		0.892	1.0E+0	3.417E-2
31509	**9H39ML10**			**J6D27039713**	P-0596	FILTER	4/27/2006 10:30:00		4/14/2006 10:30:00 AM				
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**7.8233E-01**	1.188E+00	1.191E+00	5.704E+00	PCI/SA		1.0	1.0E+0	2.079E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.8848E+00**	1.729E+00	1.944E+00	6.023E+00	PCI/SA		1.0	1.0E+0	3.435E-2
TH-228	9NS1	0		5/28/2006 5:04:53 PM	**1.9206E-01**	8.289E-02	8.454E-02	2.128E-01	PCI/SA		0.993	1.0E+0	3.457E-2
TH-230	9NS1	0		5/28/2006 5:04:53 PM	**1.5914E-01**	7.291E-02	7.419E-02	1.86E-01	PCI/SA		0.993	1.0E+0	3.457E-2
TH-232	9NS1	0		5/28/2006 5:04:53 PM	**0.0E+00**	0.0E+00	3.609E-02	7.986E-02	PCI/SA		0.993	1.0E+0	3.457E-2
31509	**9H39MN10**			**J6D27039714**	P-0597	FILTER	4/27/2006 10:30:00		4/14/2006 9:10:00 AM				
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**1.9987E+00**	1.763E+00	1.775E+00	7.515E+00	PCI/SA		1.0	1.0E+0	2.073E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**1.1678E+01**	2.019E+00	2.186E+00	7.182E+00	PCI/SA		1.0	1.0E+0	3.274E-2
TH-228	9NS1	0		5/28/2006 5:05:13 PM	**-3.0288E-06**	5.566E-02	5.566E-02	3.345E-01	PCI/SA		1.057	1.0E+0	3.282E-2
TH-230	9NS1	0		5/28/2006 5:05:13 PM	**8.6453E-02**	6.113E-02	6.161E-02	1.171E-01	PCI/SA		1.057	1.0E+0	3.282E-2
TH-232	9NS1	0		5/28/2006 5:05:13 PM	**4.3227E-02**	4.323E-02	4.34E-02	1.171E-01	PCI/SA		1.057	1.0E+0	3.282E-2
31509	**H4C831AB**			**J6D280000462**	INTRA-LAB BLANK	FILTER	4/27/2006 10:30:00		4/14/2006 9:15:00 AM				
TH-228	9NS1	0	B	5/28/2006 5:05:29 PM	**7.8677E-03**	7.359E-03	7.391E-03	2.895E-02	PCI/SA		1.068	1.0E+0	1.0E+0
TH-230	9NS1	0	B	5/28/2006 5:05:29 PM	**7.4839E-03**	5.292E-03	5.331E-03	1.014E-02	PCI/SA		1.068	1.0E+0	1.0E+0
TH-232	9NS1	0	B	5/28/2006 5:05:29 PM	**3.742E-03**	3.742E-03	3.756E-03	1.014E-02	PCI/SA		1.068	1.0E+0	1.0E+0
31509	**H4C831CS**			**J6D280000462**	INTRA-LAB CHECK	FILTER	4/27/2006 10:30:00		4/14/2006 9:15:00 AM				
TH-229	9NS1	0	S	5/29/2006 10:28:32	**1.7909E+00**	7.956E-02	1.745E-01	2.117E-02	PCI/SA	1.8366E+00	1.056	1.0E+0	1.0E+0

6118462, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 46 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H4C831AA=> , mat:FILTER | Air *wo:H4C831AA=> , mat:FILTER | Air *wo:H4C831AA=> , mat:FILTER | Air *wo:H4C831AC=> , mat:FILTER | Air.

Batch Nbr: 6118462

Alpha Spec, Thlso by ALP , Results

5/30/2006 7:23:38 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Thlso by ALP				Richland Standard Alplso Wo Blk Subt.										
Calc	S1	FILTER	H39LT1AA	TH-228	-4.50E-02	(3.21E-02)	U4	PCI/SA	R	1.05E-01	3.32E-01 CRDC mu		86%	
Calc	S1	FILTER	H39LT1AA	TH-230	3.86E-01	(1.33E-01)		PCI/SA	R		1.16E-01		86%	
Calc	S1	FILTER	H39LT1AA	TH-232	7.15E-07	(5.25E-02)	U4	PCI/SA	R	9.97E-02	3.15E-01		86%	
Calc	S1	FILTER	H39L21AA	TH-228	1.11E-01	(7.92E-02)	U4	PCI/SA	R	8.62E-02	2.73E-01		103%	
Calc	S1	FILTER	H39L21AA	TH-230	3.17E-01	(1.09E-01)		PCI/SA	R		9.55E-02		103%	
Calc	S1	FILTER	H39L21AA	TH-232	7.05E-02	(5.02E-02)	U4	PCI/SA	R		9.55E-02		103%	
Calc	S1	FILTER	H39L31AA	TH-228	4.39E-02	(6.95E-02)	U4	PCI/SA	R	1.02E-01	3.23E-01		108%	
Calc	S1	FILTER	H39L31AA	TH-230	3.76E-01	(1.30E-01)		PCI/SA	R		1.13E-01		108%	
Calc	S1	FILTER	H39L31AA	TH-232	0.00E+00	(5.11E-02)	U4	PCI/SA	R		1.13E-01		108%	
Calc	S1	FILTER	H39L41AA	TH-228	1.36E-01	(7.95E-02)		PCI/SA	R		1.23E-01		100%	
Calc	S1	FILTER	H39L41AA	TH-230	1.73E-01	(8.77E-02)		PCI/SA	R		1.17E-01		100%	
Calc	S1	FILTER	H39L41AA	TH-232	4.32E-02	(4.33E-02)	U4	PCI/SA	R		1.17E-01		100%	
Calc	S1	FILTER	H39L61AA	TH-228	9.56E-02	(6.95E-02)	U4	PCI/SA	R	6.29E-02	2.29E-01		100%	
Calc	S1	FILTER	H39L61AA	TH-230	1.27E-01	(7.59E-02)		PCI/SA	R	5.99E-02	2.18E-01		100%	
Calc	S1	FILTER	H39L61AA	TH-232	1.82E-02	(4.07E-02)	U4	PCI/SA	R	5.99E-02	2.18E-01		100%	
Calc	S1	FILTER	H39L71AA	TH-228	1.32E-01	(9.44E-02)	U4	PCI/SA	R	1.03E-01	3.25E-01		89%	
Calc	S1	FILTER	H39L71AA	TH-230	2.94E-01	(1.14E-01)		PCI/SA	R		1.14E-01		89%	
Calc	S1	FILTER	H39L71AA	TH-232	1.26E-01	(7.36E-02)		PCI/SA	R		1.14E-01		89%	
Calc	S1	FILTER	H39L81AA	TH-228	4.33E-02	(4.35E-02)	U4	PCI/SA	R		1.17E-01		111%	
Calc	S1	FILTER	H39L81AA	TH-230	-2.06E-02	(2.07E-02)	U4	PCI/SA	R	6.78E-02	2.47E-01		111%	
Calc	S1	FILTER	H39L81AA	TH-232	0.00E+00	(5.05E-02)	U4	PCI/SA	R		1.12E-01		111%	
Calc	S1	FILTER	H39MC1AA	TH-228	6.36E-07	(4.67E-02)	U4	PCI/SA	R	8.87E-02	2.81E-01		94%	
Calc	S1	FILTER	H39MC1AA	TH-230	1.09E-01	(6.35E-02)		PCI/SA	R		9.83E-02		94%	
Calc	S1	FILTER	H39MC1AA	TH-232	3.63E-02	(3.64E-02)	U4	PCI/SA	R		9.83E-02		94%	
Calc	S1	FILTER	H39MD1AA	TH-228	2.73E-05	(1.09E-01)	U4	PCI/SA	R	2.07E-01	5.85E-01		56%	
Calc	S1	FILTER	H39MD1AA	TH-230	5.99E-02	(6.02E-02)	U4	PCI/SA	R		1.62E-01		56%	
Calc	S1	FILTER	H39MD1AA	TH-232	3.00E-02	(6.71E-02)	U4	PCI/SA	R	9.86E-02	3.60E-01		56%	
Calc	S1	FILTER	H39MF1AA	TH-228	-1.47E-01	(5.72E-02)	U4	PCI/SA	R	1.83E-01	4.80E-01		80%	
Calc	S1	FILTER	H39MF1AA	TH-230	1.20E-01	(7.01E-02)		PCI/SA	R		1.08E-01		80%	
Calc	S1	FILTER	H39MF1AA	TH-232	4.00E-02	(4.02E-02)	U4	PCI/SA	R		1.08E-01		80%	
Calc	S1	FILTER	H39MH1AA	TH-228	3.76E-06	(5.53E-02)	U4	PCI/SA	R	1.05E-01	3.32E-01		97%	
Calc	S1	FILTER	H39MH1AA	TH-230	1.29E-01	(7.53E-02)		PCI/SA	R		1.16E-01		97%	
Calc	S1	FILTER	H39MH1AA	TH-232	0.00E+00	(5.26E-02)	U4	PCI/SA	R		1.16E-01		97%	
Calc	S1	FILTER	H39MJ1AA	TH-228	6.75E-02	(5.39E-02)	U4	PCI/SA	R	3.90E-02	1.80E-01		89%	
Calc	S1	FILTER	H39MJ1AA	TH-230	1.64E-01	(8.17E-02)		PCI/SA	R	5.25E-02	2.02E-01		89%	
Calc	S1	FILTER	H39MJ1AA	TH-232	-7.14E-03	(7.17E-03)	U4	PCI/SA	R	3.71E-02	1.71E-01		89%	
Calc	S1	FILTER	H39ML1AA	TH-228	1.92E-01	(8.45E-02)		PCI/SA	R	6.45E-02	2.13E-01		99%	

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:51
RADCALC v4.8.18
STL Richland

Batch Nbr: 6118462

Alpha Spec, ThIso by ALP , Results

Summary Report

5/30/2006 7:23:38 AM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	S1	FILTER	**H39ML1AA**	TH-230	**1.59E-01**	**(7.42E-02)**		PCI/SA	R	5.31E-02	1.86E-01		99%	
Calc	S1	FILTER	**H39ML1AA**	TH-232	**0.00E+00**	**(3.61E-02)**	**U4**	PCI/SA	R		7.99E-02		99%	
Calc	S1	FILTER	**H39MN1AA**	TH-228	**-3.03E-06**	**(5.57E-02)**	**U4**	PCI/SA	R	1.06E-01	3.34E-01		106%	
Calc	S1	FILTER	**H39MN1AA**	TH-230	**8.65E-02**	**(6.16E-02)**	**U4**	PCI/SA	R		1.17E-01		106%	
Calc	S1	FILTER	**H39MN1AA**	TH-232	**4.32E-02**	**(4.34E-02)**	**U4**	PCI/SA	R		1.17E-01		106%	
Calc	S1	FILTER	**H4C831AA**	TH-228	**7.87E-03**	**(7.39E-03)**	**U4**	PCI/SA	R	9.15E-03	2.90E-02	**B**	107%	
Calc	S1	FILTER	**H4C831AA**	TH-230	**7.48E-03**	**(5.33E-03)**	**U4**	PCI/SA	R		1.01E-02	**B**	107%	
Calc	S1	FILTER	**H4C831AA**	TH-232	**3.74E-03**	**(3.76E-03)**	**U4**	PCI/SA	R		1.01E-02	**B**	107%	
Calc	S1	FILTER	**H4C831AC**	TH-229	**1.79E+00**	**(1.75E-01)**		PCI/SA	R	5.81E-03	2.12E-02	**S**	106%	98%

P Anderson
5-31-06.

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:62
RADCALC v4.8.18
STL Richland

Batch Nbr: 6118462

Alpha Spec, ThIso by ALP , Calculated Results

5/30/2006 7:23:39 AM

Detailed Report

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39LT1AA**	**PCI/SA**		04/14/06 09:15	05/28/06 17:02			1	1.00 SA	
536403,000423					,J6D270397-1 v4.8.18		FILTER					THTF0504 Alq		0.08437 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:52	TH-228	0	2	ALP171	ED	N	N	2.9087E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			499.4666666	998.95			Y		(8.726E-03)			5%			(0.000E+00)	11.852513		
1	05/28/06 12:52	TH-229	509	1	ALP171	ED	Y	N	2.9087E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)						(0.000E+00)	11.852513		
2	05/28/06 12:52	TH-230	9	0	ALP171	ED	N	N	2.9087E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)			5%			(0.000E+00)	11.852513		
3	05/28/06 12:52	TH-232	1	2	ALP171	ED	N	N	2.9087E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)			5%			(0.000E+00)	11.852513		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**-0.045049**	U4	-2.00210E-03	-0.008075	-0.008075	1.00 SA	86%		0.331563		
				(0.03211)		(1.4157E-03)	(0.005737)	(0.005737)	(0.028284)			0.104802		
	05/30/06	TH-229	R	**18.687334**		1.01809E+00	3.50018	3.50018	1.00 SA	86%				
				(1.467815)		(4.5181E-02)	(0.187496)	(0.187496)	(0.028284)					
	05/30/06	TH-230	R	**0.385683**		1.80192E-02	0.072239	0.072239	1.00 SA	86%		0.116133		
				(0.133142)		(6.0064E-03)	(0.02459)	(0.02459)	(0.028284)					
	05/30/06	TH-232	R	**7.1498E-07**	U4	3.34040E-08	1.3392E-07	1.3392E-07	1.00 SA	86%		0.315401		
				(0.052485)		(2.4521E-03)	(0.00983)	(0.00983)	(0.028284)			0.099693		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39L21AA**	**PCI/SA**		04/14/06 09:20	05/28/06 17:02			1	1.00 SA	
536403,000424					,J6D270397-2 v4.8.18		FILTER					THTF0505 Alq		0.085426 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:52	TH-228	4	2	ALP172	ED	N	N	2.9949E-01		N	103%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			499.4666666	998.95			Y		(8.985E-03)			6%			(0.000E+00)	11.706023		
1	05/28/06 12:52	TH-229	629	0	ALP172	ED	Y	N	2.9949E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)						(0.000E+00)	11.706023		
2	05/28/06 12:52	TH-230	9	0	ALP172	ED	N	N	2.9949E-01		N	103%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			6%			(0.000E+00)	11.706023		
3	05/28/06 12:52	TH-232	2	0	ALP172	ED	N	N	2.9949E-01		N	103%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			6%			(0.000E+00)	11.706023		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:2

RADCALC v4.8.18
STL Richland

Batch Nbr: 6118462

Alpha Spec, ThIso by ALP , Calculated Results

5/30/2006 7:23:39 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**0.111171**	U4	6.00644E-03	0.020177	0.020177	1.00 SA	103%		0.272736		
				(0.07921)		(4.2472E-03)	(0.014329)	(0.014329)	(0.028284)			0.086207		
	05/30/06	TH-229	R	**22.172595**		1.25934E+00	4.204947	4.204947	1.00 SA	103%				
				(1.687133)		(5.0213E-02)	(0.209819)	(0.209819)	(0.028284)					
	05/30/06	TH-230	R	**0.317255**		1.80192E-02	0.060166	0.060166	1.00 SA	103%		0.095529		
				(0.109345)		(6.0064E-03)	(0.020447)	(0.020447)	(0.028284)					
	05/30/06	TH-232	R	**0.070501**	U4	4.00427E-03	0.01337	0.01337	1.00 SA	103%		0.095529		
				(0.050233)		(2.8314E-03)	(0.009496)	(0.009496)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39L31AA**	**PCI/SA**		04/14/06 09:40	05/28/06 17:02			1	1.00 SA	
536403,000425					,J6D270397-3 v4.8.18		FILTER					THTF0506 Alq		0.085172 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:52	TH-228	2	2	ALP173	ED	N	N	2.5374E-01		N	108%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			499.4666666	998.95			Y		(7.612E-03)			7%			(0.000E+00)	11.740945		
1	05/28/06 12:52	TH-229	557	1	ALP173	ED	Y	N	2.5374E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)						(0.000E+00)	11.740945		
2	05/28/06 12:52	TH-230	9	0	ALP173	ED	N	N	2.5374E-01		N	108%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)			7%			(0.000E+00)	11.740945		
3	05/28/06 12:52	TH-232	0	0	ALP173	ED	N	N	2.5374E-01		N	108%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)			7%			(0.000E+00)	11.740945		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**0.043868**	U4	2.00217E-03	0.007938	0.007938	1.00 SA	108%		0.322864		
				(0.06947)		(3.1656E-03)	(0.012563)	(0.012563)	(0.028284)			0.102052		
	05/30/06	TH-229	R	**23.222808**		1.11419E+00	4.391017	4.391017	1.00 SA	108%				
				(1.798736)		(4.7263E-02)	(0.228137)	(0.228137)	(0.028284)					
	05/30/06	TH-230	R	**0.375571**		1.80192E-02	0.071014	0.071014	1.00 SA	108%		0.113089		
				(0.129559)		(6.0064E-03)	(0.024155)	(0.024155)	(0.028284)					
	05/30/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	108%		0.113089		
				(0.051109)		(0.0000E+00)	(0.009664)	(0.009664)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39L41AA**	**PCI/SA**		04/14/06 10:00	05/28/06 17:02			1	1.00 SA	
536403,000426					,J6D270397-4 v4.8.18		FILTER					THTF0507 Alq		0.084274 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:52	TH-228	3	0	ALP174	ED	N	N	2.4814E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			499.4666666	998.95			Y		(7.444E-03)			6%			(0.000E+00)	11.866066		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.18

STL Richland

Batch Nbr: 6118462

Alpha Spec, Thlso by ALP , Calculated Results

5/30/2006 7:23:39 AM

1	05/28/06 12:52	TH-229	506	1	ALP174	ED	Y	N	2.4814E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00		
			499.4666666	998.95			Y		(7.444E-03)				(0.000E+00)	11.866066			
2	05/28/06 12:52	TH-230	4	0	ALP174	ED	N	N	2.4814E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00		
			499.4666666	998.95			Y		(7.444E-03)		6%		(0.000E+00)	11.866066			
3	05/28/06 12:52	TH-232	1	0	ALP174	ED	N	N	2.4814E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00		
			499.4666666	998.95			Y		(7.444E-03)		6%		(0.000E+00)	11.866066			

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**0.136102**		6.00641E-03	0.024369	0.024369	1.00 SA	100%		0.122945		
				(0.079524)		(3.4678E-03)	(0.01417)	(0.01417)	(0.028284)					
	05/30/06	TH-229	R	**21.800831**		1.01208E+00	4.078681	4.078681	1.00 SA	100%				
				(1.713991)		(4.5048E-02)	(0.21893)	(0.21893)	(0.028284)					
	05/30/06	TH-230	R	**0.172629**		8.00854E-03	0.032297	0.032297	1.00 SA	100%		0.116956		
				(0.087697)		(4.0043E-03)	(0.016302)	(0.016302)	(0.028284)					
	05/30/06	TH-232	R	**0.043157**	U4	2.00214E-03	0.008074	0.008074	1.00 SA	100%		0.116956		
				(0.043331)		(2.0021E-03)	(0.008093)	(0.008093)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39L61AA**	**PCI/SA**		04/14/06 10:15	05/28/06 17:02			1	1.00 SA	
536403,000427					,J6D270397-5 v4.8.18		FILTER					THTF0508 Alq		0.084518 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:52	TH-228	3	1	ALP175	ED	N	N	2.9360E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			499.4666666	998.95			Y		(8.808E-03)			6%			(0.000E+00)	11.831755		
1	05/28/06 12:52	TH-229	597	1	ALP175	ED	Y	N	2.9360E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)						(0.000E+00)	11.831755		
2	05/28/06 12:52	TH-230	4	1	ALP175	ED	N	N	2.9360E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)			6%			(0.000E+00)	11.831755		
3	05/28/06 12:52	TH-232	1	1	ALP175	ED	N	N	2.9360E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)			6%			(0.000E+00)	11.831755		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**0.095632**	U4	5.00536E-03	0.017173	0.017173	1.00 SA	100%		0.229441		
				(0.069474)		(3.6094E-03)	(0.012436)	(0.012436)	(0.028284)			0.062925		
	05/30/06	TH-229	R	**21.679256**		1.19427E+00	4.067697	4.067697	1.00 SA	100%				
				(1.662186)		(4.8930E-02)	(0.206555)	(0.206555)	(0.028284)					
	05/30/06	TH-230	R	**0.127364**		7.00749E-03	0.023897	0.023897	1.00 SA	100%		0.218266		
				(0.075854)		(4.1275E-03)	(0.014166)	(0.014166)	(0.028284)			0.059861		
	05/30/06	TH-232	R	**0.018195**	U4	1.00108E-03	0.003414	0.003414	1.00 SA	100%		0.218266		
				(0.040716)		(2.2384E-03)	(0.007637)	(0.007637)	(0.028284)			0.059861		

RecCnt:6 RADCALC v4.8.18 STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118462

Alpha Spec, ThIso by ALP , Calculated Results

5/30/2006 7:23:40 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39L71AA**	**PCI/SA**		04/14/06 10:35	05/28/06 17:02		THTF0509 Alq	1	1.00 SA 0.083219 SA	
536403,000428					,J6D270397-6 v4.8.18		FILTER								

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:52	TH-228	4 499.4666666	2 998.95	ALP176	ED	N Y	N	2.9146E-01 (8.744E-03)		N	89% 5%	N		1.0000E+00 (0.000E+00)	4.5045E-01 12.016466	1.0449E+00	
1	05/28/06 12:52	TH-229	526 499.4666666	0 998.95	ALP176	ED	Y Y	N	2.9146E-01 (8.744E-03)		N	100%	N		1.0000E+00 (0.000E+00)	4.5045E-01 12.016466	1.0000E+00	
2	05/28/06 12:52	TH-230	7 499.4666666	0 998.95	ALP176	ED	N Y	N	2.9146E-01 (8.744E-03)		N	89% 5%	N		1.0000E+00 (0.000E+00)	4.5045E-01 12.016466	1.0000E+00	
3	05/28/06 12:52	TH-232	3 499.4666666	0 998.95	ALP176	ED	N Y	N	2.9146E-01 (8.744E-03)		N	89% 5%	N		1.0000E+00 (0.000E+00)	4.5045E-01 12.016466	1.0000E+00	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**0.132453** **(0.094403)**	U4	6.00644E-03 (4.2472E-03)	0.023419 (0.016637)	0.023419 (0.016637)	1.00 SA (0.028284)	89%		0.324948 0.102711		
	05/30/06	TH-229	R	**19.557949** **(1.527667)**		1.05312E+00 (4.5918E-02)	3.613266 (0.191235)	3.613266 (0.191235)	1.00 SA (0.028284)	89%				
	05/30/06	TH-230	R	**0.294007** **(0.11419)**		1.40149E-02 (5.2972E-03)	0.054317 (0.020864)	0.054317 (0.020864)	1.00 SA (0.028284)	89%		0.113823		
	05/30/06	TH-232	R	**0.126003** **(0.073615)**		6.00641E-03 (3.4678E-03)	0.023279 (0.013534)	0.023279 (0.013534)	1.00 SA (0.028284)	89%		0.113823		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39L81AA**	**PCI/SA**		04/14/06 10:05	05/28/06 17:02		THTF0510 Alq	1	1.00 SA 0.083781 SA	
536403,000429					,J6D270397-7 v4.8.18		FILTER								

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:52	TH-228	1 499.4666666	0 998.95	ALP177	ED	N Y	N	2.6130E-01 (7.839E-03)		N	111% 7%	N		1.0000E+00 (0.000E+00)	4.5045E-01 11.935924	1.0449E+00	
1	05/28/06 12:52	TH-229	590 499.4666666	2 998.95	ALP177	ED	Y Y	N	2.6130E-01 (7.839E-03)		N	100%	N		1.0000E+00 (0.000E+00)	4.5045E-01 11.935924	1.0000E+00	
2	05/28/06 12:52	TH-230	0 499.4666666	1 998.95	ALP177	ED	N Y	N	2.6130E-01 (7.839E-03)		N	111% 7%	N		1.0000E+00 (0.000E+00)	4.5045E-01 11.935924	1.0000E+00	
3	05/28/06 12:52	TH-232	0 499.4666666	0 998.95	ALP177	ED	N Y	N	2.6130E-01 (7.839E-03)		N	111% 7%	N		1.0000E+00 (0.000E+00)	4.5045E-01 11.935924	1.0000E+00	

RecCnt:7 RADCALC v4.8.18
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118462

Alpha Spec, ThIso by ALP , Calculated Results

5/30/2006 7:23:40 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**0.043305**	U4	2.00214E-03	0.007708	0.007708	1.00 SA	111%		0.117358		
				(0.043474)		(2.0021E-03)	(0.007726)	(0.007726)	(0.028284)					
	05/30/06	TH-229	R	**24.264419**		1.17926E+00	4.51302	4.51302	1.00 SA	111%				
				(1.86412)		(4.8652E-02)	(0.230213)	(0.230213)	(0.028284)					
	05/30/06	TH-230	R	**-0.020598**	U4	-1.00105E-03	-0.003831	-0.003831	1.00 SA	111%		0.247094		
				(0.020678)		(1.0011E-03)	(0.00384)	(0.00384)	(0.028284)			0.067767		
	05/30/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	111%		0.111641		
				(0.050455)		(0.0000E+00)	(0.009384)	(0.009384)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39MC1AA**	**PCI/SA**		04/14/06 09:05	05/28/06 17:02			1	1.00 SA	
536403,P-0591					,J6D270397-8 v4.8.18		FILTER					THTF0511 Alq		0.084327 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:52	TH-228	1	2	ALP178	ED	N	N	3.1338E-01		N	94%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			499.4666666	998.95			Y		(9.401E-03)			6%			(0.000E+00)	11.858587		
1	05/28/06 12:52	TH-229	602	0	ALP178	ED	Y	N	3.1338E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(9.401E-03)						(0.000E+00)	11.858587		
2	05/28/06 12:52	TH-230	3	0	ALP178	ED	N	N	3.1338E-01		N	94%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(9.401E-03)			6%			(0.000E+00)	11.858587		
3	05/28/06 12:52	TH-232	1	0	ALP178	ED	N	N	3.1338E-01		N	94%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(9.401E-03)			6%			(0.000E+00)	11.858587		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**6.3589E-07**	U4	3.34040E-08	1.1392E-07	1.1392E-07	1.00 SA	94%		0.280511		
				(0.046679)		(2.4521E-03)	(0.008363)	(0.008363)	(0.028284)			0.088665		
	05/30/06	TH-229	R	**20.544534**		1.20529E+00	3.846066	3.846066	1.00 SA	94%				
				(1.572849)		(4.9124E-02)	(0.19464)	(0.19464)	(0.028284)					
	05/30/06	TH-230	R	**0.108765**		6.00641E-03	0.020362	0.020362	1.00 SA	94%		0.098251		
				(0.063522)		(3.4678E-03)	(0.011834)	(0.011834)	(0.028284)					
	05/30/06	TH-232	R	**0.036255**	U4	2.00214E-03	0.006787	0.006787	1.00 SA	94%		0.098251		
				(0.036395)		(2.0021E-03)	(0.006802)	(0.006802)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39MD1AA**	**PCI/SA**		04/14/06 09:25	05/28/06 17:03			1	1.00 SA	
536403,P-0592					,J6D270397-9 v4.8.18		FILTER					THTF0512 Alq		0.084581 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:53	TH-228	2	4	ALP113	ED	N	N	3.1797E-01		N	56%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			500.0166666	1000.25			Y		(9.539E-03)			4%			(0.000E+00)	11.823032		

RecCnt:9 RADCALC v4.8.18
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118462

Alpha Spec, ThIso by ALP , Calculated Results

5/30/2006 7:23:40 AM

1	05/28/06 12:53	TH-229	365	4	ALP113	ED	Y	N	3.1797E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.0166666	1000.25			Y		(9.539E-03)				(0.000E+00)	11.823032	
2	05/28/06 12:53	TH-230	1	0	ALP113	ED	N	N	3.1797E-01	N	56%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.0166666	1000.25			Y		(9.539E-03)		4%		(0.000E+00)	11.823032	
3	05/28/06 12:53	TH-232	1	1	ALP113	ED	N	N	3.1797E-01	N	56%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.0166666	1000.25			Y		(9.539E-03)		4%		(0.000E+00)	11.823032	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**2.73E-05**	U4	8.66421E-07	4.9058E-06	4.9058E-06	1.00 SA	56%		0.585132		
				(0.10914)		(3.4637E-03)	(0.019612)	(0.019612)	(0.028284)			0.207302		
	05/30/06	TH-229	R	**12.159586**		7.25977E-01	2.283197	2.283197	1.00 SA	56%				
				(1.015713)		(3.8261E-02)	(0.13846)	(0.13846)	(0.028284)					
	05/30/06	TH-230	R	**0.059945**	U4	1.99993E-03	0.011256	0.011256	1.00 SA	56%		0.162451		
				(0.06021)		(1.9999E-03)	(0.011287)	(0.011287)	(0.028284)					
	05/30/06	TH-232	R	**0.029979**	U4	1.00018E-03	0.005629	0.005629	1.00 SA	56%		0.359533		
				(0.067077)		(2.2359E-03)	(0.012591)	(0.012591)	(0.028284)			0.098599		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39MF1AA**	**PCI/SA**		04/14/06 09:35	05/28/06 17:03			1	1.00 SA	
536403,P-0593					,J6D270397-10 v4.8.18		FILTER					THTF0513 Alq		0.085112 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:53	TH-228	0	7	ALP114	ED	N	N	3.2873E-01		N	80%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			500.1166666	1000.2			Y		(9.862E-03)			5%			(0.000E+00)	11.749222		
1	05/28/06 12:53	TH-229	539	0	ALP114	ED	Y	N	3.2873E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1166666	1000.2			Y		(9.862E-03)						(0.000E+00)	11.749222		
2	05/28/06 12:53	TH-230	3	0	ALP114	ED	N	N	3.2873E-01		N	80%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1166666	1000.2			Y		(9.862E-03)			5%			(0.000E+00)	11.749222		
3	05/28/06 12:53	TH-232	1	0	ALP114	ED	N	N	3.2873E-01		N	80%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1166666	1000.2			Y		(9.862E-03)			5%			(0.000E+00)	11.749222		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**-0.147222**	U4	-6.99860E-03	-0.026622	-0.026622	1.00 SA	80%		0.479906		
				(0.057171)		(2.6452E-03)	(0.010224)	(0.010224)	(0.028284)			0.183068		
	05/30/06	TH-229	R	**17.351313**		1.07775E+00	3.278511	3.278511	1.00 SA	80%				
				(1.350205)		(4.6422E-02)	(0.172092)	(0.172092)	(0.028284)					
	05/30/06	TH-230	R	**0.120037**		5.99860E-03	0.022681	0.022681	1.00 SA	80%		0.108433		
				(0.070124)		(3.4633E-03)	(0.013186)	(0.013186)	(0.028284)					
	05/30/06	TH-232	R	**0.040012**	U4	1.99953E-03	0.00756	0.00756	1.00 SA	80%		0.108433		
				(0.040171)		(1.9995E-03)	(0.007578)	(0.007578)	(0.028284)					

RecCnt:11 RADCALC v4.8.18 STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118462

Alpha Spec, Thlso by ALP , Calculated Results

5/30/2006 7:23:40 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39MH1AA**	**PCI/SA**		04/14/06 09:55	05/28/06 17:04			1	1.00 SA	
536403,P-0594					,J6D270397-11 v4.8.18		FILTER					THTF0514 Alq		0.085099 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:54	TH-228	1	2	ALP116	ED	N	N	2.5523E-01		N	97%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			500.0166666	1000.1166			Y		(7.657E-03)			6%			(0.000E+00)	11.751048		
1	05/28/06 12:54	TH-229	504	2	ALP116	ED	Y	N	2.5523E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.1166			Y		(7.657E-03)						(0.000E+00)	11.751048		
2	05/28/06 12:54	TH-230	3	0	ALP116	ED	N	N	2.5523E-01		N	97%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.1166			Y		(7.657E-03)			6%			(0.000E+00)	11.751048		
3	05/28/06 12:54	TH-232	0	0	ALP116	ED	N	N	2.5523E-01		N	97%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.1166			Y		(7.657E-03)			6%			(0.000E+00)	11.751048		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**3.7622E-06**	**U4**	1.66642E-07	6.802E-07	6.802E-07	1.00 SA	97%		0.332303		
				(0.055297)		(2.4493E-03)	(0.009998)	(0.009998)	(0.028284)			0.105034		
	05/30/06	TH-229	R	**20.862732**		1.00597E+00	3.941377	3.941377	1.00 SA	97%				
				(1.641938)		(4.4921E-02)	(0.21203)	(0.21203)	(0.028284)					
	05/30/06	TH-230	R	**0.128854**		5.99980E-03	0.024343	0.024343	1.00 SA	97%		0.116398		
				(0.075291)		(3.4640E-03)	(0.014155)	(0.014155)	(0.028284)					
	05/30/06	TH-232	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	97%		0.116398		
				(0.052604)		(0.0000E+00)	(0.009938)	(0.009938)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39MJ1AA**	**PCI/SA**		04/14/06 10:20	05/28/06 17:04			1	1.00 SA	
536403,P-0595					,J6D270397-12 v4.8.18		FILTER					THTF0515 Alq		0.08417 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:54	TH-228	2	1	ALP117	ED	N	N	3.3591E-01		N	89%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			500.1	2500.1			Y		(1.008E-02)			5%			(0.000E+00)	11.880704		
1	05/28/06 12:54	TH-229	610	2	ALP117	ED	Y	N	3.3591E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1	2500.1			Y		(1.008E-02)						(0.000E+00)	11.880704		
2	05/28/06 12:54	TH-230	5	2	ALP117	ED	N	N	3.3591E-01		N	89%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1	2500.1			Y		(1.008E-02)			5%			(0.000E+00)	11.880704		
3	05/28/06 12:54	TH-232	0	1	ALP117	ED	N	N	3.3591E-01		N	89%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1	2500.1			Y		(1.008E-02)			5%			(0.000E+00)	11.880704		

RecCnt:12 RADCALC v4.8.18 STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118462

Alpha Spec, ThIso by ALP , Calculated Results

5/30/2006 7:23:41 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**0.067544**	U4	3.59922E-03	0.012079	0.012079	1.00 SA	89%		0.179735		
				(0.053925)		(2.8560E-03)	(0.009618)	(0.009618)	(0.028284)			0.039044		
	05/30/06	TH-229	R	**19.420288**		1.21896E+00	3.628832	3.628832	1.00 SA	89%				
				(1.484314)		(4.9390E-02)	(0.182949)	(0.182949)	(0.028284)					
	05/30/06	TH-230	R	**0.164207**		9.19803E-03	0.030683	0.030683	1.00 SA	89%		0.201733		
				(0.081744)		(4.5069E-03)	(0.015172)	(0.015172)	(0.028284)			0.052527		
	05/30/06	TH-232	R	**-0.007141**	U4	-3.99984E-04	-0.001334	-0.001334	1.00 SA	89%		0.170981		
				(0.007168)		(3.9998E-04)	(0.001337)	(0.001337)	(0.028284)			0.037142		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39ML1AA**	**PCI/SA**		04/14/06 10:30	05/28/06 17:04			1	1.00 SA	
536403,P-0596					,J6D270397-13 v4.8.18		FILTER					THTF0516 Alq		0.084569 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:54	TH-228	7	4	ALP118	ED	N	N	3.6403E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			500.1	2500.0166			Y		(1.092E-02)			6%			(0.000E+00)	11.824624		
1	05/28/06 12:54	TH-229	732	9	ALP118	ED	Y	N	3.6403E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1	2500.0166			Y		(1.092E-02)						(0.000E+00)	11.824624		
2	05/28/06 12:54	TH-230	6	3	ALP118	ED	N	N	3.6403E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1	2500.0166			Y		(1.092E-02)			6%			(0.000E+00)	11.824624		
3	05/28/06 12:54	TH-232	0	0	ALP118	ED	N	N	3.6403E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1	2500.0166			Y		(1.092E-02)			6%			(0.000E+00)	11.824624		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**0.192064**		1.23972E-02	0.03451	0.03451	1.00 SA	99%		0.212809		
				(0.084538)		(5.3506E-03)	(0.01506)	(0.01506)	(0.028284)			0.064466		
	05/30/06	TH-229	R	**21.363743**		1.46011E+00	4.010915	4.010915	1.00 SA	99%				
				(1.594935)		(5.4113E-02)	(0.191247)	(0.191247)	(0.028284)					
	05/30/06	TH-230	R	**0.159136**		1.07976E-02	0.029877	0.029877	1.00 SA	99%		0.186023		
				(0.074191)		(4.9468E-03)	(0.013823)	(0.013823)	(0.028284)			0.053111		
	05/30/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	99%		0.079864		
				(0.036094)		(0.0000E+00)	(0.006776)	(0.006776)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H39MN1AA**	**PCI/SA**		04/14/06 09:10	05/28/06 17:05			1	1.00 SA	
536403,P-0597					,J6D270397-14 v4.8.18		FILTER					THTF0517 Alq		0.082822 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:55	TH-228	1	2	ALP119	ED	N	N	2.5157E-01		N	106%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			500.1333333	1000.2			Y		(7.547E-03)			6%			(0.000E+00)	12.074037		

RecCnt:14 RADCALC v4.8.18

STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118462

Alpha Spec, ThIso by ALP , Calculated Results

5/30/2006 7:23:41 AM

1	05/28/06 12:55	TH-229	541	0	ALP119	ED	Y	N	2.5157E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.1333333	1000.2			Y		(7.547E-03)				(0.000E+00)	12.074037	
2	05/28/06 12:55	TH-230	2	0	ALP119	ED	N	N	2.5157E-01	N	106%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.1333333	1000.2			Y		(7.547E-03)		6%		(0.000E+00)	12.074037	
3	05/28/06 12:55	TH-232	1	0	ALP119	ED	N	N	2.5157E-01	N	106%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.1333333	1000.2			Y		(7.547E-03)		6%		(0.000E+00)	12.074037	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**-3.0288E-06**	U4	-1.33271E-07	-5.3295E-07	-5.3295E-07	1.00 SA	106%		0.334458		
				(0.055656)		(2.4489E-03)	(0.009793)	(0.009793)	(0.028284)			0.105718		
	05/30/06	TH-229	R	**23.385556**		1.08171E+00	4.299803	4.299803	1.00 SA	106%				
				(1.818733)		(4.6506E-02)	(0.225419)	(0.225419)	(0.028284)					
	05/30/06	TH-230	R	**0.086453**	U4	3.99893E-03	0.015896	0.015896	1.00 SA	106%		0.117144		
				(0.061615)		(2.8277E-03)	(0.011292)	(0.011292)	(0.028284)					
	05/30/06	TH-232	R	**0.043227**	U4	1.99947E-03	0.007948	0.007948	1.00 SA	106%		0.117144		
				(0.043398)		(1.9995E-03)	(0.007966)	(0.007966)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H4C831AA**	**PCI/SA**	**B**	04/14/06 09:15	05/28/06 17:05			1	1.00 SA	
0,INTRA-LAB BLANK					,J6D280000-462		FILTER					THTF0518 Alq		1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/28/06 12:55	TH-228	3	2	ALP120	ED	N	N	2.4073E-01		N	107%	N		1.0000E+00	4.5045E-01	1.0449E+00	
			500.05	1000.1666			Y		(7.222E-03)			7%			(0.000E+00)	1.00		
1	05/28/06 12:55	TH-229	526	0	ALP120	ED	Y	N	2.4073E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.05	1000.1666			Y		(7.222E-03)						(0.000E+00)	1.00		
2	05/28/06 12:55	TH-230	2	0	ALP120	ED	N	N	2.4073E-01		N	107%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.05	1000.1666			Y		(7.222E-03)			7%			(0.000E+00)	1.00		
3	05/28/06 12:55	TH-232	1	0	ALP120	ED	N	N	2.4073E-01		N	107%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.05	1000.1666			Y		(7.222E-03)			7%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-228	R	**0.007868**	U4	3.99973E-03	0.016715	0.016715	1.00 SA	107%		0.028952		
				(0.007391)		(3.7412E-03)	(0.015677)	(0.015677)	(0.017321)			0.009151		
	05/30/06	TH-229	R	**1.968273**		1.05189E+00	4.369571	4.369571	1.00 SA	107%				
				(0.147307)		(4.5865E-02)	(0.231263)	(0.231263)	(0.017321)					
	05/30/06	TH-230	R	**0.007484**	U4	3.99960E-03	0.016614	0.016614	1.00 SA	107%		0.010141		
				(0.005331)		(2.8281E-03)	(0.011803)	(0.011803)	(0.017321)					
	05/30/06	TH-232	R	**0.003742**	U4	1.99980E-03	0.008307	0.008307	1.00 SA	107%		0.010141		
				(0.003756)		(1.9998E-03)	(0.008327)	(0.008327)	(0.017321)					

RecCnt:16 RADCALC v4.8.18 STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118462

Alpha Spec, ThIso by ALP , Calculated Results

5/30/2006 7:23:41 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H4C831AC**	**PCI/SA**	**S**	04/14/06 09:15	05/29/06 10:28		THSO0038	1	1.00 SA	
0,INTRA-LAB CHECK					,J6D280000-462		FILTER					THSO0038 Alq		1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/29/06 06:18	TH-229	508	1	ALP116	ED	N	N	2.5523E-01		N	106%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1166666	1000.1166			Y		(7.657E-03)			7%			(0.000E+00)	1.00		
2	05/29/06 06:18	TH-230	550	0	ALP116	ED	Y	N	2.5523E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1166666	1000.1166			Y		(7.657E-03)						(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	TH-229	R	**1.790918**		1.01476E+00	3.975842	3.975842	1.00 SA	106%	98%	0.021167		
				(0.174549)		(4.5078E-02)	(0.325416)	(0.325416)	(0.017321)			0.005805		
	05/30/06	TH-230	R	**1.940897**		1.09974E+00	4.308795	4.308795	1.00 SA	106%				
				(0.144178)		(4.6893E-02)	(0.224644)	(0.224644)	(0.017321)					

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
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Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16

RADCALC v4.8.18
STL Richland

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST

5/28/06
2112

C.R. Technician RS
Date Counted 5/28/06
C.R. Analyst S
Date Analyzed 5/29/06

Counting Time
Sample 500 Minutes
Background See Alpha Analysis Report

SOP's
Operating: RICHRD008
Review: RICHRD0016

TH BRC

6118462

WorkOrder #	Th-229 (4845 KeV) Tracer from Th-234 Beta Count (7)				TOTAL COUNTS			Det #	Comment
	ID	Activity	ROI Cts	BKG	Th-228 (5423 KeV) (6)	Th-230 (4688 KeV) (8)	Th-232 (4010 KeV) (9)		
H39LT1AA		10		0	See Alpha Analysis Report for ROI Information			171	
H39L21AA		10		0	See Alpha Analysis Report for ROI Information			172	
H39L31AA		10		0	See Alpha Analysis Report for ROI Information			173	
H39L41AA		10		0	See Alpha Analysis Report for ROI Information			174	
H39L61AA		10		0	See Alpha Analysis Report for ROI Information			175	
H39L71AA		10		0	See Alpha Analysis Report for ROI Information			176	
H39L81AA		10		0	See Alpha Analysis Report for ROI Information			177	
H39MC1AA		10		0	See Alpha Analysis Report for ROI Information			178	
		10		0	See Alpha Analysis Report for ROI Information				

Comments:

Form No: RC-012, 10/02, Rev 9

Approved by: S

Date: 5/29/06

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39LT1AA

Detector: ALP171 1
Report Date: 29-May-06 06:55 AM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	0	2	-0.002	5423.2	116.3	317	337
TH-229	509	1	1.018	4845.3	360.7	220	282
TH-230	9	0	0.018	4687.7	116.4	190	210
TH-232	1	2	0.000	4013.0	116.4	74	94

End of Alpha Region Report
(Produced by ANAL Report)

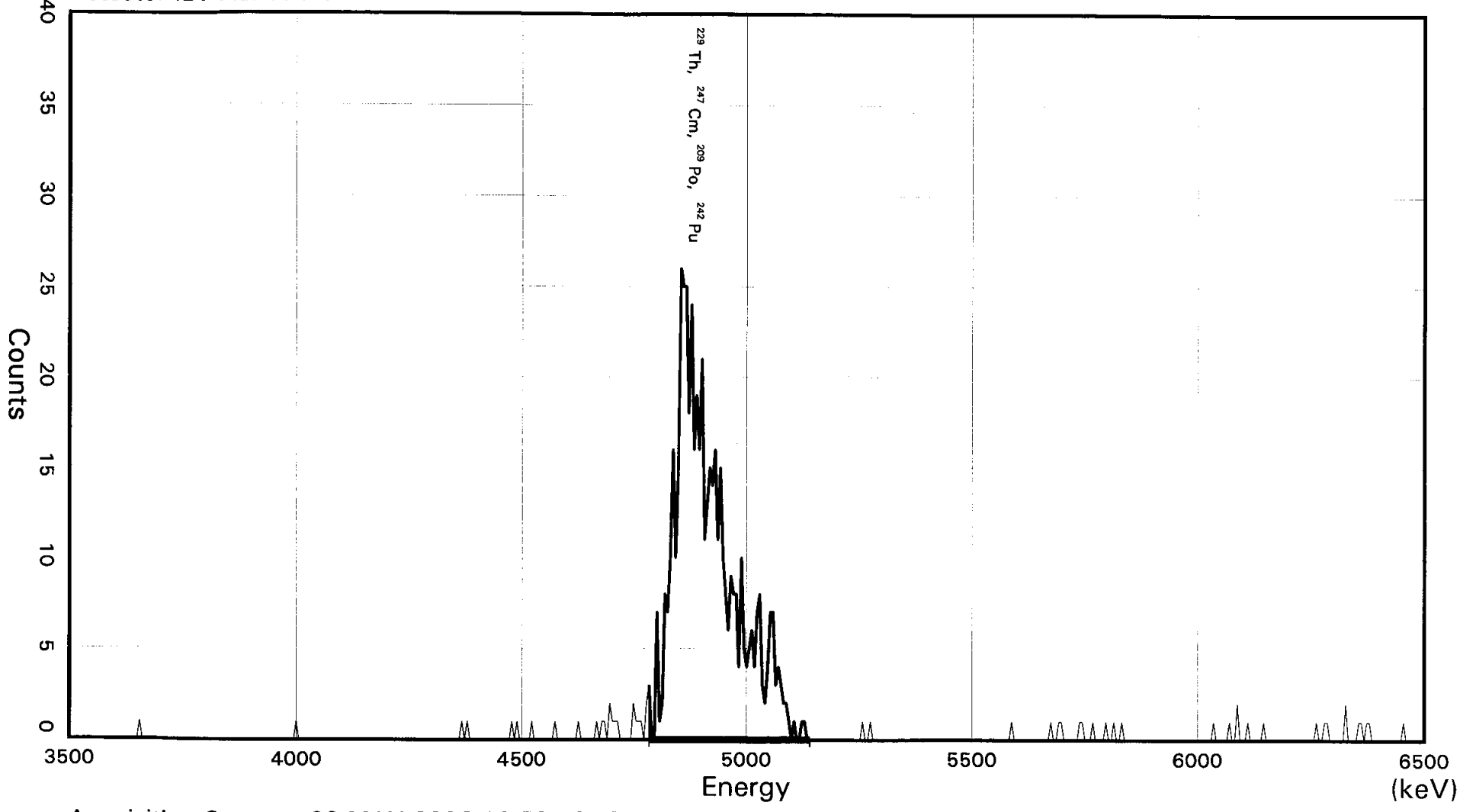
STL Richland WA.

TH BRC

Sample ID: H39LT1AA

Detector ID: ALP171 1

Batch ID: 6118462



Acquisition Start: 28-MAY-2006 12:52:48.77

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.49295E+03

Slope: 5.82316E+00

Quadrature: -9.98936E-06

SAMPLE IDENTIITY: H39LT1AA

TITLE : TH BRC

DETECTOR : ALP171 1
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H39LT1AA_280561252A.CN
F;1
ACQUIRE DATE of BACKGROUND: 06-MAY-2006 14:12:16

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:52:48 CALIB DATE : 06-MAY-2006 00:05:01

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3492.95 keV CONSTANT FWHM : 9.16667 Channels
SLOPE : 5.82316 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.998936E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39LT1AA

Detector: ALP171 1
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5154.0	354.8	268	329	0.00	0.00	M I
PO-209	508	1	0	1.016	4922.3	354.9	222	283	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5343.4	354.8	301	362	0.00	0.00	M
AC-227	-9999	-9999	0	-10.010	6077.1	354.7	427	488	0.00	0.00	M
TH-227	-9999	-9999	0	-10.010	6077.1	354.7	427	488	0.00	0.00	M
TH-228	-9999	-9999	0	-10.010	5462.3	354.8	321	382	0.00	0.00	M
TH-229	508	1	0	1.016	4884.4	354.9	222	283	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4726.8	354.9	195	256	0.00	0.00	M I
TH-232	1	3	0	-0.001	4052.1	355.1	79	140	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5359.2	354.8	304	365	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4813.7	354.9	210	271	0.00	0.00	M I
U-235	-9999	-9999	0	-10.010	4436.9	355.0	145	206	0.00	0.00	M
PU-236	-9999	-9999	0	-10.010	5806.7	354.7	381	442	0.00	0.00	M
NP-237	-9999	-9999	0	-10.010	4827.1	354.9	212	273	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5538.1	354.8	334	395	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4237.1	355.0	111	172	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5195.6	354.8	276	337	0.00	0.00	M I
AM-241	-9999	-9999	0	-10.010	5524.7	354.8	332	393	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5245.9	354.8	284	345	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6151.8	354.6	440	501	0.00	0.00	M
PU-242	508	1	0	1.016	4939.6	354.9	222	283	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5314.4	354.8	296	357	0.00	0.00	M
CM-244	-9999	-9999	0	-10.010	5843.9	354.7	387	448	0.00	0.00	M
CM-246	-9999	-9999	0	-10.010	5425.6	354.8	315	376	0.00	0.00	M
CM-247	508	1	0	1.016	4909.5	354.9	222	283	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5117.7	354.9	262	323	0.00	0.00	M I

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39LT1AA
Detector: ALP171 1
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0	@	151	0	@	201	8	@	251	0	@	301	0	@	351	0	@	401	0	@	451	0	-	501
		2	0		52	0	+	102	1	@	152	1	@	202	6	@	252	0	@	302	0	@	352	1	@	402	0	@	452	0		502
0		3	0		53	0	+	103	0	@	153	0	@	203	9	@	253	1	@	303	0	@	353	0	@	403	0	@	453	0		503
0		4	0		54	0	+	104	0	@	154	1	@	204	8	@	254	0	@	304	0	@	354	0	@	404	0	@	454	0		504
0		5	0		55	0	+	105	0	@	155	1	@	205	8	@	255	0	@	305	0	@	355	0	@	405	0	@	455	0		505
0		6	0		56	0	+	106	0	@	156	0	@	206	4	@	256	1	@	306	0	@	356	0	@	406	1	@	456	0		506
0		7	0		57	0	+	107	0	@	157	2	+	207	10	@	257	0	@	307	0	@	357	0	@	407	0	@	457	0		507
0		8	0		58	0	+	108	0	@	158	1	+	208	5	@	258	0	@	308	0	@	358	0	@	408	0	@	458	0		508
0		9	0		59	0	+	109	0	@	159	1	+	209	4	@	259	0	@	309	0	@	359	0	@	409	0	@	459	1		509
0		10	0		60	0	+	110	0	@	160	1	@	210	5	@	260	0	@	310	1	@	360	0	@	410	0	@	460	0		510
0		11	0		61	0	@	111	0	@	161	0	@	211	6	@	261	0	@	311	0	@	361	0	@	411	0	@	461	0		511
0		12	0		62	0	@	112	0	@	162	0	-	212	4	-	262	0	@	312	0	@	362	0	@	412	0	@	462	0		512
0		13	0		63	0	@	113	0	@	163	0	@	213	7	@	263	0	@	313	0	@	363	0	@	413	0	@	463			
0		14	0		64	0	@	114	0	@	164	0	@	214	8	@	264	0	@	314	0	@	364	0	@	414	0	@	464			
0		15	0		65	0	@	115	0	@	165	0	@	215	3	@	265	0	@	315	0	@	365	0	@	415	0	@	465			
0		16	0		66	0	@	116	0	@	166	2	@	216	2	@	266	0	@	316	0	@	366	0	@	416	0	@	466			
0		17	0		67	0	@	117	0	@	167	1	@	217	4	@	267	0	@	317	0	@	367	0	@	417	0	@	467			
0		18	0		68	0	@	118	0	@	168	1	@	218	7	@	268	0	@	318	0	@	368	0	@	418	0	@	468			
0		19	0		69	0	@	119	1	@	169	1	@	219	7	@	269	0	@	319	0	@	369	0	@	419	0	@	469			
0		20	0		70	0	@	120	0	@	170	0	@	220	3	@	270	0	@	320	0	@	370	0	@	420	0	@	470			
0		21	0		71	0	@	121	1	@	171	2	@	221	4	@	271	0	@	321	0	@	371	0	@	421	0	@	471			
0		22	0		72	0	@	122	0	@	172	3	@	222	3	@	272	0	@	322	0	@	372	0	@	422	0	@	472			
0		23	0		73	0	@	123	0	+	173	0	@	223	2	@	273	0	@	323	0	@	373	0	@	423	0	@	473			
0		24	0		74	0	@	124	0	+	174	0	@	224	2	@	274	0	@	324	0	@	374	0	@	424	0	@	474			
0		25	0		75	0	@	125	0	+	175	7	@	225	1	@	275	0	@	325	1	@	375	0	@	425	0	@	475			
0		26	0		76	0	@	126	0	+	176	1	@	226	0	@	276	0	@	326	0	@	376	0	@	426	1	@	476			
0		27	0		77	0	@	127	1	+	177	2	@	227	1	@	277	0	@	327	0	@	377	0	@	427	0	@	477			
1		28	0		78	0	@	128	0	+	178	8	@	228	0	@	278	0	@	328	1	@	378	0	@	428	0	@	478			
0		29	0	+	79	0	@	129	0	+	179	7	@	229	0	@	279	0	@	329	1	@	379	0	@	429	1	@	479			
0		30	0	+	80	0	@	130	0	+	180	10	@	230	1	@	280	0	@	330	0	@	380	0	@	430	1	@	480			
0		31	0	+	81	0	@	131	0	+	181	16	@	231	1	@	281	0	@	331	0	@	381	0	@	431	0	@	481			
0		32	0	+	82	0	@	132	0	+	182	10	@	232	0	@	282	0	@	332	0	@	382	0	@	432	0	@	482			
0		33	0	+	83	0	@	133	0	+	183	15	@	233	0	@	283	0	@	333	0	@	383	0	@	433	0	@	483			
0		34	0	+	84	0	@	134	0	+	184	26	@	234	0	@	284	0	@	334	0	@	384	0	@	434	0	@	484			
0		35	0	+	85	0	@	135	0	+	185	25	@	235	0	@	285	0	@	335	0	@	385	0	@	435	0	@	485			
0		36	0	+	86	0	@	136	1	+	186	25	@	236	0	@	286	0	@	336	1	@	386	0	@	436	0	@	486			
0		37	1	+	87	0	@	137	0	+	187	18	@	237	0	@	287	0	@	337	1	-	387	1	@	437	2	@	487			
0		38	0	+	88	0	@	138	0	+	188	24	@	238	0	@	288	0	@	338	0	@	388	0	@	438	0	@	488			
0		39	0	+	89	0	@	139	0	+	189	16	@	239	0	@	289	0	@	339	0	@	389	0	@	439	0	-	489			
0		40	0	+	90	0	@	140	0	+	190	19	@	240	0	@	290	0	@	340	0	@	390	0	@	440	0	-	490			
0		41	0	+	91	0	-	141	0	+	191	16	@	241	0	@	291	0	@	341	1	@	391	0	@	441	0	-	491			
0		42	0	+	92	0	-	142	0	+	192	21	@	242	0	@	292	0	@	342	0	@	392	0	@	442	1	-	492			
0		43	0	+	93	0	-	143	0	+	193	11	@	243	0	@	293	0	@	343	0	@	393	1	@	443	1	-	493			
0		44	0	+	94	0	-	144	0	+	194	13	@	244	0	@	294	0	@	344	0	@	394	0	@	444	0	-	494			
0		45	0	+	95	0	@	145	1	@	195	15	@	245	0	@	295	0	@	345	0	@	395	0	@	445	1	-	495			
0		46	0	+	96	0	@	146	0	@	196	14	@	246	0	@	296	0	@	346	1	@	396	2	@	446	1	-	496			
0		47	0	+	97	0	@	147	0	@	197	16	@	247	0	@	297	0	@	347	0	@	397	0	@	447	0	-	497			
0		48	0	+	98	0	@	148	0	@	198	11	@	248	0	@	298	0	@	348	0	@	398	0	@	448	0	-	498			
0		49	0	+	99	0	@	149	0	@	199	15	@	249	0	@	299	0	@	349	1	@	399	0	@	449	0	-	499			
0		50	0	+	100	1	@	150	0	@	200	10	@	250	0	@	300	0	@	350	0	@	400	1	@	450	0	-	500			

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:13:21

Configuration	: $DISK1:[ALP171.SAMPLE]H39LT1AA_280561252A.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 14-APR-2006 12:00:00	Acquisition date	: 28-MAY-2006 12:52:48
Sample ID	: H39LT1AA	Sample quantity	: 0.00000E+00 LITER
Sample type	: disk	Sample geometry	:
Detector name	: ALP171 1	Detector geometry	:
Elapsed live time	: 0 08:19:28.00	Elapsed real time	: 0 08:19:28.00 0.0%
Start energy	: 3510.42 keV	End energy	: 6471.79 keV
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4884.36	508	0104.82		239.04	222	61	1.70E-02	4.4	

VMS Nuclide Identification Report V3.0 Generated 28-MAY-2006 21:13:25

```
Configuration     : $DISK1:[ALP171.SAMPLE]H39LT1AA_280561252A.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID         : H39LT1AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                 1
 Number of unidentified lines                      0
 Number of lines tentatively identified by NID     1      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H39LT1AA_280561252A.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4884.35	222	283	508	507	0.04		

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39L21AA

Detector: ALP171 2
Report Date: 29-May-06 06:55 AM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	4	2	0.006	5423.2	113.1	320	340
TH-229	629	0	1.259	4845.3	361.4	218	282
TH-230	9	0	0.018	4687.7	112.9	190	210
TH-232	2	0	0.004	4013.0	112.6	70	90

End of Alpha Region Report
(Produced by ANAL Report)

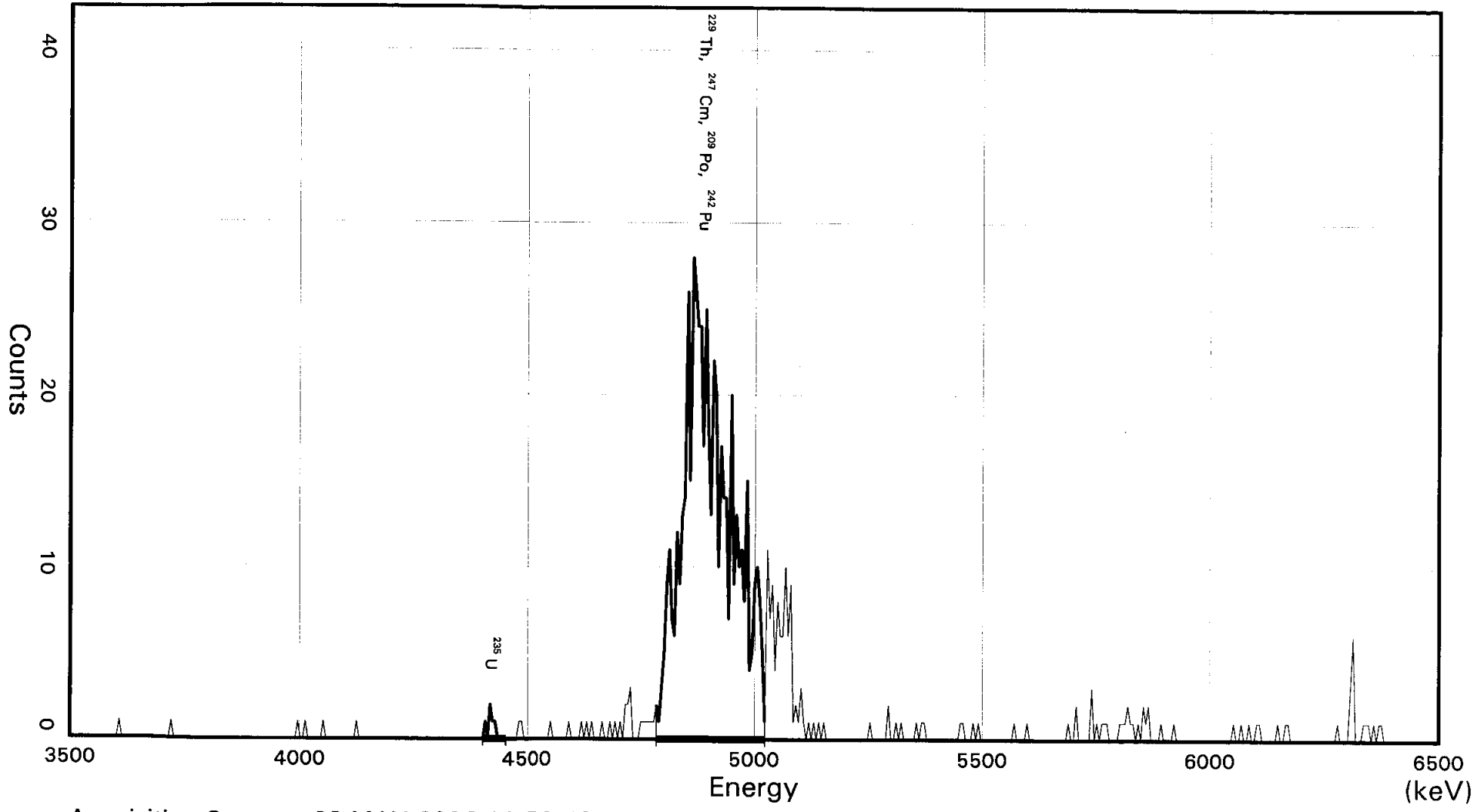
STL Richland WA.

TH BRC

Sample ID: H39L21AA

Detector ID: ALP171 2

Batch ID: 6118462



Acquisition Start: 28-MAY-2006 12:52:48.77

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.53416E+03

Slope: 5.62517E+00

Quadrature: 4.49479E-05

SAMPLE IDENTIITY: H39L21AA

TITLE : TH BRC

DETECTOR : ALP171 2
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H39L21AA_280561252B.CN
F;1
ACQUIRE DATE of BACKGROUND: 06-MAY-2006 14:12:16

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:52:48 CALIB DATE : 06-MAY-2006 11:42:00

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3534.16 keV CONSTANT FWHM : 10.00000 Channels
SLOPE : 5.62517 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 4.494790E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L21AA

Detector: ALP171 2
Report Date: 29-May-06 05:16 AM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5158.7	237.4	270	312	0.00	0.00	M
PO-209	541	0	0	1.083	4927.0	237.2	222	264	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5348.1	237.5	303	345	0.00	0.00	M
AC-227	-9999	-9999	0	-10.010	6081.8	238.0	433	475	0.00	0.00	M
TH-227	-9999	-9999	0	-10.010	6081.8	238.0	433	475	0.00	0.00	M
TH-228	-9999	-9999	0	-10.010	5467.0	237.6	324	366	0.00	0.00	M
TH-229	541	0	0	1.083	4889.1	237.2	222	264	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4731.5	237.1	194	236	0.00	0.00	M I
TH-232	4	2	0	0.006	4056.8	236.6	74	116	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5363.9	237.5	306	348	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4818.4	237.1	209	251	0.00	0.00	M I
U-235	6	2	0	0.010	4441.6	50.8	154	163	0.00	0.00	P
PU-236	15	5	19	0.024	5811.4	237.8	385	427	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4831.8	237.1	212	254	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5542.8	237.6	338	380	0.00	0.00	M
U-238	0	0	0	0.000	4241.8	236.7	107	149	0.00	0.00	S
PU-239	-9999	-9999	0	-10.010	5200.4	237.4	277	319	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5529.4	237.6	335	377	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5250.6	237.4	286	328	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6156.5	238.0	446	488	0.00	0.00	M
PU-242	541	0	0	1.083	4944.3	237.2	222	264	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5319.1	237.5	298	340	0.00	0.00	M
CM-244	-9999	-9999	0	-10.010	5848.6	237.8	392	434	0.00	0.00	M
CM-246	-9999	-9999	0	-10.010	5430.3	237.5	318	360	0.00	0.00	M
CM-247	541	0	0	1.083	4914.2	237.2	222	264	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5122.4	237.3	263	305	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L21AA
Detector: ALP171 2
Report Date: 29-May-06 05:16 AM
Acquire Date: 28-MAY-2006 12:52:48.77

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1		0	51		0+	101		0	151		1+	201		20@	251		0@	301		0@	351		0@	401		0@	451		0	501
		2		0	52		0+	102		0	152		0+	202		9@	252		0@	302		0@	352		1@	402		1@	452		1	502
	0	3		0	53		0+	103		0	153		0+	203		13@	253		0@	303		0@	353		1@	403		0@	453		1	503
	0	4		0	54		0+	104		0+	154		1+	204		10@	254		0@	304		0@	354		1@	404		0@	454		0	504
	0	5		0	55		1+	105		1+	155		0+	205		11@	255		1@	305		0@	355		2@	405		1@	455		0	505
	0	6		0	56		0+	106		0+	156		1+	206		8@	256		0@	306		0@	356		1@	406		1@	456		0	506
	0	7		0	57		0@	107		2+	157		0+	207		15@	257		0@	307		0@	357		1@	407		0@	457		0	507
	0	8		0	58		0@	108		1+	158		1+	208		4@	258		0@	308		0@	358		0@	408		0@	458		0	508
	0	9		0	59		0@	109		1+	159		0@	209		5@	259		0@	309		0@	359		1@	409		0@	459		0	509
	0	10		0	60		0@	110		0+	160		2@	210		9@	260		0@	310		0@	360		0@	410		0@	460		0	510
	0	11		0	61		0@	111		0+	161		2@	211		10@	261		0@	311		1@	361		2@	411		0@	461		0	511
	0	12		0	62		0@	112		0+	162		3-	212		8@	262		2@	312		0@	362		1@	412		0@	462		0	512
	1	13		0	63		0@	113		0	163		0@	213		5-	263		0@	313		0@	363		2@	413		1@	463			
	0	14		0	64		0@	114		0	164		0@	214		1+	264		0@	314		0@	364		0@	414		0@	464			
	0	15		0	65		0@	115		0	165		0@	215		11+	265		1@	315		0@	365		0@	415		0@	465			
	0	16		0	66		0@	116		0	166		1@	216		7+	266		0@	316		1@	366		0@	416		1@	466			
	0	17		0	67		0-	117		0	167		1@	217		9+	267		1@	317		0@	367		0@	417		1@	467			
	0	18		0	68		0-	118		1	168		1@	218		4+	268		0-	318		0@	368		1@	418		0@	468			
	0	19		0	69		0-	119		1	169		1@	219		8+	269		0@	319		0@	369		0@	419		0@	469			
	0	20		0	70		0-	120		0	170		1@	220		6@	270		0@	320		0@	370		0@	420		0@	470			
	0	21		0	71		0-	121		0	171		1@	221		6@	271		0@	321		0@	371		0@	421		0@	471			
	0	22		0	72		0-	122		0	172		2@	222		10@	272		0@	322		0@	372		0@	422		0@	472			
	0	23		0	73		0-	123		0	173		1@	223		6@	273		1@	323		0@	373		1@	423		0@	473			
	0	24		0+	74		0-	124		0	174		3@	224		9@	274		0@	324		0@	374		0@	424		0@	474			
	0	25		0+	75		0-	125		0	175		5@	225		1@	275		1@	325		0@	375		0@	425		0@	475			
	0	26		0+	76		0-	126		0	176		9@	226		2@	276		1@	326		0@	376		0@	426		0-	476			
	0	27		0+	77		0-	127		0	177		11@	227		1@	277		0@	327		0@	377		0@	427		0-	477			
	0	28		0+	78		0-	128		0	178		7@	228		3@	278		0@	328		0+	378		0-	428		0-	478			
	0	29		0+	79		0-	129		0	179		6@	229		1@	279		0@	329		0+	379		0-	429		0-	479			
	0	30		0+	80		0-	130		0	180		12@	230		0@	280		0@	330		0+	380		0-	430		0-	480			
	0	31		0+	81		0-	131		1	181		9@	231		1@	281		0@	331		0	381		0-	431		0-	481			
	0	32		1+	82		0-	132		0	182		13@	232		0@	282		0@	332		1	382		0-	432		0-	482			
	1	33		0+	83		0-	133		0	183		14@	233		1@	283		0@	333		0	383		0@	433		0-	483			
	0	34		0+	84		0-	134		0	184		26@	234		0@	284		0@	334		0	384		0@	434		0-	484			
	0	35		1+	85		0-	135		0	185		15@	235		1@	285		0@	335		2+	385		0@	435		0-	485			
	0	36		0+	86		0-	136		0	186		28@	236		0@	286		0@	336		0+	386		0@	436		1-	486			
	0	37		0+	87		0-	137		0	187		26@	237		1@	287		0@	337		0+	387		0@	437		0-	487			
	0	38		0+	88		0-	138		1	188		24@	238		0@	288		0@	338		0+	388		0@	438		0-	488			
	0	39		0+	89		0-	139		0	189		24@	239		0@	289		0@	339		0+	389		0@	439		0	489			
	0	40		0+	90		0-	140		0	190		17@	240		0@	290		1@	340		0+	390		0@	440		0	490			
	0	41		0+	91		0-	141		0	191		25@	241		0@	291		1@	341		3+	391		0@	441		3	491			
	0	42		1+	92		0-	142		0	192		18@	242		0@	292		0@	342		0@	392		0@	442		6	492			
	0	43		0+	93		0-	143		1	193		13@	243		0@	293		0@	343		1@	393		0@	443		0	493			
	0	44		0+	94		0-	144		0+	194		22@	244		0@	294		0@	344		0@	394		0@	444		0	494			
	0	45		0+	95		0-	145		1+	195		20@	245		0@	295		1@	345		1@	395		0@	445		0	495			
	0	46		0+	96		0-	146		0+	196		10@	246		0@	296		0@	346		1@	396		1-	446		1	496			
	0	47		0+	97		0-	147		1+	197		17@	247		0@	297		1@	347		1@	397		0@	447		1	497			
	0	48		0+	98		0-	148		0+	198		14@	248		0@	298		0@	348		0@	398		0@	448		1	498			
	0	49		0+	99		0-	149		0+	199		14@	249		0@	299		0@	349		0@	399		1@	449		0	499			
	0	50		0+	100		0	150		0+	200		7@	250		0@	300		0@	350		0@	400		0@	450		1	500			

VMS Peak Search Report V1.9 Generated 29-MAY-2006 05:16:15

```
Configuration     : $DISK1:[ALP171.SAMPLE]H39L21AA_280561252B.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID         : H39L21AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Start energy      :  3551.04 keV         End energy       :  6426.03 keV
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4421.24	6	0	33.75	157.50	154	9	2.00E-04	40.8	
2	0	4889.06	541	0	106.88	240.40	222	42	1.81E-02	4.3	

VMS Nuclide Identification Report V3.0 Generated 29-MAY-2006 05:16:18

```
Configuration     : $DISK1:[ALP171.SAMPLE]H39L21AA_280561252B.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID         : H39L21AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

Total number of lines in spectrum	2	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	2	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-235	7.08E+08Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H39L21AA_280561252B.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4421.24	154	163	6	5	0.41		
4889.06	222	264	541	540	0.04		

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39L31AA

Detector: ALP171 3
Report Date: 29-May-06 06:55 AM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	2	0.002	5423.2	119.4	309	329
TH-229	557	1	1.114	4845.3	369.9	212	274
TH-230	9	0	0.018	4687.7	119.3	185	205
TH-232	0	0	0.000	4013.0	119.1	72	92

End of Alpha Region Report
(Produced by ANAL Report)

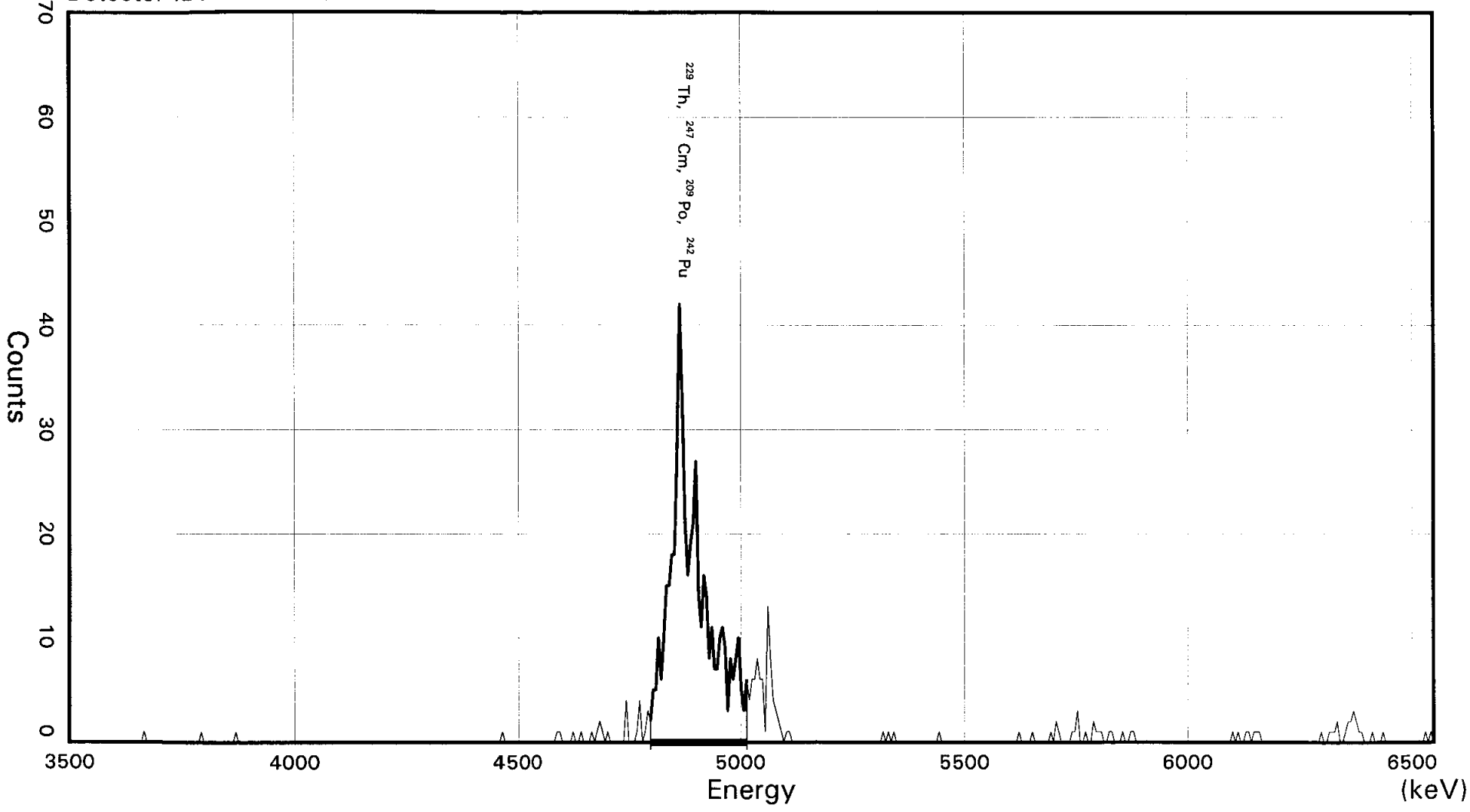
STL Richland WA.

TH BRC

Sample ID: H39L31AA

Detector ID: ALP171 3

Batch ID: 6118462



Acquisition Start: 28-MAY-2006 12:52:48.77

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.49360E+03

Slope: 5.95189E+00

Quadrature: 2.77060E-05

SAMPLE IDENTIITY: H39L31AA

TITLE : TH BRC

DETECTOR : ALP171 3
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H39L31AA_280561252C.CN
F;1
ACQUIRE DATE of BACKGROUND: 06-MAY-2006 14:12:16

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:52:48 CALIB DATE : 06-MAY-2006 00:05:17

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3493.60 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 5.95189 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 2.770600E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L31AA

Detector: ALP171 3
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5145.8	214.8	264	300	0.00	0.00	M
PO-209	478	0	0	0.957	4914.1	214.7	219	255	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5335.3	214.9	296	332	0.00	0.00	M
AC-227	4	1	7	0.007	6068.9	215.1	419	455	0.00	0.00	S
TH-227	4	1	7	0.007	6068.9	215.1	419	455	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5454.1	214.9	316	352	0.00	0.00	M
TH-229	478	0	0	0.957	4876.2	214.7	219	255	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4718.6	214.7	193	229	0.00	0.00	M I
TH-232	0	0	0	0.000	4043.9	214.5	79	115	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5351.1	214.9	299	335	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4805.5	214.7	207	243	0.00	0.00	M I
U-235	1	0	0	0.002	4428.7	214.6	144	180	0.00	0.00	S
PU-236	11	4	11	0.018	5798.6	209.1	374	409	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4818.9	214.7	209	245	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5530.0	215.0	329	365	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4228.9	214.5	110	146	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5187.5	214.8	271	307	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5516.5	215.0	326	362	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5237.7	214.9	280	316	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6143.7	215.2	431	467	0.00	0.00	M
PU-242	478	0	0	0.957	4931.4	214.7	219	255	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5306.2	214.9	291	327	0.00	0.00	M
CM-244	6	4	11	0.008	5835.8	215.1	380	416	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5417.4	214.9	310	346	0.00	0.00	M
CM-247	478	0	0	0.957	4901.3	214.7	219	255	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5109.5	214.8	258	294	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L31AA
Detector: ALP171 3
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0	+	151	1	+	201	8	@	251	0	@	301	0	@	351	0	@	401	0	@	451	0		501
		2	0		52	0	+	102	0	+	152	0	+	202	10	@	252	0	@	302	0	@	352	0	@	402	0	@	452	0		502
0		3	0		53	0	+	103	0	+	153	1	+	203	5	@	253	0	@	303	0	@	353	0	@	403	0	@	453	0		503
0		4	0		54	0	+	104	0	+	154	0	+	204	3	@	254	0	@	304	0	@	354	0	@	404	0	@	454	0		504
0		5	0		55	0	+	105	0	+	155	0	+	205	6		255	0	@	305	0	@	355	0	@	405	0	@	455	0		505
0		6	0		56	0	+	106	0	+	156	0	+	206	4		256	1	@	306	0	@	356	0	@	406	0	-	456	0		506
0		7	0		57	0	+	107	0	+	157	0	@	207	6		257	0	@	307	1	@	357	0	@	407	0	-	457	0		507
0		8	0		58	0	+	108	0	+	158	0	@	208	6	+	258	1	@	308	0	@	358	0	@	408	0	-	458	0		508
0		9	0		59	0	+	109	0	+	159	0	-	209	8	+	259	0	@	309	0	@	359	0	@	409	0	-	459	1		509
0		10	0		60	0	@	110	0	+	160	4	@	210	6	+	260	1	-	310	0	@	360	0	-	410	0	-	460	0		510
0		11	0		61	0	@	111	0	+	161	0	@	211	6	+	261	0	@	311	0	@	361	0	-	411	0	-	461	1		511
0		12	0		62	0	@	112	0	+	162	0	@	212	1	+	262	0	@	312	1	@	362	0	-	412	0	-	462	0		512
0		13	1		63	0	@	113	1	+	163	0	@	213	13	+	263	0	@	313	0	+	363	0	-	413	0	-	463			
0		14	0		64	0	@	114	0	+	164	1	@	214	8	@	264	0	@	314	0	+	364	0	-	414	0	-	464			
0		15	0		65	0	@	115	0	+	165	4	@	215	4	@	265	0	@	315	0	+	365	0	-	415	0	-	465			
0		16	0		66	0	-	116	0	+	166	0	@	216	3	@	266	0	@	316	0		366	0	-	416	0	-	466			
0		17	0		67	0	-	117	0	+	167	1	@	217	2	@	267	0	@	317	0		367	0		417	0	-	467			
0		18	0		68	0	-	118	0	+	168	3	@	218	1	@	268	0	@	318	0		368	0		418	0		468			
0		19	0		69	0	-	119	0	+	169	2	@	219	0	@	269	0	@	319	1		369	0	@	419	0		469			
0		20	0		70	0	-	120	0	+	170	5	@	220	1	@	270	0	@	320	0		370	0	@	420	1		470			
0		21	0		71	0	-	121	0	+	171	5	@	221	1	@	271	0	@	321	2		371	0	@	421	0		471			
0		22	0		72	0	-	122	0	+	172	10	@	222	0	@	272	0	@	322	1		372	0	@	422	0		472			
0		23	0		73	0	-	123	0	+	173	6	@	223	0	@	273	0	@	323	0		373	0	@	423	1		473			
0		24	0		74	0	-	124	0	+	174	10	@	224	0	@	274	0	@	324	0	+	374	0	@	424	1		474			
0		25	0		75	0	-	125	0	+	175	15	@	225	0	@	275	0	@	325	0	+	375	0	@	425	1		475			
0		26	0		76	0	-	126	0	+	176	15	@	226	0	@	276	0	@	326	0	+	376	0	@	426	2		476			
0		27	0		77	0	-	127	0	+	177	18	@	227	0	@	277	1	@	327	1	+	377	0	@	427	0		477			
0		28	0		78	0	-	128	0	+	178	18	@	228	0	@	278	0	@	328	1	+	378	0	@	428	0		478			
1		29	0	+	79	0	-	129	0	+	179	28	@	229	0	@	279	0	@	329	3	+	379	0	@	429	1		479			
0		30	0	+	80	0	-	130	0	+	180	42	@	230	0	@	280	0	@	330	0	@	380	0	@	430	2		480			
0		31	0	+	81	0	-	131	0		181	33	@	231	0	@	281	0	@	331	0	@	381	0	-	431	2		481			
0		32	0	+	82	0	-	132	0		182	21	@	232	0	@	282	0	@	332	1	@	382	0	@	432	3		482			
0		33	0	+	83	0	-	133	0		183	16	@	233	0	@	283	0	@	333	0	@	383	0	@	433	2		483			
0		34	0	+	84	0	-	134	1		184	19	@	234	0	@	284	0	@	334	0	@	384	0	@	434	1		484			
0		35	0	+	85	0	-	135	1		185	21	@	235	0	@	285	0	@	335	2	@	385	0	@	435	1		485			
0		36	0	+	86	0	-	136	0		186	27	@	236	0	@	286	0	@	336	1	@	386	0	@	436	0		486			
0		37	0	+	87	0	-	137	0		187	14	@	237	0	@	287	0	@	337	1	@	387	1	@	437	0		487			
0		38	0	+	88	0	-	138	0		188	11	@	238	0	@	288	0	@	338	1	@	388	0	@	438	0		488			
0		39	0	+	89	0	-	139	0		189	16	@	239	0	@	289	0	@	339	0	@	389	1	@	439	1		489			
0		40	0	+	90	0	-	140	1		190	14	@	240	0	@	290	0	@	340	0	@	390	0	@	440	0		490			
0		41	0	+	91	0	-	141	0		191	8	@	241	0	@	291	0	@	341	1	@	391	0	@	441	0		491			
0		42	0	+	92	0	-	142	0		192	11	@	242	0	@	292	0	@	342	1	@	392	1	@	442	0		492			
0		43	0	+	93	0	-	143	1	+	193	7	@	243	0	@	293	0	@	343	0	@	393	1	@	443	1		493			
0		44	0	+	94	0	@	144	0	+	194	7	@	244	0	@	294	0	@	344	0	@	394	0	@	444	0		494			
0		45	0	+	95	0	@	145	0	+	195	10	@	245	0	@	295	0	@	345	0	@	395	1	@	445	0		495			
0		46	0	+	96	0	@	146	0	+	196	11	@	246	0	@	296	0	@	346	1	@	396	1	@	446	0		496			
0		47	0	+	97	0	+	147	1	+	197	9	@	247	0	@	297	0	@	347	0	@	397	1	@	447	0		497			
0		48	0	+	98	0	+	148	0	+	198	3	@	248	0	@	298	0	@	348	0	@	398	0	@	448	0		498			
0		49	0	+	99	0	+	149	1	+	199	8	@	249	0	@	299	0	@	349	1	@	399	0	@	449	0		499			
1		50	0	+	100	0	+	150	2	+	200	6	@	250	0	@	300	0	@	350	1	@	400	0	@	450	0		500			

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:13:31

Configuration : $DISK1:[ALP171.SAMPLE]H39L31AA_280561252C.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID : H39L31AA Sample quantity : 0.00000E+00 LITER
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3511.46 keV End energy : 6548.23 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4876.24	478	0	71.42	232.05	219	36	1.60E-02	4.6	

VMS Nuclide Identification Report V3.0 Generated 28-MAY-2006 21:13:37

```
Configuration     : $DISK1:[ALP171.SAMPLE]H39L31AA_280561252C.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID         : H39L31AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H39L31AA_280561252C.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4876.23	219	255	478	478	0.00		

End of Report

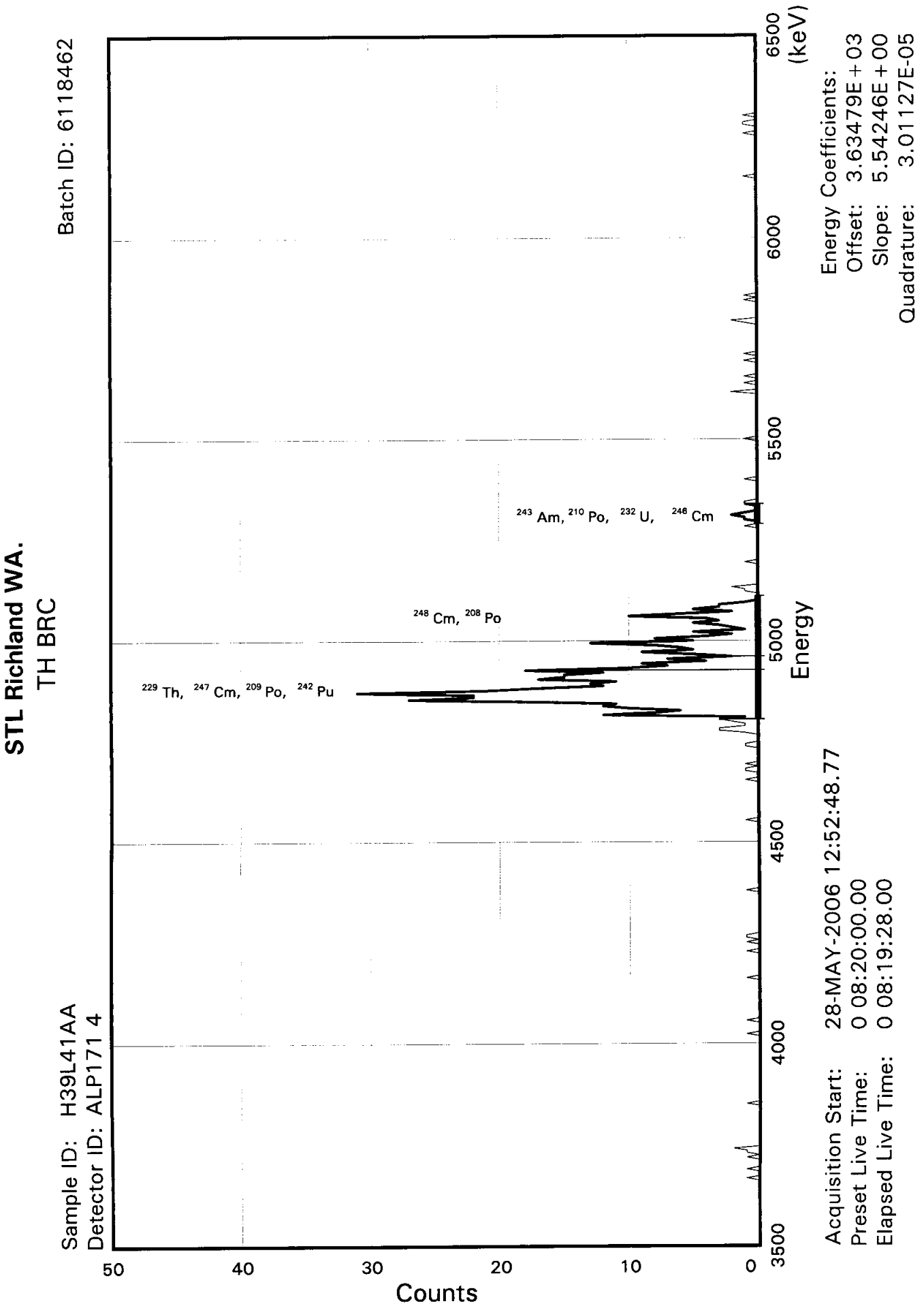
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39L41AA

Detector: ALP171 4
Report Date: 29-May-06 06:55 AM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	3	0	0.006	5423.2	111.2	307	327
TH-229	506	1	1.012	4845.3	389.0	203	273
TH-230	4	0	0.008	4687.7	111.1	175	195
TH-232	1	0	0.002	4013.0	110.9	53	73

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6118462
Sample ID: H39L41AA
Detector ID: ALP171 4
229 Th, 247 Cm, 209 Po, 242 Pu
248 Cm, 208 Po
243 Am, 210 Po, 232 U, 246 Cm
Counts
50
40
30
20
10
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 28-MAY-2006 12:52:48.77
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.63479E+03
Slope: 5.54246E+00
Quadrature: 3.01127E-05

SAMPLE IDENTITY: H39L41AA

TITLE : TH BRC

DETECTOR : ALP171 4
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H39L41AA_280561252D.CN
F;1
ACQUIRE DATE of BACKGROUND: 06-MAY-2006 14:12:16

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:52:48 CALIB DATE : 06-MAY-2006 00:05:29

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3634.79 keV CONSTANT FWHM : 10.00000 Channels
SLOPE : 5.54246 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 3.011270E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L41AA

Detector: ALP171 4
Report Date: 29-May-06 05:16 AM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	101	0	0	0.202	5149.6	183.4	233	266	0.00	0.00	P
PO-209	390	1	0	0.780	4917.9	155.6	211	239	0.00	0.00	P
PO-210	6	0	0	0.012	5339.0	50.0	298	307	0.00	0.00	P
AC-227	1	0	1	0.001	6072.7	155.9	425	453	0.00	0.00	S
TH-227	1	0	1	0.001	6072.7	155.9	425	453	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5457.9	155.7	315	343	0.00	0.00	M
TH-229	390	1	0	0.780	4880.0	155.6	211	239	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4722.4	155.5	183	211	0.00	0.00	M
TH-232	2	0	0	0.004	4047.7	155.3	61	89	0.00	0.00	
U-232	6	0	0	0.012	5354.8	50.0	298	307	0.00	0.00	P
U-234	-9999	-9999	0	-10.010	4809.3	155.5	198	226	0.00	0.00	M I
U-235	1	0	0	0.002	4432.5	155.4	130	158	0.00	0.00	
PU-236	3	0	5	0.005	5802.3	155.8	377	405	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4822.7	155.6	201	229	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5533.7	155.8	329	357	0.00	0.00	M
U-238	5	0	0	0.010	4232.7	155.4	94	122	0.00	0.00	
PU-239	5	1	1	0.009	5191.3	155.7	267	295	0.00	0.00	S
AM-241	-9999	-9999	0	-10.010	5520.3	155.8	326	354	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5241.5	155.7	276	304	0.00	0.00	S I
CM-242	-9999	-9999	0	-10.010	6147.4	156.0	439	467	0.00	0.00	M
PU-242	390	1	0	0.780	4935.2	155.6	211	239	0.00	0.00	P
AM-243	6	0	0	0.012	5310.0	50.0	298	307	0.00	0.00	P
CM-244	3	1	5	0.004	5839.5	155.9	384	412	0.00	0.00	S
CM-246	6	0	0	0.012	5421.2	50.0	298	307	0.00	0.00	P
CM-247	390	1	0	0.780	4905.1	155.6	211	239	0.00	0.00	P
CM-248	101	0	0	0.202	5113.3	183.4	233	266	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L41AA
Detector: ALP171 4
Report Date: 29-May-06 05:16 AM
Acquire Date: 28-MAY-2006 12:52:48.77

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0	+	151	0	-	201	1	@	251	1	@	301	0	@	351	0	@	401	0	@	451
		2	0		52	0	+	102	0	+	152	0	@	202	2	@	252	2	@	302	0	@	352	0	@	402	0	@	452
0		3	0		53	0	+	103	0	+	153	0	@	203	3	@	253	1	@	303	0	@	353	0	@	403	1	@	453
0		4	0		54	0	+	104	0	+	154	0	@	204	5	@	254	0	@	304	0	@	354	0	@	404	0	-	454
0		5	0		55	0	+	105	0	+	155	1	@	205	3	@	255	0	@	305	0	+	355	0	@	405	0	-	455
1		6	0		56	0	+	106	0	+	156	3	@	206	4	@	256	0	@	306	0	+	356	0	-	406	0	-	456
0		7	0		57	1	+	107	0	+	157	3	@	207	10	@	257	1		307	2	+	357	0	-	407	0	-	457
0		8	0		58	0	+	108	0	+	158	1	@	208	6	@	258	1		308	0		358	0	-	408	0	-	458
0		9	0		59	0	+	109	0		159	1	@	209	2	@	259	0		309	0		359	0	-	409	0	-	459
1		10	0		60	0	+	110	0		160	2	@	210	5	@	260	0		310	0		360	0	-	410	0	-	460
0		11	0	+	61	1	+	111	0		161	3	@	211	3	@	261	0		311	1		361	0	-	411	0	-	461
0		12	0	+	62	0	+	112	0		162	1	@	212	3	@	262	0		312	0		362	0	-	412	0	-	462
0		13	0	+	63	1	+	113	0		163	12	@	213	1	@	263	0		313	0		363	0		413	0	-	463
0		14	0	+	64	1	+	114	0		164	8	@	214	0	@	264	0		314	1		364	0		414	0	-	464
1		15	0	+	65	0	+	115	0		165	6	@	215	0	@	265	0	+	315	0		365	0		415	0	-	465
0		16	0	+	66	0	+	116	1		166	10	@	216	0		266	0	+	316	0		366	0		416	0	-	466
1		17	0	+	67	0	+	117	0		167	12	@	217	0	+	267	0	+	317	0		367	0		417	0	-	467
1		18	0	+	68	0	+	118	0		168	11	@	218	1	+	268	1	+	318	0		368	0		418	0		468
2		19	0	+	69	0	+	119	0		169	18	@	219	1	+	269	0	+	319	0		369	0		419	0		469
0		20	1	+	70	0	+	120	0		170	27	@	220	2	+	270	0	+	320	0		370	0		420	0		470
0		21	0	+	71	0	+	121	0		171	22	@	221	0	+	271	0	+	321	1		371	0		421	0		471
0		22	0	+	72	0	+	122	0		172	22	@	222	0	+	272	0	+	322	0		372	0		422	1		472
0		23	0	+	73	0		123	0		173	31	@	223	0	+	273	0	+	323	0		373	0		423	0		473
0		24	0	+	74	0		124	0		174	21	@	224	0	+	274	0	+	324	1		374	0		424	0		474
0		25	0	+	75	0		125	0		175	17	@	225	0	+	275	0	+	325	0		375	0	@	425	0		475
0		26	1	+	76	0		126	0		176	12	@	226	0	@	276	0	@	326	0		376	0	@	426	1		476
0		27	0	+	77	0		127	0		177	13	@	227	0	@	277	0	@	327	0	+	377	0	@	427	1		477
0		28	0	+	78	0		128	0		178	11	@	228	0	@	278	0	@	328	0	+	378	0	@	428	0		478
0		29	0	+	79	0		129	0		179	17	@	229	0	@	279	0	@	329	0	+	379	0	@	429	0		479
0		30	0	+	80	0	+	130	0		180	15	@	230	0	@	280	0	@	330	0	+	380	0	@	430	1		480
0		31	0	+	81	0	+	131	0		181	15	@	231	1	@	281	0	@	331	0	+	381	0	@	431	0		481
0		32	0	+	82	0	+	132	0		182	12	@	232	0	@	282	0	@	332	0	+	382	0	@	432	0		482
0		33	0	+	83	0	+	133	0	+	183	18	-	233	0	@	283	0	@	333	0	+	383	0	@	433	0		483
0		34	0	+	84	1	+	134	1	+	184	10	@	234	0	@	284	0	@	334	0	@	384	0	@	434	0		484
0		35	0	+	85	0	+	135	0	+	185	7	@	235	0	@	285	0	@	335	0	@	385	0	@	435	0		485
0		36	0	+	86	0	+	136	0	+	186	9	@	236	0	@	286	1	@	336	0	@	386	0	@	436	0		486
0		37	0	+	87	0	+	137	0	+	187	4	@	237	0	@	287	0	@	337	0	@	387	0	@	437	0		487
0		38	0	+	88	0	+	138	1	+	188	7	@	238	0	@	288	0	@	338	1	@	388	0	@	438	0		488
1		39	0	+	89	0	+	139	1	+	189	2	@	239	0	@	289	0	@	339	2	@	389	0	-	439	0		489
0		40	0		90	0	+	140	0	+	190	5	@	240	0	@	290	0	@	340	0	@	390	0	@	440	0		490
0		41	0		91	0	+	141	1	+	191	9	@	241	0	@	291	0	@	341	0	@	391	0	@	441	0		491
0		42	0		92	0	+	142	0	+	192	5	@	242	0	@	292	0	@	342	0	@	392	0	@	442	0		492
0		43	0		93	0	+	143	0	+	193	6	@	243	0	@	293	0	@	343	0	@	393	0	@	443	0		493
0		44	0	+	94	0	+	144	0	+	194	8	@	244	0	@	294	0	@	344	0	@	394	0	@	444	0		494
0		45	1	+	95	0	+	145	0	+	195	13	@	245	0	@	295	0	@	345	0	@	395	0	@	445	0		495
0		46	0	+	96	0	+	146	0	+	196	5	@	246	0	-	296	0	@	346	0	@	396	0	@	446	0		496
0		47	0	+	97	0	+	147	0	+	197	8	@	247	1	-	297	0	@	347	0	@	397	0	@	447	0		497
0		48	0	+	98	0	+	148	0	@	198	4	@	248	0	@	298	0	@	348	1	@	398	0	@	448	0		498
0		49	0	+	99	0	+	149	1	@	199	2	@	249	0	@	299	0	@	349	0	@	399	0	@	449	0		499
0		50	0	+	100	0	+	150	1	@	200	5	@	250	1	@	300	0	@	350	1	@	400	0	@	450	0		500

VMS Peak Search Report V1.9 Generated 29-MAY-2006 05:16:27

Configuration	: $DISK1:[ALP171.SAMPLE]H39L41AA_280561252D.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 14-APR-2006 12:00:00	Acquisition date	: 28-MAY-2006 12:52:48
Sample ID	: H39L41AA	Sample quantity	: 0.00000E+00 LITER
Sample type	: disk	Sample geometry	:
Detector name	: ALP171 1	Detector geometry	:
Elapsed live time	: 0 08:19:28.00	Elapsed real time	: 0 08:19:28.00 0.0%
Start energy	: 3651.42 keV	End energy	: 6480.43 keV
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4879.97	390	0	83.14	224.39	211	28	1.30E-02	5.1	
2	0	5059.51	101	0	55.42	256.70	233	33	3.37E-03	10.0	
3	0	5308.58	6	0	33.25	301.50	298	9	2.00E-04	40.8	

VMS Nuclide Identification Report V3.0 Generated 29-MAY-2006 05:16:29

```
Configuration     : $DISK1:[ALP171.SAMPLE]H39L41AA_280561252D.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID         : H39L41AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                3
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    3      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-210	138.38D	1.25	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-246	8500.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-243	7370.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

```
   Grand Total Activity :  0.000E+00    0.000E+00
```

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H39L41AA_280561252D.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4879.96	211	239	390	373	0.86		
5059.51	233	266	101	175	-7.36	57	0.00
5308.58	298	307	6	6	0.00		

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

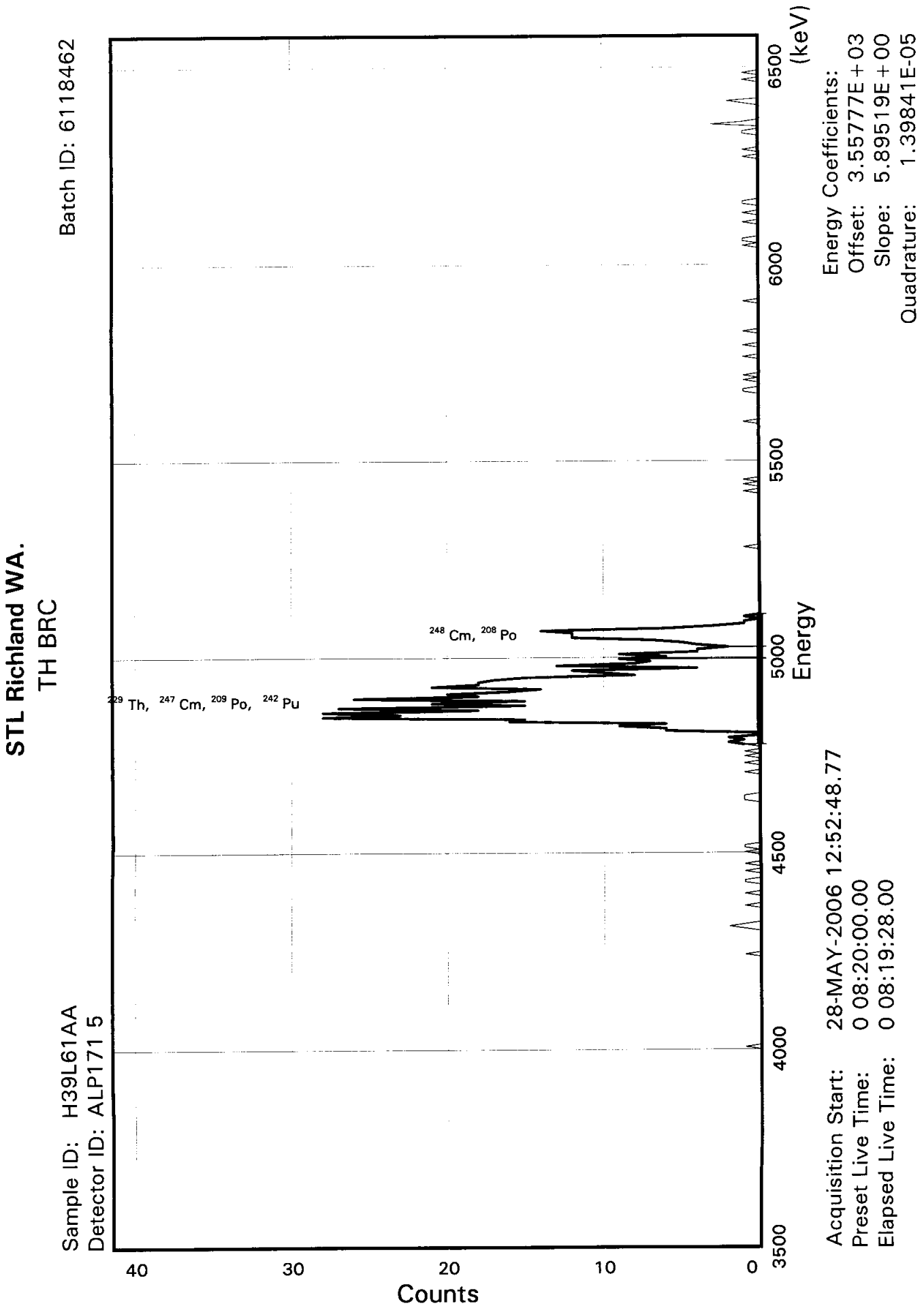
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39L61AA

Detector: ALP171 5
Report Date: 29-May-06 06:56 AM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	3	1	0.005	5423.2	118.1	301	321
TH-229	597	1	1.194	4845.3	371.8	203	266
TH-230	4	1	0.007	4687.7	118.0	177	197
TH-232	1	1	0.001	4013.0	117.9	62	82

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6118462
Sample ID: H39L61AA
Detector ID: ALP171 5
229 Th, 247 Cm, 209 Po, 242 Pu
248 Cm, 208 Po
Counts
40
30
20
10
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 28-MAY-2006 12:52:48.77
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.55777E+03
Slope: 5.89519E+00
Quadrature: 1.39841E-05

SAMPLE IDENTIITY: H39L61AA

TITLE : TH BRC

DETECTOR : ALP171 5
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H39L61AA_280561252E.CN
F;1
ACQUIRE DATE of BACKGROUND: 06-MAY-2006 14:12:16

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:52:48 CALIB DATE : 06-MAY-2006 11:43:55

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3557.77 keV CONSTANT FWHM : 8.16667 Channels
SLOPE : 5.89519 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 1.398410E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L61AA

Detector: ALP171 5
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	83	0	0	0.166	5158.4	112.1	244	263	0.00	0.00	P
PO-209	515	1	0	1.030	4926.7	247.9	207	249	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5347.9	248.0	285	327	0.00	0.00	M
AC-227	-9999	-9999	0	-10.010	6081.5	248.1	409	451	0.00	0.00	M
TH-227	-9999	-9999	0	-10.010	6081.5	248.1	409	451	0.00	0.00	M
TH-228	-9999	-9999	0	-10.010	5466.7	248.0	305	347	0.00	0.00	M
TH-229	515	1	0	1.030	4888.8	247.9	207	249	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4731.2	247.8	180	222	0.00	0.00	M I
TH-232	1	3	0	-0.001	4056.5	247.7	66	108	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5363.7	248.0	287	329	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4818.1	247.9	195	237	0.00	0.00	M I
U-235	9	1	1	0.017	4441.3	247.8	131	173	0.00	0.00	S
PU-236	4	4	4	0.005	5811.2	248.0	363	405	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4831.5	247.9	197	239	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5542.6	248.0	318	360	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4241.5	247.7	97	139	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5200.1	247.9	260	302	0.00	0.00	M I
AM-241	-9999	-9999	0	-10.010	5529.1	248.0	315	357	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5250.3	247.9	268	310	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6156.2	248.1	422	464	0.00	0.00	M
PU-242	515	1	0	1.030	4944.0	247.9	207	249	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5318.8	248.0	280	322	0.00	0.00	M
CM-244	-9999	-9999	0	-10.010	5848.3	248.1	370	412	0.00	0.00	M
CM-246	-9999	-9999	0	-10.010	5430.0	248.0	299	341	0.00	0.00	M
CM-247	515	1	0	1.030	4913.9	247.9	207	249	0.00	0.00	P
CM-248	83	0	0	0.166	5122.1	112.1	244	263	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L61AA
Detector: ALP171 5
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	@	101	0	+	151	0	@	201	5	@	251	0	@	301	0	@	351	0	@	401	0	@	451
		2	0		52	0	@	102	1	+	152	1	@	202	7	@	252	0	@	302	0	@	352	0	@	402	0	-	452
0		3	0		53	0	@	103	0	+	153	0	@	203	12	@	253	0	@	303	0	@	353	0	@	403	0	-	453
0		4	0		54	0	@	104	0	+	154	1	@	204	12	@	254	0	@	304	0	@	354	0	@	404	0	-	454
0		5	0		55	0	@	105	1	+	155	0	@	205	12	@	255	0	@	305	0	@	355	0	@	405	0	-	455
0		6	0		56	0	@	106	0	+	156	0	@	206	14	@	256	0	@	306	0	@	356	0	-	406	0	-	456
0		7	0		57	0	@	107	0	+	157	1	@	207	6	@	257	0	@	307	0	@	357	0	-	407	0	-	457
0		8	0		58	0	@	108	0	+	158	2	@	208	3	@	258	0	@	308	0	+	358	0	-	408	0	-	458
0		9	0		59	0	-	109	0	+	159	1	@	209	1	@	259	0	@	309	1	+	359	0	@	409	0	-	459
0		10	0		60	0	-	110	1	+	160	2	@	210	1	@	260	0	@	310	1	+	360	0	@	410	1	-	460
0		11	0		61	0	-	111	0	+	161	0	@	211	0	@	261	0	@	311	0		361	0	@	411	0	-	461
0		12	0		62	0	-	112	1	+	162	0	@	212	1	@	262	0	@	312	0		362	0	@	412	0	-	462
0		13	0		63	0	-	113	1	+	163	6	@	213	0	+	263	0	@	313	0	+	363	0	@	413	1	-	463
0		14	0		64	0	-	114	0	+	164	6	@	214	0	+	264	0	@	314	1	+	364	0	@	414	0	-	464
0		15	0		65	0	-	115	0	+	165	9	@	215	0	+	265	0	@	315	0	+	365	0	@	415	0		465
0		16	0	+	66	1	-	116	0	+	166	6	@	216	0	+	266	1	@	316	1	+	366	0	@	416	0		466
0		17	0	+	67	0	-	117	0	+	167	16	@	217	0	+	267	0	@	317	0	+	367	0	@	417	0		467
0		18	0	+	68	0	-	118	0	+	168	15	@	218	0	@	268	0	@	318	0	+	368	0	@	418	0		468
0		19	0	+	69	0	-	119	0	+	169	28	@	219	0	@	269	1	@	319	0	+	369	0	@	419	0		469
0		20	0	+	70	0	-	120	0	+	170	23	@	220	0	@	270	0	@	320	0	@	370	0	@	420	1		470
0		21	0	+	71	0	-	121	0	+	171	28	@	221	0	@	271	1	@	321	0	@	371	0	@	421	1		471
0		22	0	+	72	0	-	122	0	+	172	18	@	222	0	@	272	0	@	322	0	@	372	1	-	422	0		472
0		23	0	+	73	0	-	123	0	+	173	27	@	223	0	@	273	0	@	323	0	@	373	0	@	423	0		473
0		24	0	+	74	0	-	124	0		174	15	@	224	0	@	274	0	@	324	1	@	374	1	@	424	3		474
0		25	0	+	75	0	-	125	0		175	21	@	225	0	@	275	0	@	325	0	@	375	1	@	425	1		475
0		26	1	+	76	0	-	126	0		176	15	@	226	0	@	276	0	@	326	0	@	376	0	@	426	0		476
0		27	0	+	77	1	-	127	0		177	26	@	227	0	@	277	0	@	327	0	@	377	0	@	427	0		477
0		28	0	+	78	2	-	128	0		178	18	@	228	0	@	278	0	@	328	0	@	378	0	@	428	0		478
0		29	0	+	79	1	-	129	0		179	20	@	229	0	@	279	0	@	329	1	@	379	0	@	429	0		479
0		30	0	+	80	0	-	130	0	+	180	16	@	230	0	-	280	0	@	330	0	@	380	0	@	430	0		480
0		31	0	+	81	0	@	131	0	+	181	14	@	231	0	@	281	0	@	331	0	@	381	0	@	431	0		481
0		32	0	+	82	0	@	132	0	+	182	21	@	232	0	@	282	0	@	332	0	@	382	1	@	432	0		482
0		33	0	+	83	0	@	133	1	+	183	18	@	233	0	@	283	0	@	333	0	@	383	0	@	433	1		483
0		34	0	+	84	0	@	134	1	+	184	18	@	234	0	@	284	0	@	334	0	@	384	0	@	434	2		484
0		35	0	+	85	0	@	135	1	+	185	17	@	235	0	@	285	0	@	335	1	@	385	0	@	435	0		485
0		36	0	+	86	0	@	136	0	+	186	15	@	236	0	@	286	0	@	336	0	@	386	1	@	436	0		486
0		37	0	+	87	1	@	137	0	+	187	8	@	237	0	@	287	0	@	337	0	@	387	0	@	437	0		487
0		38	0	+	88	0	@	138	0	+	188	10	@	238	0	@	288	0	@	338	0	@	388	0	@	438	0		488
0		39	0	+	89	0	@	139	0	+	189	12	@	239	0	@	289	0	@	339	0	@	389	0	@	439	0		489
0		40	0	+	90	0	+	140	0	+	190	4	@	240	0	@	290	0	@	340	0	@	390	1	@	440	0		490
0		41	0	+	91	0	+	141	0	+	191	13	@	241	0	@	291	0	@	341	0	@	391	1	@	441	0		491
0		42	0	+	92	1	+	142	0	+	192	8	@	242	1	@	292	0	@	342	0	@	392	0	@	442	0		492
0		43	0	+	93	0	+	143	0	+	193	7	@	243	0	@	293	0	@	343	0	@	393	0	@	443	1		493
0		44	0	+	94	0	+	144	0	+	194	9	-	244	0	@	294	0	@	344	0	@	394	0	@	444	0		494
0		45	0	+	95	0	+	145	1	@	195	6	@	245	0	@	295	0	@	345	0	@	395	0	@	445	0		495
0		46	0	+	96	0	+	146	0	@	196	9	@	246	0	@	296	1	@	346	0	@	396	0	@	446	1		496
0		47	0	@	97	1	+	147	0	-	197	4	@	247	0	@	297	0	@	347	0	@	397	0	@	447	0		497
0		48	0	@	98	1	+	148	0	@	198	4	@	248	0	@	298	0	@	348	1	@	398	0	@	448	0		498
0		49	0	@	99	0	+	149	1	@	199	2	@	249	0	-	299	0	@	349	0	@	399	0	@	449	0		499
0		50	0	@	100	0	+	150	0	@	200	4	@	250	0	@	300	0	@	350	0	@	400	0	@	450	0		500

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:13:42

```
Configuration     : $DISK1:[ALP171.SAMPLE]H39L61AA_280561252E.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID         : H39L61AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Start energy      :  3575.46 keV         End energy       :  6579.77 keV
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4888.82	515	0112.01		225.67	207	42	1.72E-02	4.4	
2	0	5058.91	83	0 35.37		254.48	244	19	2.77E-03	11.0	

VMS Nuclide Identification Report V3.0 Generated 28-MAY-2006 21:13:44

```
Configuration     : $DISK1:[ALP171.SAMPLE]H39L61AA_280561252E.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID         : H39L61AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    2      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H39L61AA_280561252E.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4888.82	207	249	515	518	-0.13		
5058.90	244	263	83	112	-3.18	34	0.08

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39L71AA

Detector: ALP171 6
Report Date: 29-May-06 06:56 AM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	4	2	0.006	5423.2	120.9	322	342
TH-229	526	0	1.053	4845.3	338.0	228	284
TH-230	7	0	0.014	4687.7	120.6	201	221
TH-232	3	0	0.006	4013.0	120.3	89	109

End of Alpha Region Report
(Produced by ANAL Report)

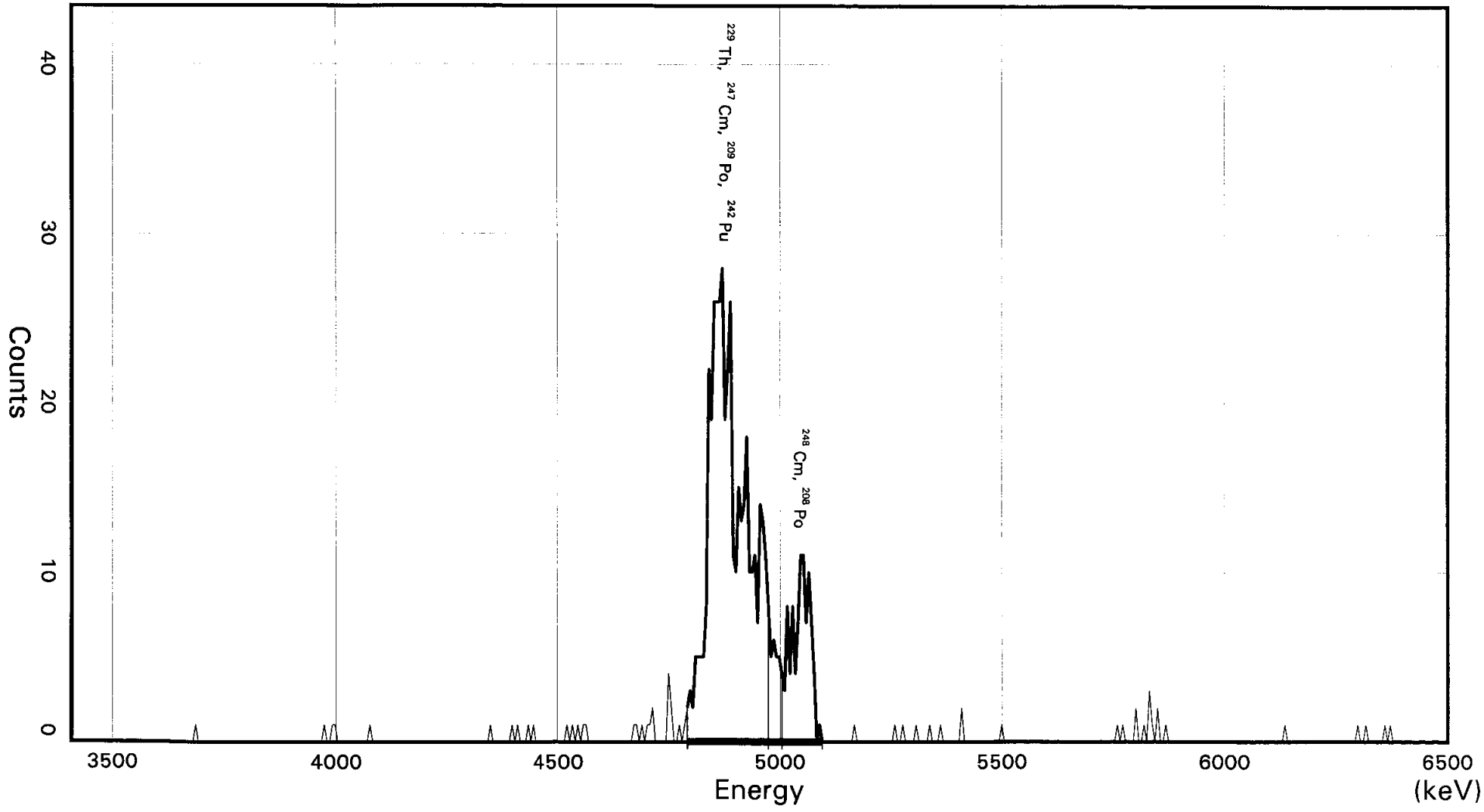
STL Richland WA.

TH BRC

Sample ID: H39L71AA

Detector ID: ALP171 6

Batch ID: 6118462



Acquisition Start: 28-MAY-2006 12:52:48.77

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.39036E+03

Slope: 6.00329E+00

Quadrature: 6.37184E-05

SAMPLE IDENTIITY: H39L71AA

TITLE : TH BRC

DETECTOR : ALP171 6
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H39L71AA_280561252F.CN
F;1
ACQUIRE DATE of BACKGROUND: 08-MAY-2006 04:40:02

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:52:48 CALIB DATE : 07-MAY-2006 06:53:51

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3390.36 keV CONSTANT FWHM : 7.33333 Channels
SLOPE : 6.00329 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 6.371840E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L71AA

Detector: ALP171 6
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	85	0	0	0.170	5147.7	120.8	263	283	0.00	0.00	P
PO-209	438	0	0	0.877	4916.0	211.2	233	268	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5337.2	211.6	309	344	0.00	0.00	M
AC-227	1	1	1	0.001	6070.8	212.1	430	465	0.00	0.00	S
TH-227	1	1	1	0.001	6070.8	212.1	430	465	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5456.0	211.7	329	364	0.00	0.00	M
TH-229	438	0	0	0.877	4878.1	211.2	233	268	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4720.5	211.1	207	242	0.00	0.00	M I
TH-232	4	0	0	0.008	4045.8	210.6	95	130	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5353.0	211.6	312	347	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4807.4	211.2	221	256	0.00	0.00	M I
U-235	9	1	1	0.016	4430.6	210.9	159	194	0.00	0.00	S
PU-236	6	2	12	0.011	5800.5	211.9	386	421	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4820.8	211.2	224	259	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5531.9	211.7	341	376	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4230.8	210.8	126	161	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5189.4	211.5	285	320	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5518.4	211.7	339	374	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5239.6	211.5	293	328	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6145.6	206.1	443	477	0.00	0.00	M
PU-242	438	0	0	0.877	4933.3	211.2	233	268	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5308.1	211.5	304	339	0.00	0.00	M
CM-244	6	2	12	0.011	5837.7	211.9	392	427	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5419.3	211.6	323	358	0.00	0.00	M
CM-247	438	0	0	0.877	4903.2	211.2	233	268	0.00	0.00	P
CM-248	85	0	0	0.170	5111.4	120.8	263	283	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L71AA
Detector: ALP171 6
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	1	+	101	0	-	151	0		201	10	@	251	0	@	301	0	@	351	0	@	401	0	@	451
		2	0		52	0	+	102	0	-	152	0		202	15	@	252	0	@	302	0	@	352	0	@	402	0	@	452
0		3	0		53	0	+	103	0	-	153	0		203	13	@	253	0	@	303	0	@	353	1	@	403	0	@	453
0		4	0		54	0	+	104	0	-	154	0		204	14	@	254	0	-	304	0	@	354	0	@	404	0	@	454
0		5	0		55	0	+	105	0	-	155	0		205	18	@	255	0	@	305	0	@	355	3	@	405	1	@	455
0		6	0		56	0	+	106	0	-	156	0		206	10	@	256	0	@	306	0	@	356	1	@	406	0	@	456
0		7	0		57	0	+	107	0	-	157	0	+	207	10	@	257	0	@	307	0	@	357	0	@	407	0	@	457
0		8	0		58	0	+	108	0	-	158	0	+	208	11	@	258	0	@	308	0	@	358	2	@	408	0	@	458
0		9	0		59	0	+	109	1	@	159	0	+	209	7	@	259	0	@	309	0	@	359	0	@	409	0	@	459
0		10	0		60	0	+	110	0	@	160	0	+	210	14	@	260	1	@	310	0	@	360	0	@	410	0	@	460
0		11	0		61	0	+	111	0	@	161	0	+	211	13	@	261	0	@	311	0	@	361	1	@	411	0	@	461
0		12	0		62	0	+	112	0	+	162	0	+	212	11	@	262	0	@	312	0	@	362	0	@	412	0	@	462
0		13	0		63	0	+	113	0	+	163	1	+	213	8	-	263	1	@	313	0	@	363	0	@	413	0	@	463
0		14	0		64	1	+	114	0	+	164	1	+	214	5	@	264	0	@	314	0	@	364	0	@	414	0	@	464
0		15	0		65	0	+	115	0	+	165	0	+	215	6	@	265	0	@	315	0	@	365	0	@	415	0	@	465
0		16	0		66	0	+	116	0	+	166	1	+	216	5	@	266	0	@	316	0	@	366	0	@	416	0	-	466
0		17	0		67	0	+	117	1	+	167	0	+	217	5	@	267	0	@	317	0	@	367	0	@	417	0	-	467
0		18	0		68	0	+	118	0	+	168	1	+	218	4	@	268	1	@	318	0	@	368	0	@	418	0	-	468
0		19	0		69	0	+	119	1	+	169	1	+	219	3	@	269	0	@	319	0	@	369	0	@	419	0	-	469
0		20	0		70	0	+	120	0	+	170	2	+	220	8	@	270	0	@	320	0	@	370	0	@	420	0	-	470
0		21	0		71	0	+	121	0	+	171	0	@	221	4	@	271	0	@	321	0	@	371	0	@	421	0	-	471
0		22	0		72	0	+	122	0	+	172	0	@	222	8	@	272	0	@	322	0	@	372	0	-	422	0	-	472
0		23	0		73	0	+	123	1	+	173	0	@	223	4	@	273	1	-	323	0	@	373	0	-	423	0	-	473
0		24	0		74	0	+	124	0	+	174	0	-	224	7	@	274	0	@	324	0	@	374	0	-	424	0	-	474
0		25	0		75	0	+	125	1	+	175	0	@	225	11	@	275	0	@	325	0	+	375	0	-	425	0	-	475
0		26	0		76	0	@	126	0	+	176	4	@	226	11	@	276	0	@	326	0	+	376	0	-	426	0	-	476
0		27	0		77	0	@	127	0	+	177	2	@	227	7	@	277	1	@	327	0		377	0	-	427	0	-	477
0		28	0		78	0	@	128	0	+	178	0	@	228	10	@	278	0	@	328	0		378	0		428	0		478
0		29	0		79	0	@	129	0	+	179	0	@	229	7	@	279	0	@	329	0		379	0		429	0		479
0		30	0		80	0	@	130	0	+	180	1	@	230	4	@	280	0	@	330	0		380	0	@	430	0		480
0		31	0		81	0	-	131	0	+	181	0	@	231	0	@	281	0	@	331	0		381	0	@	431	0		481
0		32	0		82	0	-	132	0	+	182	1	@	232	1	@	282	0	@	332	0		382	0	@	432	1		482
0		33	0		83	0	-	133	0	+	183	2	@	233	0		283	0	@	333	0		383	0	@	433	0		483
0		34	0		84	0	-	134	0	+	184	3	@	234	0		284	0	@	334	0		384	0	@	434	0		484
0		35	0		85	0	-	135	0	+	185	2	@	235	0	+	285	2	@	335	0		385	0	@	435	1		485
0		36	0		86	0	-	136	0	+	186	5	@	236	0	+	286	0	@	336	0	+	386	0	@	436	0		486
0		37	0		87	0	-	137	0	+	187	5	@	237	0	+	287	0	@	337	0	+	387	0	@	437	0		487
0		38	0		88	0	-	138	1	+	188	5	@	238	0	+	288	0	@	338	0	+	388	0	@	438	0		488
0		39	0		89	0	-	139	0	+	189	5	@	239	0	+	289	0	@	339	0	+	389	0	@	439	0		489
0		40	0		90	0	-	140	1	+	190	8	@	240	0	+	290	0	@	340	0	+	390	0	@	440	0		490
0		41	0		91	0	-	141	0	+	191	22	@	241	0	+	291	0	@	341	0	+	391	0	@	441	0		491
0		42	0		92	0	-	142	1	+	192	19	@	242	0	+	292	0	@	342	0	@	392	0	@	442	1		492
0		43	0		93	0	-	143	0	+	193	26	@	243	0	@	293	0	@	343	1	@	393	0	-	443	0		493
0		44	0		94	0	-	144	1	+	194	26	@	244	0	@	294	0	@	344	0	@	394	0	@	444	1		494
0		45	0	+	95	0	-	145	1		195	26	@	245	1	@	295	0	@	345	1	@	395	0	@	445	0		495
0		46	0	+	96	0	-	146	0		196	28	@	246	0	@	296	0	@	346	0	@	396	0	@	446	0		496
0		47	1	+	97	0	-	147	0		197	19	@	247	0	@	297	0	@	347	0	@	397	0	@	447	0		497
0		48	0	+	98	0	-	148	0		198	22	@	248	0	@	298	0	@	348	0	@	398	0	@	448	0		498
1		49	0	+	99	0	-	149	0		199	26	@	249	0	@	299	0	@	349	0	@	399	0	@	449	0		499
0		50	1	+	100	0	-	150	0		200	11	@	250	0	@	300	1	@	350	2	@	400	0	@	450	0		500

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:13:46

Configuration : $DISK1:[ALP171.SAMPLE]H39L71AA_280561252F.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID : H39L71AA Sample quantity : 0.00000E+00 LITER
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3408.37 keV End energy : 6480.74 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4878.14	438	0	90.05	247.18	233	35	1.46E-02	4.8	
2	0	5044.95	85	0	60.03	274.81	263	20	2.84E-03	10.8	

VMS Nuclide Identification Report V3.0 Generated 28-MAY-2006 21:13:49

```
Configuration     : $DISK1:[ALP171.SAMPLE]H39L71AA_280561252F.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID         : H39L71AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    2      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H39L71AA_280561252F.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4878.13	233	268	438	439	-0.05		
5044.95	263	283	85	118	-3.58	33	-0.04

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39L81AA

Detector: ALP171 7
Report Date: 29-May-06 06:56 AM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	0	0.002	5423.2	112.7	311	331
TH-229	590	2	1.179	4845.3	344.0	208	269
TH-230	0	1	-0.001	4687.7	112.8	180	200
TH-232	0	0	0.000	4013.0	112.9	61	81

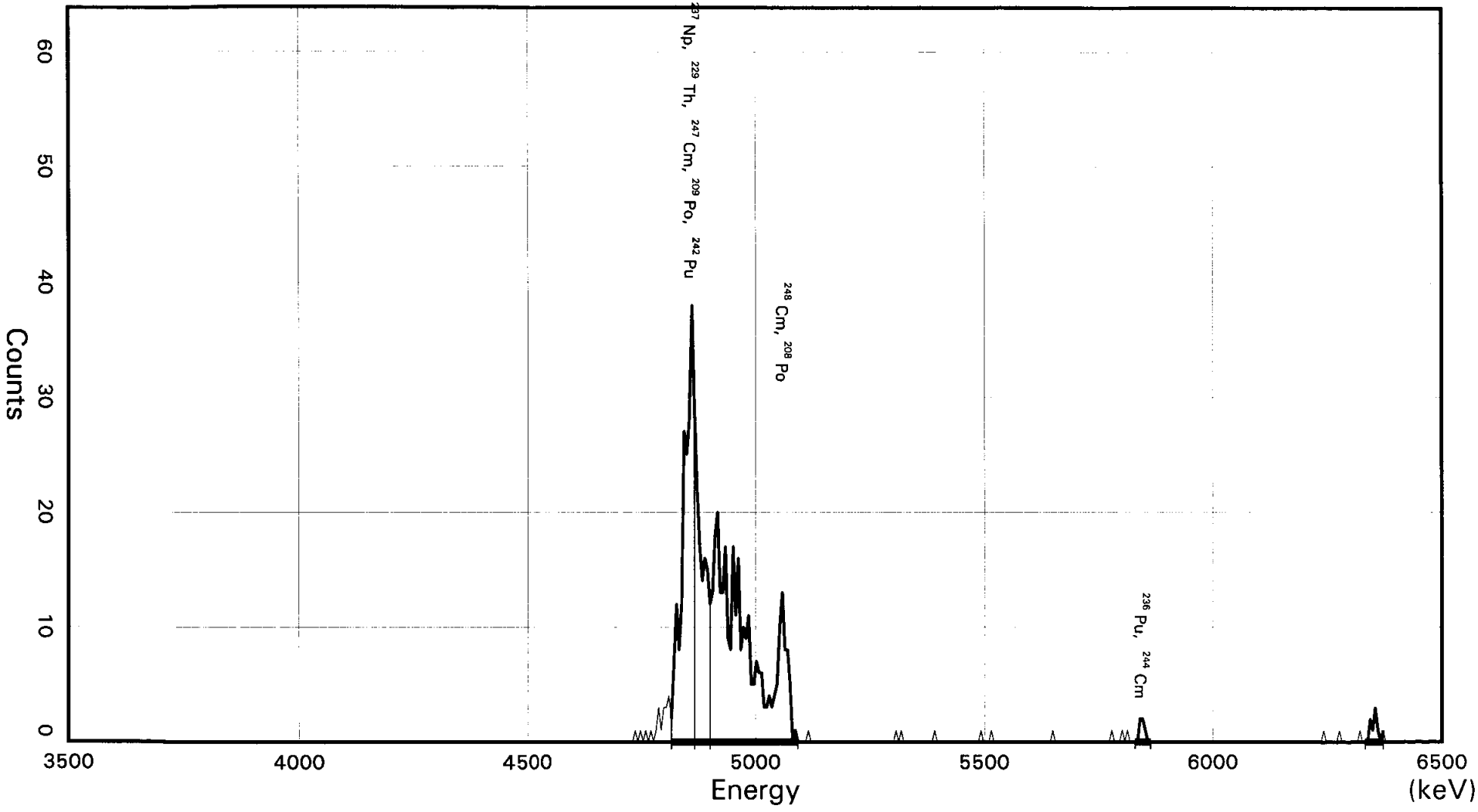
End of Alpha Region Report
(Produced by ANAL Report)

STL Richland WA.

TH BRC

Sample ID: H39L81AA
Detector ID: ALP171 7

Batch ID: 6118462



Acquisition Start: 28-MAY-2006 12:52:48.77
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:
Offset: 3.58497E+03
Slope: 5.64847E+00
Quadrature: -1.76165E-05

SAMPLE IDENTIITY: H39L81AA

TITLE : TH BRC

DETECTOR : ALP171 7
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H39L81AA_280561252G.CN
F;1
ACQUIRE DATE of BACKGROUND: 06-MAY-2006 14:12:16

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:52:48 CALIB DATE : 06-MAY-2006 00:06:10

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3584.97 keV CONSTANT FWHM : 6.33333 Channels
SLOPE : 5.64847 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.176165E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39L81AA

Detector: ALP171 7
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	159	2	0	0.316	5127.1	225.6	227	267	0.00	0.00	P
PO-209	414	0	0	0.829	4895.4	84.6	218	233	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5316.6	84.6	299	314	0.00	0.00	M
AC-227	0	1	0	-0.001	6050.2	84.5	430	445	0.00	0.00	S
TH-227	0	1	0	-0.001	6050.2	84.5	430	445	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5435.4	84.6	320	335	0.00	0.00	M
TH-229	414	0	0	0.829	4857.5	84.6	218	233	0.00	0.00	P
TH-230	1	2	0	0.000	4699.9	84.6	190	205	0.00	0.00	
TH-232	0	1	0	-0.001	4025.2	84.7	71	86	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5332.4	84.6	302	317	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4786.8	84.6	205	220	0.00	0.00	I
U-235	0	0	0	0.000	4410.0	84.6	139	154	0.00	0.00	
PU-236	6	1	0	0.011	5779.9	33.8	398	404	0.00	0.00	P
NP-237	414	0	0	0.829	4800.2	84.6	218	233	0.00	0.00	P
PU-238	-9999	-9999	0	-10.010	5511.3	84.5	334	349	0.00	0.00	M
U-238	0	0	0	0.000	4210.2	84.7	103	118	0.00	0.00	
PU-239	0	1	0	-0.001	5168.8	84.6	273	288	0.00	0.00	S
AM-241	-9999	-9999	0	-10.010	5497.8	84.5	332	347	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5219.0	84.6	282	297	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6125.0	84.5	443	458	0.00	0.00	M
PU-242	414	0	0	0.829	4912.7	84.6	218	233	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5287.5	84.6	294	309	0.00	0.00	M
CM-244	6	1	0	0.011	5817.1	33.8	398	404	0.00	0.00	P
CM-246	-9999	-9999	0	-10.010	5398.7	84.6	314	329	0.00	0.00	M
CM-247	414	0	0	0.829	4882.6	84.6	218	233	0.00	0.00	P
CM-248	159	2	0	0.316	5090.8	225.6	227	267	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39L81AA
Detector: ALP171 7
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	+	201	7	@	251	0	@	301	0		351	2	@	401	0	-	451	0		501
		2	0		52	0		102	0	+	152	0	+	202	6	@	252	0	@	302	0		352	1	@	402	0	-	452	0		502
0		3	0		53	0	+	103	0	+	153	0	+	203	6	@	253	0	@	303	0		353	0	@	403	0	-	453	0		503
0		4	0		54	0	+	104	0	+	154	1	+	204	3	@	254	0	@	304	0		354	0		404	0	-	454	0		504
0		5	0		55	0	+	105	0		155	0	@	205	3	@	255	1	@	305	0		355	0		405	0	-	455	0		505
0		6	0		56	0	+	106	0		156	1	+	206	4	@	256	0	@	306	0		356	0		406	0	-	456	0		506
0		7	0		57	0	+	107	0		157	0	+	207	3	@	257	1	@	307	0		357	0		407	0	-	457	0		507
0		8	0		58	0	+	108	0		158	1	+	208	4	@	258	0	@	308	0		358	0		408	0	-	458	0		508
0		9	0		59	0	+	109	0		159	0	+	209	5	@	259	0	@	309	0		359	0		409	0		459	0		509
0		10	0		60	0	+	110	0		160	1	+	210	10	@	260	0	@	310	0		360	0		410	0		460	0		510
0		11	0		61	0	+	111	0		161	0	+	211	13	@	261	0	@	311	0		361	0		411	0		461	0		511
0		12	0		62	0	+	112	0		162	1	+	212	8	@	262	0	@	312	0		362	0		412	0		462	0		512
0		13	0		63	0	+	113	0		163	3	+	213	8	@	263	0	@	313	0		363	0		413	0		463			
0		14	0		64	0	+	114	0		164	1	+	214	5	@	264	0	-	314	0		364	0		414	0		464			
0		15	0		65	0	+	115	0		165	3	+	215	0	@	265	0	@	315	0		365	0		415	0		465			
0		16	0		66	0	+	116	0		166	3	+	216	1	@	266	0	@	316	1		366	0		416	0		466			
0		17	0		67	0	+	117	0		167	4	+	217	0		267	0	@	317	0		367	0		417	0		467			
0		18	0		68	0	+	118	0		168	2	+	218	0		268	0	-	318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	7	@	219	0		269	0	-	319	0		369	0		419	0		469			
0		20	0		70	0		120	0		170	12	@	220	0		270	1	@	320	0		370	0		420	0		470			
0		21	0	+	71	0		121	0		171	8	@	221	1		271	0	@	321	0		371	0		421	1		471			
0		22	0	+	72	0		122	0		172	12	@	222	0		272	0	@	322	0		372	0		422	0		472			
0		23	0	+	73	0		123	0		173	27	@	223	0	+	273	0	@	323	0		373	0		423	0		473			
0		24	0	+	74	0		124	0		174	25	@	224	0	+	274	0	@	324	0		374	0		424	0		474			
0		25	0	+	75	0		125	0		175	28	@	225	0	+	275	0	@	325	0		375	0		425	0		475			
0		26	0	+	76	0		126	0		176	38	@	226	0	+	276	0	@	326	0		376	0		426	0		476			
0		27	0	+	77	0		127	0		177	29	-	227	0	+	277	0	@	327	0		377	0		427	1		477			
0		28	0	+	78	0		128	0		178	22	@	228	0	+	278	0	@	328	0		378	0		428	0		478			
0		29	0	+	79	0		129	0		179	17	@	229	0	+	279	0	@	329	0		379	0		429	0		479			
0		30	0	+	80	0		130	0		180	14	@	230	0	+	280	0	+	330	0		380	0	@	430	0		480			
0		31	0	+	81	0		131	0		181	16	@	231	0	+	281	0	+	331	0		381	0	@	431	0		481			
0		32	0	+	82	0		132	0		182	15	@	232	0	@	282	0	@	332	0		382	0	@	432	0		482			
0		33	0	+	83	0		133	0		183	12	@	233	0	@	283	0	@	333	0		383	0	@	433	0		483			
0		34	0	+	84	0		134	0		184	13	@	234	0	@	284	0	@	334	0		384	0	@	434	0		484			
0		35	0	+	85	0		135	0		185	18	@	235	0	@	285	0	@	335	0		385	0	@	435	1		485			
0		36	0	+	86	0		136	0		186	20	@	236	0	@	286	0	@	336	0		386	0	@	436	0		486			
0		37	0		87	0		137	0		187	13	@	237	0	@	287	0	@	337	0		387	0	@	437	0		487			
0		38	0		88	0		138	0		188	13	@	238	0	@	288	1	@	338	0		388	0	@	438	0		488			
0		39	0		89	0	+	139	0		189	17	@	239	0	-	289	0	@	339	1		389	0	@	439	2		489			
0		40	0		90	0	+	140	0	+	190	9	@	240	0	-	290	0	@	340	0		390	0	@	440	1		490			
0		41	0		91	0	+	141	0	+	191	8	@	241	0	-	291	0	@	341	0		391	0	@	441	3		491			
0		42	0		92	0	+	142	0	+	192	17	@	242	0	-	292	1	@	342	0		392	0	@	442	1		492			
0		43	0		93	0	+	143	0	+	193	11	@	243	0	-	293	0	@	343	1		393	0	-	443	0		493			
0		44	0		94	0	+	144	0	+	194	16	@	244	0	@	294	0	@	344	0		394	0	@	444	1		494			
0		45	0		95	0	+	145	0	+	195	8	@	245	0	@	295	0	@	345	1		395	0	@	445	0		495			
0		46	0		96	0	+	146	0	+	196	10	@	246	0	@	296	0	@	346	0		396	0	-	446	0		496			
0		47	0		97	0	+	147	0	+	197	9	@	247	0	@	297	0	@	347	0		397	0	-	447	0		497			
0		48	0		98	0	+	148	0	+	198	11	@	248	0	-	298	0	+	348	0	@	398	0	-	448	0		498			
0		49	0		99	0	+	149	0	+	199	5	@	249	0	@	299	0	+	349	0	@	399	0	-	449	0		499			
0		50	0		100	0	+	150	0	+	200	5	@	250	0	@	300	0		350	2	@	400	0	-	450	0		500			

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:13:51

Configuration : $DISK1:[ALP171.SAMPLE]H39L81AA_280561252G.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID : H39L81AA Sample quantity : 0.00000E+00 LITER
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3601.91 keV End energy : 6472.36 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4857.54	414	0	33.89	225.45	218	15	1.38E-02	4.9	
2	0	5058.27	159	0	28.24	261.05	227	40	5.31E-03	7.9	
3	0	5842.66	6	0	16.95	400.20	398	6	2.00E-04	40.8	
4	0	6347.55	7	0	22.59	489.83	487	7	2.34E-04	37.8	

VMS Nuclide Identification Report V3.0 Generated 28-MAY-2006 21:13:53

```
Configuration     : $DISK1:[ALP171.SAMPLE]H39L81AA_280561252G.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID         : H39L81AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                4
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    3       75.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-236	2.86Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H39L81AA_280561252G.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4857.53	218	233	414	284	6.39		
5058.27	227	267	159	414	-20.22	125	0.00
5842.66	398	404	6	5	0.41		
6347.54	487	494	7	8	-0.38		

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39MC1AA

Detector: ALP171 8
Report Date: 29-May-06 06:56 AM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	2	0.000	5423.2	117.7	307	327
TH-229	602	0	1.205	4845.3	335.6	209	266
TH-230	3	0	0.006	4687.7	117.8	182	202
TH-232	1	0	0.002	4013.0	117.9	67	87

End of Alpha Region Report
(Produced by ANAL Report)

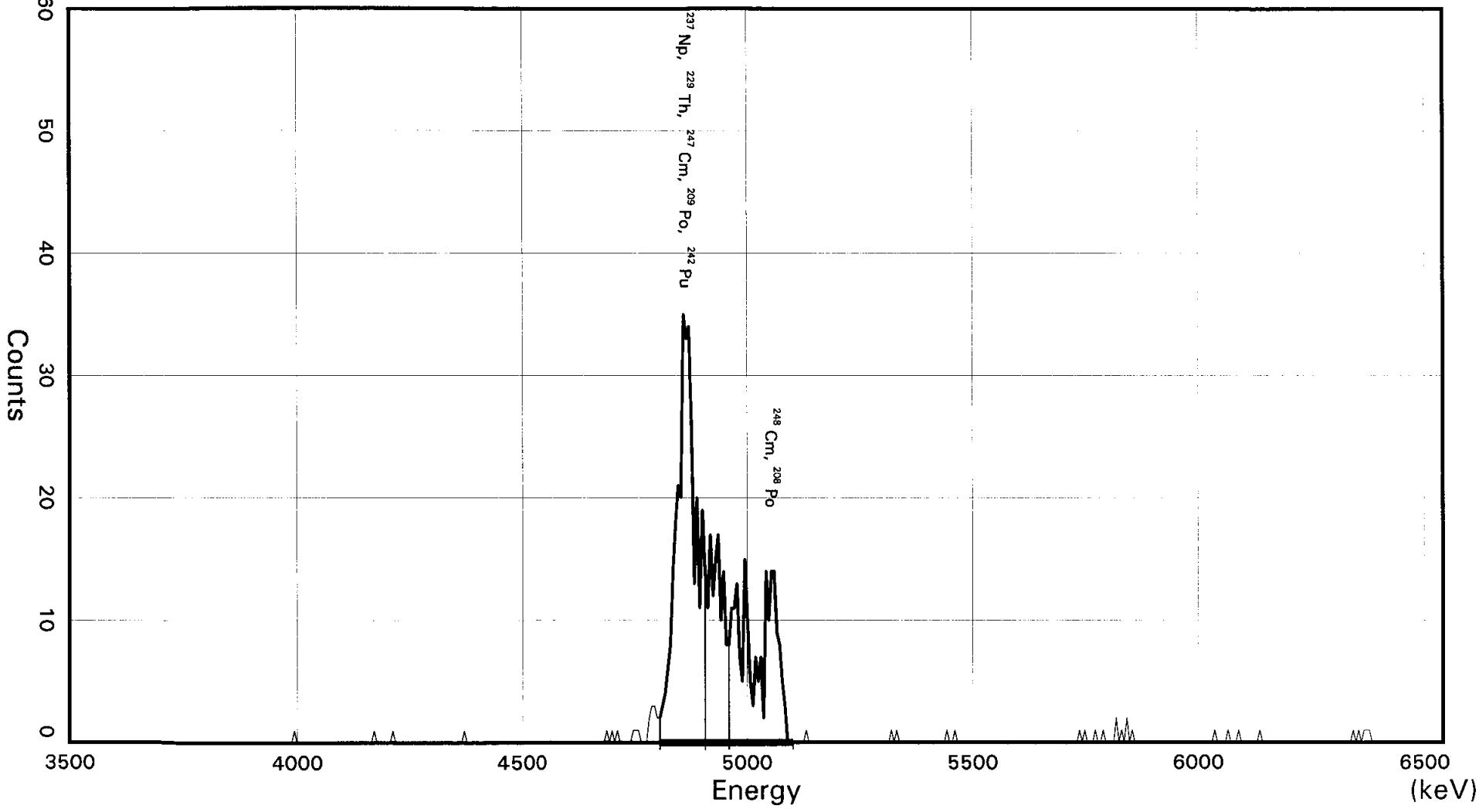
STL Richland WA.

TH BRC

Sample ID: H39MC1AA

Detector ID: ALP171 8

Batch ID: 6118462



Acquisition Start: 28-MAY-2006 12:52:48.77

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.52756E+03

Slope: 5.89937E+00

Quadrature: -2.58312E-05

SAMPLE IDENTIITY: H39MC1AA

TITLE : TH BRC

DETECTOR : ALP171 8
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H39MC1AA_280561252H.CN
F;1
ACQUIRE DATE of BACKGROUND: 06-MAY-2006 14:12:16

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:52:48 CALIB DATE : 06-MAY-2006 00:06:38

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3527.56 keV CONSTANT FWHM : 7.33333 Channels
SLOPE : 5.89937 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.258312E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39MC1AA

Detector: ALP171 8
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	161	0	0	0.322	5134.8	194.3	234	267	0.00	0.00	P
PO-209	429	0	0	0.859	4903.1	153.1	217	243	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5324.3	153.0	295	321	0.00	0.00	M
AC-227	3	1	2	0.006	6057.9	152.8	420	446	0.00	0.00	S
TH-227	3	1	2	0.006	6057.9	152.8	420	446	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5443.1	152.9	315	341	0.00	0.00	M
TH-229	429	0	0	0.859	4865.2	153.1	217	243	0.00	0.00	P
TH-230	10	0	13	0.019	4707.6	153.1	190	216	0.00	0.00	S
TH-232	1	0	0	0.002	4032.9	153.3	76	102	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5340.1	153.0	298	324	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4794.5	153.1	205	231	0.00	0.00	S I
U-235	1	1	0	0.001	4417.7	153.2	141	167	0.00	0.00	
PU-236	6	5	8	0.007	5787.6	152.9	374	400	0.00	0.00	S
NP-237	429	0	0	0.859	4807.9	153.1	217	243	0.00	0.00	P
PU-238	-9999	-9999	0	-10.010	5519.0	152.9	328	354	0.00	0.00	M
U-238	2	0	0	0.004	4217.9	153.2	107	133	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5176.5	153.0	270	296	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5505.5	152.9	326	352	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5226.7	153.0	278	304	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6132.6	158.7	432	459	0.00	0.00	M
PU-242	429	0	0	0.859	4920.4	153.1	217	243	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5295.2	153.0	290	316	0.00	0.00	M
CM-244	4	5	8	0.003	5824.7	152.9	380	406	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5406.4	153.0	309	335	0.00	0.00	M
CM-247	429	0	0	0.859	4890.3	153.1	217	243	0.00	0.00	P
CM-248	161	0	0	0.322	5098.5	194.3	234	267	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun 92)

Sample Identity: H39MC1AA
Detector: ALP171 8
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:52:48.77

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0	+	151	1	+	201	5	@	251	0	@	301	0	@	351	0	-	401
		2	0		52	0	+	102	0	+	152	0	+	202	3	@	252	0	@	302	0	@	352	0	-	402
0		3	0		53	0		103	0	+	153	0	+	203	7	@	253	0	@	303	0	+	353	0	-	403
0		4	0		54	0		104	0	+	154	0	+	204	5	@	254	1	@	304	0	+	354	0	-	404
0		5	0		55	0		105	0	+	155	0	@	205	7	@	255	0	@	305	0		355	0	-	405
0		6	0		56	0		106	0	+	156	0	@	206	2	@	256	1	@	306	0		356	0	-	406
0		7	0		57	0	+	107	0	+	157	1	@	207	14	@	257	0	@	307	0		357	0		407
0		8	0		58	0	+	108	0	+	158	1	@	208	10	@	258	0	@	308	0		358	0	-	408
0		9	0		59	1	+	109	0	+	159	1	@	209	14	@	259	0	-	309	0		359	0		409
0		10	0		60	0	+	110	0	+	160	0	@	210	14	@	260	0	@	310	0		360	0		410
0		11	0		61	0	+	111	0	+	161	0	@	211	9	@	261	0	@	311	0		361	0		411
0		12	0		62	0	+	112	0	+	162	0	@	212	8	@	262	0	@	312	0		362	0		412
0		13	0		63	0	+	113	0	+	163	2	@	213	5	@	263	0	@	313	0		363	0		413
0		14	0		64	0	+	114	0	+	164	3	@	214	3	@	264	0	@	314	0		364	0		414
0		15	0		65	0	+	115	0	+	165	3	@	215	0	@	265	0	@	315	0		365	0		415
0		16	0		66	1	+	116	0	+	166	2	@	216	0	@	266	0	@	316	0		366	0		416
0		17	0		67	0	+	117	0	+	167	2	-	217	0		267	0	@	317	0		367	0		417
0		18	0		68	0	+	118	0		168	3	@	218	0		268	0	@	318	0		368	0		418
0		19	0		69	0	+	119	0		169	4	@	219	0		269	0	@	319	0		369	0		419
0		20	0		70	0	+	120	0		170	6	@	220	0	+	270	0	@	320	0		370	0	@	420
0		21	0		71	0	+	121	0		171	8	@	221	0	+	271	0	@	321	0		371	0	@	421
0		22	0		72	0	+	122	0		172	14	@	222	1	+	272	0	@	322	0		372	0	@	422
0		23	0		73	0	+	123	0		173	18	@	223	0	+	273	0	@	323	0		373	0	@	423
0		24	0		74	0	+	124	0		174	21	@	224	0	+	274	0	@	324	0	+	374	0	@	424
0		25	0		75	0	+	125	0		175	20	@	225	0	+	275	1	@	325	1	+	375	0	@	425
0		26	0	+	76	0	+	126	0		176	35	@	226	0	+	276	0	@	326	0	+	376	1	@	426
0		27	0	+	77	0	+	127	0		177	33	@	227	0	+	277	0	@	327	1	+	377	0	@	427
0		28	0	+	78	0	+	128	0		178	34	@	228	0	@	278	1	@	328	0	+	378	0	@	428
0		29	1	+	79	0	+	129	0		179	26	@	229	0	@	279	0	@	329	0	+	379	0	@	429
0		30	0	+	80	0	+	130	0		180	13	@	230	0	@	280	0	@	330	0	@	380	0	@	430
0		31	0	+	81	0	+	131	0		181	20	@	231	0	@	281	0	@	331	1	@	381	1	@	431
0		32	0	+	82	0	+	132	0		182	11	@	232	0	@	282	0	@	332	0	@	382	0	-	432
0		33	0	+	83	0	+	133	0		183	19	@	233	0	@	283	0	@	333	0	@	383	0	@	433
0		34	0	+	84	0		134	0		184	14	-	234	0	@	284	0	@	334	1	@	384	0	@	434
0		35	0	+	85	0		135	0		185	11	@	235	0	@	285	0	@	335	0	@	385	1	@	435
0		36	0	+	86	0		136	0		186	17	@	236	0	@	286	0	@	336	0	@	386	0	@	436
0		37	0	+	87	0		137	0		187	12	@	237	0	@	287	0	@	337	0	@	387	0	@	437
0		38	0	+	88	0		138	0		188	15	@	238	0	@	288	0	@	338	0	@	388	0	@	438
0		39	0	+	89	0		139	0		189	17	@	239	0	@	289	0	@	339	2	@	389	0	@	439
0		40	0	+	90	0		140	0	+	190	10	@	240	0	-	290	0	@	340	0	@	390	0	@	440
0		41	0	+	91	0	+	141	0	+	191	14	@	241	0	@	291	0	@	341	1	@	391	0	@	441
0		42	0	+	92	0	+	142	0	+	192	8	@	242	0	@	292	0	@	342	0	@	392	0	@	442
0		43	0	+	93	1	+	143	0	+	193	8	@	243	0	@	293	0	@	343	2	@	393	1	@	443
0		44	0	+	94	0	+	144	0	+	194	11	@	244	0	@	294	0	@	344	0	@	394	0	@	444
0		45	0	+	95	0	+	145	0	+	195	11	@	245	0	@	295	0	@	345	1	@	395	0	@	445
0		46	0	+	96	0	+	146	0	+	196	13	@	246	0	@	296	0	@	346	0	@	396	0	@	446
0		47	0	+	97	0	+	147	1	+	197	7	@	247	0	@	297	0	@	347	0	@	397	0	-	447
0		48	0	+	98	0	+	148	0	+	198	5	@	248	0	@	298	0	@	348	0	@	398	0	-	448
0		49	0	+	99	0	+	149	1	+	199	15	@	249	0	@	299	0	@	349	0	@	399	0	-	449
0		50	0	+	100	0	+	150	0	+	200	10	@	250	0	@	300	0	@	350	0	@	400	0	-	450

Cnt	F	Chn
0		501
0		502
0		503
0		504
0		505
0		506
0		507
0		508
0		509
0		510
0		511
0		512

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:13:56

Configuration : $DISK1:[ALP171.SAMPLE]H39MC1AA_280561252H.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:52:48
Sample ID : H39MC1AA Sample quantity : 0.00000E+00 LITER
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3545.25 keV End energy : 6541.26 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4865.22	429	0	41.30	226.97	217	26	1.43E-02	4.8	
2	0	5054.32	161	0	41.30	259.10	234	33	5.37E-03	7.9	

VMS Nuclide Identification Report V3.0 Generated 28-MAY-2006 21:13:58

Configuration : $DISK1:[ALP171.SAMPLE]H39MC1AA_280561252H.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title : TH BRC
Sample date : 14-APR-2006 12:00:00
Sample ID : H39MC1AA
Sample type : disk
Detector name : ALP171 1
Elapsed live time: 0 08:19:28.00
Energy tolerance : 80.00 keV
Errors propagated: No
Efficiency type : Spline
Abundance limit : 70.00

Acquisition date : 28-MAY-2006 12:52:48
Sample quantity : 0.00000E+00 LITER
Sample geometry :
Detector geometry:
Elapsed real time: 0 08:19:28.00 0.0%
Half life ratio : 1.00
Systematic Error : 0.00 %
Efficiencies at : Peak Energy

Summary of Nuclide Activity

Total number of lines in spectrum	2	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	2	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H39MC1AA_280561252H.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4865.22	217	243	429	413	0.77		
5054.32	234	267	161	304	-11.27	126	-0.04

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

5/28/06

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST

2115

C.R. Technician: RS
Date Counted: 5/28/06
C.R. Analyst: D
Date Analyzed: 5/29/06

Counting Time
Sample: 500 Minutes

Background: See Alpha Analysis Report

SOP's
Operating: RICHRD008
Review: RICHRD0016

TH BRC 6118462

WorkOrder #	Th-229 (4845 KeV) Tracer from Th-234 Beta Count (7)				TOTAL COUNTS			Det #	Comment
					Th-228 (5423 KeV)	Th-230 (4688 KeV)	Th-232 (4010 KeV)		
	ID	Activity	ROI Cts	BKG	(6)	(8)	(9)		
H39MDIAA		10		0	See Alpha Analysis Report for ROI Information			113	
H39MFIAA		10		0	See Alpha Analysis Report for ROI Information			114	
H39MHIAA		10		0	See Alpha Analysis Report for ROI Information			116	
H39MJIAA		10		0	See Alpha Analysis Report for ROI Information			117	
H39MLIAA		10		0	See Alpha Analysis Report for ROI Information			118	
H39MNIAA		10		0	See Alpha Analysis Report for ROI Information			119	
H4C83IAA		10		0	See Alpha Analysis Report for ROI Information			120	
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				

Comments:

Form No: RC-012, 10/02, Rev 9

Approved by: S

Date: 5/29/06

STL RICHLAND

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Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39MD1AA

Detector: ALP113 1
Report Date: 29-May-06 06:57 AM
Acquire Date: 28-MAY-2006 12:53:33.21
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	4	0.000	5423.2	152.2	333	353
TH-229	365	4	0.726	4845.3	328.0	265	308
TH-230	1	0	0.002	4687.7	152.8	236	256
TH-232	1	1	0.001	4013.0	153.4	148	168

End of Alpha Region Report
(Produced by ANAL Report)

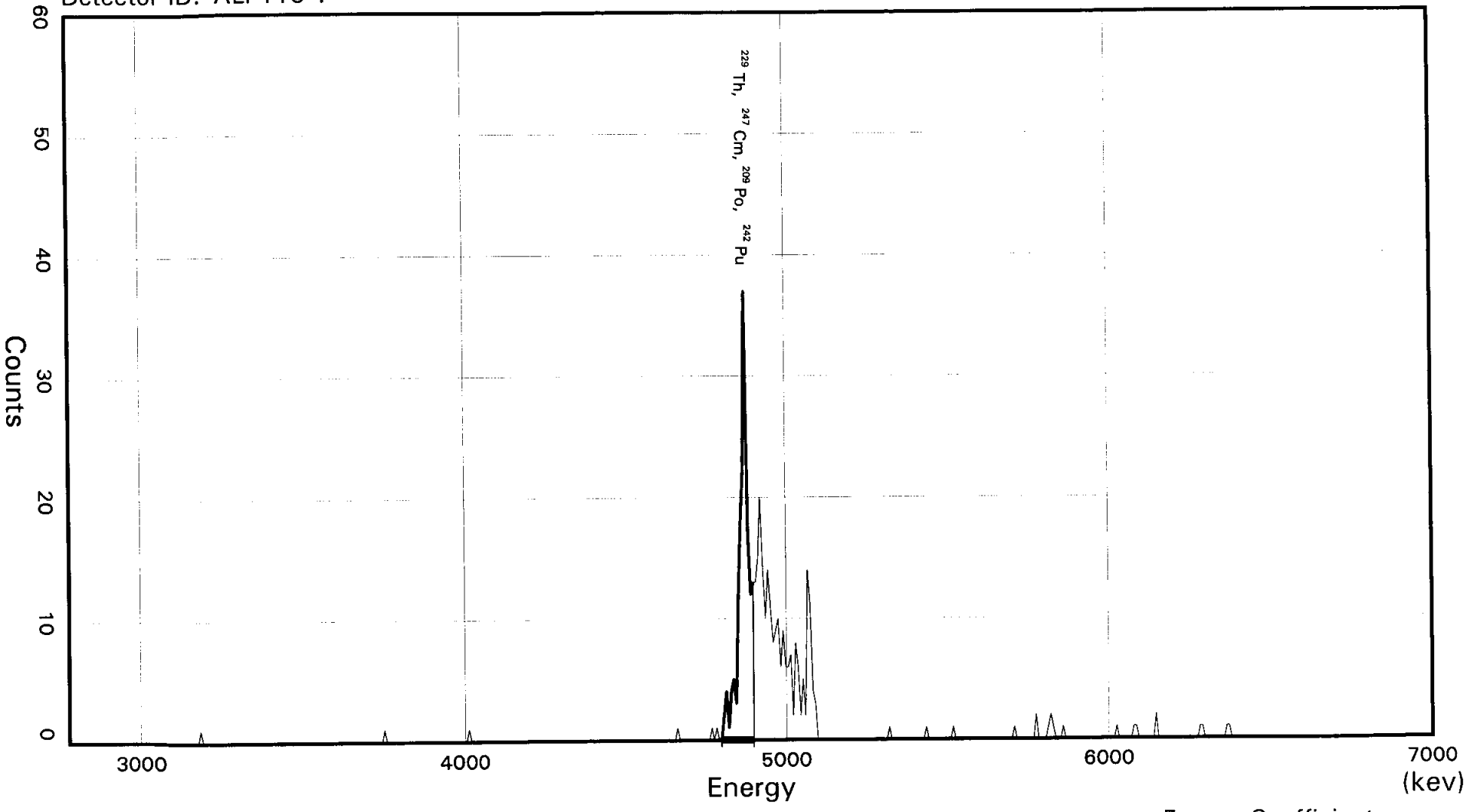
STL Richland WA.

TH BRC

Sample ID: H39MD1AA

Detector ID: ALP113 1

Batch ID: 6118462



Acquisition Start: 28-MAY-2006 12:53:33.21

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:01.00

Energy Coefficients:

Offset: 2.75725E+03

Slope: 7.72320E+00

Quadrature: -1.68196E-04

SAMPLE IDENTITY: H39MD1AA

TITLE : TH BRC

DETECTOR : ALP113 1
CONFIGURATION NAME : RDND06$DKA100:[ALP113.SAMPLE]H39MD1AA_280561
253.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:40:46

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:53:33 CALIB DATE : 15-MAY-2006 02:21:09

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:01

OFFSET : 2757.25 keV CONSTANT FWHM : 5.50000 Channels
SLOPE : 7.72320 keV/C SENSITIVITY : 6.00000 Std Dev's
QUAD COEFF : -.168196E-03 keV/C^2 SUM SENSITIVITY: 0.10000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39MD1AA

Detector: ALP113 1
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:53:33.21
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.001	5142.5	99.1	301	314	0.00	0.00	M
PO-209	150	1	0	0.299	4910.8	99.2	266	279	0.00	0.00	P
PO-210	-9999	-9999	0	-10.001	5332.0	98.9	326	339	0.00	0.00	M
AC-227	2	1	2	0.003	6065.6	98.5	423	436	0.00	0.00	S
TH-227	2	1	2	0.003	6065.6	98.5	423	436	0.00	0.00	S
TH-228	-9999	-9999	0	-10.001	5450.8	98.9	342	355	0.00	0.00	M
TH-229	150	1	0	0.299	4872.9	99.2	266	279	0.00	0.00	P
TH-230	1	0	0	0.002	4715.3	99.3	245	258	0.00	0.00	S
TH-232	1	1	0	0.001	4040.6	99.7	157	170	0.00	0.00	
U-232	-9999	-9999	0	-10.001	5347.8	98.9	328	341	0.00	0.00	M
U-234	-9999	-9999	0	-10.001	4802.2	99.3	257	270	0.00	0.00	M I
U-235	0	2	0	-0.002	4425.4	99.5	207	220	0.00	0.00	
PU-236	3	2	5	0.004	5795.3	98.7	387	400	0.00	0.00	S
NP-237	-9999	-9999	0	-10.001	4815.6	99.2	258	271	0.00	0.00	S I
PU-238	-9999	-9999	0	-10.001	5526.6	98.8	352	365	0.00	0.00	M
U-238	0	0	0	0.000	4225.6	99.6	181	194	0.00	0.00	
PU-239	-9999	-9999	0	-10.001	5184.2	99.0	307	320	0.00	0.00	M
AM-241	-9999	-9999	0	-10.001	5513.2	98.8	350	363	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.001	5234.4	99.0	313	326	0.00	0.00	M
CM-242	-9999	-9999	0	-10.001	6140.3	98.5	433	446	0.00	0.00	M
PU-242	150	1	0	0.299	4928.1	99.2	266	279	0.00	0.00	P
AM-243	-9999	-9999	0	-10.001	5302.9	99.0	322	335	0.00	0.00	M
CM-244	5	4	5	0.006	5832.4	98.7	392	405	0.00	0.00	S
CM-246	-9999	-9999	0	-10.001	5414.1	98.9	337	350	0.00	0.00	M
CM-247	150	1	0	0.299	4898.0	99.2	266	279	0.00	0.00	P
CM-248	-9999	-9999	0	-10.001	5106.2	99.1	297	310	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39MD1AA
Detector: ALP113 1
Report Date: 28-May-06 09:13 PM
Acquire Date: 28-MAY-2006 12:53:33.21

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0	+	251	14	@	301	0	@	351	1	-	401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0	+	252	11	@	302	0	@	352	0	-	402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0	+	253	4	@	303	0	@	353	0	-	403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0	+	254	3	@	304	0	@	354	0	-	404	0		454	0		504
0		5	1		55	0		105	0		155	0		205	0	+	255	0	@	305	0	@	355	1	-	405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	0	+	256	0	@	306	0	@	356	0		406	0		456	0		506
0		7	0		57	0		107	0	+	157	0	+	207	0	@	257	0	@	307	0	@	357	0		407	0		457	0		507
0		8	0		58	0		108	0	+	158	0	+	208	0	+	258	0	@	308	0	@	358	0		408	0		458	0		508
0		9	0		59	0		109	0	+	159	0	+	209	0	@	259	0	@	309	0	@	359	0		409	0		459	0		509
0		10	0		60	0		110	0	+	160	0	+	210	0	@	260	0	@	310	1	@	360	0		410	0		460	0		510
0		11	0		61	0		111	0	+	161	0	+	211	0	@	261	0	@	311	0	@	361	0		411	1		461	0		511
0		12	0		62	0		112	0	+	162	0	+	212	1	@	262	0	@	312	0	@	362	0		412	1		462	0		512
0		13	0		63	0		113	1	+	163	0	+	213	0	@	263	0	-	313	0	@	363	0		413	0		463			
0		14	0		64	0		114	0	+	164	0	+	214	1	@	264	0	@	314	0	+	364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0	+	215	0	@	265	0	@	315	0	+	365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0	+	216	0	@	266	0	@	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0	+	217	2	@	267	0	@	317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0	+	218	4	@	268	0	@	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0	+	219	1	@	269	0	@	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0	+	220	4	@	270	0	@	320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	5	@	271	0	-	321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	3	@	272	0	@	322	0		372	0		422	1		472			
0		23	0		73	0		123	0		173	0		223	12	@	273	0	@	323	0		373	0	@	423	1		473			
0		24	0		74	0		124	0		174	0		224	18	@	274	0	@	324	0		374	0	@	424	0		474			
0		25	0		75	0		125	0		175	0		225	22	@	275	0	@	325	0		375	0	@	425	0		475			
0		26	0		76	0		126	0		176	0		226	37	@	276	0	@	326	0		376	0	@	426	0		476			
0		27	0		77	0		127	0		177	0		227	17	@	277	0	@	327	0		377	1	@	427	0		477			
0		28	0		78	0		128	0		178	0		228	12	@	278	0	@	328	0		378	0	@	428	0		478			
0		29	0		79	1		129	0		179	0		229	13		279	0	@	329	0		379	0	@	429	0		479			
0		30	0		80	0		130	0		180	0		230	13		280	0	@	330	0		380	0	@	430	0		480			
0		31	0		81	0		131	0	+	181	0		231	15		281	0	@	331	0		381	0	@	431	0		481			
0		32	0		82	0		132	0	+	182	0		232	20		282	0	@	332	0		382	0	@	432	0		482			
0		33	0		83	0		133	0	+	183	0		233	14		283	0	@	333	0		383	0	-	433	0		483			
0		34	0		84	0		134	0	+	184	0		234	10		284	1	@	334	0		384	1	@	434	0		484			
0		35	0		85	0		135	0	+	185	0		235	14		285	0	@	335	1		385	1	@	435	0		485			
0		36	0		86	0		136	0	+	186	0		236	11		286	0	@	336	0		386	0	@	436	0		486			
0		37	0		87	0		137	0	+	187	0		237	8		287	0	-	337	0	+	387	0	-	437	0		487			
0		38	0		88	0		138	0	+	188	0		238	9		288	0	@	338	0	+	388	0	-	438	0		488			
0		39	0		89	0		139	0	+	189	0		239	10		289	0	@	339	0	+	389	0	-	439	0		489			
0		40	0		90	0		140	0	+	190	0		240	6		290	0	@	340	0	+	390	0	-	440	0		490			
0		41	0		91	0		141	0	+	191	0		241	9		291	0	@	341	0	+	391	0	-	441	0		491			
0		42	0		92	0		142	0	+	192	0		242	6		292	0	@	342	0	@	392	0	-	442	0		492			
0		43	0		93	0		143	0	+	193	0		243	6		293	0	@	343	0	@	393	2	-	443	0		493			
0		44	0		94	0		144	0	+	194	0		244	7		294	0	@	344	2	@	394	0	-	444	0		494			
0		45	0		95	0		145	0		195	0	+	245	2		295	0	@	345	0	@	395	0	-	445	0		495			
0		46	0		96	0		146	0		196	0	+	246	8		296	0	@	346	0	@	396	0	-	446	0		496			
0		47	0		97	0		147	0		197	0	+	247	6	+	297	0	@	347	0	@	397	0		447	0		497			
0		48	0		98	0		148	0		198	1	+	248	2	+	298	0	@	348	0	@	398	0		448	0		498			
0		49	0		99	0		149	0		199	0	+	249	5	+	299	1	@	349	1	@	399	0		449	0		499			
0		50	0		100	0		150	0		200	0	+	250	2	+	300	0	@	350	2	@	400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:13:38

Configuration	: RDND06$DKA100:[ALP113.SAMPLE]H39MD1AA_280561253.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 14-APR-2006 12:00:00	Acquisition date	: 28-MAY-2006 12:53:33
Sample ID	: H39MD1AA	Sample quantity	: 0.00000E+00 LITER
Sample type	: disk	Sample geometry	:
Detector name	: ALP113	Detector geometry	:
Elapsed live time	: 0 08:20:01.00	Elapsed real time	: 0 08:20:01.00 0.0%
Start energy	: 2780.42 kev	End energy	: 6667.43 kev
Sensitivity	: 6.00	Sum Sensitivity	: 0.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4872.91	150	0	30.89	275.59	266	13	5.00E-03	8.2	

VMS Nuclide Identification Report V3.1 Generated 28-MAY-2006 21:13:40

```
Configuration     : RDND06$DKA100:[ALP113.SAMPLE]H39MD1AA_280561253.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:53:33
Sample ID         : H39MD1AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP113               Detector geometry:
Elapsed live time: 0 08:20:01.00         Elapsed real time: 0 08:20:01.00   0.0%
Energy tolerance :    80.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                  1
 Number of unidentified lines                       0
 Number of lines tentatively identified by NID      1      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP113.SAMPLE]H39MD1AA_280561253.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4872.90	266	279	150	150	0.00		

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39MF1AA

Detector: ALP114 1
Report Date: 29-May-06 06:57 AM
Acquire Date: 28-MAY-2006 12:53:52.08
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	0	7	-0.007	5423.2	149.8	321	341
TH-229	539	0	1.078	4845.3	352.6	248	295
TH-230	3	0	0.006	4687.7	150.2	223	243
TH-232	1	0	0.002	4013.0	150.5	133	153

End of Alpha Region Report
(Produced by ANAL Report)

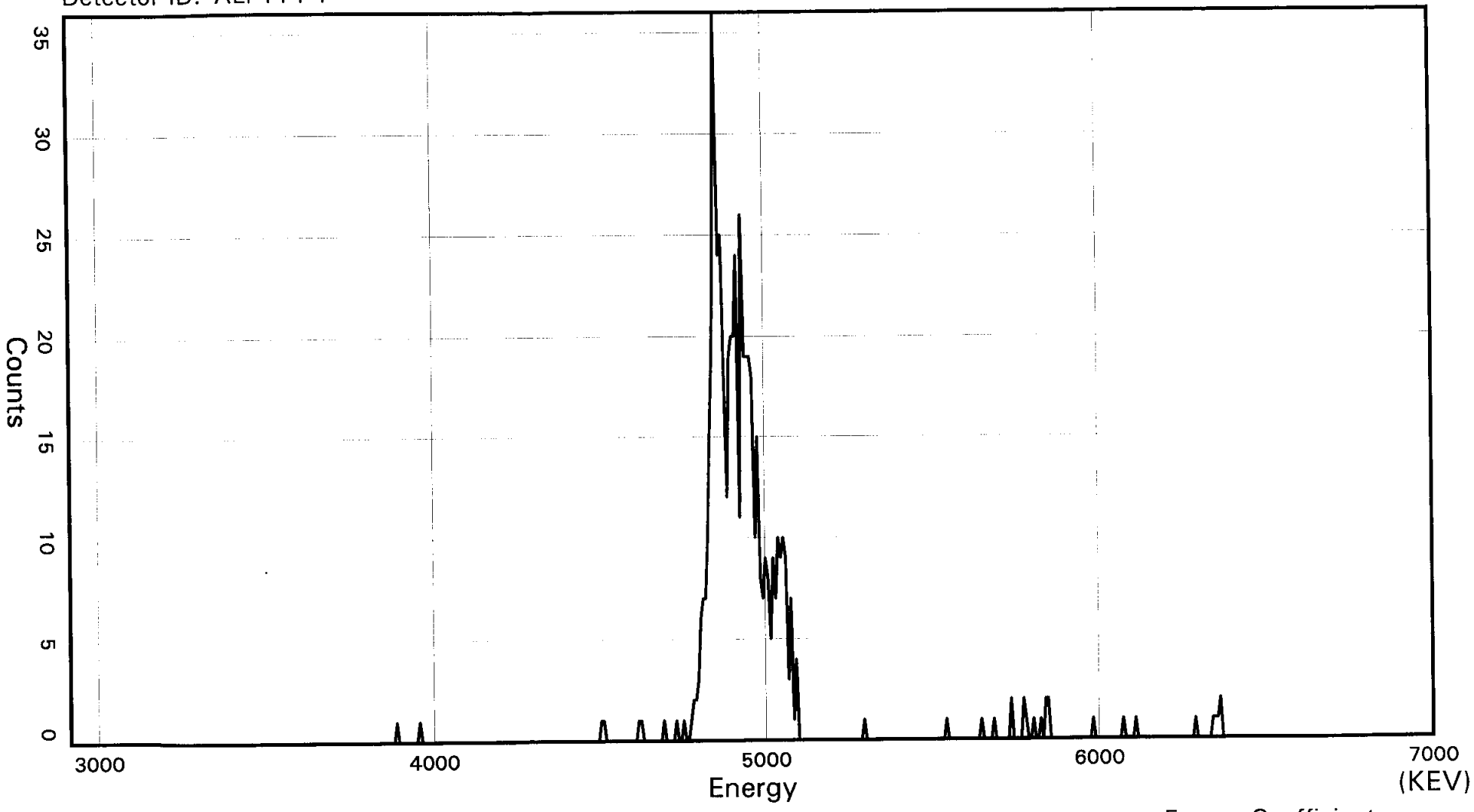
STL Richland WA.

TH BRC

Sample ID: H39MF1AA

Detector ID: ALP114 1

Batch ID: 6118462



Acquisition Start: 28-MAY-2006 12:53:52.08

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:07.00

Energy Coefficients:

Offset: 2.89411E+03

Slope: 7.54967E+00

Quadrature: -8.69294E-05

SAMPLE IDENTIITY: H39MF1AA

TITLE : TH BRC

DETECTOR : ALP114 1
CONFIGURATION NAME : RDND06$DKA100:[ALP114.SAMPLE]H39MF1AA_280561
253.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:40:49

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:53:52 CALIB DATE : 15-MAY-2006 02:21:17

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:07

OFFSET : 2894.11 keV CONSTANT FWHM : 7.00000 Channels
SLOPE : 7.54967 keV/C SENSITIVITY : 6.00000 Std Dev's
QUAD COEFF : -.869294E-04 keV/C^2 SUM SENSITIVITY: 0.10000 %

Alpha Spectrum Listing
for Spectra Not Processed by Alp_rgn_cnts
(Version: 29-Jun-92)

Sample Identity: H39MF1AA
Detector: ALP114 1
Report Date: 28-May-06 09:14 PM
Acquire Date: 28-MAY-2006 12:53:52.08

Flags Key

Intersect Region: @
Non-Intersect Region: +,

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	2		251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	2		252	0		302	1		352	0		402	1		452	0		502
0		3	0		53	0		103	0		153	0		203	3		253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	6		254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	7		255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	7		256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	10		257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0		208	15		258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0		209	19		259	0		309	0		359	0		409	1		459	0		509
0		10	0		60	0		110	0		160	0		210	26		260	0		310	0		360	0		410	1		460	0		510
0		11	0		61	0		111	0		161	0		211	36		261	0		311	0		361	1		411	1		461	0		511
0		12	0		62	0		112	0		162	0		212	24		262	0		312	0		362	0		412	2		462	0		512
0		13	0		63	0		113	0		163	0		213	25		263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	1		214	18		264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	1		215	12		265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	19		266	0		316	1		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	20		267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	20		268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0		219	24		269	1		319	0		369	0		419	0		469			
0		20	0		70	0		120	0		170	0		220	11		270	0		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	26		271	0		321	1		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	19		272	0		322	0		372	0		422	0		472			
0		23	0		73	0		123	0		173	0		223	19		273	0		323	0		373	1		423	0		473			
0		24	0		74	0		124	0		174	0		224	19		274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	18		275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	10		276	0		326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	15		277	0		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	8		278	0		328	2		378	1		428	0		478			
0		29	0		79	0		129	0		179	1		229	7		279	0		329	0		379	0		429	0		479			
0		30	0		80	0		130	0		180	1		230	9		280	0		330	0		380	0		430	0		480			
0		31	0		81	0		131	0		181	0		231	8		281	0		331	0		381	0		431	0		481			
0		32	0		82	1		132	0		182	0		232	5		282	0		332	0		382	0		432	0		482			
0		33	0		83	0		133	0		183	0		233	9		283	0		333	2		383	0		433	0		483			
0		34	0		84	0		134	0		184	0		234	7		284	0		334	1		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	10		285	0		335	0		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	9		286	0		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	10		287	0		337	1		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	9		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	1		239	3		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	7		290	0		340	1		390	0		440	0		490			
0		41	0		91	1		141	0		191	0		241	1		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	4		292	0		342	2		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	0		343	2		393	0		443	0		493			
0		44	0		94	0		144	0		194	1		244	0		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	0		296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0		197	1		247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0		198	0		248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	0		349	0		399	0		449	0		499			

0 50 0 100 0 150 0 200 1 250 0 300 0 350 0 400 0 450 0 500

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:14:02

```
Configuration     : RDND06$DKA100:[ALP114.SAMPLE]H39MF1AA_280561253.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:53:52
Sample ID         : H39MF1AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP114               Detector geometry:
Elapsed live time: 0 08:20:07.00         Elapsed real time: 0 08:20:07.00   0.0%
Start energy      :  2916.76 KEV         End energy       :  6736.75 KEV
Sensitivity       :     6.00             Sum Sensitivity  :     0.10
No peaks were found
```

VMS Nuclide Identification Report V3.1 Generated 28-MAY-2006 21:14:03

```
Configuration     : RDND06$DKA100:[ALP114.SAMPLE]H39MF1AA_280561253.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:53:52
Sample ID         : H39MF1AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP114               Detector geometry:
Elapsed live time: 0 08:20:07.00         Elapsed real time: 0 08:20:07.00   0.0%
Energy tolerance :    80.00 KEV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

**** There are no nuclides meeting summary criteria ****

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

```
  Error Report  (Date: 28-May-06  09:14 PM)

Program: Alp_rgn_cnts
subroutine: Main
Message: No trace pk or nucl
Record being processed:  7

System Status Message:

%NONAME-W-NOMSG, Message number 00000000
```

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39MH1AA

Detector: ALP116 1
Report Date: 29-May-06 06:57 AM
Acquire Date: 28-MAY-2006 12:54:16.56
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	2	0.000	5423.2	150.4	327	347
TH-229	504	2	1.006	4845.3	399.4	250	303
TH-230	3	0	0.006	4687.7	151.0	229	249
TH-232	0	0	0.000	4013.0	151.5	140	160

End of Alpha Region Report
(Produced by ANAL Report)

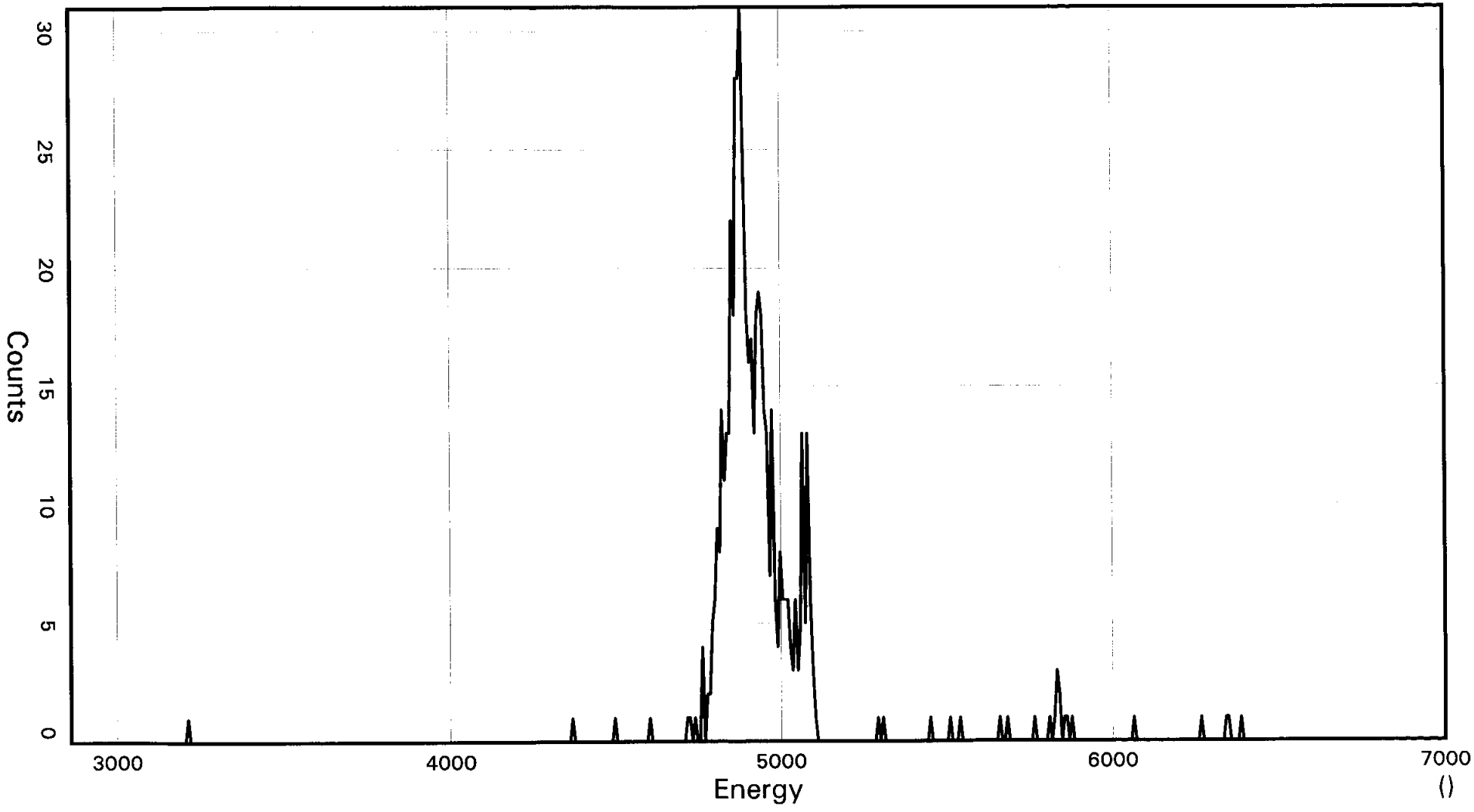
STL Richland WA.

TH BRC

Sample ID: H39MH1AA

Detector ID: ALP116 1

Batch ID: 6118462



Acquisition Start: 28-MAY-2006 12:54:16.56

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:01.00

Energy Coefficients:

Offset: 2.83815E+03

Slope: 7.61998E+00

Quadrature: -1.51265E-04

SAMPLE IDENTIITY: H39MH1AA

TITLE : TH BRC

DETECTOR : ALP116 1
CONFIGURATION NAME : RDND06$DKA100:[ALP116.SAMPLE]H39MH1AA_280561
254.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:40:55

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:54:16 CALIB DATE : 15-MAY-2006 02:21:38

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:01

OFFSET : 2838.15 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 7.61998 keV/C SENSITIVITY : 6.00000 Std Dev's
QUAD COEFF : -.151265E-03 keV/C^2 SUM SENSITIVITY: 0.10000 %

Alpha Spectrum Listing
for Spectra Not Processed by Alp_rgn_cnts
(Version: 29-Jun-92)

Sample Identity: H39MH1AA
Detector: ALP116 1
Report Date: 28-May-06 09:14 PM
Acquire Date: 28-MAY-2006 12:54:16.56

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	1		251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	1		202	0		252	0		302	0		352	1		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	4		254	0		304	0		354	0		404	1		454	0		504
0		5	0		55	0		105	0		155	0		205	0		255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	2		256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	2		257	0		307	1		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0		208	5		258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0		209	6		259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0		210	9		260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	8		261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	14		262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	11		263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	13		264	0		314	0		364	0		414	1		464			
0		15	0		65	0		115	0		165	0		215	13		265	0		315	0		365	0		415	1		465			
0		16	0		66	0		116	0		166	0		216	22		266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	18		267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	28		268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	1		219	28		269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0		170	0		220	31		270	0		320	0		370	0		420	1		470			
0		21	0		71	0		121	0		171	0		221	24		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	18		272	0		322	0		372	0		422	0		472			
0		23	0		73	0		123	0		173	0		223	16		273	0		323	1		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	17		274	1		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	13		275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	18		276	1		326	1		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	19		277	0		327	0		377	1		427	0		477			
0		28	0		78	0		128	0		178	0		228	18		278	0		328	0		378	0		428	0		478			
0		29	0		79	0		129	0		179	0		229	14		279	0		329	0		379	0		429	0		479			
0		30	0		80	0		130	0		180	0		230	13		280	0		330	0		380	0		430	0		480			
0		31	0		81	0		131	0		181	0		231	7		281	0		331	0		381	0		431	0		481			
0		32	0		82	0		132	0		182	0		232	14		282	0		332	0		382	0		432	0		482			
0		33	0		83	0		133	0		183	1		233	6		283	0		333	0		383	0		433	0		483			
0		34	0		84	0		134	0		184	0		234	4		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	8		285	0		335	0		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	6		286	0		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	6		287	0		337	1		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	6		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	4		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	3		290	0		340	0		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	6		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	3		292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	5		293	0		343	1		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	13		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	5		295	1		345	1		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	13		296	0		346	3		396	0		446	0		496			
0		47	0		97	0		147	0		197	0		247	6		297	0		347	2		397	0		447	0		497			
0		48	0		98	0		148	0		198	1		248	3		298	0		348	0		398	0		448	0		498			
1		49	0		99	0		149	0		199	1		249	1		299	0		349	1		399	0		449	0		499			

0 50 0 100 0 150 0 200 0 250 0 300 0 350 1 400 0 450 0 500

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:14:20

Configuration	: RDND06$DKA100:[ALP116.SAMPLE]H39MH1AA_280561254.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 14-APR-2006 12:00:00	Acquisition date	: 28-MAY-2006 12:54:16
Sample ID	: H39MH1AA	Sample quantity	: 0.00000E+00 LITER
Sample type	: disk	Sample geometry	:
Detector name	: ALP116	Detector geometry	:
Elapsed live time	: 0 08:20:01.00	Elapsed real time	: 0 08:20:01.00 0.0%
Start energy	: 2861.01	End energy	: 6699.93
Sensitivity	: 6.00	Sum Sensitivity	: 0.10

No peaks were found

VMS Nuclide Identification Report V3.1 Generated 28-MAY-2006 21:14:21

```
Configuration     : RDND06$DKA100:[ALP116.SAMPLE]H39MH1AA_280561254.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:54:16
Sample ID         : H39MH1AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP116               Detector geometry:
Elapsed live time: 0 08:20:01.00         Elapsed real time: 0 08:20:01.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

**** There are no nuclides meeting summary criteria ****

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

```
  Error Report  (Date: 28-May-06  09:14 PM)

Program: Alp_rgn_cnts
subroutine: Main
Message: No trace pk or nucl
Record being processed:  7

System Status Message:

%NONAME-W-NOMSG, Message number 00000000
```

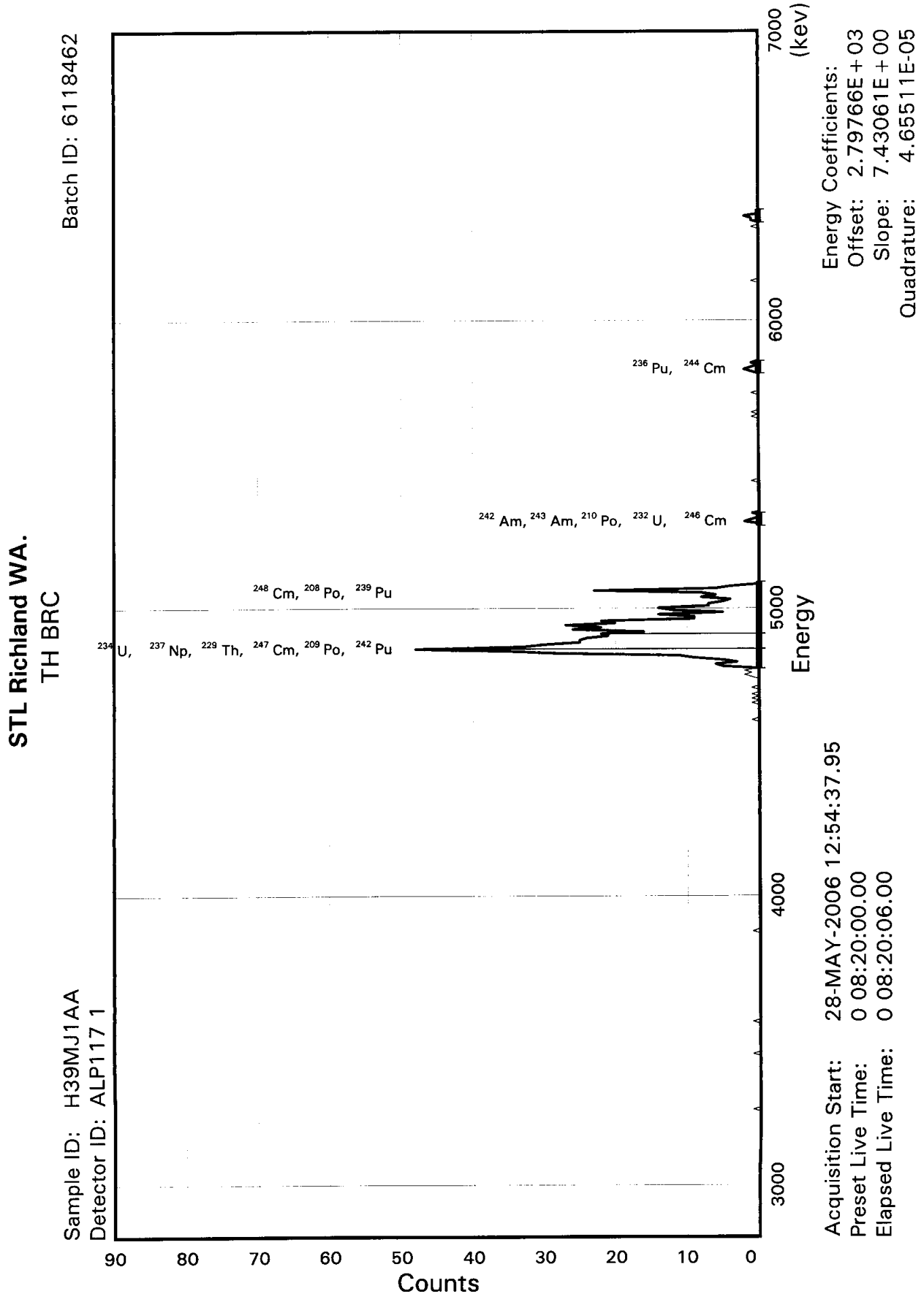
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39MJ1AA

Detector: ALP117 1
Report Date: 29-May-06 06:57 AM
Acquire Date: 28-MAY-2006 12:54:37.95
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 2500 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	1	0.004	5423.2	149.3	338	358
TH-229	610	2	1.219	4845.3	357.9	260	308
TH-230	5	2	0.009	4687.7	149.1	239	259
TH-232	0	1	0.000	4013.0	148.9	148	168

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6118462
Sample ID: H39MJ1AA
Detector ID: ALP117 1
234 U, 237 Np, 229 Th, 247 Cm, 209 Po, 242 Pu
248 Cm, 208 Po, 239 Pu
242 Am, 243 Am, 210 Po, 232 U, 246 Cm
236 Pu, 244 Cm
Counts
90 80 70 60 50 40 30 20 10 0
Energy
3000 4000 5000 6000 7000
(kev)
Acquisition Start: 28-MAY-2006 12:54:37.95
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:06.00
Energy Coefficients:
Offset: 2.79766E+03
Slope: 7.43061E+00
Quadrature: 4.65511E-05

SAMPLE IDENTIITY: H39MJ1AA

TITLE : TH BRC

DETECTOR : ALP117 1
CONFIGURATION NAME : RDND06$DKA100:[ALP117.SAMPLE]H39MJ1AA_280561
254.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:40:57

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:54:37 CALIB DATE : 15-MAY-2006 02:21:42

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:06

OFFSET : 2797.66 keV CONSTANT FWHM : 6.66667 Channels
SLOPE : 7.43061 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 4.655110E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39MJ1AA

Detector: ALP117 1
Report Date: 28-May-06 09:14 PM
Acquire Date: 28-MAY-2006 12:54:37.95
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	137	1	0	0.274	5131.7	231.2	277	308	0.00	0.00	P
PO-209	466	1	0	0.931	4900.0	119.3	268	284	0.00	0.00	P
PO-210	4	0	0	0.008	5321.2	44.8	334	340	0.00	0.00	P
AC-227	0	1	0	0.000	6054.8	119.5	428	444	0.00	0.00	S
TH-227	0	1	0	0.000	6054.8	119.5	428	444	0.00	0.00	S
TH-228	-9999	-9999	0	-15.995	5440.0	119.4	345	361	0.00	0.00	M
TH-229	466	1	0	0.931	4862.1	119.3	268	284	0.00	0.00	P
TH-230	4	1	0	0.008	4704.5	119.3	247	263	0.00	0.00	
TH-232	0	0	0	0.000	4029.8	119.1	156	172	0.00	0.00	
U-232	4	0	0	0.008	5337.0	44.8	334	340	0.00	0.00	P
U-234	466	1	0	0.931	4791.4	119.3	268	284	0.00	0.00	P
U-235	0	0	0	0.000	4414.6	119.2	208	224	0.00	0.00	
PU-236	4	17	0	0.001	5784.4	44.8	405	411	0.00	0.00	P
NP-237	466	1	0	0.931	4804.8	119.3	268	284	0.00	0.00	P
PU-238	-9999	-9999	0	-15.995	5515.8	119.4	356	372	0.00	0.00	M
U-238	0	1	0	0.000	4214.8	119.2	181	197	0.00	0.00	
PU-239	137	1	0	0.274	5173.4	231.2	277	308	0.00	0.00	P
AM-241	-9999	-9999	0	-15.995	5502.4	119.4	354	370	0.00	0.00	M
AM-242M	4	0	0	0.008	5223.6	44.8	334	340	0.00	0.00	P
CM-242	-9999	-9999	0	-15.995	6129.5	119.6	438	454	0.00	0.00	M
PU-242	466	1	0	0.931	4917.3	119.3	268	284	0.00	0.00	P
AM-243	4	0	0	0.008	5292.1	44.8	334	340	0.00	0.00	P
CM-244	4	17	0	0.001	5821.6	44.8	405	411	0.00	0.00	P
CM-246	4	0	0	0.008	5403.3	44.8	334	340	0.00	0.00	P
CM-247	466	1	0	0.931	4887.2	119.3	268	284	0.00	0.00	P
CM-248	137	1	0	0.274	5095.4	231.2	277	308	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39MJ1AA
Detector: ALP117 1
Report Date: 28-May-06 09:14 PM
Acquire Date: 28-MAY-2006 12:54:37.95

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0	+	251	8	@	301	0	+	351	0		401	0	-	451	0		501
		2	0		52	0		102	0		152	0		202	1	+	252	6	@	302	0	+	352	0		402	0	-	452	0		502
0		3	0		53	1		103	0		153	0		203	0	+	253	8	@	303	0	+	353	0		403	0	-	453	0		503
0		4	0		54	0		104	0		154	0		204	1	+	254	23	@	304	0	@	354	0		404	0	-	454	0		504
0		5	0		55	0		105	0		155	0		205	0	+	255	6	@	305	1	@	355	0	@	405	0		455	0		505
0		6	0		56	0		106	0	+	156	0		206	1	+	256	4	@	306	0	@	356	1	@	406	0		456	0		506
0		7	0		57	0		107	0	+	157	0		207	0	+	257	0	@	307	0	@	357	2	@	407	0		457	0		507
0		8	0		58	0		108	0	+	158	0	+	208	0	+	258	0		308	0	@	358	1	@	408	0		458	0		508
0		9	0		59	0		109	0	+	159	0	+	209	1	+	259	0		309	0	@	359	0	@	409	0		459	0		509
0		10	0		60	0		110	0	+	160	0	+	210	0	+	260	0		310	0	@	360	1	@	410	0		460	0		510
0		11	0		61	0		111	0	+	161	0	+	211	0	+	261	0		311	0	@	361	0		411	0		461	0		511
0		12	1		62	0		112	0	+	162	0	+	212	0	+	262	0		312	0	@	362	0		412	0		462	0		512
0		13	0		63	0		113	0	+	163	0	+	213	0	+	263	0		313	0	@	363	0		413	0		463			
0		14	0		64	0		114	0	+	164	0	+	214	1		264	0		314	0	@	364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0	+	215	2		265	0		315	0	@	365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0	+	216	1		266	0		316	0	@	366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0	+	217	2		267	0		317	0	@	367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0	+	218	0	@	268	0		318	0	@	368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0	+	219	5	@	269	0		319	0	@	369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0	+	220	6	@	270	0		320	0	@	370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0	+	221	3	@	271	0		321	0	+	371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0	+	222	5	@	272	0		322	0	+	372	0		422	0		472			
0		23	0		73	0		123	0		173	0	+	223	9	@	273	0		323	0		373	0		423	1		473			
0		24	0		74	0		124	0		174	0	+	224	11	@	274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	28	@	275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	35	@	276	0		326	0		376	0		426	1		476			
0		27	0		77	0		127	0		177	0		227	48	-	277	0		327	0		377	0		427	1		477			
0		28	0		78	0		128	0		178	0		228	33	@	278	0		328	0		378	0	@	428	2		478			
0		29	0		79	0		129	0		179	0		229	30	@	279	0		329	0		379	0	@	429	0		479			
0		30	0		80	0		130	0		180	0		230	25	@	280	0		330	0		380	0	@	430	0		480			
0		31	0		81	0		131	0	+	181	0		231	25	@	281	0		331	0		381	0	@	431	0		481			
0		32	0		82	0		132	0	+	182	0		232	24	@	282	0		332	0		382	0	@	432	0		482			
0		33	0		83	0		133	0	+	183	0		233	21	@	283	0		333	0		383	0	@	433	0		483			
0		34	0		84	0		134	0	+	184	0		234	22	@	284	0	+	334	0		384	0	@	434	0		484			
0		35	0		85	0		135	0	+	185	0		235	16	@	285	0	@	335	1		385	0	@	435	0		485			
0		36	0		86	0		136	0	+	186	0		236	26	@	286	2	@	336	0		386	0	@	436	0		486			
0		37	0		87	0		137	0	+	187	0		237	22	@	287	1	@	337	1		387	0	@	437	0		487			
0		38	1		88	0		138	0	+	188	0		238	27	@	288	0	@	338	0		388	0	-	438	0		488			
0		39	0		89	0		139	0	+	189	0		239	20	@	289	0	@	339	0		389	0	@	439	0		489			
0		40	0		90	0		140	0	+	190	0		240	22	@	290	1		340	0		390	0	@	440	0		490			
0		41	0		91	0		141	0	+	191	0		241	9	@	291	0		341	0		391	0	@	441	0		491			
0		42	0		92	0		142	0	+	192	0		242	9	@	292	0		342	0		392	0	@	442	0		492			
0		43	0		93	0		143	0	+	193	0		243	14	@	293	0		343	0		393	0	@	443	0		493			
0		44	0		94	0		144	0	+	194	1		244	5	@	294	0		344	0		394	0	@	444	0		494			
0		45	0		95	1		145	0	+	195	0		245	12	@	295	0	+	345	0		395	0	-	445	0		495			
0		46	0		96	0		146	0	+	196	0		246	14	@	296	0	+	346	1		396	0	-	446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	7	@	297	0	+	347	0		397	0	-	447	0		497			
0		48	0		98	0		148	0		198	0	+	248	7	@	298	0	+	348	0		398	1	-	448	0		498			
0		49	0		99	0		149	0		199	0	+	249	5	@	299	0	+	349	0		399	0	-	449	0		499			
0		50	0		100	0		150	0		200	0	+	250	4	@	300	0	+	350	0		400	0	-	450	0		500			

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:14:45

Configuration : RDND06$DKA100:[ALP117.SAMPLE]H39MJ1AA_280561254.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:54:37
Sample ID : H39MJ1AA Sample quantity : 0.00000E+00 LITER
Sample type : disk Sample geometry :
Detector name : ALP117 Detector geometry:
Elapsed live time: 0 08:20:06.00 Elapsed real time: 0 08:20:06.00 0.0%
Start energy : 2819.95 kev End energy : 6614.33 kev
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4862.09	466	0	44.58	277.35	268	16	1.55E-02	4.6	
2	0	5057.40	137	0	29.72	303.53	277	31	4.57E-03	8.5	
3	0	5303.33	4	0	29.72	336.50	334	6	1.33E-04	50.0	
4	0	5833.36	4	0	29.72	407.50	405	6	1.33E-04	50.0	
5	0	6356.39	4	0	29.72	477.50	475	6	1.33E-04	50.0	

VMS Nuclide Identification Report V3.1 Generated 28-MAY-2006 21:14:47

Configuration : RDND06$DKA100:[ALP117.SAMPLE]H39MJ1AA_280561254.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title : TH BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:54:37
Sample ID : H39MJ1AA Sample quantity : 0.00000E+00 LITER
Sample type : disk Sample geometry :
Detector name : ALP117 Detector geometry:
Elapsed live time: 0 08:20:06.00 Elapsed real time: 0 08:20:06.00 0.0%
Energy tolerance : 100.00 kev Half life ratio : 1.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Spline Efficiencies at : Peak Energy
Abundance limit : 0.00

Summary of Nuclide Activity

Total number of lines in spectrum 5
Number of unidentified lines 1
Number of lines tentatively identified by NID 4 80.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-210	138.38D	1.25	0.000E+00	0.000E+00	0.000E+00	0.00	
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-246	8500.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-236	2.86Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-239	24110.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-242M	141.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-243	7370.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP117.SAMPLE]H39MJ1AA_280561254.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4862.08	268	284	466	330	6.30		
5057.39	277	308	137	502	-31.18	228	-0.04
5303.32	334	340	4	4	0.00		
5833.36	405	411	4	5	-0.50		
6356.38	475	481	4	4	0.00		

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39ML1AA

Detector: ALP118 1
Report Date: 29-May-06 06:58 AM
Acquire Date: 28-MAY-2006 12:54:50.24
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 2500 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	7	4	0.012	5423.2	153.6	320	340
TH-229	732	9	1.460	4845.3	345.2	250	295
TH-230	6	3	0.011	4687.7	153.3	224	244
TH-232	0	0	0.000	4013.0	153.0	136	156

End of Alpha Region Report
(Produced by ANAL Report)

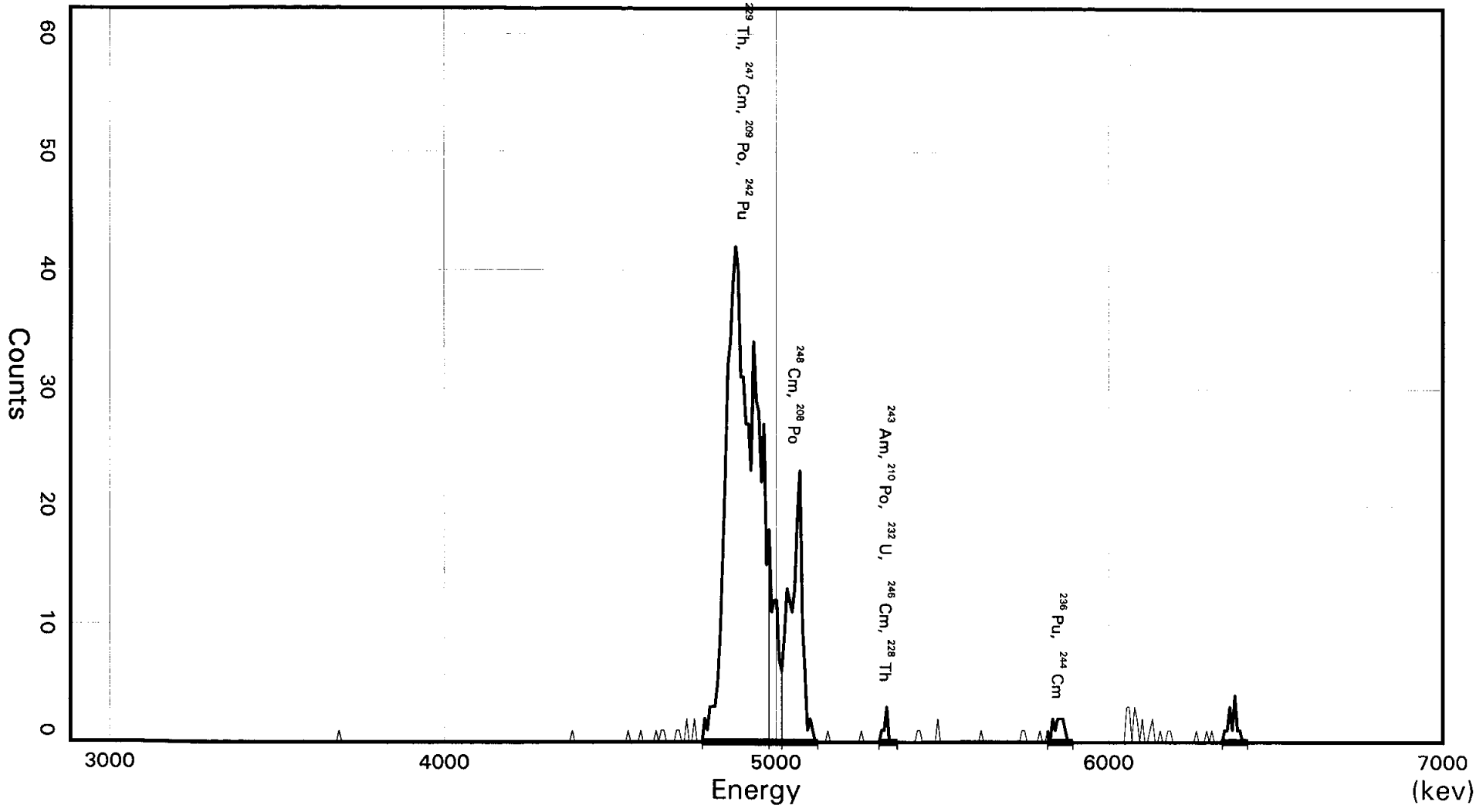
STL Richland WA.

TH BRC

Sample ID: H39ML1AA

Detector ID: ALP118 1

Batch ID: 6118462



Acquisition Start: 28-MAY-2006 12:54:50.24

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:06.00

Energy Coefficients:

Offset: 2.85950E+03

Slope: 7.62890E+00

Quadrature: 7.83909E-05

SAMPLE IDENTIITY: H39ML1AA

TITLE : TH BRC

DETECTOR : ALP118 1
CONFIGURATION NAME : RDND06$DKA100:[ALP118.SAMPLE]H39ML1AA_280561
254.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:41:02

REPORT DATE : 28-May-06
ACQUIRE DATE: 28-MAY-2006 12:54:50

SAMPLE DATE: 14-APR-2006 12:00:00
CALIB DATE : 15-MAY-2006 02:21:48

PRESET LIVE TIME: 0 08:20:00

ELAPSED LIVE TIME: 0 08:20:06

OFFSET : 2859.50 keV
SLOPE : 7.62890 keV/C
QUAD COEFF : 7.839090E-05 keV/C^2

CONSTANT FWHM : 7.50000 Channels
SENSITIVITY : 3.00000 Std Dev's
SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39ML1AA

Detector: ALP118 1
Report Date: 28-May-06 09:16 PM
Acquire Date: 28-MAY-2006 12:54:50.24
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	125	2	0	0.249	5172.1	145.8	277	296	0.00	0.00	P
PO-209	604	7	0	1.205	4940.4	237.8	251	282	0.00	0.00	P
PO-210	4	1	0	0.008	5361.5	53.8	320	327	0.00	0.00	P
AC-227	10	7	19	0.016	6095.2	238.5	406	437	0.00	0.00	S
TH-227	10	7	19	0.016	6095.2	238.5	406	437	0.00	0.00	S
TH-228	4	1	0	0.008	5480.4	53.8	320	327	0.00	0.00	P
TH-229	604	7	0	1.205	4902.5	237.8	251	282	0.00	0.00	P
TH-230	-9999	-9999	0	-15.994	4744.9	237.7	230	261	0.00	0.00	M I
TH-232	0	2	0	-0.001	4070.2	237.3	142	173	0.00	0.00	S
U-232	4	1	0	0.008	5377.3	53.8	320	327	0.00	0.00	P
U-234	-9999	-9999	0	-15.994	4831.8	237.7	242	273	0.00	0.00	M I
U-235	2	1	0	0.004	4455.0	237.5	193	224	0.00	0.00	S
PU-236	10	40	0	0.004	5824.8	76.9	386	396	0.00	0.00	P
NP-237	-9999	-9999	0	-15.994	4845.2	237.8	244	275	0.00	0.00	M I
PU-238	2	4	4	0.002	5556.2	238.2	336	367	0.00	0.00	S
U-238	-9999	-9999	0	-15.994	4255.2	237.4	167	198	0.00	0.00	M
PU-239	-9999	-9999	0	-15.994	5213.8	238.0	292	323	0.00	0.00	S I
AM-241	3	2	4	0.005	5542.8	238.2	334	365	0.00	0.00	S
AM-242M	-9999	-9999	0	-15.994	5264.0	238.0	298	329	0.00	0.00	S I
CM-242	-9999	-9999	0	-15.994	6169.9	238.6	416	447	0.00	0.00	M
PU-242	604	7	0	1.205	4957.7	237.8	251	282	0.00	0.00	P
AM-243	4	1	0	0.008	5332.5	53.8	320	327	0.00	0.00	P
CM-244	10	40	0	0.004	5862.0	76.9	386	396	0.00	0.00	P
CM-246	4	1	0	0.008	5443.7	53.8	320	327	0.00	0.00	P
CM-247	604	7	0	1.205	4927.6	237.8	251	282	0.00	0.00	P
CM-248	125	2	0	0.249	5135.8	145.8	277	296	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39ML1AA
Detector: ALP118 1
Report Date: 28-May-06 09:16 PM
Acquire Date: 28-MAY-2006 12:54:50.24

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	+	201	0	@	251	0	@	301	0	@	351	0		401	0		451	0		501
		2	0		52	0		102	0	+	152	0	+	202	2	@	252	0	@	302	0	@	352	0		402	0		452	0		502
0		3	0		53	0		103	0	+	153	0	+	203	1	@	253	0	@	303	0	@	353	0		403	0		453	0		503
0		4	0		54	0		104	0	+	154	0	+	204	3	@	254	0	@	304	0	@	354	0		404	0		454	0		504
0		5	0		55	0		105	0	+	155	0	+	205	3	@	255	0	@	305	0	@	355	0		405	1		455	0		505
0		6	0		56	0		106	0	+	156	0	+	206	3	@	256	0	@	306	0	@	356	0	@	406	1		456	0		506
0		7	0		57	0		107	0	+	157	0	+	207	5	@	257	0	@	307	0	@	357	0	@	407	3		457	0		507
0		8	0		58	1		108	0	+	158	0	+	208	9	@	258	0	@	308	0	@	358	0	@	408	1		458	0		508
0		9	0		59	0		109	0	+	159	0	+	209	16	@	259	0	@	309	0	@	359	0	@	409	4		459	0		509
0		10	0		60	0		110	0	+	160	0	+	210	23	@	260	0	@	310	1	@	360	0	@	410	1		460	0		510
0		11	0		61	0		111	0	+	161	0	+	211	32	@	261	0	@	311	0	@	361	0	@	411	1		461	0		511
0		12	0		62	0		112	0	+	162	0	+	212	34	@	262	0	@	312	0	@	362	0	@	412	0		462	0		512
0		13	0		63	0		113	0	+	163	0	+	213	39	@	263	1	@	313	0	@	363	0	@	413	0		463			
0		14	0		64	0		114	0	+	164	0	+	214	42	@	264	0	@	314	0	@	364	0	@	414	0		464			
0		15	0		65	0		115	0	+	165	0	+	215	40	@	265	0	@	315	0	@	365	0	@	415	0		465			
0		16	0		66	0		116	0	+	166	0	+	216	31	@	266	0	@	316	0	+	366	0	-	416	0		466			
0		17	0		67	0		117	0	@	167	0	+	217	31	@	267	0	@	317	0	+	367	3	@	417	0		467			
0		18	0		68	0		118	0	@	168	0	+	218	27	@	268	0	@	318	0		368	3	@	418	0		468			
0		19	0		69	0		119	0	@	169	0	+	219	27	@	269	0	@	319	0		369	0	@	419	0		469			
0		20	0		70	0		120	0	@	170	0	+	220	23	@	270	0	@	320	0		370	3	@	420	0		470			
0		21	0		71	0		121	0	@	171	0	+	221	34	@	271	1	@	321	0		371	2	@	421	0		471			
0		22	0		72	0		122	0	@	172	1	+	222	29	@	272	1	@	322	0		372	0	@	422	0		472			
0		23	0		73	0		123	0	@	173	0	+	223	28	@	273	3	@	323	0		373	2	@	423	0		473			
0		24	0		74	0		124	0	-	174	0	+	224	22	@	274	0	@	324	0		374	0	@	424	0		474			
0		25	0		75	0		125	0	-	175	0		225	27	@	275	0	@	325	0		375	0	@	425	0		475			
0		26	0		76	0		126	0	-	176	0		226	15	@	276	0	@	326	1		376	1	@	426	0		476			
0		27	0		77	0		127	0	-	177	1		227	18	-	277	0	+	327	1		377	2	@	427	0		477			
0		28	0		78	0		128	0	-	178	0		228	11	@	278	0	+	328	0		378	0	@	428	0		478			
0		29	0		79	0		129	0	-	179	0		229	12	@	279	0	+	329	0		379	0	@	429	0		479			
0		30	0		80	0		130	0	-	180	0	+	230	12	@	280	0		330	0		380	1	@	430	0		480			
0		31	0		81	0		131	0	-	181	0	+	231	7	@	281	0		331	0		381	0	@	431	0		481			
0		32	0		82	0		132	0	-	182	0	+	232	6	@	282	0		332	0		382	0	@	432	0		482			
0		33	0		83	0		133	0	-	183	1	+	233	9	@	283	0		333	1		383	1	@	433	0		483			
0		34	0		84	0		134	0	-	184	0	+	234	13	@	284	0	+	334	0		384	1	@	434	0		484			
0		35	0		85	0		135	0	-	185	1	+	235	12	@	285	1	+	335	0		385	0	@	435	0		485			
0		36	0		86	0		136	0	-	186	1	+	236	11	@	286	1	@	336	1	@	386	0	@	436	0		486			
0		37	0		87	0		137	0	-	187	0	+	237	13	@	287	0	@	337	0	@	387	0	@	437	0		487			
0		38	0		88	0		138	0	-	188	0	+	238	19	@	288	0	@	338	2	@	388	0	-	438	0		488			
0		39	0		89	0		139	0	-	189	0	+	239	23	@	289	0	@	339	1	@	389	0	-	439	0		489			
0		40	0		90	0		140	0	-	190	0	+	240	10	@	290	0	@	340	2	@	390	0	-	440	0		490			
0		41	0		91	0		141	0	-	191	1	+	241	6	@	291	0	@	341	2	@	391	0	-	441	0		491			
0		42	0		92	0	+	142	0	-	192	1	@	242	1	@	292	0	@	342	2	@	392	0	-	442	0		492			
0		43	0		93	0	+	143	0	@	193	0	@	243	2	@	293	2	@	343	1	@	393	0	-	443	0		493			
0		44	0		94	0	+	144	0	@	194	0	-	244	1	@	294	0	@	344	0	@	394	1	-	444	0		494			
0		45	0		95	0	+	145	0	@	195	2	@	245	0	@	295	0	@	345	0	@	395	0	-	445	0		495			
0		46	0		96	0	+	146	0	@	196	0	@	246	0	+	296	0	@	346	0		396	0	-	446	0		496			
0		47	0		97	0	+	147	0	@	197	0	@	247	0	+	297	0	@	347	0		397	0	-	447	0		497			
0		48	0		98	0	+	148	0	@	198	2	@	248	0	@	298	0	@	348	0		398	1		448	0		498			
0		49	0		99	0	+	149	0	+	199	0	@	249	0	@	299	0	@	349	0		399	0		449	0		499			
0		50	0		100	0	+	150	1	+	200	0	@	250	1	@	300	0	@	350	0		400	1		450	0		500			

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:16:52

Configuration : RDND06$DKA100:[ALP118.SAMPLE]H39ML1AA_280561254.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:54:50
Sample ID : H39ML1AA Sample quantity : 0.00000E+00 LITER
Sample type : disk Sample geometry :
Detector name : ALP118 Detector geometry:
Elapsed live time: 0 08:20:06.00 Elapsed real time: 0 08:20:06.00 0.0%
Start energy : 2882.39 kev End energy : 6786.05 kev
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4902.47	604	0	122.06	267.06	251	31	2.01E-02	4.1	
2	0	5054.61	125	0	61.03	286.89	277	19	4.17E-03	8.9	
3	0	5327.98	4	0	30.52	322.50	320	7	1.33E-04	50.0	
4	0	5846.70	10	0	45.77	390.00	386	10	3.33E-04	31.6	
5	0	6369.22	11	0	45.77	457.90	454	10	3.67E-04	30.2	

VMS Nuclide Identification Report V3.1 Generated 28-MAY-2006 21:16:55

Configuration : RDND06$DKA100:[ALP118.SAMPLE]H39ML1AA_280561254.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title : TH BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:54:50
Sample ID : H39ML1AA Sample quantity : 0.00000E+00 LITER
Sample type : disk Sample geometry :
Detector name : ALP118 Detector geometry:
Elapsed live time: 0 08:20:06.00 Elapsed real time: 0 08:20:06.00 0.0%
Energy tolerance : 100.00 kev Half life ratio : 1.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Spline Efficiencies at : Peak Energy
Abundance limit : 0.00

Summary of Nuclide Activity

Total number of lines in spectrum	5	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	4	80.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-210	138.38D	1.25	0.000E+00	0.000E+00	0.000E+00	0.00	
TH-228	1.91Y	1.04	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-246	8500.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-236	2.86Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-243	7370.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP118.SAMPLE]H39ML1AA_280561254.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4902.46	251	282	604	612	-0.33		
5054.61	277	296	125	186	-5.46	66	-0.11
5327.97	320	327	4	5	-0.50		
5846.70	386	396	10	11	-0.32		
6369.21	454	464	11	12	-0.30		

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H39MN1AA

Detector: ALP119 1
Report Date: 29-May-06 06:58 AM
Acquire Date: 28-MAY-2006 12:55:09.15
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	2	0.000	5423.2	148.8	330	350
TH-229	541	0	1.082	4845.3	409.2	252	307
TH-230	2	0	0.004	4687.7	148.8	231	251
TH-232	1	0	0.002	4013.0	148.8	140	160

End of Alpha Region Report
(Produced by ANAL Report)

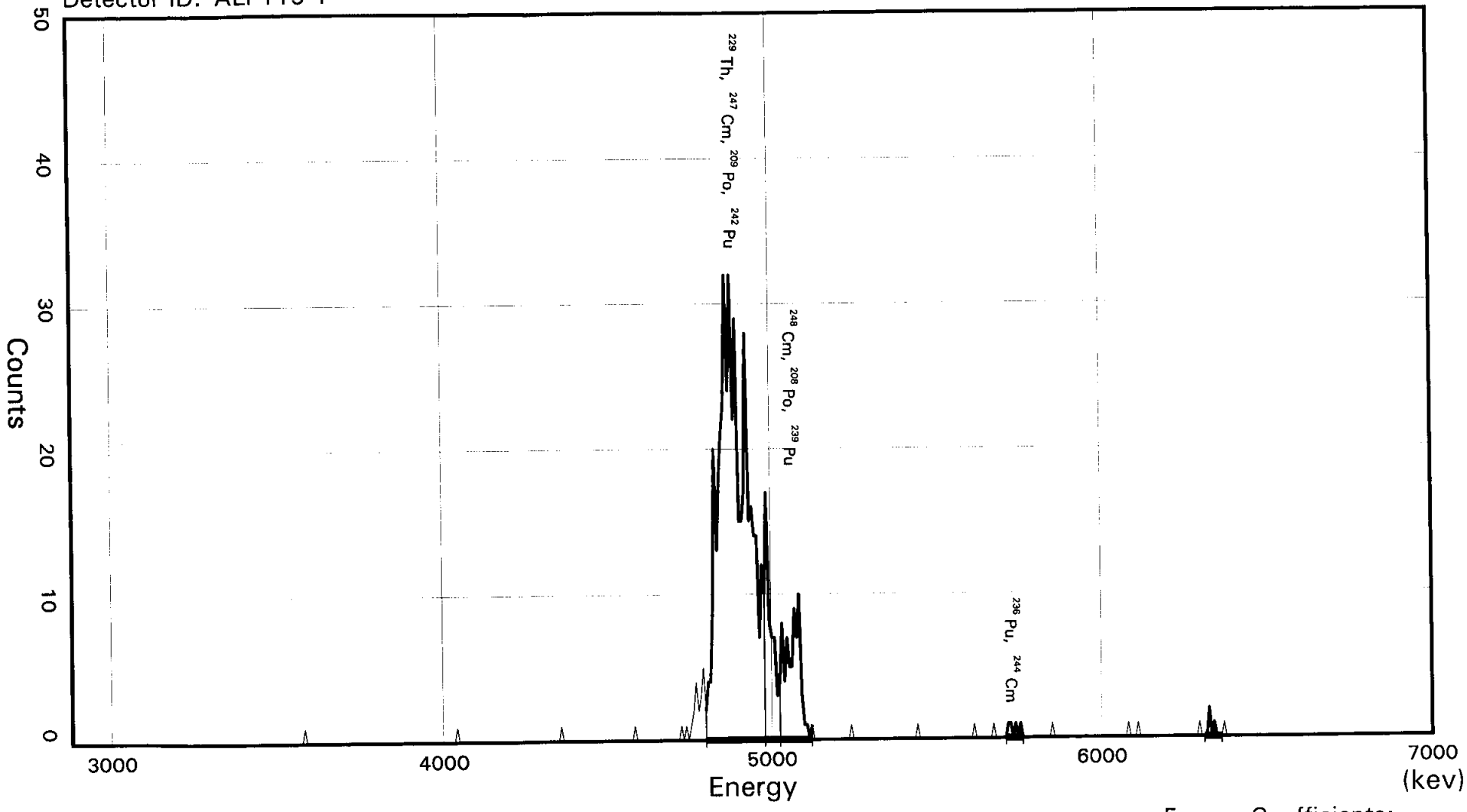
STL Richland WA.

TH BRC

Sample ID: H39MN1AA

Detector ID: ALP119 1

Batch ID: 6118462



Acquisition Start: 28-MAY-2006 12:55:09.15

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:08.00

Energy Coefficients:

Offset: 2.85956E+03

Slope: 7.43984E+00

Quadrature: -9.43425E-07

SAMPLE IDENTITY: H39MN1AA

TITLE : TH BRC

DETECTOR : ALP119 1
CONFIGURATION NAME : RDND06$DKA100:[ALP119.SAMPLE]H39MN1AA_280561
255.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:41:04

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:55:09 CALIB DATE : 15-MAY-2006 02:21:53

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:08

OFFSET : 2859.56 keV CONSTANT FWHM : 8.83333 Channels
SLOPE : 7.43984 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.943425E-06 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H39MN1AA

Detector: ALP119 1
Report Date: 28-May-06 09:15 PM
Acquire Date: 28-MAY-2006 12:55:09.15
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	72	0	0	0.144	5158.3	141.3	285	304	0.00	0.00	P
PO-209	453	0	0	0.906	4926.6	223.2	261	291	0.00	0.00	P
PO-210	-9999	-9999	0	-9.996	5347.8	223.2	323	353	0.00	0.00	M
AC-227	1	0	2	0.002	6081.4	223.2	421	451	0.00	0.00	S
TH-227	1	0	2	0.002	6081.4	223.2	421	451	0.00	0.00	S
TH-228	-9999	-9999	0	-9.996	5466.6	223.2	339	369	0.00	0.00	M
TH-229	453	0	0	0.906	4888.7	223.2	261	291	0.00	0.00	P
TH-230	-9999	-9999	0	-9.996	4731.1	223.2	240	270	0.00	0.00	M I
TH-232	1	1	0	0.001	4056.4	223.2	149	179	0.00	0.00	S
U-232	-9999	-9999	0	-9.996	5363.6	223.2	325	355	0.00	0.00	M
U-234	-9999	-9999	0	-9.996	4818.0	223.2	251	281	0.00	0.00	M I
U-235	1	2	1	-0.001	4441.2	223.2	201	231	0.00	0.00	S
PU-236	4	0	0	0.008	5811.1	52.1	383	390	0.00	0.00	P
NP-237	-9999	-9999	0	-9.996	4831.4	223.2	253	283	0.00	0.00	M I
PU-238	-9999	-9999	0	-9.996	5542.4	223.2	349	379	0.00	0.00	M
U-238	-9999	-9999	0	-9.996	4241.4	223.2	174	204	0.00	0.00	M
PU-239	72	0	0	0.144	5200.0	141.3	285	304	0.00	0.00	P
AM-241	-9999	-9999	0	-9.996	5529.0	223.2	347	377	0.00	0.00	M
AM-242M	-9999	-9999	0	-9.996	5250.2	223.2	310	340	0.00	0.00	M
CM-242	-9999	-9999	0	-9.996	6156.1	223.2	431	461	0.00	0.00	M
PU-242	453	0	0	0.906	4943.9	223.2	261	291	0.00	0.00	P
AM-243	-9999	-9999	0	-9.996	5318.7	223.2	319	349	0.00	0.00	M
CM-244	4	0	0	0.008	5848.2	52.1	383	390	0.00	0.00	P
CM-246	-9999	-9999	0	-9.996	5429.9	223.2	334	364	0.00	0.00	M
CM-247	453	0	0	0.906	4913.8	223.2	261	291	0.00	0.00	P
CM-248	72	0	0	0.144	5122.0	141.3	285	304	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H39MN1AA
Detector: ALP119 1
Report Date: 28-May-06 09:15 PM
Acquire Date: 28-MAY-2006 12:55:09.15

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	@	201	1	@	251	1	@	301	0	@	351	0		401	0	@	451
		2	0		52	0		102	0	+	152	1	@	202	0	@	252	1	@	302	0	@	352	1		402	0	-	452
0		3	0		53	0		103	0	+	153	0	@	203	1	-	253	0	@	303	0	@	353	0		403	0	-	453
0		4	0		54	0		104	0	+	154	0	@	204	0	@	254	1		304	0	@	354	0		404	0	-	454
0		5	0		55	0		105	0	+	155	0	+	205	1	@	255	0		305	0	@	355	0		405	0	-	455
0		6	0		56	0		106	0	+	156	0	+	206	2	@	256	0		306	0	@	356	0		406	0	-	456
0		7	0		57	0		107	0	+	157	0	+	207	4	@	257	0		307	0	@	357	0		407	0	-	457
0		8	0		58	0		108	0	+	158	0	+	208	2	@	258	0		308	0	@	358	0		408	0	-	458
0		9	0		59	0		109	1	+	159	0	+	209	3	@	259	0		309	0	@	359	0		409	0	-	459
0		10	0		60	0		110	0	+	160	0	+	210	5	@	260	0	+	310	0	@	360	0		410	0	-	460
0		11	0		61	0		111	0	+	161	0	+	211	2	@	261	0	+	311	0	@	361	0		411	0	-	461
0		12	0		62	0		112	0	+	162	0	+	212	4	@	262	0	+	312	0	@	362	0		412	1		462
0		13	0		63	0		113	0	+	163	0	+	213	4	@	263	0	+	313	0	@	363	0		413	0		463
0		14	0		64	0		114	0	+	164	0	+	214	9	@	264	0	+	314	0	@	364	0		414	0		464
0		15	0		65	0		115	0	+	165	0	+	215	20	@	265	0	+	315	0	@	365	0		415	0		465
0		16	0		66	0		116	0	+	166	0	+	216	13	@	266	0	+	316	0	@	366	0		416	2		466
0		17	0		67	0		117	0	+	167	0	+	217	18	@	267	0	+	317	0	@	367	0		417	0		467
0		18	0		68	0		118	0	+	168	0	+	218	21	@	268	0	+	318	0	@	368	0		418	1		468
0		19	0		69	0		119	0	+	169	0	+	219	23	@	269	0	@	319	0	@	369	0		419	0		469
0		20	0		70	0		120	0	+	170	0	+	220	32	@	270	1	@	320	1	@	370	0		420	0		470
0		21	0		71	0		121	0	+	171	0	+	221	24	@	271	0	@	321	0	@	371	0	@	421	0		471
0		22	0		72	0		122	0	+	172	0	+	222	32	@	272	0	@	322	0	@	372	0	@	422	1		472
0		23	0		73	0		123	0	+	173	0	+	223	22	@	273	0	@	323	0	@	373	0	@	423	0		473
0		24	0		74	0		124	0	@	174	0	+	224	29	@	274	0	@	324	0	@	374	0	@	424	0		474
0		25	0		75	0		125	0	@	175	0	+	225	15	@	275	0	@	325	0	@	375	0	@	425	0		475
0		26	0		76	0		126	0	@	176	0	+	226	15	@	276	0	@	326	0	@	376	0	@	426	0		476
0		27	0		77	0		127	0	@	177	0	+	227	17	@	277	0	@	327	0	@	377	0	@	427	0		477
0		28	0		78	0		128	0	@	178	0	+	228	28	@	278	0	@	328	1	+	378	0	@	428	0		478
0		29	0		79	0		129	0	@	179	0	+	229	15	@	279	0	@	329	0	+	379	0	@	429	0		479
0		30	0		80	0		130	0	-	180	0	+	230	16	@	280	0	@	330	0		380	0	@	430	0		480
0		31	0		81	0		131	0	-	181	0	+	231	14	@	281	0	@	331	0		381	0	-	431	0		481
0		32	0		82	0		132	0	-	182	1		232	14	@	282	0	@	332	0		382	0	@	432	0		482
0		33	0		83	0		133	0	-	183	0		233	7	@	283	0	@	333	0	@	383	1	@	433	0		483
0		34	0		84	0		134	0	-	184	0		234	12	@	284	0	-	334	1	@	384	0	@	434	0		484
0		35	0		85	0		135	0	-	185	0		235	10	-	285	0	@	335	1	@	385	0	@	435	0		485
0		36	0		86	0		136	0	-	186	0		236	17	@	286	0	@	336	0	@	386	0	@	436	0		486
0		37	0		87	0		137	0	-	187	0		237	8	@	287	0	@	337	1	@	387	1	@	437	0		487
0		38	0		88	0		138	0	-	188	0		238	7	@	288	0	@	338	0	@	388	0	@	438	0		488
0		39	0		89	0		139	0	-	189	0		239	7	@	289	0	@	339	1	@	389	0	@	439	0		489
0		40	0		90	0		140	0	-	190	0	+	240	3	@	290	0	@	340	0		390	0	@	440	0		490
0		41	0		91	0		141	0	-	191	0	+	241	4	@	291	0	@	341	0		391	0	@	441	0		491
0		42	0		92	0		142	0	-	192	0	+	242	8	@	292	0	@	342	0		392	0	@	442	0		492
0		43	0		93	0		143	0	-	193	0	+	243	4	@	293	0	@	343	0		393	0	@	443	0		493
0		44	0		94	0		144	0	-	194	0	+	244	7	@	294	0	@	344	0		394	0	@	444	0		494
0		45	0		95	0		145	0	-	195	0	+	245	5	@	295	0	@	345	0		395	0	@	445	0		495
0		46	0		96	0		146	0	-	196	0	+	246	5	@	296	0	@	346	0		396	0	@	446	0		496
0		47	1		97	0		147	0	-	197	0	+	247	9	@	297	1	@	347	0		397	0	@	447	0		497
0		48	0		98	0		148	0	-	198	0	+	248	7	@	298	0	@	348	0		398	0	@	448	0		498
0		49	0		99	0	+	149	0	-	199	0	+	249	10	@	299	0	@	349	0		399	0	@	449	0		499
0		50	0		100	0	+	150	0	-	200	0	+	250	3	@	300	0	@	350	0		400	0	@	450	0		500

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:15:19

Configuration	: RDND06$DKA100:[ALP119.SAMPLE]H39MN1AA_280561255.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 14-APR-2006 12:00:00	Acquisition date	: 28-MAY-2006 12:55:09
Sample ID	: H39MN1AA	Sample quantity	: 0.00000E+00 LITER
Sample type	: disk	Sample geometry	:
Detector name	: ALP119	Detector geometry	:
Elapsed live time	: 0 08:20:08.00	Elapsed real time	: 0 08:20:08.00 0.0%
Start energy	: 2881.88 kev	End energy	: 6668.51 kev
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4888.72	453	0	111.60	272.75	261	30	1.51E-02	4.7	
2	0	5062.62	72	0	66.96	296.13	285	19	2.40E-03	11.8	
3	0	5727.48	4	0	29.76	385.50	383	7	1.33E-04	50.0	
4	0	6330.04	4	0	29.76	466.50	464	7	1.33E-04	50.0	

VMS Nuclide Identification Report V3.1 Generated 28-MAY-2006 21:15:21

Configuration : RDND06$DKA100:[ALP119.SAMPLE]H39MN1AA_280561255.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title : TH BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:55:09
Sample ID : H39MN1AA Sample quantity : 0.00000E+00 LITER
Sample type : disk Sample geometry :
Detector name : ALP119 Detector geometry:
Elapsed live time: 0 08:20:08.00 Elapsed real time: 0 08:20:08.00 0.0%
Energy tolerance : 100.00 kev Half life ratio : 1.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Spline Efficiencies at : Peak Energy
Abundance limit : 0.00

Summary of Nuclide Activity

Total number of lines in spectrum	4	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	3	75.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-236	2.86Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-239	24110.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP119.SAMPLE]H39MN1AA_280561255.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4888.71	261	291	453	462	-0.42		
5062.62	285	304	72	117	-5.30	56	0.09
5727.48	383	390	4	4	0.00		
6330.04	464	471	4	3	0.50		

End of Report

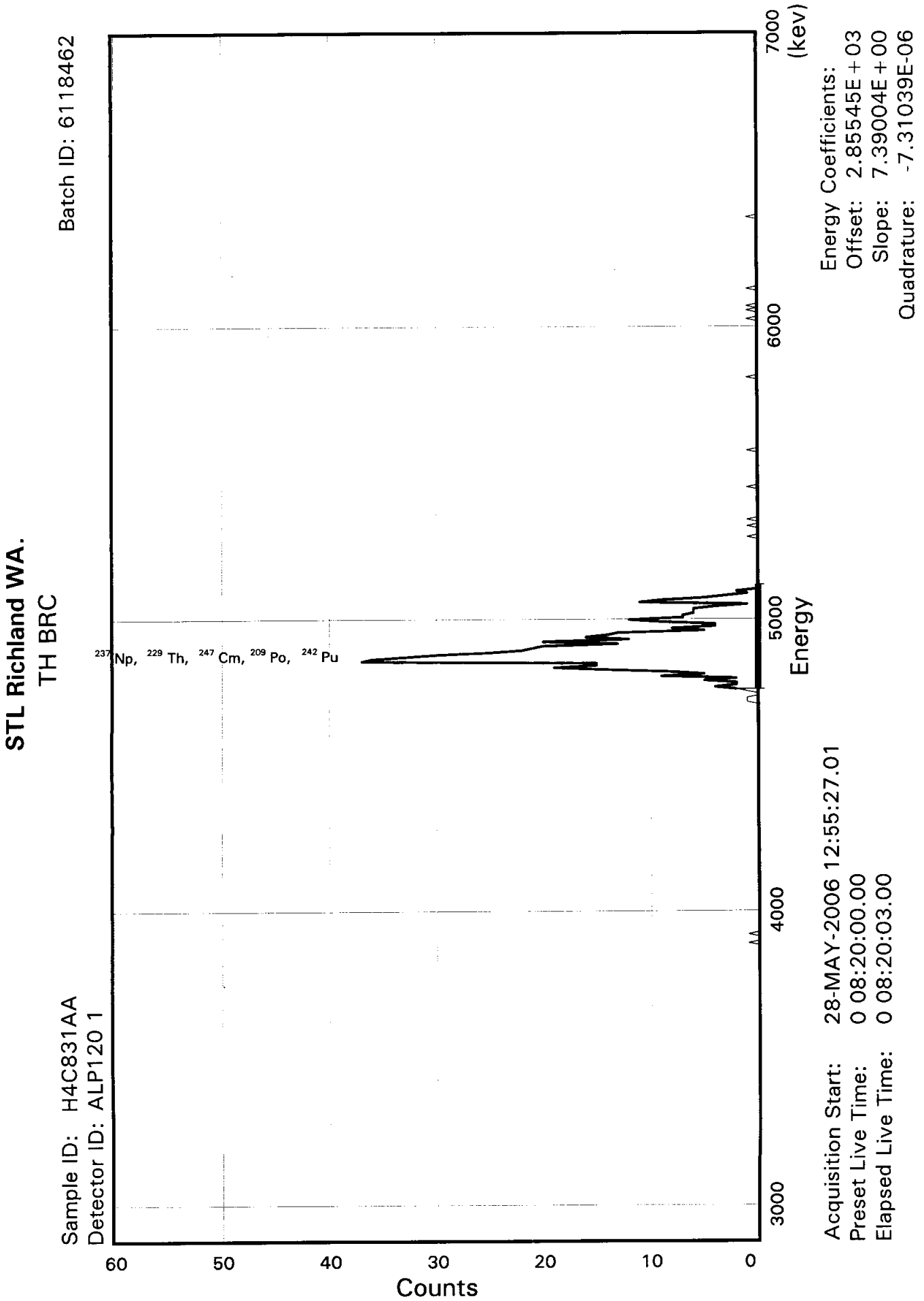
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4C831AA

Detector: ALP120 1
Report Date: 29-May-06 06:58 AM
Acquire Date: 28-MAY-2006 12:55:27.01
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	3	2	0.004	5423.2	147.7	333	353
TH-229	526	0	1.052	4845.3	384.1	254	306
TH-230	2	0	0.004	4687.7	147.7	233	253
TH-232	1	0	0.002	4013.0	147.8	142	162

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6118462
Sample ID: H4C831AA
Detector ID: ALP120 1
237Np, 229Th, 247Cm, 209Po, 242Pu
Counts
60
50
40
30
20
10
0
3000
4000
5000
6000
7000
(kev)
Energy
Acquisition Start: 28-MAY-2006 12:55:27.01
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:03.00
Energy Coefficients:
Offset: 2.85545E+03
Slope: 7.39004E+00
Quadrature: -7.31039E-06

SAMPLE IDENTIITY: H4C831AA

TITLE : TH BRC

DETECTOR : ALP120 1
CONFIGURATION NAME : RDND06$DKA100:[ALP120.SAMPLE]H4C831AA_280561
255.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:41:06

REPORT DATE : 28-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 28-MAY-2006 12:55:27 CALIB DATE : 15-MAY-2006 02:22:03

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:03

OFFSET : 2855.45 keV CONSTANT FWHM : 9.50000 Channels
SLOPE : 7.39004 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.731039E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H4C831AA

Detector: ALP120 1
Report Date: 28-May-06 09:18 PM
Acquire Date: 28-MAY-2006 12:55:27.01
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-9.999	5146.9	354.5	295	343	0.00	0.00	M I
PO-209	526	0	0	1.052	4915.2	354.5	258	306	0.00	0.00	P
PO-210	-9999	-9999	0	-9.999	5336.4	354.5	320	368	0.00	0.00	M
AC-227	-9999	-9999	0	-9.999	6070.1	354.4	420	468	0.00	0.00	M
TH-227	-9999	-9999	0	-9.999	6070.1	354.4	420	468	0.00	0.00	M
TH-228	-9999	-9999	0	-9.999	5455.2	354.5	336	384	0.00	0.00	M
TH-229	526	0	0	1.052	4877.3	354.5	258	306	0.00	0.00	P
TH-230	-9999	-9999	0	-9.999	4719.7	354.5	237	285	0.00	0.00	M I
TH-232	0	0	0	0.000	4045.0	354.6	145	193	0.00	0.00	S
U-232	-9999	-9999	0	-9.999	5352.2	354.5	322	370	0.00	0.00	M
U-234	-9999	-9999	0	-9.999	4806.6	354.5	248	296	0.00	0.00	M I
U-235	-9999	-9999	0	-9.999	4429.8	354.6	197	245	0.00	0.00	M
PU-236	-9999	-9999	0	-9.999	5799.7	354.4	383	431	0.00	0.00	M
NP-237	526	0	0	1.052	4820.0	354.5	258	306	0.00	0.00	P
PU-238	-9999	-9999	0	-9.999	5531.1	354.5	347	395	0.00	0.00	M
U-238	-9999	-9999	0	-9.999	4230.0	354.6	170	218	0.00	0.00	M
PU-239	-9999	-9999	0	-9.999	5188.6	354.5	300	348	0.00	0.00	M I
AM-241	-9999	-9999	0	-9.999	5517.6	354.5	345	393	0.00	0.00	M
AM-242M	-9999	-9999	0	-9.999	5238.8	354.5	307	355	0.00	0.00	M
CM-242	-9999	-9999	0	-9.999	6144.8	354.4	430	478	0.00	0.00	M
PU-242	526	0	0	1.052	4932.5	354.5	258	306	0.00	0.00	P
AM-243	-9999	-9999	0	-9.999	5307.3	354.5	316	364	0.00	0.00	M
CM-244	-9999	-9999	0	-9.999	5836.9	354.4	388	436	0.00	0.00	M
CM-246	-9999	-9999	0	-9.999	5418.5	354.5	331	379	0.00	0.00	M
CM-247	526	0	0	1.052	4902.4	354.5	258	306	0.00	0.00	P
CM-248	-9999	-9999	0	-9.999	5110.6	354.5	290	338	0.00	0.00	M I

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H4C831AA
Detector: ALP120 1
Report Date: 28-May-06 09:18 PM
Acquire Date: 28-MAY-2006 12:55:27.01

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	@	201	0	@	251	3	@	301	1	@	351	0	@	401	0	@	451
		2	0		52	0		102	0	+	152	0	@	202	1	@	252	1	@	302	0	@	352	1	@	402	0	@	452
0		3	0		53	0		103	0	+	153	0	@	203	1	@	253	2	@	303	0	@	353	0	@	403	0	@	453
0		4	0		54	0		104	0	+	154	0	@	204	1	@	254	0	@	304	0	@	354	0	@	404	0	@	454
0		5	0		55	0		105	0	+	155	0	@	205	0	@	255	0	@	305	0	@	355	0	@	405	0	@	455
0		6	0		56	0		106	0	+	156	0	@	206	0	@	256	0	@	306	0	@	356	0	@	406	0	@	456
0		7	0		57	0		107	0	+	157	0	@	207	1	@	257	0	@	307	0	@	357	0	@	407	0	@	457
0		8	0		58	0		108	0	+	158	0	@	208	2	-	258	0	@	308	0	@	358	0	@	408	0	@	458
0		9	0		59	0		109	0	+	159	0	@	209	4	@	259	0	@	309	0	@	359	0	@	409	0	@	459
0		10	0		60	0		110	0	+	160	0	@	210	2	@	260	0	@	310	0	@	360	0	@	410	0	@	460
0		11	0		61	0		111	0	+	161	0	@	211	2	@	261	0	@	311	0	@	361	0	@	411	0	@	461
0		12	0		62	0		112	0	+	162	0	@	212	5	@	262	0	@	312	0	@	362	0	@	412	0	@	462
0		13	0		63	0		113	0	+	163	0	@	213	2	@	263	0	@	313	0	@	363	0	@	413	0	@	463
0		14	0		64	0		114	0	+	164	0	@	214	9	@	264	0	@	314	0	@	364	0	@	414	0	@	464
0		15	0		65	0		115	0	+	165	0	@	215	5	@	265	0	@	315	0	@	365	0	@	415	0	@	465
0		16	0		66	0		116	0	+	166	0	@	216	8	@	266	0	@	316	0	@	366	0	@	416	0	@	466
0		17	0		67	0		117	0	+	167	0	@	217	14	@	267	0	@	317	0	@	367	0	@	417	0	@	467
0		18	0		68	0		118	0	+	168	0	@	218	19	@	268	0	@	318	1	@	368	0	@	418	0	@	468
0		19	0		69	0		119	0	+	169	0	+	219	15	@	269	0	@	319	0	@	369	0	@	419	0	-	469
0		20	0		70	0		120	0	@	170	0	+	220	15	@	270	0	@	320	0	@	370	0	@	420	0	-	470
0		21	0		71	0		121	0	@	171	0	+	221	37	@	271	0	@	321	0	@	371	0	@	421	0	-	471
0		22	0		72	0		122	0	@	172	0	+	222	36	@	272	0	@	322	0	@	372	0	@	422	0	-	472
0		23	0		73	0		123	0	@	173	0	+	223	33	@	273	0	@	323	0	@	373	0	@	423	0	-	473
0		24	0		74	0		124	0	@	174	0	+	224	30	@	274	0	@	324	0	@	374	0	@	424	0	-	474
0		25	0		75	0		125	0	@	175	0	+	225	25	@	275	0	@	325	0	@	375	0	@	425	0	-	475
0		26	0		76	0		126	0	@	176	0	+	226	22	@	276	0	@	326	0	@	376	0	@	426	1	-	476
0		27	0		77	0		127	0	@	177	0	+	227	21	@	277	0	@	327	0	@	377	0	@	427	0	-	477
0		28	0		78	0		128	0	@	178	0	+	228	20	@	278	1	@	328	0	@	378	0	@	428	0	-	478
0		29	0		79	0		129	0	@	179	0	+	229	13	@	279	0	@	329	0	@	379	1	@	429	0		479
0		30	0		80	0		130	0	@	180	0	+	230	20	@	280	0	@	330	0	@	380	0	@	430	0		480
0		31	0		81	0		131	0	@	181	0	+	231	12	@	281	0	@	331	0	@	381	0	@	431	0		481
0		32	0		82	0		132	0	@	182	0	+	232	16	@	282	0	@	332	0	@	382	0	@	432	0		482
0		33	0		83	0		133	0	@	183	0	+	233	14	@	283	1	@	333	0	@	383	1	@	433	0		483
0		34	0		84	0		134	0	@	184	0	+	234	13	@	284	0	@	334	0	@	384	0	@	434	0		484
0		35	0		85	0		135	0	@	185	0	+	235	5	@	285	0	@	335	0	@	385	1	@	435	0		485
0		36	0		86	0		136	0	@	186	0	+	236	8	@	286	1	@	336	0	@	386	0	@	436	0		486
0		37	0		87	0		137	0	@	187	0	@	237	4	@	287	0	@	337	0	@	387	0	@	437	0		487
0		38	0		88	0		138	0	@	188	0	@	238	4	@	288	0	@	338	0	-	388	0	@	438	0		488
0		39	0		89	0		139	0	@	189	0	@	239	9	@	289	0	@	339	0	@	389	0	@	439	0		489
0		40	0		90	1		140	0	@	190	0	@	240	12	-	290	0	@	340	0	@	390	0	@	440	0		490
0		41	0		91	0		141	0	@	191	0	@	241	7	@	291	0	@	341	0	@	391	0	@	441	0		491
0		42	0		92	0		142	0	@	192	0	@	242	7	@	292	0	@	342	0	@	392	0	@	442	0		492
0		43	0		93	0		143	0	@	193	0	@	243	6	@	293	0	@	343	0	@	393	1	@	443	0		493
0		44	0		94	1		144	0	-	194	0	@	244	6	@	294	0	@	344	0	@	394	0	@	444	0		494
0		45	0		95	0	+	145	0	-	195	0	@	245	6	@	295	0	@	345	0	@	395	0	@	445	0		495
0		46	0		96	0	+	146	0	-	196	0	+	246	4	@	296	0	@	346	0	@	396	0	@	446	0		496
0		47	0		97	0	+	147	0	@	197	0	+	247	1	@	297	0	@	347	0	@	397	0	@	447	0		497
0		48	0		98	0	+	148	0	@	198	0	@	248	11	@	298	0	@	348	0	@	398	0	@	448	0		498
0		49	0		99	0	+	149	0	@	199	0	@	249	9	@	299	0	@	349	0	@	399	0	@	449	0		499
0		50	0		100	0	+	150	0	@	200	0	@	250	5	@	300	0	@	350	0	@	400	0	@	450	0		500

VMS Peak Search Report V1.9 Generated 28-MAY-2006 21:18:40

```
Configuration     : RDND06$DKA100:[ALP120.SAMPLE]H4C831AA_280561255.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:55:27
Sample ID         : H4C831AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP120               Detector geometry:
Elapsed live time: 0 08:20:03.00         Elapsed real time: 0 08:20:03.00   0.0%
Start energy      :  2877.62 kev         End energy       :  6637.24 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4877.34	526	0	81.29	273.67	258	48	1.75E-02	4.4	

VMS Nuclide Identification Report V3.1 Generated 28-MAY-2006 21:18:41

```
Configuration     : RDND06$DKA100:[ALP120.SAMPLE]H4C831AA_280561255.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 28-MAY-2006 12:55:27
Sample ID         : H4C831AA             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP120               Detector geometry:
Elapsed live time: 0 08:20:03.00         Elapsed real time: 0 08:20:03.00   0.0%
Energy tolerance :   100.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                 1
 Number of unidentified lines                      0
 Number of lines tentatively identified by NID     1      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP120.SAMPLE]H4C831AA_280561255.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4877.34	258	306	526	524	0.09		

End of Report

SEVERN TRENT **STL**

STL RICHLAND

THORIUM ISOTOPIC COUNTING REQUEST

1438

C.R. Technician
Date Counted 5/29/04
C.R. Analyst
Date Analyzed 5/30/04

Counting Time
Sample 500 Minutes

Background See Alpha Analysis Report

SOP's
Operating: RICHRD008
Review: RICHRD0016

BRC 4/14 6118462

WorkOrder #	Th-229 (4845 KeV) Tracer from Th-234 Beta Count (7)				TOTAL COUNTS			Det #	Comment
					Th-228 (5423 KeV)	Th-230 (4688 KeV)	Th-232 (4010 KeV)		
	ID	Activity	ROI Cts	BKG	(6)	(8)	(9)		
174C83 IAC		10		0	See Alpha Analysis Report for ROI Information			114	
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				

Comments:

Form No: RC-012, 10/02, Rev 9

Approved by: S

Date: 5/30/04

360

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4C831AC

Detector: ALP116 1
Report Date: 30-May-06 06:37 AM
Acquire Date: 29-MAY-2006 06:18:28.52
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	4	2	0.006	5423.2	150.4	327	347
TH-229	508	1	1.015	4845.3	316.5	259	301
TH-230	550	0	1.100	4687.7	203.8	225	252
TH-232	0	0	0.000	4013.0	151.5	140	160

End of Alpha Region Report
(Produced by ANAL Report)

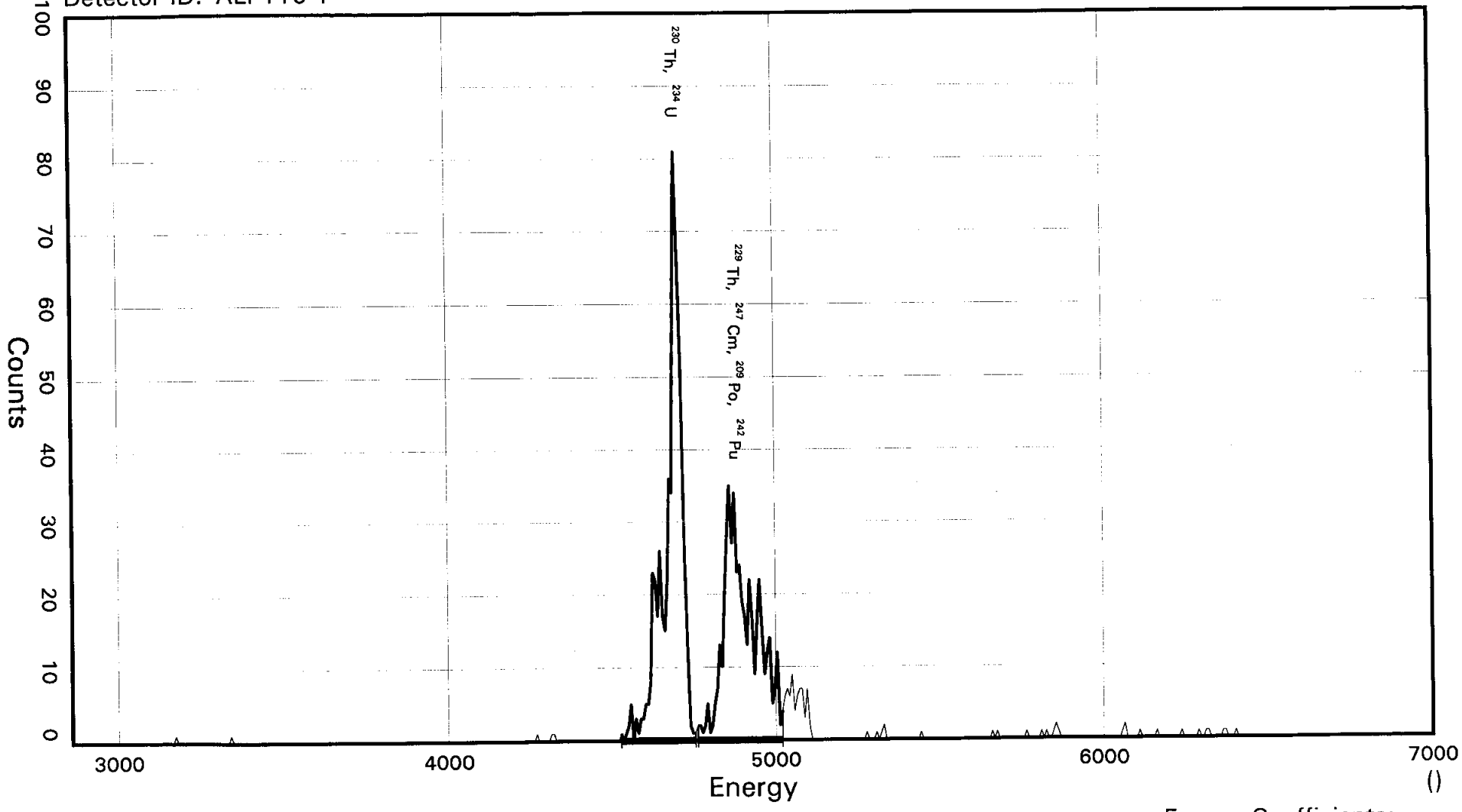
STL Richland WA.

TH BRC

Sample ID: H4C831AC

Detector ID: ALP116 1

Batch ID: 6118462



Acquisition Start: 29-MAY-2006 06:18:28.52

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:07.00

Energy Coefficients:

Offset: 2.83815E+03

Slope: 7.61998E+00

Quadrature: -1.51265E-04

SAMPLE IDENTIITY: H4C831AC

TITLE : TH BRC

DETECTOR : ALP116 1
CONFIGURATION NAME : RDND06$DKA100:[ALP116.SAMPLE]H4C831AC_290560
618.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:40:55

REPORT DATE : 29-May-06 SAMPLE DATE: 14-APR-2006 12:00:00
ACQUIRE DATE: 29-MAY-2006 06:18:28 CALIB DATE : 15-MAY-2006 02:21:38

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:07

OFFSET : 2838.15 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 7.61998 keV/C SENSITIVITY : 6.00000 Std. Dev's
QUAD COEFF : -.151265E-03 keV/C^2 SUM SENSITIVITY: 0.10000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H4C831AC

Detector: ALP116 1
Report Date: 29-May-06 02:38 PM
Acquire Date: 29-MAY-2006 06:18:28.52
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-9.996	5153.8	255.9	290	324	0.00	0.00	M
PO-209	457	0	0	0.914	4922.1	256.3	254	288	0.00	0.00	P
PO-210	-9999	-9999	0	-9.996	5343.2	255.7	315	349	0.00	0.00	M
AC-227	-9999	-9999	0	-9.996	6076.9	254.7	413	447	0.00	0.00	M
TH-227	-9999	-9999	0	-9.996	6076.9	254.7	413	447	0.00	0.00	M
TH-228	-9999	-9999	0	-9.996	5462.1	255.5	331	365	0.00	0.00	M
TH-229	457	0	0	0.914	4884.2	256.3	254	288	0.00	0.00	P
TH-230	553	0	0	1.106	4726.6	226.4	223	253	0.00	0.00	P
TH-232	0	1	0	0.000	4051.9	257.4	144	178	0.00	0.00	S
U-232	-9999	-9999	0	-9.996	5359.0	255.6	317	351	0.00	0.00	M
U-234	553	0	0	1.106	4813.5	226.4	223	253	0.00	0.00	P
U-235	-9999	-9999	0	-9.996	4436.7	256.9	195	229	0.00	0.00	S I
PU-236	4	7	7	0.000	5806.5	255.0	377	411	0.00	0.00	S
NP-237	-9999	-9999	0	-9.996	4826.9	256.4	246	280	0.00	0.00	I
PU-238	-9999	-9999	0	-9.996	5537.9	255.4	341	375	0.00	0.00	M
U-238	-9999	-9999	0	-9.996	4236.9	257.2	168	202	0.00	0.00	M
PU-239	-9999	-9999	0	-9.996	5195.4	255.9	295	329	0.00	0.00	M
AM-241	-9999	-9999	0	-9.996	5524.5	255.4	339	373	0.00	0.00	M
AM-242M	-9999	-9999	0	-9.996	5245.7	255.8	302	336	0.00	0.00	M
CM-242	-9999	-9999	0	-9.996	6151.6	254.6	423	457	0.00	0.00	M
PU-242	457	0	0	0.914	4939.4	256.3	254	288	0.00	0.00	P
AM-243	-9999	-9999	0	-9.996	5314.2	255.7	311	345	0.00	0.00	M
CM-244	-9999	-9999	0	-9.996	5843.7	255.0	382	416	0.00	0.00	M
CM-246	-9999	-9999	0	-9.996	5425.4	255.6	326	360	0.00	0.00	M
CM-247	457	0	0	0.914	4909.3	256.3	254	288	0.00	0.00	P
CM-248	-9999	-9999	0	-9.996	5117.5	256.0	285	319	0.00	0.00	M I

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H4C831AC
Detector: ALP116 1
Report Date: 29-May-06 02:38 PM
Acquire Date: 29-MAY-2006 06:18:28.52

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	@	201	2	@	251	0	@	301	0	@	351	0	@	401	0	-	451
		2	0		52	0		102	0	+	152	0	@	202	1	@	252	0	@	302	0	@	352	0	@	402	0	-	452
0		3	0		53	0		103	0	+	153	0	+	203	1	-	253	0	@	303	0	@	353	0	@	403	0	-	453
0		4	0		54	0		104	0	+	154	0	+	204	2	@	254	0	@	304	0	@	354	0	@	404	0	-	454
0		5	0		55	0		105	0	+	155	0	+	205	2	@	255	0	@	305	0	@	355	0	@	405	0	-	455
0		6	0		56	0		106	0	+	156	0	+	206	1	@	256	0	@	306	0	@	356	0	@	406	0	-	456
0		7	0		57	0		107	0	+	157	0	+	207	2	@	257	0	@	307	0	@	357	0	@	407	1	-	457
0		8	0		58	0		108	0	+	158	0	+	208	5	@	258	0	@	308	0	@	358	0	@	408	0		458
0		9	0		59	0		109	0	+	159	0	+	209	1	@	259	0	@	309	0	@	359	0	@	409	0		459
0		10	0		60	0		110	0	+	160	0	+	210	2	@	260	0	@	310	0	@	360	0	@	410	1		460
0		11	0		61	0		111	0	+	161	0	+	211	5	@	261	0	@	311	0	@	361	0	@	411	1		461
0		12	0		62	0		112	0	+	162	0	+	212	7	@	262	0	@	312	0	@	362	0	-	412	0		462
0		13	0		63	0		113	0	+	163	0	+	213	13	@	263	0	@	313	0	@	363	0	@	413	0		463
0		14	0		64	0		114	0	+	164	0	+	214	10	@	264	0	@	314	0	@	364	0	@	414	0		464
0		15	0		65	0		115	0	+	165	0	+	215	20	@	265	0	@	315	0	@	365	0	@	415	0		465
0		16	1		66	0		116	0	+	166	0	+	216	28	@	266	0	@	316	0	@	366	0	@	416	0		466
0		17	0		67	0		117	0	+	167	0	+	217	35	@	267	0	@	317	0	@	367	0	@	417	1		467
0		18	0		68	0		118	0	@	168	0	+	218	27	@	268	0	@	318	0	@	368	0	@	418	1		468
0		19	0		69	0		119	0	@	169	0	+	219	34	@	269	0	@	319	0	@	369	0	@	419	0		469
0		20	0		70	0		120	0	@	170	0	+	220	23	@	270	0	@	320	0	@	370	0	@	420	0		470
0		21	0		71	0		121	0	@	171	0	+	221	24	@	271	0	@	321	0	@	371	0	@	421	0		471
0		22	0		72	0		122	0	@	172	0	+	222	19	@	272	1	@	322	0	@	372	0	@	422	1		472
0		23	0		73	0		123	0	@	173	1	@	223	17	@	273	0	@	323	1	@	373	0	-	423	0		473
0		24	0		74	0		124	0	@	174	0	@	224	13	@	274	0	@	324	0	+	374	0	@	424	0		474
0		25	0		75	0		125	0	@	175	1	@	225	22	@	275	0	@	325	1	+	375	0	@	425	0		475
0		26	0		76	0		126	0	@	176	2	@	226	17	@	276	1	-	326	0		376	1	@	426	0		476
0		27	0		77	0		127	0	@	177	5	@	227	9	@	277	0	@	327	0	+	377	2	@	427	0		477
0		28	0		78	0		128	0	@	178	0	@	228	16	@	278	1	@	328	0	+	378	0	@	428	0		478
0		29	0		79	0		129	0	-	179	3	@	229	22	@	279	2	@	329	0	+	379	0	@	429	0		479
0		30	0		80	0		130	0	-	180	1	@	230	15	@	280	0	@	330	0	+	380	0	@	430	0		480
0		31	0		81	0		131	0	-	181	3	@	231	9	@	281	0	@	331	0	+	381	0	@	431	0		481
0		32	0		82	0		132	0	-	182	3	@	232	12	@	282	0	@	332	0	@	382	0	@	432	0		482
0		33	0		83	0		133	0	-	183	5	@	233	14	@	283	0	@	333	0	@	383	1	@	433	0		483
0		34	0		84	0		134	0	-	184	5	@	234	5	@	284	0	@	334	0	@	384	0	@	434	0		484
0		35	0		85	0		135	0	-	185	8	@	235	7	-	285	0	@	335	0	@	385	0	@	435	0		485
0		36	0		86	0		136	0	-	186	23	@	236	12	@	286	0	@	336	0	@	386	0	@	436	0		486
0		37	0		87	0		137	0	-	187	22	@	237	2	@	287	0	@	337	1	@	387	0	@	437	0		487
0		38	0		88	0		138	0	-	188	17	@	238	4	-	288	0	@	338	0	@	388	0	@	438	0		488
0		39	0		89	0		139	1	-	189	26	@	239	6	-	289	0	@	339	0	@	389	0	@	439	0		489
0		40	0		90	0		140	0	-	190	17	@	240	7	@	290	0	@	340	0	@	390	1	@	440	0		490
0		41	0		91	0		141	0	-	191	15	@	241	6	@	291	0	@	341	0	@	391	0	@	441	0		491
0		42	0		92	0		142	0	-	192	22	@	242	9	@	292	0	@	342	0	@	392	0	@	442	0		492
0		43	0		93	0		143	0	-	193	36	@	243	4	@	293	0	@	343	1	@	393	0	@	443	0		493
1		44	0		94	0	+	144	0	-	194	34	@	244	6	@	294	1	@	344	0	@	394	0	@	444	0		494
0		45	0		95	0	+	145	1	@	195	62	@	245	7	@	295	0	@	345	1	@	395	0	@	445	0		495
0		46	0		96	0	+	146	1	@	196	81	-	246	7	@	296	0	@	346	0	@	396	0	@	446	0		496
0		47	0		97	0	+	147	0	@	197	66	@	247	3	@	297	0	@	347	0	@	397	0	@	447	0		497
0		48	0		98	0	+	148	0	@	198	51	@	248	7	@	298	0	@	348	1	@	398	0	-	448	0		498
0		49	0		99	0	+	149	0	@	199	26	@	249	2	@	299	0	@	349	2	@	399	0	-	449	0		499
0		50	0		100	0	+	150	0	@	200	13	@	250	0	@	300	0	@	350	1	@	400	1	-	450	0		500

VMS Peak Search Report V1.9 Generated 29-MAY-2006 14:38:39

Configuration : RDND06$DKA100:[ALP116.SAMPLE]H4C831AC_290560618.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:18:28
Sample ID : H4C831AC Sample quantity : 0.00000E+00 LITER
Sample type : disk Sample geometry :
Detector name : ALP116 Detector geometry:
Elapsed live time: 0 08:20:07.00 Elapsed real time: 0 08:20:08.00 0.0%
Start energy : 2861.01 End energy : 6699.93
Sensitivity : 6.00 Sum Sensitivity : 0.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4701.35	553	0	45.72	245.71	223	30	1.84E-02	4.3	
2	0	4884.15	457	0	106.68	269.95	254	34	1.52E-02	4.7	

VMS Nuclide Identification Report V3.1 Generated 29-MAY-2006 14:38:40

```
Configuration     : RDND06$DKA100:[ALP116.SAMPLE]H4C831AC_290560618.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 14-APR-2006 12:00:00 Acquisition date : 29-MAY-2006 06:18:28
Sample ID         : H4C831AC             Sample quantity  : 0.00000E+00 LITER
Sample type       : disk                 Sample geometry  :
Detector name     : ALP116               Detector geometry:
Elapsed live time: 0 08:20:07.00         Elapsed real time: 0 08:20:08.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    2      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
TH-230	7.54E+04Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/LITER	Decay Corr PCI/LITER	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

```
   Grand Total Activity :  0.000E+00    0.000E+00
```

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP116.SAMPLE]H4C831AC_290560618.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4701.35	223	253	553	552	0.04		
4884.15	254	288	457	456	0.05		

End of Report

ALPHA

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

5/31/2006 4:49:54 PM

Lot No., Due Date: J6D270397; 05/25/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6118463; RALPHA-A Alpha by GPC-Am

SDG, Matrix: 31509; FILTER

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 Matt Lerly **Date** 5-31-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6118463

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: Sheryl A Adams Date: 6-1-06

STL RICHLAND

5/22/2006 11:44:18 AM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

BA Gross Alpha PrpRC5016/5014
S7 Gross Alpha by GPC using Am-241 curve
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 05/24/2006

Sep1 DT/Tm Tech:

Batch: 6118463 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: HansenM Scott

Work Order, Lot, Sample DateTime	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 H39LT-1-AE J6D270397-1-SAMP 04/14/2006 09:15	0.833sa,g	12.64g,in	AmtRec: FILTER #Containers: 1	1.5	0.4	100	10A	1118	9/29/06	Scr: Alpha: Beta:
2 H39L2-1-AE J6D270397-2-SAMP 04/14/2006 09:20	0.833sa,g	12.50g,in	AmtRec: FILTER #Containers: 1		1.0		10B			Scr: Alpha: Beta:
3 H39L3-1-AE J6D270397-3-SAMP 04/14/2006 09:40	0.833sa,g	12.54g,in	AmtRec: FILTER #Containers: 1		0.1		10C			Scr: Alpha: Beta:
4 H39L4-1-AE J6D270397-4-SAMP 04/14/2006 10:00	0.833sa,g	12.67g,in	AmtRec: FILTER #Containers: 1		0.1		10D			Scr: Alpha: Beta:
5 H39L6-1-AE J6D270397-5-SAMP 04/14/2006 10:15	0.833sa,g	12.52g,in	AmtRec: FILTER #Containers: 1		1.0		10E			Scr: Alpha: Beta:
6 H39L7-1-AE J6D270397-6-SAMP 04/14/2006 10:35	0.833sa,g	12.63g,in	AmtRec: FILTER #Containers: 1		0.3		10A	1310	9/29/06	Scr: Alpha: Beta:
7 H39L8-1-AE J6D270397-7-SAMP 04/14/2006 10:05	0.833sa,g	12.56g,in	AmtRec: FILTER #Containers: 1		0.5		10D			Scr: Alpha: Beta:

STL RICHLAND

5/22/2006 11:44:19 AM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BA Gross Alpha PrpRC5016/5014
S7 Gross Alpha by GPC using Am-241 curve
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 05/24/2006

Sep1 DT/Tm Tech:

Batch: 6118463 **FILTER** **pCi/sampl** **PM, Quote: SA , 63174**

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM Scott

Work Order, Lot, Sample DateTime	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 H39MC-1-AE J6D270397-8-SAMP 04/14/2006 09:05	0.833sa,g	12.62g,in AmtRec: FILTER	#Containers: 1	1.5	0.1	100	10C Scr:	1310 Alpha:	5/25/06 Beta:	
9 H39MD-1-AE J6D270397-9-SAMP 04/14/2006 09:25	0.833sa,g	12.65g,in AmtRec: FILTER	#Containers: 1		0.1		10D Scr:	Alpha:	Beta:	
10 H39MF-1-AE J6D270397-10-SAMP 04/14/2006 09:35	0.833sa,g	12.58g,in AmtRec: FILTER	#Containers: 1		0.3		10E Scr:	Alpha:	Beta:	
11 H39MH-1-AE J6D270397-11-SAMP 04/14/2006 09:55	0.833sa,g	12.71g,in AmtRec: FILTER	#Containers: 1		0.4		10F Scr:	0716 Alpha:	5/25/06 Beta:	
12 H39MJ-1-AE J6D270397-12-SAMP 04/14/2006 10:20	0.833sa,g	12.58g,in AmtRec: FILTER	#Containers: 1		0.3		10G Scr:	Alpha:	Beta:	
13 H39ML-1-AE J6D270397-13-SAMP 04/14/2006 10:30	0.833sa,g	12.53g,in AmtRec: FILTER	#Containers: 1		0.7		10C Scr:	Alpha:	Beta:	
14 H39MN-1-AE J6D270397-14-SAMP 04/14/2006 09:10	0.833sa,g	12.54g,in AmtRec: FILTER	#Containers: 1		0.7		10D Scr:	Alpha:	Beta:	

STL RICHLAND

5/22/2006 11:44:19 AM

Sample Preparation/Analysis

Balance Id:1120373922

BA Gross Alpha PrpRC5016/5014
S7 Gross Alpha by GPC using Am-241 curve
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 05/24/2006

Sep1 DT/Tm Tech:

Batch: 6118463 pCi/sampl

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,HansenM

Work Order, Lot, Sample DateTime	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:
15H4C9C-1-AA-B J6D280000-463-BLK 04/14/2006 09:15	AmtRec:	1.00sa,in	#Containers: 1	1.5	0.1	100	NE	0716	6/3 Scr: Alpha: Beta:	
16H4C9C-1-AC-C J6D280000-463-LCS 04/14/2006 09:15	AmtRec:	1.00sa,in	ASC0386 05/16/06,pd 02/09/06,r #Containers: 1	↓	0.0	↓	NA	0909	↓ Scr: Alpha: Beta:	

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H39LT1AE-SAMP Constituent List:
ALPHA RDL:20 pCi/sam LCL: UCL: RPD:
H4C9C1AA-BLK:
ALPHA RDL:20 pCi/sam LCL: UCL: RPD:
H4C9C1AC-LCS:

H39LT1AE-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C9C1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C9C1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

5/31/2006 4:48:53 PM

ICOC Fraction Transfer/Status Report

ByDate: 5/31/2005, 6/5/2006, Batch: '6118463', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6118463						
AC		**CalcC**	**ScottM**	5/25/2006 12:41:58		
SC			wagarr	IsBatched	4/28/2006 2:39:32 PM	ICOC_RADCALC v4.8.22
SC			ScottM	Prep2C	5/25/2006 12:41:58 PM	RICH-RC-5014 REVISION 6
SC			BlackCL	InCnt1	5/25/2006 1:11:19 PM	RICH-RD-0003 REVISION 4
SC			BlackCL	CalcC	5/30/2006 9:32:19 AM	RICH-RD-0003 REVISION 4
AC			**BlackCL**	5/25/2006 1:11:19 PM		
AC			**BlackCL**	5/30/2006 9:32:19		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 3

ICOCFractions v4.8.18

5/31/2006 4:48:48 PM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Mda	Sample Date / Units	Expected	Yield	Volumes	
31509	**9H39L210**			**J6D2703972**	000424	FILTER	4/27/2006 10:30:00		4/14/2006 9:20:00 AM				
ALPHA	BAS7	0		5/29/2006 10:28:04	**1.7348E+00**	1.51E+00	1.521E+00	6.383E+00	PCI/SA		1.0	1.0E+0	2.075E-2
BETA	BDS8	0		5/27/2006 12:07:31 PM	**8.2447E+00**	1.694E+00	1.786E+00	6.161E+00	PCI/SA		1.0	1.0E+0	8.443E-2
31509	**9H39L310**			**J6D2703973**	000425	FILTER	4/27/2006 10:30:00		4/14/2006 9:40:00 AM				
ALPHA	BAS7	0		5/29/2006 10:28:04	**4.891E+00**	1.88E+00	1.947E+00	5.34E+00	PCI/SA		1.0	1.0E+0	2.085E-2
BETA	BDS8	0		5/27/2006 12:07:31 PM	**1.1426E+01**	1.851E+00	2.014E+00	6.408E+00	PCI/SA		1.0	1.0E+0	8.406E-2
31509	**9H39L410**			**J6D2703974**	000426	FILTER	4/27/2006 10:30:00		4/14/2006 10:00:00 AM				
ALPHA	BAS7	0		5/29/2006 10:28:04	**4.845E+00**	1.991E+00	2.052E+00	6.537E+00	PCI/SA		1.0	1.0E+0	2.109E-2
BETA	BDS8	0		5/27/2006 12:07:24 PM	**1.188E+01**	1.917E+00	2.087E+00	6.639E+00	PCI/SA		1.0	1.0E+0	8.359E-2
31509	**9H39L610**			**J6D2703975**	000427	FILTER	4/27/2006 10:30:00		4/14/2006 10:15:00 AM				
ALPHA	BAS7	0		5/29/2006 10:28:04	**2.8178E+00**	1.533E+00	1.56E+00	5.233E+00	PCI/SA		1.0	1.0E+0	2.078E-2
BETA	BDS8	0		5/27/2006 12:07:24 PM	**1.7494E+01**	2.091E+00	2.528E+00	6.677E+00	PCI/SA		1.0	1.0E+0	8.364E-2
31509	**9H39L710**			**J6D2703976**	000428	FILTER	4/27/2006 10:30:00		4/14/2006 10:35:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**3.2765E+00**	1.795E+00	1.827E+00	6.559E+00	PCI/SA		1.0	1.0E+0	2.084E-2
BETA	BDS8	0		5/27/2006 12:07:24 PM	**1.0598E+01**	1.871E+00	2.069E+00	6.56E+00	PCI/SA		1.0	1.0E+0	8.263E-2
31509	**9H39L810**			**J6D2703977**	000429	FILTER	4/27/2006 10:30:00		4/14/2006 10:05:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**1.0743E-01**	1.172E+00	1.172E+00	6.325E+00	PCI/SA		1.0	1.0E+0	2.089E-2
BETA	BDS8	0		5/27/2006 12:07:13 PM	**2.3544E+00**	1.536E+00	1.545E+00	6.442E+00	PCI/SA		1.0	1.0E+0	8.341E-2
31509	**9H39LT10**			**J6D2703971**	000423	FILTER	4/27/2006 10:30:00		4/14/2006 9:15:00 AM				
ALPHA	BAS7	0		5/29/2006 10:28:04	**4.3704E+00**	1.954E+00	2.007E+00	6.561E+00	PCI/SA		1.0	1.0E+0	2.085E-2
BETA	BDS8	0		5/27/2006 12:07:31 PM	**1.0432E+01**	1.652E+00	1.964E+00	5.664E+00	PCI/SA		1.0	1.0E+0	8.289E-2
31509	**9H39MC10**			**J6D2703978**	P-0591	FILTER	4/27/2006 10:30:00		4/14/2006 9:05:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**1.5469E+00**	1.289E+00	1.299E+00	5.308E+00	PCI/SA		1.0	1.0E+0	2.097E-2
BETA	BDS8	0		5/27/2006 12:07:13 PM	**1.1377E+01**	1.764E+00	2.012E+00	5.95E+00	PCI/SA		1.0	1.0E+0	8.466E-2
31509	**9H39MD10**			**J6D2703979**	P-0592	FILTER	4/27/2006 10:30:00		4/14/2006 9:25:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**2.0697E-01**	1.259E+00	1.259E+00	6.562E+00	PCI/SA		1.0	1.0E+0	2.101E-2
BETA	BDS8	0		5/27/2006 12:07:13 PM	**6.3374E+00**	1.711E+00	1.766E+00	6.564E+00	PCI/SA		1.0	1.0E+0	8.343E-2
31509	**9H39MF10**			**J6D27039710**	P-0593	FILTER	4/27/2006 10:30:00		4/14/2006 9:35:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**2.2454E+00**	1.42E+00	1.439E+00	5.213E+00	PCI/SA		1.0	1.0E+0	2.08E-2
BETA	BDS8	0		5/27/2006 12:07:13 PM	**8.5854E+00**	1.743E+00	1.844E+00	6.29E+00	PCI/SA		1.0	1.0E+0	8.275E-2
31509	**9H39MH10**			**J6D27039711**	P-0594	FILTER	4/27/2006 10:30:00		4/14/2006 9:55:00 AM				
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**-1.7294E+00**	1.393E+00	1.404E+00	8.661E+00	PCI/SA		1.0	1.0E+0	2.107E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5329E+00**	1.82E+00	1.935E+00	6.522E+00	PCI/SA		1.0	1.0E+0	8.397E-2
31509	**9H39MJ10**			**J6D27039712**	P-0595	FILTER	4/27/2006 10:30:00		4/14/2006 10:20:00 AM				
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**1.2881E+00**	1.261E+00	1.268E+00	5.479E+00	PCI/SA		1.0	1.0E+0	2.089E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5189E+00**	1.783E+00	1.901E+00	6.353E+00	PCI/SA		1.0	1.0E+0	8.351E-2
31509	**9H39ML10**			**J6D27039713**	P-0596	FILTER	4/27/2006 10:30:00		4/14/2006 10:30:00 AM				
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**7.8233E-01**	1.188E+00	1.191E+00	5.704E+00	PCI/SA		1.0	1.0E+0	2.079E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.8848E+00**	1.729E+00	1.944E+00	6.023E+00	PCI/SA		1.0	1.0E+0	8.435E-2
31509	**9H39MN10**			**J6D27039714**	P-0597	FILTER	4/27/2006 10:30:00		4/14/2006 9:10:00 AM				
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**1.9987E+00**	1.763E+00	1.775E+00	7.515E+00	PCI/SA		1.0	1.0E+0	2.073E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**1.1678E+01**	2.019E+00	2.186E+00	7.182E+00	PCI/SA		1.0	1.0E+0	8.274E-2
31509	**H4C9C1AB**			**J6D280000463**	INTRA-LAB BLANK	FILTER	4/27/2006 10:30:00		4/14/2006 9:15:00 AM				
ALPHA	BAS7	0	B	5/30/2006 6:26:17 AM	**2.7997E-02**	2.741E-02	2.755E-02	1.191E-01	PCI/SA		1.0	1.0E+0	1.0E+0
31509	**H4C9C1CS**			**J6D280000463**	INTRA-LAB CHECK	FILTER	4/27/2006 10:30:00		4/14/2006 9:15:00 AM				
ALPHA	BAS7	0	S	5/30/2006 8:19:01 AM	**2.6838E+00**	1.784E-01	3.266E-01	1.824E-01	PCI/SA	2.3975E+00	1.0	1.0E+0	1.0E+0

6118463, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 16 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6118463

Alpha Beta, Alpha by GPC-Am , Results Summary Report

5/30/2006 9:29:05 AM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Alpha by GPC-Am				Richland Standard Gross Alpha/Beta Wo Blk Subt										
Calc	S7	FILTER	**H39LT1AE**	ALPHA	**4.37E+00**	**(2.01E+00)**		PCI/SA	R	2.54E+00	6.56E+00	✓	100%	
Calc	S7	FILTER	**H39L21AE**	ALPHA	**1.73E+00**	**(1.52E+00)**	**U4**	PCI/SA	R	2.46E+00	6.38E+00	✓	100%	
Calc	S7	FILTER	**H39L31AE**	ALPHA	**4.89E+00**	**(1.95E+00)**		PCI/SA	R	1.92E+00	5.34E+00	✓	100%	
Calc	S7	FILTER	**H39L41AE**	ALPHA	**4.84E+00**	**(2.05E+00)**		PCI/SA	R	2.57E+00	6.54E+00	✓	100%	
Calc	S7	FILTER	**H39L61AE**	ALPHA	**2.82E+00**	**(1.56E+00)**		PCI/SA	R	1.85E+00	5.23E+00	✓	100%	
Calc	S7	FILTER	**H39L71AE**	ALPHA	**3.28E+00**	**(1.83E+00)**		PCI/SA	R	2.54E+00	6.56E+00	✓	100%	
Calc	S7	FILTER	**H39L81AE**	ALPHA	**1.07E-01**	**(1.17E+00)**	**U4**	PCI/SA	R	2.44E+00	6.32E+00	✓	100%	
Calc	S7	FILTER	**H39MC1AE**	ALPHA	**1.55E+00**	**(1.30E+00)**	**U4**	PCI/SA	R	1.91E+00	5.31E+00	✓	100%	
Calc	S7	FILTER	**H39MD1AE**	ALPHA	**2.07E-01**	**(1.26E+00)**	**U4**	PCI/SA	R	2.58E+00	6.56E+00	✓	100%	
Calc	S7	FILTER	**H39MF1AE**	ALPHA	**2.25E+00**	**(1.44E+00)**	**U4**	PCI/SA	R	1.85E+00	5.21E+00	✓	100%	
Calc	S7	FILTER	**H39MH1AE**	ALPHA	**-1.73E+00**	**(1.40E+00)**	**U4**	PCI/SA	R	3.60E+00	8.66E+00	✓	100%	
Calc	S7	FILTER	**H39MJ1AE**	ALPHA	**1.29E+00**	**(1.27E+00)**	**U4**	PCI/SA	R	2.01E+00	5.48E+00	✓	100%	
Calc	S7	FILTER	**H39ML1AE**	ALPHA	**7.82E-01**	**(1.19E+00)**	**U4**	PCI/SA	R	2.10E+00	5.70E+00	✓	100%	
Calc	S7	FILTER	**H39MN1AE**	ALPHA	**2.00E+00**	**(1.78E+00)**	**U4**	PCI/SA	R	3.05E+00	7.52E+00	✓	100%	
Calc	S7	FILTER	**H4C9C1AA**	ALPHA	**2.80E-02** ✓	**(2.76E-02)**	**U4**	PCI/SA	R	4.38E-02	1.19E-01	✓ **B**	100%	
Calc	S7	FILTER	**H4C9C1AC**	ALPHA	**2.68E+00**	**(3.27E-01)**		PCI/SA	R	7.58E-02	1.82E-01	✓ **S**	100%	✓112%

Matt Lordy 5-31-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16
RADCALC v4.8.24
STL Richland

Batch Nbr: 6118463

Alpha Beta, Alpha by GPC-Am , Calculated Results

5/30/2006 9:29:06 AM

Detailed Report

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	S7	FILTER	*STLE	GabWoBS	**H39LT1AE**	**PCI/SA**		04/14/06 09:15	05/29/06 10:28			1	1.00 SA	
536403,000423					,J6D270397-1 v4.8.24		FILTER			00.4				0.020845 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 11:18	ALPHA	12	20	GPC10A	1.5	N	N	3.9556E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.366E-02)	(0.000E+00)		8%			(0.000E+00)	47.97267		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**4.370361**		8.00000E-02	0.202245	0.202245	1.00 SA	100%		6.561005		
				(2.007005)		(3.5777E-02)	(0.092147)	(0.092147)	(0.028284)			2.541782		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	S7	FILTER	*STLE	GabWoBS	**H39L21AE**	**PCI/SA**		04/14/06 09:20	05/29/06 10:28			1	1.00 SA	
536403,000424					,J6D270397-2 v4.8.24		FILTER			01.0				0.020747 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 11:18	ALPHA	7	19	GPC10B	1.5	N	N	4.0050E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.344E-02)	(0.000E+00)		8%			(0.000E+00)	48.20072		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**1.734799**	**U4**	3.20000E-02	0.0799	0.0799	1.00 SA	100%		6.383258		
				(1.520935)		(2.7857E-02)	(0.0699)	(0.0699)	(0.028284)			2.45851		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	S7	FILTER	*STLE	GabWoBS	**H39L31AE**	**PCI/SA**		04/14/06 09:40	05/29/06 10:28			1	1.00 SA	
536403,000425					,J6D270397-3 v4.8.24		FILTER			00.1				0.020848 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 11:18	ALPHA	11	11	GPC10C	1.5	N	N	3.8874E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.295E-02)	(0.000E+00)		8%			(0.000E+00)	47.965598		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**4.891039**		8.80000E-02	0.226373	0.226373	1.00 SA	100%		5.339606		
				(1.947446)		(3.3823E-02)	(0.089191)	(0.089191)	(0.028284)			1.917833		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	S7	FILTER	*STLE	GabWoBS	**H39L41AE**	**PCI/SA**		04/14/06 10:00	05/29/06 10:28			1	1.00 SA	
536403,000426					,J6D270397-4 v4.8.24		FILTER			00.1				0.021093 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 11:18	ALPHA	14	23	GPC10D	1.5	N	N	4.1432E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.205E-02)	(0.000E+00)		8%			(0.000E+00)	47.408071		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118463

Alpha Beta, Alpha by GPC-Am , Calculated Results

5/30/2006 9:29:06 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**4.844984**		9.40000E-02	0.226879	0.226879	1.00 SA	100%		6.537192		
				(2.052129)		(3.8626E-02)	(0.095208)	(0.095208)	(0.028284)			2.571724		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	S7	FILTER	*STLE	GabWoBS	**H39L61AE**	**PCI/SA**		04/14/06 10:15	05/29/06 10:28			1	1.00 SA	
536403,000427					,J6D270397-5 v4.8.24		FILTER			01.0				0.020781 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 11:18	ALPHA	7	10	GPC10E	1.5	N	N	3.8463E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.138E-02)	(0.000E+00)		8%			(0.000E+00)	48.120846		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**2.817778**		5.00000E-02	0.129995	0.129995	1.00 SA	100%		5.233229		
				(1.560183)		(2.7203E-02)	(0.071589)	(0.071589)	(0.028284)			1.854098		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	S7	FILTER	*STLE	GabWoBS	**H39L71AE**	**PCI/SA**		04/14/06 10:35	05/29/06 12:20			1	1.00 SA	
536403,000428					,J6D270397-6 v4.8.24		FILTER			00.3				0.020842 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 13:10	ALPHA	10	20	GPC10A	1.5	N	N	3.9577E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.367E-02)	(0.000E+00)		8%			(0.000E+00)	47.980237		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**3.276534**		6.00000E-02	0.151602	0.151602	1.00 SA	100%		6.55853		
				(1.826923)		(3.2863E-02)	(0.08408)	(0.08408)	(0.028284)			2.540823		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	S7	FILTER	*STLE	GabWoBS	**H39L81AE**	**PCI/SA**		04/14/06 10:05	05/29/06 12:20			1	1.00 SA	
536403,000429					,J6D270397-7 v4.8.24		FILTER			00.5				0.020891 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 13:10	ALPHA	4	19	GPC10B	1.5	N	N	4.0142E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.348E-02)	(0.000E+00)		8%			(0.000E+00)	47.867236		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**0.107428**	**U4**	2.00000E-03	0.004982	0.004982	1.00 SA	100%		6.324565		
				(1.171955)		(2.1817E-02)	(0.054353)	(0.054353)	(0.028284)			2.435904		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	S7	FILTER	*STLE	GabWoBS	**H39MC1AE**	**PCI/SA**		04/14/06 09:05	05/29/06 12:20			1	1.00 SA	
536403,P-0591					,J6D270397-8 v4.8.24		FILTER			00.1				0.020974 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118463

Alpha Beta, Alpha by GPC-Am , Calculated Results

5/30/2006 9:29:06 AM

0	05/29/06 13:10	ALPHA	5	11	GPC10C	1.5	N	N	3.8874E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.295E-02)	(0.000E+00)		8%			(0.000E+00)	47.678659		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**1.54693**	**U4**	2.80000E-02	0.072028	0.072028	1.00 SA	100%		5.307663		
				(1.29858)		(2.3324E-02)	(0.060322)	(0.060322)	(0.028284)			1.90636		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	S7	FILTER	*STLE	GabWoBS	**H39MD1AE**	**PCI/SA**		04/14/06 09:25	05/29/06 12:20			1	1.00 SA	
536403,P-0592					,J6D270397-9 v4.8.24		FILTER			00.1				0.021012 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 13:10	ALPHA	5	23	GPC10D	1.5	N	N	4.1432E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.205E-02)	(0.000E+00)		8%			(0.000E+00)	47.59121		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**0.206966**	**U4**	4.00000E-03	0.009654	0.009654	1.00 SA	100%		6.562445		
				(1.259104)		(2.4331E-02)	(0.058731)	(0.058731)	(0.028284)			2.581658		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	S7	FILTER	*STLE	GabWoBS	**H39MF1AE**	**PCI/SA**		04/14/06 09:35	05/29/06 12:20			1	1.00 SA	
536403,P-0593					,J6D270397-10 v4.8.24		FILTER			00.3				0.020799 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/29/06 13:10	ALPHA	6	10	GPC10E	1.5	N	N	3.8582E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.142E-02)	(0.000E+00)		8%			(0.000E+00)	48.080281		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**2.2454**	**U4**	4.00000E-02	0.103676	0.103676	1.00 SA	100%		5.212747		
				(1.438766)		(2.5298E-02)	(0.066164)	(0.066164)	(0.028284)			1.846841		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	S7	FILTER	*STLE	GabWoBS	**H39MH1AE**	**PCI/SA**		04/14/06 09:55	05/30/06 06:26			1	1.00 SA	
536403,P-0594					,J6D270397-11 v4.8.24		FILTER			00.4				0.021072 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/30/06 07:16	ALPHA	5	41	GPC10A	1.5	N	N	3.9556E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.366E-02)	(0.000E+00)		8%			(0.000E+00)	47.45722		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**-1.729361**	**U4**	-3.20000E-02	-0.080898	-0.080898	1.00 SA	100%		8.660627		
				(1.404227)		(2.5768E-02)	(0.065524)	(0.065524)	(0.028284)			3.600175		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:12

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118463

Alpha Beta, Alpha by GPC-Am , Calculated Results

5/30/2006 9:29:07 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	S7	FILTER	*STLE	GabWoBS	H39MJ1AE	PCI/SA		04/14/06 10:20	05/30/06 06:26			1	1.00 SA	
536403,P-0595					,J6D270397-12 v4.8.24		FILTER			00.3				0.020889 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/30/06 07:16	ALPHA	5	13	GPC10B	1.5	N	N	4.0178E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.349E-02)	(0.000E+00)		8%			(0.000E+00)	47.872249		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**1.288125**	U4	2.40000E-02	0.059735	0.059735	1.00 SA	100%		5.47877		
				(1.268106)		(2.3495E-02)	(0.058706)	(0.058706)	(0.028284)			2.013327		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	S7	FILTER	*STLE	GabWoBS	H39ML1AE	PCI/SA		04/14/06 10:30	05/30/06 06:26			1	1.00 SA	
536403,P-0596					,J6D270397-13 v4.8.24		FILTER			00.7				0.02079 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/30/06 07:16	ALPHA	4	13	GPC10C	1.5	N	N	3.8774E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.291E-02)	(0.000E+00)		8%			(0.000E+00)	48.100645		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**0.782325**	U4	1.40000E-02	0.036107	0.036107	1.00 SA	100%		5.704212		
				(1.190814)		(2.1260E-02)	(0.054921)	(0.054921)	(0.028284)			2.096172		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	S7	FILTER	*STLE	GabWoBS	H39MN1AE	PCI/SA		04/14/06 09:10	05/30/06 06:26			1	1.00 SA	
536403,P-0597					,J6D270397-14 v4.8.24		FILTER			00.7				0.020726 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/30/06 07:16	ALPHA	10	31	GPC10D	1.5	N	N	4.1320E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.202E-02)	(0.000E+00)		8%			(0.000E+00)	48.248007		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**1.99871**	U4	3.80000E-02	0.091965	0.091965	1.00 SA	100%		7.515363		
				(1.775299)		(3.3526E-02)	(0.081515)	(0.081515)	(0.028284)			3.046793		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	S7	FILTER	*STLE	GabWoBS	H4C9C1AA	PCI/SA	B	04/14/06 09:15	05/30/06 06:26			1	1.00 SA	
0,INTRA-LAB BLANK					,J6D280000-463		FILTER			00.1				1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/30/06 07:16	ALPHA	5	13	GPC10E	1.5	N	N	3.8614E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.143E-02)	(0.000E+00)		8%			(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24
STL Richland

Batch Nbr: 6118463

Alpha Beta, Alpha by GPC-Am , Calculated Results

5/30/2006 9:29:07 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**0.027997**	**U4**	2.40000E-02	0.062154	0.062154	1.00 SA	100%		0.11908		
				(0.027551)		(2.3495E-02)	(0.061075)	(0.061075)	(0.017321)			0.043759		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	S7	FILTER	*STLE	GabWoBS	**H4C9C1AC**	**PCI/SA**	**S**	04/14/06 09:15	05/30/06 08:19		ASC0386	1	1.00 SA	
0,INTRA-LAB CHECK					,J6D280000-463		FILTER			00.3		ASC0386 Alq		1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	05/30/06 09:09	ALPHA	244	41	GPC10A	1.5	N	N	3.9577E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.367E-02)	(0.000E+00)		8%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/30/06	ALPHA	R	**2.683767**		2.35800E+00	5.95797	5.95797	1.00 SA	100%	112%	0.182396		
				(0.326614)		(1.5673E-01)	(0.652958)	(0.652958)	(0.017321)			0.075821		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16

RADCALC v4.8.24

STL Richland

UST Number: H39LT1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H39LT1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4204

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00012	00000	0100	00000	1000	29-MAY-2006 11:18:04.90

Bkg File: [quad10.bkgrnd]2006-05-28_2305.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	28-MAY-2006 23:05:52.52

UST Number: H39L21AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H39L21AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4201

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00007	00000	0100	00000	1000	29-MAY-2006 11:18:04.90

Bkg File: [quad10.bkgrnd]2006-05-28_2305.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00019	0500	0.04	00000	1000	28-MAY-2006 23:05:52.52

UST Number: H39L31AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H39L31AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4210

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00011	00000	0100	00000	1000	29-MAY-2006 11:18:04.90

Bkg File: [quad10.bkgrnd]2006-05-28_2305.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00011	0500	0.02	00000	1000	28-MAY-2006 23:05:52.52

UST Number: H39L41AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H39L41AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4204

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00014	00000	0100	00000	1000	29-MAY-2006 11:18:04.90

Bkg File: [quad10.bkgrnd]2006-05-28_2305.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00023	0500	0.05	00000	1000	28-MAY-2006 23:05:52.52

UST Number: H39L61AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H39L61AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4199

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00007	00000	0100	00000	1000	29-MAY-2006 11:18:04.90

Bkg File: [quad10.bkgrnd]2006-05-28_2305.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00010	0500	0.02	00000	1000	28-MAY-2006 23:05:52.52

```
UST Number: H39L71AE   Isotope: 112       (QREPORT Rev 11-OCT-98)

  Detector: 10-A          File: [quad10.sample.A]H39L71AE.112
 Dish Size: 15        Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4204

Cycle  Alpha   Beta     Min   Guard   Volts      Finish Date/Time
   1   00010   00000   0100   00000   1000   29-MAY-2006 13:10:19.18

   Bkg File: [quad10.bkgrnd]2006-05-28_2305.A_15        (QREPORT Rev 11-OCT-98)

Cycle  Count    Min      CPM     Guard   Volts         Date/Time
 Bkg   00020   0500       0.04   00000   1000   28-MAY-2006 23:05:52.52
```

UST Number: H39L81AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H39L81AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4201

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00004	00000	0100	00000	1000	29-MAY-2006 13:10:19.18

Bkg File: [quad10.bkgrnd]2006-05-28_2305.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00019	0500	0.04	00000	1000	28-MAY-2006 23:05:52.52

UST Number: H39MC1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H39MC1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4210

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00005	00000	0100	00000	1000	29-MAY-2006 13:10:19.18

Bkg File: [quad10.bkgrnd]2006-05-28_2305.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00011	0500	0.02	00000	1000	28-MAY-2006 23:05:52.52

UST Number: H39MD1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H39MD1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4204

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00005	00000	0100	00000	1000	29-MAY-2006 13:10:19.18

Bkg File: [quad10.bkgrnd]2006-05-28_2305.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00023	0500	0.05	00000	1000	28-MAY-2006 23:05:52.52

UST Number: H39MF1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H39MF1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4199

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00006	00000	0100	00000	1000	29-MAY-2006 13:10:19.18

Bkg File: [quad10.bkgrnd]2006-05-28_2305.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00010	0500	0.02	00000	1000	28-MAY-2006 23:05:52.52

UST Number: H39MH1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H39MH1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4205

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00005	00000	0100	00000	1000	30-MAY-2006 07:16:17.34

Bkg File: [quad10.bkgrnd]2006-05-29_2144.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00041	0500	0.08	00000	1000	29-MAY-2006 21:44:51.99

UST Number: H39MJ1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H39MJ1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4202

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00005	00000	0100	00000	1000	30-MAY-2006 07:16:17.34

Bkg File: [quad10.bkgrnd]2006-05-29_2144.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00013	0500	0.03	00000	1000	29-MAY-2006 21:44:51.99

UST Number: H39ML1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H39ML1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4211

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00004	00000	0100	00000	1000	30-MAY-2006 07:16:17.34

Bkg File: [quad10.bkgrnd]2006-05-29_2144.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00013	0500	0.03	00000	1000	29-MAY-2006 21:44:51.99

UST Number: H39MN1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H39MN1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4205

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00010	00000	0100	00000	1000	30-MAY-2006 07:16:17.34

Bkg File: [quad10.bkgrnd]2006-05-29_2144.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00031	0500	0.06	00000	1000	29-MAY-2006 21:44:51.99

UST Number: H4C9C1AA Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H4C9C1AA.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4200

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00005	00000	0100	00000	1000	30-MAY-2006 07:16:17.34

Bkg File: [quad10.bkgrnd]2006-05-29_2144.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00013	0500	0.03	00000	1000	29-MAY-2006 21:44:51.99

UST Number: H4C9C1AC Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H4C9C1AC.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4205

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00244	00000	0100	00000	1000	30-MAY-2006 09:09:01.85

Bkg File: [quad10.bkgrnd]2006-05-29_2144.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00041	0500	0.08	00000	1000	29-MAY-2006 21:44:51.99

BETA

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

5/31/2006 3:17:25 PM

Lot No., Due Date: J6D270397; 05/25/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6118464; RBETA-SR Beta by GPC-Sr/Y

SDG, Matrix: 31509; FILTER

1.0 COC

	Yes	No	N/A
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		

2.0 QC Batch

	Yes	No	N/A
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?			✓

3.0 QC & Samples

	Yes	No	N/A
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?			✓
3.5 Are the sample yields and MDAs within contract limits?		✓	

4.0 Raw Data

	Yes	No	N/A
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?	✓		
4.4 Were spectra reviewed/meet contractual requirements?			✓
4.5 Were raw counts reviewed for anomalies?	✓		

5.0 Other

	Yes	No	N/A
5.1 Are all nonconformances included and noted?	✓		
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

See NCM number 10-08122 for response to Item 3.5.

First Level Review Mat Lovely **Date** 5-31-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6118464

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 Adam Date: 6-1-06

STL RICHLAND

5/22/2006 11:47:12 AM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BD Gross Beta PrpRC5016/5014
S8 Gross Beta by GPC using Sr/Y-90 curve
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 05/24/2006

Sep1 DT/Tm Tech:

Batch: 6118464 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

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:
1 H39LT-1-AF J6D270397-1-SAMP 04/14/2006 09:15	0.833sa,g	505.11sa,g	50.26g,in	0.0829g	Dish 1.5 2.6	100	27b	1256	5/27/06 K	
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
2 H39L2-1-AF J6D270397-2-SAMP 04/14/2006 09:20	0.833sa,g	501.89sa,g	50.87g,in	0.0844g	1.6		27c			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
3 H39L3-1-AF J6D270397-3-SAMP 04/14/2006 09:40	0.833sa,g	501.04sa,g	50.56g,in	0.0841g	2.0		27d			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
4 H39L4-1-AF J6D270397-4-SAMP 04/14/2006 10:00	0.833sa,g	500.35sa,g	50.21g,in	0.0836g	2.1		28B			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
5 H39L6-1-AF J6D270397-5-SAMP 04/14/2006 10:15	0.833sa,g	501.86sa,g	50.39g,in	0.0836g	1.8		28c			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
6 H39L7-1-AF J6D270397-6-SAMP 04/14/2006 10:35	0.833sa,g	504.79sa,g	50.07g,in	0.0826g	1.5		28d			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
7 H39L8-1-AF J6D270397-7-SAMP 04/14/2006 10:05	0.833sa,g	500.81sa,g	50.15g,in	0.0834g	1.3		31a			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

5/22/2006 11:47:12 AM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BD Gross Beta PrpRC5016/5014
S8 Gross Beta by GPC using Sr/Y-90 curve
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 05/24/2006

Sep1 DT/Tm Tech:

Batch: 6118464 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: HansenM

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:
8 H39MC-1-AF J6D270397-8-SAMP 04/14/2006 09:05	0.833sa,g	501.22sa,g	50.94g,in	0.0847g	Dish 1.5	0.5 100	31b	1256	5/27/06 r	
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
9 H39MD-1-AF J6D270397-9-SAMP 04/14/2006 09:25	0.833sa,g	501.49sa,g	50.23g,in	0.0834g	2.0		31c			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
10 H39MF-1-AF J6D270397-10-SAMP 04/14/2006 09:35	0.833sa,g	503.84sa,g	50.05g,in	0.0827g	1.5		31d			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
11 H39MH-1-AF J6D270397-11-SAMP 04/14/2006 09:55	0.833sa,g	502.45sa,g	50.65g,in	0.084g	2.1		32a			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
12 H39MJ-1-AF J6D270397-12-SAMP 04/14/2006 10:20	0.833sa,g	501.66sa,g	50.29g,in	0.0835g	1.3		32B			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
13 H39ML-1-AF J6D270397-13-SAMP 04/14/2006 10:30	0.833sa,g	502.05sa,g	50.84g,in	0.0844g	1.7		32c			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
14 H39MN-1-AF J6D270397-14-SAMP 04/14/2006 09:10	0.833sa,g	503.99sa,g	50.06g,in	0.0827g	1.0		32d			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:

STL RICHLAND

5/22/2006 11:47:13 AM

Sample Preparation/Analysis

BD Gross Beta PrpRC5016/5014
S8 Gross Beta by GPC using Sr/Y-90 curve
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,HansenM

AnalyDueDate: 05/24/2006

Batch: 6118464 pCi/sampl
SEQ Batch, Test: None

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:
15H4C9L-1-AA-B J6D280000-464-BLK 04/14/2006 09:15			1.00sa,in	1.00sa	01.5 1.5	1.5	100	26a	1451	5/27/06 K
	AmtRec:		#Containers: 1				Scr:	Alpha:		Beta:
16H4C9L-1-AC-C J6D280000-464-LCS 04/14/2006 09:15			1.00sa,in	1.00sa	BESD0730 04/27/06,pd 12/28/05,r	0.5		26B		
	AmtRec:		#Containers: 1				Scr:	Alpha:		Beta:

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H39LT1AF-SAMP Constituent List:
BETA RDL:5 pCi/sam LCL: UCL: RPD:
H4C9L1AA-BLK:
BETA RDL:5 pCi/sam LCL: UCL: RPD:
H4C9L1AC-LCS:
Cs-137 RDL: pCi/sam LCL:70 UCL:130 RPD:20 Cs-137DA RDL: pCi/sam LCL:70 UCL:130 RPD:20
Sr-90 RDL: pCi/sam LCL:70 UCL:130 RPD:20

H39LT1AF-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C9L1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C9L1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

Clouseau
Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: **10-08122**
NCM Initiated By: Matt Lardy
Date Opened: 05/31/2006
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Prep
Tests: Beta by GPC-Sr/Y
Lot #'s (Sample #'s): J6D270397 (1,10,11,12,13,14,2,3,4,5,6,7,8,9),
QC Batches: 6118464

Nonconformance: Elevated reporting limits
Subcategory: Other (explanation required)

Problem Description / Root Cause

Name	Date	Description
Matt Lardy	05/31/2006	The MDC for the samples averaged 6 pCi/SA compared to the CRDL of 5 pCi/SA. All the samples but H39L81AF and H39MD1AF (STL ID numbers) had results greater than the MDC. The results will be reported.

Corrective Action

Name	Date	Corrective Action
Matt Lardy	05/31/2006	Report the results.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

Date Printed: 5/31/2006

5/31/2006 3:10:14 PM

ICOC Fraction Transfer/Status Report

ByDate: 5/31/2005, 6/5/2006, Batch: '6118464', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6118464						
AC		**CalcC**	**ScottM**	5/25/2006 6:56:51 PM		
SC			wagarr	IsBatched	4/28/2006 2:39:32 PM	ICOC_RADCALC v4.8.22
SC			ScottM	Prep2C	5/25/2006 6:56:51 PM	RICH-RC-5014 REVISION 6
SC			BlackCL	InCnt1	5/25/2006 7:03:36 PM	RICH-RD-0003 REVISION 4
SC			StringerR	CalcC	5/28/2006 9:37:10 AM	RICH-RD-0003 REVISION 4
AC			**BlackCL**	5/25/2006 7:03:36 PM		
AC			**StringerR**	5/28/2006 9:37:10		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 3

ICOCFractions v4.8.18

5/31/2006 3:10:09 PM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mga	Units	Expected	Yield	Volumes	
31509	**9H39L210**			**J6D2703972**	000424	FILTER	4/27/2006 10:30:00	4/14/2006 9:20:00 AM					
BETA	BDS8	0		5/27/2006 12:07:31 PM	**8.2447E+00**	1.694E+00	1.786E+00	6.161E+00	PCI/SA		1.0	1.0E+0	8.443E-2
31509	**9H39L310**			**J6D2703973**	000425	FILTER	4/27/2006 10:30:00	4/14/2006 9:40:00 AM					
BETA	BDS8	0		5/27/2006 12:07:31 PM	**1.1426E+01**	1.851E+00	2.014E+00	6.408E+00	PCI/SA		1.0	1.0E+0	8.406E-2
31509	**9H39L410**			**J6D2703974**	000426	FILTER	4/27/2006 10:30:00	4/14/2006 10:00:00 AM					
BETA	BDS8	0		5/27/2006 12:07:24 PM	**1.188E+01**	1.917E+00	2.087E+00	6.639E+00	PCI/SA		1.0	1.0E+0	8.359E-2
31509	**9H39L610**			**J6D2703975**	000427	FILTER	4/27/2006 10:30:00	4/14/2006 10:15:00 AM					
BETA	BDS8	0		5/27/2006 12:07:24 PM	**1.7494E+01**	2.091E+00	2.528E+00	6.677E+00	PCI/SA		1.0	1.0E+0	8.364E-2
31509	**9H39L710**			**J6D2703976**	000428	FILTER	4/27/2006 10:30:00	4/14/2006 10:35:00 AM					
BETA	BDS8	0		5/27/2006 12:07:24 PM	**1.0598E+01**	1.871E+00	2.069E+00	6.56E+00	PCI/SA		1.0	1.0E+0	8.263E-2
31509	**9H39L810**			**J6D2703977**	000429	FILTER	4/27/2006 10:30:00	4/14/2006 10:05:00 AM					
BETA	BDS8	0		5/27/2006 12:07:13 PM	**2.3544E+00**	1.536E+00	1.545E+00	6.442E+00	PCI/SA		1.0	1.0E+0	8.341E-2
31509	**9H39LT10**			**J6D2703971**	000423	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM					
BETA	BDS8	0		5/27/2006 12:07:31 PM	**1.0432E+01**	1.652E+00	1.964E+00	5.664E+00	PCI/SA		1.0	1.0E+0	8.289E-2
31509	**9H39MC10**			**J6D2703978**	P-0591	FILTER	4/27/2006 10:30:00	4/14/2006 9:05:00 AM					
BETA	BDS8	0		5/27/2006 12:07:13 PM	**1.1377E+01**	1.764E+00	2.012E+00	5.95E+00	PCI/SA		1.0	1.0E+0	8.466E-2
31509	**9H39MD10**			**J6D2703979**	P-0592	FILTER	4/27/2006 10:30:00	4/14/2006 9:25:00 AM					
BETA	BDS8	0		5/27/2006 12:07:13 PM	**6.3374E+00**	1.711E+00	1.766E+00	6.564E+00	PCI/SA		1.0	1.0E+0	8.343E-2
31509	**9H39MF10**			**J6D27039710**	P-0593	FILTER	4/27/2006 10:30:00	4/14/2006 9:35:00 AM					
BETA	BDS8	0		5/27/2006 12:07:13 PM	**8.5854E+00**	1.743E+00	1.844E+00	6.29E+00	PCI/SA		1.0	1.0E+0	8.275E-2
31509	**9H39MH10**			**J6D27039711**	P-0594	FILTER	4/27/2006 10:30:00	4/14/2006 9:55:00 AM					
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5329E+00**	1.82E+00	1.935E+00	6.522E+00	PCI/SA		1.0	1.0E+0	8.397E-2
31509	**9H39MJ10**			**J6D27039712**	P-0595	FILTER	4/27/2006 10:30:00	4/14/2006 10:20:00 AM					
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5189E+00**	1.783E+00	1.901E+00	6.353E+00	PCI/SA		1.0	1.0E+0	8.351E-2
31509	**9H39ML10**			**J6D27039713**	P-0596	FILTER	4/27/2006 10:30:00	4/14/2006 10:30:00 AM					
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.8848E+00**	1.729E+00	1.944E+00	6.023E+00	PCI/SA		1.0	1.0E+0	8.435E-2
31509	**9H39MN10**			**J6D27039714**	P-0597	FILTER	4/27/2006 10:30:00	4/14/2006 9:10:00 AM					
BETA	BDS8	0		5/27/2006 12:07:25 PM	**1.1678E+01**	2.019E+00	2.186E+00	7.182E+00	PCI/SA		1.0	1.0E+0	8.274E-2
31509	**H4C9L1AB**			**J6D280000464**	INTRA-LAB BLANK	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM					
BETA	BDS8	0	B	5/27/2006 2:03:24 PM	**-1.7784E-02**	1.344E-01	1.344E-01	6.002E-01	PCI/SA		1.0	1.0E+0	1.0E+0
31509	**H4C9L1CS**			**J6D280000464**	INTRA-LAB CHECK	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM					
BETA	BDS8	0	S	5/27/2006 2:03:24 PM	**1.069E+01**	3.543E-01	7.984E-01	5.547E-01	PCI/SA	1.3554E+01	1.0	1.0E+0	1.0E+0

6118464, **Samples Inserted | Updated | NotUpdated => 16 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 16 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6118464

Alpha Beta, Beta by GPC-Sr/Y , Results
Summary Report

5/28/2006 9:35:34 AM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Beta by GPC-Sr/Y				Richland Standard Gross Alpha/Beta Wo Blk Subt										
Calc	S8	FILTER	**H39LT1AF**	BETA	**1.04E+01**	**(1.96E+00)**		PCI/SA	R	2.69E+00	5.66E+00		100%	
Calc	S8	FILTER	**H39L21AF**	BETA	**8.24E+00**	**(1.79E+00)**		PCI/SA	R	2.92E+00	6.16E+00		100%	
Calc	S8	FILTER	**H39L31AF**	BETA	**1.14E+01**	**(2.01E+00)**		PCI/SA	R	3.04E+00	6.41E+00		100%	
Calc	S8	FILTER	**H39L41AF**	BETA	**1.19E+01**	**(2.09E+00)**		PCI/SA	R	3.15E+00	6.64E+00		100%	
Calc	S8	FILTER	**H39L61AF**	BETA	**1.75E+01**	**(2.53E+00)**		PCI/SA	R	3.17E+00	6.68E+00		100%	
Calc	S8	FILTER	**H39L71AF**	BETA	**1.06E+01**	**(2.07E+00)**		PCI/SA	R	3.11E+00	6.56E+00		100%	
Calc	S8	FILTER	**H39L81AF**	BETA	**2.35E+00**	**(1.55E+00)**	**U4**	PCI/SA	R	3.06E+00	6.44E+00	X	100%	
Calc	S8	FILTER	**H39MC1AF**	BETA	**1.14E+01**	**(2.01E+00)**		PCI/SA	R	2.82E+00	5.95E+00		100%	
Calc	S8	FILTER	**H39MD1AF**	BETA	**6.34E+00**	**(1.77E+00)**		PCI/SA	R	3.12E+00	6.56E+00	X	100%	
Calc	S8	FILTER	**H39MF1AF**	BETA	**8.59E+00**	**(1.84E+00)**		PCI/SA	R	2.98E+00	6.29E+00		100%	
Calc	S8	FILTER	**H39MH1AF**	BETA	**9.53E+00**	**(1.94E+00)**		PCI/SA	R	3.09E+00	6.52E+00		100%	
Calc	S8	FILTER	**H39MJ1AF**	BETA	**9.52E+00**	**(1.90E+00)**		PCI/SA	R	3.01E+00	6.35E+00		100%	
Calc	S8	FILTER	**H39ML1AF**	BETA	**9.88E+00**	**(1.94E+00)**		PCI/SA	R	2.85E+00	6.02E+00		100%	
Calc	S8	FILTER	**H39MN1AF**	BETA	**1.17E+01**	**(2.19E+00)**		PCI/SA	R	3.42E+00	7.18E+00		100%	
Calc	S8	FILTER	**H4C9L1AA**	BETA	**-1.78E-02**	**(1.34E-01)**	**U4**	PCI/SA	R	2.87E-01	6.00E-01	✓ **B**	100%	
Calc	S8	FILTER	**H4C9L1AC**	BETA	**1.07E+01**	**(7.98E-01)**		PCI/SA	R	2.64E-01	5.55E-01	✓ **S**	100%	79%

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16
RADCALC v4.8.24
STL Richland

Batch Nbr: 6118464

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

5/28/2006 9:35:35 AM

Detailed Report

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	S8	FILTER	*STLE	GabWoBS	**H39LT1AF**	**PCI/SA**		04/14/06 09:15	05/27/06 12:07			1	1.00 Sa	
536403,000423					,J6D270397-1 v4.8.24		FILTER			02.6				0.082886 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	211	572	GPC27B	1.5	N	N	5.0324E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(3.954E-02)	(0.000E+00)		5%			(0.000E+00)	12.064754		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**10.431976**		9.66000E-01	1.919559	1.919559	1.00 Sa	100%		5.66366		
				(1.963778)		(1.5293E-01)	(0.352575)	(0.352575)	(0.028284)			2.687097		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	S8	FILTER	*STLE	GabWoBS	**H39L21AF**	**PCI/SA**		04/14/06 09:20	05/27/06 12:07			1	1.00 Sa	
536403,000424					,J6D270397-2 v4.8.24		FILTER			01.6				0.08443 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	182	562	GPC27C	1.5	N	N	4.5038E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(9.962E-03)	(0.000E+00)		5%			(0.000E+00)	11.844093		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**8.244744**		6.96000E-01	1.545357	1.545357	1.00 Sa	100%		6.160906		
				(1.785533)		(1.4300E-01)	(0.328551)	(0.328551)	(0.028284)			2.921676		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	S8	FILTER	*STLE	GabWoBS	**H39L31AF**	**PCI/SA**		04/14/06 09:40	05/27/06 12:07			1	1.00 Sa	
536403,000425					,J6D270397-3 v4.8.24		FILTER			02.0				0.084058 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	214	594	GPC27D	1.5	N	N	4.4651E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.130E-02)	(0.000E+00)		5%			(0.000E+00)	11.896531		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**11.42554**		9.52000E-01	2.132111	2.132111	1.00 Sa	100%		6.408008		
				(2.014077)		(1.5419E-01)	(0.36542)	(0.36542)	(0.028284)			3.043189		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	S8	FILTER	*STLE	GabWoBS	**H39L41AF**	**PCI/SA**		04/14/06 10:00	05/27/06 12:07			1	1.00 Sa	
536403,000426					,J6D270397-4 v4.8.24		FILTER			02.1				0.083591 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	216	600	GPC28B	1.5	N	N	4.3547E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.084E-02)	(0.000E+00)		5%			(0.000E+00)	11.962961		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118464

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

5/28/2006 9:35:35 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**11.879624**		9.60000E-01	2.204537	2.204537	1.00 Sa	100%		6.638754		
				(2.086935)		(1.5492E-01)	(0.376461)	(0.376461)	(0.028284)			3.153574		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	S8	FILTER	*STLE	GabWoBS	**H39L61AF**	**PCI/SA**		04/14/06 10:15	05/27/06 12:07			1	1.00 Sa	
536403,000427					,J6D270397-5 v4.8.24		FILTER			01.8				0.083639 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	268	624	GPC28C	1.5	N	N	4.4086E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.157E-02)	(0.000E+00)		5%			(0.000E+00)	11.956201		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**17.493853**		1.43200E+00	3.248222	3.248222	1.00 Sa	100%		6.677102		
				(2.527819)		(1.7116E-01)	(0.449847)	(0.449847)	(0.028284)			3.174904		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	S8	FILTER	*STLE	GabWoBS	**H39L71AF**	**PCI/SA**		04/14/06 10:35	05/27/06 12:07			1	1.00 Sa	
536403,000428					,J6D270397-6 v4.8.24		FILTER			01.5				0.082625 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	191	542	GPC28D	1.5	N	N	4.2489E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.220E-02)	(0.000E+00)		5%			(0.000E+00)	12.102864		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**10.598298**		8.26000E-01	1.944023	1.944023	1.00 Sa	100%		6.559605		
				(2.068793)		(1.4584E-01)	(0.370912)	(0.370912)	(0.028284)			3.10779		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	S8	FILTER	*STLE	GabWoBS	**H39L81AF**	**PCI/SA**		04/14/06 10:05	05/27/06 12:07			1	1.00 Sa	
536403,000429					,J6D270397-7 v4.8.24		FILTER			01.3				0.083415 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	134	574	GPC31A	1.5	N	N	4.4038E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.295E-02)	(0.000E+00)		5%			(0.000E+00)	11.988285		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**2.354403**	**U4**	1.92000E-01	0.435991	0.435991	1.00 Sa	100%		6.441783		
				(1.545404)		(1.2528E-01)	(0.285614)	(0.285614)	(0.028284)			3.056549		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	S8	FILTER	*STLE	GabWoBS	**H39MC1AF**	**PCI/SA**		04/14/06 09:05	05/27/06 12:07			1	1.00 Sa	
536403,P-0591					,J6D270397-8 v4.8.24		FILTER			00.5				0.084659 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118464

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

5/28/2006 9:35:35 AM

1	05/27/06 12:57	BETA	199	517	GPC31B	1.5	N	N	4.4710E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00
			100	500			Y		(2.468E-02)	(0.000E+00)		5%			(0.000E+00)	11.812028	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**11.376877**		9.56000E-01	2.138218	2.138218	1.00 Sa	100%		5.949523		
				(2.012287)		(1.4822E-01)	(0.367779)	(0.367779)	(0.028284)			2.815181		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	S8	FILTER	*STLE	GabWoBS	**H39MD1AF**	**PCI/SA**		04/14/06 09:25	05/27/06 12:07			1	1.00 Sa	
536403,P-0592					,J6D270397-9 v4.8.24		FILTER			02.0				0.083435 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	173	605	GPC31C	1.5	N	N	4.4299E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(9.852E-03)	(0.000E+00)		5%			(0.000E+00)	11.985443		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**6.337399**		5.20000E-01	1.173844	1.173844	1.00 Sa	100%		6.564082		
				(1.765664)		(1.4043E-01)	(0.323444)	(0.323444)	(0.028284)			3.118755		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	S8	FILTER	*STLE	GabWoBS	**H39MF1AF**	**PCI/SA**		04/14/06 09:35	05/27/06 12:07			1	1.00 Sa	
536403,P-0593					,J6D270397-10 v4.8.24		FILTER			01.5				0.082748 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	174	526	GPC31D	1.5	N	N	4.3623E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.191E-02)	(0.000E+00)		5%			(0.000E+00)	12.084914		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**8.585413**		6.88000E-01	1.577143	1.577143	1.00 Sa	100%		6.289773		
				(1.844366)		(1.3966E-01)	(0.332512)	(0.332512)	(0.028284)			2.977567		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	S8	FILTER	*STLE	GabWoBS	**H39MH1AF**	**PCI/SA**		04/14/06 09:55	05/27/06 12:07			1	1.00 Sa	
536403,P-0594					,J6D270397-11 v4.8.24		FILTER			02.1				0.083971 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	190	568	GPC32A	1.5	N	N	4.2992E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.034E-02)	(0.000E+00)		5%			(0.000E+00)	11.908811		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**9.532852**		7.64000E-01	1.777084	1.777084	1.00 Sa	100%		6.522172		
				(1.935475)		(1.4585E-01)	(0.353287)	(0.353287)	(0.028284)			3.093852		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:12

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118464

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

5/28/2006 9:35:35 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	S8	FILTER	*STLE	GabWoBS	**H39MJ1AF**	**PCI/SA**		04/14/06 10:20	05/27/06 12:07			1	1.00 Sa	
536403,P-0595					,J6D270397-12 v4.8.24		FILTER			01.3				0.083506 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	189	557	GPC32B	1.5	N	N	4.3975E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.069E-02)	(0.000E+00)		5%			(0.000E+00)	11.975202		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**9.518853**		7.76000E-01	1.764636	1.764636	1.00 Sa	100%		6.352728		
				(1.900831)		(1.4535E-01)	(0.344789)	(0.344789)	(0.028284)			3.01194		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	S8	FILTER	*STLE	GabWoBS	**H39ML1AF**	**PCI/SA**		04/14/06 10:30	05/27/06 12:07			1	1.00 Sa	
536403,P-0596					,J6D270397-13 v4.8.24		FILTER			01.7				0.084354 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	186	519	GPC32C	1.5	N	N	4.4407E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.770E-02)	(0.000E+00)		5%			(0.000E+00)	11.85486		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**9.884753**		8.22000E-01	1.85107	1.85107	1.00 Sa	100%		6.022876		
				(1.944343)		(1.4379E-01)	(0.356019)	(0.356019)	(0.028284)			2.850188		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	S8	FILTER	*STLE	GabWoBS	**H39MN1AF**	**PCI/SA**		04/14/06 09:10	05/27/06 12:07			1	1.00 Sa	
536403,P-0597					,J6D270397-14 v4.8.24		FILTER			01.0				0.08274 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 12:57	BETA	227	674	GPC32D	1.5	N	N	4.2982E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.331E-02)	(0.000E+00)		5%			(0.000E+00)	12.086097		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**11.678252**		9.22000E-01	2.145088	2.145088	1.00 Sa	100%		7.181502		
				(2.185857)		(1.5936E-01)	(0.391641)	(0.391641)	(0.028284)			3.421155		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	S8	FILTER	*STLE	GabWoBS	**H4C9L1AA**	**PCI/SA**	**B**	04/14/06 09:15	05/27/06 14:03			1	1.00 Sa	
0,INTRA-LAB BLANK					,J6D280000-464		FILTER			01.5				1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 14:53	BETA	154	779	GPC26A	1.5	N	N	4.5593E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.556E-02)	(0.000E+00)		5%			(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118464

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

5/28/2006 9:35:36 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**-0.017784**	**U4**	-1.80000E-02	-0.03948	-0.03948	1.00 Sa	100%		0.60021		
				(0.134444)		(1.3607E-01)	(0.298462)	(0.298462)	(0.017321)			0.286888		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	S8	FILTER	*STLE	GabWoBS	**H4C9L1AC**	**PCI/SA**	**S**	04/14/06 09:15	05/27/06 14:03		BESD0730	1	1.00 Sa	
0,INTRA-LAB CHECK					,J6D280000-464		FILTER			00.6		BESD0730 Alq		1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	05/27/06 14:53	BETA	1159	605	GPC26B	1.5	N	N	4.3738E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.222E-02)	(0.000E+00)		5%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	05/28/06	BETA	R	**10.690293**		1.03800E+01	23.732473	23.732473	1.00 Sa	100%	79%	0.554701		
				(0.798432)		(3.4398E-01)	(1.570337)	(1.570337)	(0.017321)			0.263552		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16

RADCALC v4.8.24

STL Richland

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:31.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39LT1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:31.00	211	100.00	572	500.00	27B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
4	35	3363	1500

Bkg Count Date/Time
27-MAY-2006 05:33:10.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:31.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39L21AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:31.00	182	100.00	562	500.00	27C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
4	10	3363	1500

Bkg Count Date/Time
27-MAY-2006 05:33:10.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:31.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39L31AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:31.00	214	100.00	594	500.00	27D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	14	3363	1500

Bkg Count Date/Time
27-MAY-2006 05:33:10.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:24.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39L41AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:24.00	216	100.00	600	500.00	28B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
8	30	3217	1500

Bkg Count Date/Time
27-MAY-2006 05:33:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:24.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39L61AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:24.00	268	100.00	624	500.00	28C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
21	21	3217	1500

Bkg Count Date/Time
27-MAY-2006 05:33:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:24.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39L71AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:24.00	191	100.00	542	500.00	28D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
4	21	3217	1500

Bkg Count Date/Time
27-MAY-2006 05:33:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:13.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39L81AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:13.00	134	100.00	574	500.00	31A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
0	20	3387	1492

Bkg Count Date/Time
27-MAY-2006 05:36:39.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:13.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39MC1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:13.00	199	100.00	517	500.00	31B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
3	18	3387	1492

Bkg Count Date/Time
27-MAY-2006 05:36:39.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:13.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39MD1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:13.00	173	100.00	605	500.00	31C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	13	3387	1492

Bkg Count Date/Time
27-MAY-2006 05:36:39.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:13.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39MF1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:13.00	174	100.00	526	500.00	31D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	8	3387	1492

Bkg Count Date/Time
27-MAY-2006 05:36:39.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:25.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39MH1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:25.00	190	100.00	568	500.00	32A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
5	8	3195	1492

Bkg Count Date/Time
27-MAY-2006 05:37:12.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:25.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39MJ1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:25.00	189	100.00	557	500.00	32B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	13	3195	1492

Bkg Count Date/Time
27-MAY-2006 05:37:12.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:25.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39ML1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:25.00	186	100.00	519	500.00	32C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	15	3195	1492

Bkg Count Date/Time
27-MAY-2006 05:37:12.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 12:57:25.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H39MN1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 12:57:25.00	227	100.00	674	500.00	32D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
5	7	3195	1492

Bkg Count Date/Time
27-MAY-2006 05:37:12.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 14:53:24.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4C9L1AA	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 14:53:24.00	154	100.00	779	500.00	26A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
5	28	3370	1500

Bkg Count Date/Time
27-MAY-2006 05:33:06.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
27-MAY-2006 14:53:24.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4C9L1AC	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
27-MAY-2006 14:53:24.00	1159	100.00	605	500.00	26B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
7	33	3370	1500

Bkg Count Date/Time
27-MAY-2006 05:33:06.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

RADIUM 228

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/12/2006 11:13:31 AM

Lot No., Due Date: J6D270397; 05/25/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6118466; RRA228 Ra-228 by GPC

SDG, Matrix: 31509; FILTER

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

6.0 Comments on any No response:

First Level Review Pam Anderson **Date** 6.12.06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6118466

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: Sheryl A Adam Date: 6-12-06

STL RICHLAND

6/1/2006 3:00:28 PM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 05/24/2006

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #:

Sep1 DT/Tm Tech: 6/2/06 14:15 SE

Sep2 DT/Tm Tech: 6-16-06 M 11:30 9 BX 4-12-06

Prep Tech: HansenM,HoganS

Batch: 6118466 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6118465, BXTE

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:
1 H39LT-1-AD J6D270397-1-SAMP	0.833sa,g	505.11sa,g	150.05g,in	0.2475g	RATA22336 05/26/06	1A 30.7		3x50	7A 1614 6/9/06	
				1.0091					7A 0649 6/10/06	
04/14/2006 09:15		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
2 H39L2-1-AD J6D270397-2-SAMP	0.833sa,g	501.89sa,g	151.34g,in	0.2512g	RATA22337 05/26/06	30.1			7B 1614 6/9/06	
				0.9573					7B 0649 6/10/06	
04/14/2006 09:20		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
3 H39L3-1-AD J6D270397-3-SAMP	0.833sa,g	501.04sa,g	150.75g,in	0.2506g	RATA22338 05/26/06	30.4			7C 1614 6/9/06	
				0.9298					7C 0649 6/10/06	
04/14/2006 09:40		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
4 H39L4-1-AD J6D270397-4-SAMP	0.833sa,g	500.35sa,g	150.95g,in	0.2513g	RATA22339 05/26/06	30.9			1A 1614 6/9/06	
				1.0706					1A 0649 6/10/06	
04/14/2006 10:00		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:

STL RICHLAND

6/1/2006 3:00:29 PM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 05/24/2006

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: HansenM,HoganS

Batch: 6118466 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6118465, BXTE

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:
5 H39L6-1-AD J6D270397-5-SAMP	0.833sa,g	501.86sa,g	150.46g,in	0.2497g	RATA22340 05/26/06	in	31.1	3x50	IC 1614 6/9/06	
			0.9784						IC 0449 6/12/06	
04/14/2006 10:15		AmtRec: FILTER	#Containers: 1			Scr:		Alpha:		Beta:
6 H39L7-1-AD J6D270397-6-SAMP	0.833sa,g	504.79sa,g	150.75g,in	0.2488g	RATA22341 05/26/06	30.8			1D 1614 6/9/06	
			0.9128						1D 0449 6/12/06	
04/14/2006 10:35		AmtRec: FILTER	#Containers: 1			Scr:		Alpha:		Beta:
7 H39L8-1-AD J6D270397-7-SAMP	0.833sa,g	500.81sa,g	150.29g,in	0.25g	RATA22342 05/26/06	30.6			2A 1614 6/9/06	
			0.9260						2A 0449 6/12/06	
04/14/2006 10:05		AmtRec: FILTER	#Containers: 1			Scr:		Alpha:		Beta:
8 H39MC-1-AD J6D270397-8-SAMP	0.833sa,g	501.22sa,g	150.24g,in	0.2497g	RATA22343 05/26/06	30.4			2B 1614 6/9/06	
			0.8636						2B 0449 6/12/06	
04/14/2006 09:05		AmtRec: FILTER	#Containers: 1			Scr:		Alpha:		Beta:

6/1/2006 3:00:29 PM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 05/24/2006

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: HansenM,HoganS

Batch: 6118466 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: 6118465, BXTE

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:
9 H39MD-1-AD J6D270397-9-SAMP	0.833sa,g	501.49sa,g	150.03g,in	0.2492g	RATA22344 05/26/06	1in	29.9	3x50	2C 1614 6/9/06	
			0.9959						2C 0649 6/10/06	
04/14/2006 09:25		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
10H39MF-1-AD J6D270397-10-SAMP	0.833sa,g	503.84sa,g	150.67g,in	0.2491g	RATA22345 05/26/06		30.2		2D 1614 6/9/06	
			1.0295						2D 0649 6/10/06	
04/14/2006 09:35		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
11H39MH-1-AD J6D270397-11-SAMP	0.833sa,g	502.45sa,g	150.10g,in	0.2488g	RATA22346 05/26/06		29.8		3A 1614 6/9/06	
			.9848						3A 0649 6/10/06	
04/14/2006 09:55		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
12H39MJ-1-AD J6D270397-12-SAMP	0.833sa,g	501.66sa,g	150.15g,in	0.2493g	RATA22347 05/26/06		29.7		3B 1614 6/9/06	
			1.0649						3B 0649 6/10/06	
04/14/2006 10:20		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 3 ISV - Insufficient Volume for Analysis WO Cnt: 12

Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.24

6/1/2006 3:00:29 PM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 05/24/2006

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: HansenM,HoganS

Batch: 6118466 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6118465, BXTE

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:
13H39ML-1-AD J6D270397-13-SAMP	0.833sa,g	502.05sa,g	150.60g,in	0.2499g	RATA22348 05/26/06	1in	30.8	3x50	3C 1614	6/9/06
			0.9826						3C 0649	6/10/06
04/14/2006 10:30		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
14H39MN-1-AD J6D270397-14-SAMP	0.833sa,g	503.99sa,g	150.30g,in	0.2484g	RATA22349 05/26/06		30.8		3D 1614	6/9/06
			0.9754						3D 0649	6/10/06
04/14/2006 09:10		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
15H4C90-1-AA-B J6D280000-466-BLK			1.00sa,in	1.00sa	RS 6/3/06 ~~RASC4104~~ Rata 22350 05/08/06,pd 10/04/04,r		30.9		4A 1614	6/9/06
			0.9685						4A 0649	6/10/06
04/14/2006 09:15		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:
16H4C90-1-AC-C J6D280000-466-LCS			1.00sa,in	1.00sa	RASC4104 05/08/06,pd 10/04/04,r		30.7		4B 1614	6/9/06
			1.0344						4B 0649	6/10/06
04/14/2006 09:15		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 4 ISV - Insufficient Volume for Analysis WO Cnt: 16
Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.24

6/1/2006 3:00:30 PM

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 05/24/2006

Sep1 DT/Tm Tech:

Batch: 6118466 pCi/sampl
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: HoganS

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:

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H39LT1AD-SAMP Constituent List:

Ba-133	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20	RA-228	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:
RA-228DA	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:						
H4C901AA-BLK:											
Ba-133	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20	RA-228	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:
RA-228DA	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:						
H4C901AC-LCS:											
Ba-133	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20	Ra-226	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20
RA-228	RDL:1	pCi/sam	LCL:70	UCL:130	RPD:20	RA-228DA	RDL:1	pCi/sam	LCL:70	UCL:130	RPD:20

H39LT1AD-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C901AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C901AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

6/12/2006 11:13:06 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/12/2005, 6/17/2006, Batch: '6118466', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6118466						
AC		**CalcC**	**WhelandS**	6/2/2006 2:44:33 PM		
SC			wagarr	IsBatched	4/28/2006 2:39:32 PM	ICOC_RADCALC v4.8.22
SC			WhelandS	Prep1C	6/2/2006 2:44:33 PM	RICH-RC-5005 REVISION 5
SC			TamosaitisM	Sep2C	6/9/2006 1:11:09 PM	RICH-RC-5005 REVISION 4
SC			BlackCL	InCnt2	6/9/2006 1:42:22 PM	RICH-RD-0003 REVISION 4
SC			BlackCL	CalcC	6/10/2006 8:14:57 AM	RICH-RD-0003 REVISION 4
AC			**TamosaitisM**	6/9/2006 1:11:09 PM		
AC			**BlackCL**	6/9/2006 1:42:22 PM		
AC			**BlackCL**	6/10/2006 8:14:57		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 4

ICOCFractions v4.8.18

6/12/2006 11:13:05 AM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
31509	**9H39L210**			**J6D2703972**	000424	FILTER	4/27/2006 10:30:00	4/14/2006 9:20:00 AM				
ALPHA	BAS7		0	5/29/2006 10:28:04	**1.7348E+00**	1.51E+00	1.521E+00	6.383E+00	PCI/SA	1.0	1.0E+0	2.075E-2
BETA	BDS8		0	5/27/2006 12:07:31 PM	**8.2447E+00**	1.694E+00	1.786E+00	6.161E+00	PCI/SA	1.0	1.0E+0	3.443E-2
RA-226	BXTE		0	6/8/2006 2:47:00 PM	**-8.4317E-02**	1.523E-01	1.526E-01	6.313E-01	PCI/SA	0.957	8.33E-1	2.512E-1
RA-228	BXTF		0	6/10/2006 6:54:25 AM	**2.3416E+00**	5.297E-01	5.621E-01	2.123E+00	PCI/SA	0.838	1.0E+0	2.512E-1
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.1117E-01**	7.861E-02	7.921E-02	2.727E-01	PCI/SA	1.028	1.0E+0	3.543E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**3.1725E-01**	1.058E-01	1.093E-01	9.553E-02	PCI/SA	1.028	1.0E+0	3.543E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**7.0501E-02**	4.985E-02	5.023E-02	9.553E-02	PCI/SA	1.028	1.0E+0	3.543E-2
U-234	7YSR		0	5/29/2006 11:33:23	**1.7024E-01**	1.691E-01	1.697E-01	7.32E-01	PCI/SA	0.816	1.0E+0	3.234E-2
U-235	7YSR		0	5/29/2006 11:33:23	**-5.6791E-02**	2.318E-02	2.365E-02	7.015E-01	PCI/SA	0.816	1.0E+0	3.234E-2
U-238	7YSR		0	5/29/2006 11:33:23	**2.1756E-01**	1.678E-01	1.687E-01	5.405E-01	PCI/SA	0.816	1.0E+0	3.234E-2
31509	**9H39L310**			**J6D2703973**	000425	FILTER	4/27/2006 10:30:00	4/14/2006 9 40:00 AM				
ALPHA	BAS7		0	5/29/2006 10:28:04	**4.891E+00**	1.88E+00	1.947E+00	5.34E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	5/27/2006 12:07:31 PM	**1.1426E+01**	1.851E+00	2.014E+00	6.408E+00	PCI/SA	1.0	1.0E+0	3.406E-2
RA-226	BXTE		0	6/8/2006 2:50:00 PM	**2.6736E-01**	1.3E-01	1.33E-01	4.066E-01	PCI/SA	0.93	8.33E-1	2.506E-1
RA-228	BXTF		0	6/10/2006 6:54:25 AM	**2.3148E+00**	5.932E-01	6.259E-01	2.461E+00	PCI/SA	0.822	1.0E+0	2.506E-1
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**4.3868E-02**	6.936E-02	6.947E-02	3.229E-01	PCI/SA	1.075	1.0E+0	3.517E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**3.7557E-01**	1.252E-01	1.296E-01	1.131E-01	PCI/SA	1.075	1.0E+0	3.517E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**0.0E+00**	0.0E+00	5.111E-02	1.131E-01	PCI/SA	1.075	1.0E+0	3.517E-2
U-234	7YSR		0	5/29/2006 11:33:28	**2.1744E-01**	1.677E-01	1.686E-01	5.402E-01	PCI/SA	0.878	1.0E+0	3.241E-2
U-235	7YSR		0	5/29/2006 11:33:28	**-2.8384E-02**	1.639E-02	1.655E-02	5.896E-01	PCI/SA	0.878	1.0E+0	3.241E-2
U-238	7YSR		0	5/29/2006 11:33:28	**-2.8384E-02**	1.639E-02	1.655E-02	5.896E-01	PCI/SA	0.878	1.0E+0	3.241E-2
31509	**9H39L410**			**J6D2703974**	000426	FILTER	4/27/2006 10:30:00	4/14/2006 10:00:00 AM				
ALPHA	BAS7		0	5/29/2006 10:28:04	**4.845E+00**	1.991E+00	2.052E+00	6.537E+00	PCI/SA	1.0	1.0E+0	2.109E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.188E+01**	1.917E+00	2.087E+00	6.639E+00	PCI/SA	1.0	1.0E+0	3.359E-2
RA-226	BXTE		0	6/8/2006 2:48:01 PM	**2.2227E-01**	1.426E-01	1.447E-01	4.838E-01	PCI/SA	1.071	8.33E-1	2.513E-1
RA-228	BXTF		0	6/10/2006 6:54:35 AM	**2.2902E+00**	4.575E-01	4.81E-01	1.745E+00	PCI/SA	0.962	1.0E+0	2.513E-1
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.361E-01**	7.858E-02	7.952E-02	1.229E-01	PCI/SA	0.999	1.0E+0	3.427E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**1.7263E-01**	8.631E-02	8.77E-02	1.17E-01	PCI/SA	0.999	1.0E+0	3.427E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**4.3157E-02**	4.316E-02	4.333E-02	1.17E-01	PCI/SA	0.999	1.0E+0	3.427E-2
U-234	7YSR		0	5/29/2006 11:33:30	**-8.2472E-03**	8.247E-03	8.274E-03	4.148E-01	PCI/SA	1.047	1.0E+0	3.27E-2
U-235	7YSR		0	5/29/2006 11:33:30	**8.6551E-02**	1.037E-01	1.039E-01	4.71E-01	PCI/SA	1.047	1.0E+0	3.27E-2
U-238	7YSR		0	5/29/2006 11:33:30	**1.0305E-01**	1.03E-01	1.034E-01	2.793E-01	PCI/SA	1.047	1.0E+0	3.27E-2
31509	**9H39L610**			**J6D2703975**	000427	FILTER	4/27/2006 10:30:00	4/14/2006 10:15:00 AM				
ALPHA	BAS7		0	5/29/2006 10:28:04	**2.8178E+00**	1.533E+00	1.56E+00	5.233E+00	PCI/SA	1.0	1.0E+0	2.078E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.7494E+01**	2.091E+00	2.528E+00	6.677E+00	PCI/SA	1.0	1.0E+0	3.364E-2
RA-226	BXTE		0	6/8/2006 2:49:00 PM	**1.622E-01**	1.357E-01	1.368E-01	4.79E-01	PCI/SA	0.978	8.33E-1	2.497E-1
RA-228	BXTF		0	6/10/2006 6:54:35 AM	**-1.9116E-01**	4.055E-01	4.055E-01	1.999E+00	PCI/SA	0.885	1.0E+0	2.497E-1
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**9.5632E-02**	6.896E-02	6.947E-02	2.294E-01	PCI/SA	0.999	1.0E+0	3.452E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**1.2736E-01**	7.502E-02	7.585E-02	2.183E-01	PCI/SA	0.999	1.0E+0	3.452E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**1.8195E-02**	4.068E-02	4.072E-02	2.183E-01	PCI/SA	0.999	1.0E+0	3.452E-2
U-234	7YSR		0	5/29/2006 11:33:38	**2.9481E-01**	2.273E-01	2.287E-01	7.323E-01	PCI/SA	0.873	1.0E+0	3.224E-2
U-235	7YSR		0	5/29/2006 11:33:38	**-3.8476E-02**	2.221E-02	2.246E-02	7.993E-01	PCI/SA	0.873	1.0E+0	3.224E-2
U-238	7YSR		0	5/29/2006 11:33:38	**-3.8476E-02**	2.221E-02	2.246E-02	7.993E-01	PCI/SA	0.873	1.0E+0	3.224E-2
31509	**9H39L710**			**J6D2703976**	000428	FILTER	4/27/2006 10:30:00	4/14/2006 10:35:00 AM				
ALPHA	BAS7		0	5/29/2006 12:20:19 PM	**3.2765E+00**	1.795E+00	1.827E+00	6.559E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.0598E+01**	1.871E+00	2.069E+00	6.56E+00	PCI/SA	1.0	1.0E+0	3.263E-2
RA-226	BXTE		0	6/8/2006 2:49:00 PM	**-2.0647E-01**	1.803E-01	1.818E-01	7.459E-01	PCI/SA	0.913	8.33E-1	2.488E-1
RA-228	BXTF		0	6/10/2006 6:54:35 AM	**2.0605E+00**	4.96E-01	5.226E-01	2.009E+00	PCI/SA	0.817	1.0E+0	2.488E-1
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.3245E-01**	9.366E-02	9.44E-02	3.249E-01	PCI/SA	0.885	1.0E+0	3.322E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**2.9401E-01**	1.111E-01	1.142E-01	1.138E-01	PCI/SA	0.885	1.0E+0	3.322E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**1.26E-01**	7.275E-02	7.361E-02	1.138E-01	PCI/SA	0.885	1.0E+0	3.322E-2

6118466, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 16 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H4C901AA=> , mat:FILTER | Air *wo:H4C901AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Mdl	Sample Date / Units	Expected	Yield	Volumes	
U-234	7YSR	0		5/29/2006 7:59:40 AM	**0.0E+00**	0.0E+00	1.378E-01	3.049E-01	PCI/SA	0.826	1.0E+0	3.206E-2	
U-235	7YSR	0		5/29/2006 7:59:40 AM	**0.0E+00**	0.0E+00	1.378E-01	3.049E-01	PCI/SA	0.826	1.0E+0	3.206E-2	
U-238	7YSR	0		5/29/2006 7:59:40 AM	**0.0E+00**	0.0E+00	1.378E-01	3.049E-01	PCI/SA	0.826	1.0E+0	3.206E-2	
31509	**9H39L810**			**J6D2703977**	000429	FILTER	4/27/2006 10:30:00		4/14/2006 10:05:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**1.0743E-01**	1.172E+00	1.172E+00	6.325E+00	PCI/SA	1.0	1.0E+0	2.089E-2	
BETA	BDS8	0		5/27/2006 12:07:13 PM	**2.3544E+00**	1.536E+00	1.545E+00	6.442E+00	PCI/SA	1.0	1.0E+0	3.341E-2	
RA-226	BXTE	0		6/8/2006 2:48:01 PM	**1.0515E-01**	1.67E-01	1.674E-01	6.362E-01	PCI/SA	0.926	8.33E-1	2.5E-1	
RA-228	BXTF	0		6/10/2006 6:54:45 AM	**2.5708E+00**	4.726E-01	5.081E-01	1.635E+00	PCI/SA	0.824	1.0E+0	2.5E-1	
TH-228	9NS1	0		5/28/2006 5:02:33 PM	**4.3305E-02**	4.331E-02	4.347E-02	1.174E-01	PCI/SA	1.109	1.0E+0	3.378E-2	
TH-230	9NS1	0		5/28/2006 5:02:33 PM	**-2.0598E-02**	2.06E-02	2.068E-02	2.471E-01	PCI/SA	1.109	1.0E+0	3.378E-2	
TH-232	9NS1	0		5/28/2006 5:02:33 PM	**0.0E+00**	0.0E+00	5.045E-02	1.116E-01	PCI/SA	1.109	1.0E+0	3.378E-2	
U-234	7YSR	0		5/29/2006 7:59:37 AM	**1.4904E-01**	1.48E-01	1.485E-01	6.409E-01	PCI/SA	0.927	1.0E+0	3.272E-2	
U-235	7YSR	0		5/29/2006 7:59:37 AM	**5.3808E-02**	1.055E-01	1.056E-01	6.141E-01	PCI/SA	0.927	1.0E+0	3.272E-2	
U-238	7YSR	0		5/29/2006 7:59:37 AM	**-8.2859E-03**	8.286E-03	8.313E-03	4.167E-01	PCI/SA	0.927	1.0E+0	3.272E-2	
31509	**9H39LT10**			**J6D2703971**	000423	FILTER	4/27/2006 10:30:00		4/14/2006 9:15:00 AM				
ALPHA	BAS7	0		5/29/2006 10:28:04	**4.3704E+00**	1.954E+00	2.007E+00	6.561E+00	PCI/SA	1.0	1.0E+0	2.085E-2	
BETA	BDS8	0		5/27/2006 12:07:31 PM	**1.0432E+01**	1.652E+00	1.964E+00	5.664E+00	PCI/SA	1.0	1.0E+0	3.289E-2	
RA-226	BXTE	0		6/8/2006 2:48:01 PM	**1.0443E-01**	1.444E-01	1.448E-01	5.317E-01	PCI/SA	1.009	8.33E-1	2.475E-1	
RA-228	BXTF	0		6/10/2006 6:54:25 AM	**3.323E-01**	4.738E-01	4.752E-01	2.175E+00	PCI/SA	0.901	1.0E+0	2.475E-1	
TH-228	9NS1	0		5/28/2006 5:02:33 PM	**-4.5049E-02**	3.185E-02	3.211E-02	3.316E-01	PCI/SA	0.858	1.0E+0	3.437E-2	
TH-230	9NS1	0		5/28/2006 5:02:33 PM	**3.8568E-01**	1.286E-01	1.331E-01	1.161E-01	PCI/SA	0.858	1.0E+0	3.437E-2	
TH-232	9NS1	0		5/28/2006 5:02:33 PM	**7.1498E-07**	5.248E-02	5.248E-02	3.154E-01	PCI/SA	0.858	1.0E+0	3.437E-2	
U-234	7YSR	0		5/29/2006 11:33:38	**9.3115E-02**	9.312E-02	9.341E-02	2.523E-01	PCI/SA	1.005	1.0E+0	3.191E-2	
U-235	7YSR	0		5/29/2006 11:33:38	**1.8623E-01**	1.317E-01	1.325E-01	2.523E-01	PCI/SA	1.005	1.0E+0	3.191E-2	
U-238	7YSR	0		5/29/2006 11:33:38	**9.3115E-02**	9.311E-02	9.341E-02	2.523E-01	PCI/SA	1.005	1.0E+0	3.191E-2	
31509	**9H39MC10**			**J6D2703978**	P-0591	FILTER	4/27/2006 10:30:00		4/14/2006 9:05:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**1.5469E+00**	1.289E+00	1.299E+00	5.308E+00	PCI/SA	1.0	1.0E+0	2.097E-2	
BETA	BDS8	0		5/27/2006 12:07:13 PM	**1.1377E+01**	1.764E+00	2.012E+00	5.95E+00	PCI/SA	1.0	1.0E+0	3.466E-2	
RA-226	BXTE	0		6/8/2006 2:46:00 PM	**6.6496E-02**	1.95E-01	1.951E-01	7.346E-01	PCI/SA	0.864	8.33E-1	2.497E-1	
RA-228	BXTF	0		6/10/2006 6:54:45 AM	**1.7767E+00**	4.616E-01	4.736E-01	1.738E+00	PCI/SA	0.768	1.0E+0	2.497E-1	
TH-228	9NS1	0		5/28/2006 5:02:33 PM	**6.3589E-07**	4.668E-02	4.668E-02	2.805E-01	PCI/SA	0.941	1.0E+0	3.433E-2	
TH-230	9NS1	0		5/28/2006 5:02:33 PM	**1.0877E-01**	6.28E-02	6.352E-02	9.825E-02	PCI/SA	0.941	1.0E+0	3.433E-2	
TH-232	9NS1	0		5/28/2006 5:02:33 PM	**3.6255E-02**	3.626E-02	3.64E-02	9.825E-02	PCI/SA	0.941	1.0E+0	3.433E-2	
U-234	7YSR	0		5/29/2006 7:59:29 AM	**-1.7998E-02**	1.273E-02	1.281E-02	5.141E-01	PCI/SA	0.922	1.0E+0	3.247E-2	
U-235	7YSR	0		5/29/2006 7:59:29 AM	**8.5484E-02**	1.136E-01	1.138E-01	5.611E-01	PCI/SA	0.922	1.0E+0	3.247E-2	
U-238	7YSR	0		5/29/2006 7:59:29 AM	**-2.6998E-02**	1.559E-02	1.574E-02	5.611E-01	PCI/SA	0.922	1.0E+0	3.247E-2	
31509	**9H39MD10**			**J6D2703979**	P-0592	FILTER	4/27/2006 10:30:00		4/14/2006 9:25:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**2.0697E-01**	1.259E+00	1.259E+00	6.562E+00	PCI/SA	1.0	1.0E+0	2.101E-2	
BETA	BDS8	0		5/27/2006 12:07:13 PM	**6.3374E+00**	1.711E+00	1.766E+00	6.564E+00	PCI/SA	1.0	1.0E+0	3.343E-2	
RA-226	BXTE	0		6/8/2006 3:27:00 PM	**3.1077E-01**	1.546E-01	1.577E-01	4.9E-01	PCI/SA	0.996	8.33E-1	2.492E-1	
RA-228	BXTF	0		6/10/2006 6:54:45 AM	**1.6076E+00**	4.034E-01	4.269E-01	1.579E+00	PCI/SA	0.866	1.0E+0	2.492E-1	
TH-228	9NS1	0		5/28/2006 5:03:34 PM	**2.73E-05**	1.091E-01	1.091E-01	5.851E-01	PCI/SA	0.559	1.0E+0	3.458E-2	
TH-230	9NS1	0		5/28/2006 5:03:34 PM	**5.9945E-02**	5.995E-02	6.021E-02	1.625E-01	PCI/SA	0.559	1.0E+0	3.458E-2	
TH-232	9NS1	0		5/28/2006 5:03:34 PM	**2.9979E-02**	6.702E-02	6.708E-02	3.595E-01	PCI/SA	0.559	1.0E+0	3.458E-2	
U-234	7YSR	0		5/29/2006 7:59:43 AM	**-8.3293E-03**	8.329E-03	8.356E-03	4.189E-01	PCI/SA	0.996	1.0E+0	3.234E-2	
U-235	7YSR	0		5/29/2006 7:59:43 AM	**-1.6659E-02**	1.178E-02	1.186E-02	4.756E-01	PCI/SA	0.996	1.0E+0	3.234E-2	
U-238	7YSR	0		5/29/2006 7:59:43 AM	**0.0E+00**	0.0E+00	1.274E-01	2.82E-01	PCI/SA	0.996	1.0E+0	3.234E-2	
31509	**9H39MF10**			**J6D27039710**	P-0593	FILTER	4/27/2006 10:30:00		4/14/2006 9:35:00 AM				
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**2.2454E+00**	1.42E+00	1.439E+00	5.213E+00	PCI/SA	1.0	1.0E+0	2.08E-2	
BETA	BDS8	0		5/27/2006 12:07:13 PM	**8.5854E+00**	1.743E+00	1.844E+00	6.29E+00	PCI/SA	1.0	1.0E+0	3.275E-2	
RA-226	BXTE	0		6/8/2006 3:24:01 PM	**3.3808E-01**	1.494E-01	1.538E-01	4.714E-01	PCI/SA	1.029	8.33E-1	2.491E-1	
RA-228	BXTF	0		6/10/2006 6:54:45 AM	**1.6897E+00**	3.749E-01	3.953E-01	1.355E+00	PCI/SA	0.904	1.0E+0	2.491E-1	
TH-228	9NS1	0		5/28/2006 5:03:56 PM	**-1.4722E-01**	5.564E-02	5.717E-02	4.799E-01	PCI/SA	0.805	1.0E+0	3.511E-2	
TH-230	9NS1	0		5/28/2006 5:03:56 PM	**1.2004E-01**	6.93E-02	7.012E-02	1.084E-01	PCI/SA	0.805	1.0E+0	3.511E-2	

6118466, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 16 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H4C901AA=> , mat:FILTER | Air *wo:H4C901AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes	
TH-232	9NS1	0		5/28/2006 5:03:56 PM	**4.0012E-02**	4.001E-02	4.017E-02	1.084E-01	PCI/SA		0.805	1.0E+0	3.511E-2
U-234	7YSR	0		5/29/2006 7:59:45 AM	**-2.6824E-02**	1.897E-02	1.911E-02	7.66E-01	PCI/SA		0.836	1.0E+0	3.218E-2
U-235	7YSR	0		5/29/2006 7:59:45 AM	**-5.3648E-02**	2.682E-02	2.722E-02	8.952E-01	PCI/SA		0.836	1.0E+0	3.218E-2
U-238	7YSR	0		5/29/2006 7:59:45 AM	**-4.0236E-02**	2.323E-02	2.349E-02	8.361E-01	PCI/SA		0.836	1.0E+0	3.218E-2
31509	**9H39MH10**			**J6D27039711**	P-0594	FILTER	4/27/2006 10:30:00	4/14/2006 9:55:00 AM					
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**-1.7294E+00**	1.393E+00	1.404E+00	8.661E+00	PCI/SA		1.0	1.0E+0	2.107E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5329E+00**	1.82E+00	1.935E+00	6.522E+00	PCI/SA		1.0	1.0E+0	3.397E-2
RA-226	BXTE	0		6/8/2006 3:25:00 PM	**-1.261E-01**	1.307E-01	1.314E-01	6.103E-01	PCI/SA		0.985	8.33E-1	2.488E-1
RA-228	BXTF	0		6/10/2006 6:49:54 AM	**1.9204E+00**	3.883E-01	4.216E-01	1.403E+00	PCI/SA		0.853	1.0E+0	2.488E-1
TH-228	9NS1	0		5/28/2006 5:04:17 PM	**3.7622E-06**	5.53E-02	5.53E-02	3.323E-01	PCI/SA		0.966	1.0E+0	3.51E-2
TH-230	9NS1	0		5/28/2006 5:04:17 PM	**1.2885E-01**	7.439E-02	7.529E-02	1.164E-01	PCI/SA		0.966	1.0E+0	3.51E-2
TH-232	9NS1	0		5/28/2006 5:04:17 PM	**0.0E+00**	0.0E+00	5.26E-02	1.164E-01	PCI/SA		0.966	1.0E+0	3.51E-2
U-234	7YSR	0		5/29/2006 7:59:52 AM	**7.0785E-02**	1.226E-01	1.228E-01	6.669E-01	PCI/SA		0.899	1.0E+0	3.224E-2
U-235	7YSR	0		5/29/2006 7:59:52 AM	**0.0E+00**	0.0E+00	1.445E-01	3.198E-01	PCI/SA		0.899	1.0E+0	3.224E-2
U-238	7YSR	0		5/29/2006 7:59:52 AM	**0.0E+00**	0.0E+00	1.445E-01	3.198E-01	PCI/SA		0.899	1.0E+0	3.224E-2
31509	**9H39MJ10**			**J6D27039712**	P-0595	FILTER	4/27/2006 10:30:00	4/14/2006 10:20:00 AM					
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**1.2881E+00**	1.261E+00	1.268E+00	5.479E+00	PCI/SA		1.0	1.0E+0	2.089E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5189E+00**	1.783E+00	1.901E+00	6.353E+00	PCI/SA		1.0	1.0E+0	3.351E-2
RA-226	BXTE	0		6/8/2006 3:25:00 PM	**4.364E-01**	1.841E-01	1.898E-01	5.764E-01	PCI/SA		1.065	8.33E-1	2.493E-1
RA-228	BXTF	0		6/10/2006 6:49:54 AM	**1.5039E+00**	3.503E-01	3.719E-01	1.339E+00	PCI/SA		0.919	1.0E+0	2.493E-1
TH-228	9NS1	0		5/28/2006 5:04:41 PM	**6.7544E-02**	5.36E-02	5.392E-02	1.797E-01	PCI/SA		0.892	1.0E+0	3.417E-2
TH-230	9NS1	0		5/28/2006 5:04:41 PM	**1.6421E-01**	8.046E-02	8.174E-02	2.017E-01	PCI/SA		0.892	1.0E+0	3.417E-2
TH-232	9NS1	0		5/28/2006 5:04:41 PM	**-7.1407E-03**	7.141E-03	7.168E-03	1.71E-01	PCI/SA		0.892	1.0E+0	3.417E-2
U-234	7YSR	0		5/29/2006 3:07:05 PM	**6.4911E-02**	1.124E-01	1.126E-01	6.114E-01	PCI/SA		0.978	1.0E+0	3.24E-2
U-235	7YSR	0		5/29/2006 3:07:05 PM	**0.0E+00**	0.0E+00	1.325E-01	2.932E-01	PCI/SA		0.978	1.0E+0	3.24E-2
U-238	7YSR	0		5/29/2006 3:07:05 PM	**0.0E+00**	0.0E+00	1.325E-01	2.932E-01	PCI/SA		0.978	1.0E+0	3.24E-2
31509	**9H39ML10**			**J6D27039713**	P-0596	FILTER	4/27/2006 10:30:00	4/14/2006 10:30:00 AM					
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**7.8233E-01**	1.188E+00	1.191E+00	5.704E+00	PCI/SA		1.0	1.0E+0	2.079E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.8848E+00**	1.729E+00	1.944E+00	6.023E+00	PCI/SA		1.0	1.0E+0	3.435E-2
RA-226	BXTE	0		6/8/2006 3:22:00 PM	**2.026E-01**	1.164E-01	1.183E-01	3.794E-01	PCI/SA		0.983	8.33E-1	2.499E-1
RA-228	BXTF	0		6/10/2006 6:49:54 AM	**9.4927E-01**	3.384E-01	3.442E-01	1.388E+00	PCI/SA		0.88	1.0E+0	2.499E-1
TH-228	9NS1	0		5/28/2006 5:04:53 PM	**1.9206E-01**	8.289E-02	8.454E-02	2.128E-01	PCI/SA		0.993	1.0E+0	3.457E-2
TH-230	9NS1	0		5/28/2006 5:04:53 PM	**1.5914E-01**	7.291E-02	7.419E-02	1.86E-01	PCI/SA		0.993	1.0E+0	3.457E-2
TH-232	9NS1	0		5/28/2006 5:04:53 PM	**0.0E+00**	0.0E+00	3.609E-02	7.986E-02	PCI/SA		0.993	1.0E+0	3.457E-2
U-234	7YSR	0		5/29/2006 3:07:05 PM	**-4.3241E-02**	3.058E-02	3.078E-02	6.108E-01	PCI/SA		0.981	1.0E+0	3.225E-2
U-235	7YSR	0		5/29/2006 3:07:05 PM	**0.0E+00**	0.0E+00	1.324E-01	2.929E-01	PCI/SA		0.981	1.0E+0	3.225E-2
U-238	7YSR	0		5/29/2006 3:07:05 PM	**1.081E-01**	1.081E-01	1.085E-01	2.929E-01	PCI/SA		0.981	1.0E+0	3.225E-2
31509	**9H39MN10**			**J6D27039714**	P-0597	FILTER	4/27/2006 10:30:00	4/14/2006 9:10:00 AM					
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**1.9987E+00**	1.763E+00	1.775E+00	7.515E+00	PCI/SA		1.0	1.0E+0	2.073E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**1.1678E+01**	2.019E+00	2.186E+00	7.182E+00	PCI/SA		1.0	1.0E+0	3.274E-2
RA-226	BXTE	0		6/8/2006 3:23:00 PM	**5.0688E-02**	1.143E-01	1.144E-01	4.414E-01	PCI/SA		0.975	8.33E-1	2.484E-1
RA-228	BXTF	0		6/10/2006 6:49:54 AM	**1.712E+00**	3.735E-01	3.921E-01	1.337E+00	PCI/SA		0.873	1.0E+0	2.484E-1
TH-228	9NS1	0		5/28/2006 5:05:13 PM	**-3.0288E-06**	5.566E-02	5.566E-02	3.345E-01	PCI/SA		1.057	1.0E+0	3.282E-2
TH-230	9NS1	0		5/28/2006 5:05:13 PM	**8.6453E-02**	6.113E-02	6.161E-02	1.171E-01	PCI/SA		1.057	1.0E+0	3.282E-2
TH-232	9NS1	0		5/28/2006 5:05:13 PM	**4.3227E-02**	4.323E-02	4.34E-02	1.171E-01	PCI/SA		1.057	1.0E+0	3.282E-2
U-234	7YSR	0		5/30/2006 7:42:31 AM	**2.63E-01**	1.775E-01	1.788E-01	5.716E-01	PCI/SA		0.98	1.0E+0	3.21E-2
U-235	7YSR	0		5/30/2006 7:42:31 AM	**-6.0691E-02**	3.504E-02	3.538E-02	6.385E-01	PCI/SA		0.98	1.0E+0	3.21E-2
U-238	7YSR	0		5/30/2006 7:42:31 AM	**6.0693E-02**	1.051E-01	1.052E-01	5.716E-01	PCI/SA		0.98	1.0E+0	3.21E-2
31509	**H4C901AB**			**J6D280000466**	INTRA-LAB BLANK	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM					
RA-228	BXTF	0	B	6/10/2006 6:50:00 AM	**7.0903E-02**	8.13E-02	8.62E-02	4.079E-01	PCI/SA		0.87	1.0E+0	1.0E+0
31509	**H4C901CS**			**J6D280000466**	INTRA-LAB CHECK	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM					
RA-228	BXTF	0	S	6/10/2006 6:50:00 AM	**4.3366E+00**	2.263E-01	3.355E-01	3.564E-01	PCI/SA	5.0585E+00	0.923	1.0E+0	1.0E+0

6118466, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 16 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H4C901AA=> , mat:FILTER | Air *wo:H4C901AC=> , mat:FILTER | Air.

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Results

6/12/2006 11:05:26 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Ra-228 by GPC				Ra-226/Ra-228 Deem With Out Blk Subt.										
Calc	TF	FILTER	**H39LT1AD**	RA-228	**5.49E-01**	**(7.55E-01)**	**U4**	PCI/SA	R	1.55E+00	3.38E+00		90%	
Calc	TF	FILTER	**H39LT1AD**	RA-228	**-2.29E-01**	**(7.73E-01)**	**U4**	PCI/SA	R	1.72E+00	3.75E+00		90%	
Calc	TF	FILTER	**H39LT1AD**	RA-228	**6.76E-01**	**(9.29E-01)**	**U4**	PCI/SA	R	1.90E+00	4.16E+00		90%	
Calc	TF	FILTER	**H39LT1AD**	RA-228	**3.32E-01**	**(4.75E-01)**	**U4**	PCI/SA	A	9.94E-01	2.17E+00		90%	
Calc	TF	FILTER	**H39LT1AD**	RA-228	**1.52E+00**	**(4.57E+00)**	**U4**	PCI/SA	R	9.77E+00	2.14E+01		90%	
Calc	TF	FILTER	**H39L21AD**	RA-228	**2.85E+00**	**(9.41E-01)**		PCI/SA	R	1.50E+00	3.30E+00		84%	
Calc	TF	FILTER	**H39L21AD**	RA-228	**3.04E+00**	**(1.03E+00)**		PCI/SA	R	1.66E+00	3.66E+00		84%	
Calc	TF	FILTER	**H39L21AD**	RA-228	**1.13E+00**	**(9.45E-01)**	**U4**	PCI/SA	R	1.84E+00	4.06E+00		84%	
Calc	TF	FILTER	**H39L21AD**	RA-228	**2.34E+00**	**(5.62E-01)**		PCI/SA	A	9.63E-01	2.12E+00		84%	
Calc	TF	FILTER	**H39L21AD**	RA-228	**1.27E+01**	**(5.44E+00)**		PCI/SA	R	9.53E+00	2.10E+01		84%	
Calc	TF	FILTER	**H39L31AD**	RA-228	**3.27E+00**	**(1.07E+00)**		PCI/SA	R	1.75E+00	3.83E+00		82%	
Calc	TF	FILTER	**H39L31AD**	RA-228	**2.16E+00**	**(1.07E+00)**		PCI/SA	R	1.95E+00	4.25E+00		82%	
Calc	TF	FILTER	**H39L31AD**	RA-228	**1.52E+00**	**(1.11E+00)**	**U4**	PCI/SA	R	2.16E+00	4.71E+00		82%	
Calc	TF	FILTER	**H39L31AD**	RA-228	**2.31E+00**	**(6.26E-01)**		PCI/SA	A	1.13E+00	2.46E+00		82%	
Calc	TF	FILTER	**H39L31AD**	RA-228	**-2.52E+00**	**(4.98E+00)**	**U4**	PCI/SA	R	1.13E+01	2.47E+01		82%	
Calc	TF	FILTER	**H39L41AD**	RA-228	**2.57E+00**	**(7.98E-01)**		PCI/SA	R	1.24E+00	2.73E+00		96%	
Calc	TF	FILTER	**H39L41AD**	RA-228	**1.76E+00**	**(7.77E-01)**		PCI/SA	R	1.36E+00	3.00E+00		96%	
Calc	TF	FILTER	**H39L41AD**	RA-228	**2.54E+00**	**(9.17E-01)**		PCI/SA	R	1.51E+00	3.33E+00		96%	
Calc	TF	FILTER	**H39L41AD**	RA-228	**2.29E+00**	**(4.81E-01)**		PCI/SA	A	7.89E-01	1.75E+00		96%	
Calc	TF	FILTER	**H39L41AD**	RA-228	**1.98E+00**	**(3.87E+00)**	**U4**	PCI/SA	R	8.12E+00	1.79E+01		96%	
Calc	TF	FILTER	**H39L61AD**	RA-228	**8.00E-01**	**(7.15E-01)**	**U4**	PCI/SA	R	1.42E+00	3.13E+00		88%	
Calc	TF	FILTER	**H39L61AD**	RA-228	**1.64E-01**	**(7.25E-01)**	**U4**	PCI/SA	R	1.56E+00	3.44E+00		88%	
Calc	TF	FILTER	**H39L61AD**	RA-228	**-1.54E+00**	**(6.66E-01)**	**U4**	PCI/SA	R	1.73E+00	3.82E+00		88%	
Calc	TF	FILTER	**H39L61AD**	RA-228	**-1.91E-01**	**(4.06E-01)**	**U4**	PCI/SA	A	9.06E-01	2.00E+00		88%	
Calc	TF	FILTER	**H39L61AD**	RA-228	**8.22E+00**	**(4.49E+00)**		PCI/SA	R	8.18E+00	1.82E+01		88%	
Calc	TF	FILTER	**H39L71AD**	RA-228	**2.57E+00**	**(8.85E-01)**		PCI/SA	R	1.42E+00	3.15E+00		82%	
Calc	TF	FILTER	**H39L71AD**	RA-228	**2.45E+00**	**(9.36E-01)**		PCI/SA	R	1.56E+00	3.46E+00		82%	
Calc	TF	FILTER	**H39L71AD**	RA-228	**1.16E+00**	**(8.93E-01)**	**U4**	PCI/SA	R	1.73E+00	3.83E+00		82%	
Calc	TF	FILTER	**H39L71AD**	RA-228	**2.06E+00**	**(5.23E-01)**		PCI/SA	A	9.05E-01	2.01E+00		82%	
Calc	TF	FILTER	**H39L71AD**	RA-228	**4.34E+00**	**(4.77E+00)**	**U4**	PCI/SA	R	9.66E+00	2.13E+01		82%	
Calc	TF	FILTER	**H39L81AD**	RA-228	**3.72E+00**	**(9.56E-01)**		PCI/SA	R	1.08E+00	2.54E+00		82%	
Calc	TF	FILTER	**H39L81AD**	RA-228	**2.55E+00**	**(8.77E-01)**		PCI/SA	R	1.20E+00	2.82E+00		82%	
Calc	TF	FILTER	**H39L81AD**	RA-228	**1.44E+00**	**(8.00E-01)**		PCI/SA	R	1.33E+00	3.13E+00		82%	
Calc	TF	FILTER	**H39L81AD**	RA-228	**2.57E+00**	**(5.08E-01)**		PCI/SA	A	6.95E-01	1.64E+00		82%	
Calc	TF	FILTER	**H39L81AD**	RA-228	**6.64E-01**	**(3.10E+00)**	**U4**	PCI/SA	R	6.60E+00	1.56E+01		82%	
Calc	TF	FILTER	**H39MC1AD**	RA-228	**1.54E+00**	**(7.25E-01)**		PCI/SA	R	1.15E+00	2.70E+00		77%	
Calc	TF	FILTER	**H39MC1AD**	RA-228	**1.54E+00**	**(7.85E-01)**		PCI/SA	R	1.28E+00	3.00E+00		77%	
Calc	TF	FILTER	**H39MC1AD**	RA-228	**2.25E+00**	**(9.37E-01)**		PCI/SA	R	1.42E+00	3.33E+00		77%	

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:39
RADCALC v4.8.24
STL Richland

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	TF	FILTER	H39MC1AD	RA-228	1.78E+00	(4.74E-01)		PCI/SA	A	7.42E-01	1.74E+00		77%	
Calc	TF	FILTER	H39MC1AD	RA-228	2.51E+00	(3.60E+00)	U4	PCI/SA	R	7.14E+00	1.67E+01		77%	
Calc	TF	FILTER	H39MD1AD	RA-228	2.49E+00	(7.90E-01)		PCI/SA	R	1.05E+00	2.46E+00		87%	
Calc	TF	FILTER	H39MD1AD	RA-228	1.57E+00	(7.35E-01)		PCI/SA	R	1.16E+00	2.73E+00		87%	
Calc	TF	FILTER	H39MD1AD	RA-228	7.60E-01	(6.90E-01)	U4	PCI/SA	R	1.29E+00	3.02E+00		87%	
Calc	TF	FILTER	H39MD1AD	RA-228	1.61E+00	(4.27E-01)		PCI/SA	A	6.74E-01	1.58E+00		87%	
Calc	TF	FILTER	H39MD1AD	RA-228	6.47E+00	(3.93E+00)		PCI/SA	R	6.80E+00	1.58E+01		87%	
Calc	TF	FILTER	H39MF1AD	RA-228	2.40E+00	(7.26E-01)		PCI/SA	R	8.83E-01	2.11E+00		90%	
Calc	TF	FILTER	H39MF1AD	RA-228	1.26E+00	(6.28E-01)		PCI/SA	R	9.80E-01	2.34E+00		90%	
Calc	TF	FILTER	H39MF1AD	RA-228	1.40E+00	(6.96E-01)		PCI/SA	R	1.09E+00	2.59E+00		90%	
Calc	TF	FILTER	H39MF1AD	RA-228	1.69E+00	(3.95E-01)		PCI/SA	A	5.68E-01	1.36E+00		90%	
Calc	TF	FILTER	H39MF1AD	RA-228	-1.38E+00	(2.55E+00)	U4	PCI/SA	R	6.03E+00	1.42E+01		90%	
Calc	TF	FILTER	H39MH1AD	RA-228	3.72E+00	(8.87E-01)		PCI/SA	R	9.23E-01	2.18E+00		85%	
Calc	TF	FILTER	H39MH1AD	RA-228	6.74E-01	(5.62E-01)	U4	PCI/SA	R	1.02E+00	2.42E+00		85%	
Calc	TF	FILTER	H39MH1AD	RA-228	1.36E+00	(7.05E-01)		PCI/SA	R	1.14E+00	2.69E+00		85%	
Calc	TF	FILTER	H39MH1AD	RA-228	1.92E+00	(4.22E-01)		PCI/SA	A	5.93E-01	1.40E+00		85%	
Calc	TF	FILTER	H39MH1AD	RA-228	6.41E+00	(3.42E+00)		PCI/SA	R	5.37E+00	1.28E+01		85%	
Calc	TF	FILTER	H39MJ1AD	RA-228	2.20E+00	(6.80E-01)		PCI/SA	R	8.89E-01	2.08E+00		92%	
Calc	TF	FILTER	H39MJ1AD	RA-228	1.69E+00	(6.66E-01)		PCI/SA	R	9.87E-01	2.31E+00		92%	
Calc	TF	FILTER	H39MJ1AD	RA-228	6.24E-01	(5.83E-01)	U4	PCI/SA	R	1.09E+00	2.56E+00		92%	
Calc	TF	FILTER	H39MJ1AD	RA-228	1.50E+00	(3.72E-01)		PCI/SA	A	5.72E-01	1.34E+00		92%	
Calc	TF	FILTER	H39MJ1AD	RA-228	-1.19E+00	(2.68E+00)	U4	PCI/SA	R	6.06E+00	1.40E+01		92%	
Calc	TF	FILTER	H39ML1AD	RA-228	8.53E-01	(5.34E-01)	U4	PCI/SA	R	9.18E-01	2.16E+00		88%	
Calc	TF	FILTER	H39ML1AD	RA-228	9.46E-01	(5.92E-01)	U4	PCI/SA	R	1.02E+00	2.40E+00		88%	
Calc	TF	FILTER	H39ML1AD	RA-228	1.05E+00	(6.57E-01)	U4	PCI/SA	R	1.13E+00	2.66E+00		88%	
Calc	TF	FILTER	H39ML1AD	RA-228	9.49E-01	(3.44E-01)		PCI/SA	A	5.90E-01	1.39E+00		88%	
Calc	TF	FILTER	H39ML1AD	RA-228	-2.72E+00	(2.52E+00)	U4	PCI/SA	R	6.18E+00	1.44E+01		88%	
Calc	TF	FILTER	H39MN1AD	RA-228	2.26E+00	(6.98E-01)		PCI/SA	R	8.75E-01	2.08E+00		87%	
Calc	TF	FILTER	H39MN1AD	RA-228	1.15E+00	(6.04E-01)		PCI/SA	R	9.71E-01	2.31E+00		87%	
Calc	TF	FILTER	H39MN1AD	RA-228	1.73E+00	(7.29E-01)		PCI/SA	R	1.08E+00	2.56E+00		87%	
Calc	TF	FILTER	H39MN1AD	RA-228	1.71E+00	(3.92E-01)		PCI/SA	A	5.63E-01	1.34E+00		87%	
Calc	TF	FILTER	H39MN1AD	RA-228	1.62E+00	(2.95E+00)	U4	PCI/SA	R	5.85E+00	1.38E+01		87%	
Calc	TF	FILTER	H4C901AA	RA-228	1.66E-01	(1.46E-01)	U4	PCI/SA	R	2.78E-01	6.37E-01	B	87%	
Calc	TF	FILTER	H4C901AA	RA-228	-1.23E-02	(1.39E-01)	U4	PCI/SA	R	3.09E-01	7.06E-01	B	87%	
Calc	TF	FILTER	H4C901AA	RA-228	5.86E-02	(1.62E-01)	U4	PCI/SA	R	3.40E-01	7.76E-01	B	87%	
Calc	TF	FILTER	H4C901AA	RA-228	7.09E-02	(8.62E-02)	U4	PCI/SA	A	1.78E-01	4.08E-01	B	87%	
Calc	TF	FILTER	H4C901AA	RA-228	6.01E-01	(8.71E-01)	U4	PCI/SA	R	1.76E+00	4.02E+00	B	87%	
Calc	TF	FILTER	H4C901AC	RA-228	4.14E+00	(5.46E-01)		PCI/SA	R	2.39E-01	5.56E-01	S	92%	82%
Calc	TF	FILTER	H4C901AC	RA-228	4.50E+00	(5.97E-01)		PCI/SA	R	2.65E-01	6.17E-01	S	92%	89%

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:78
RADCALC v4.8.24
STL Richland

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Results

6/12/2006 11:05:27 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	TF	FILTER	**H4C901AC**	RA-228	**4.37E+00**	**(5.99E-01)**		PCI/SA	R	2.91E-01	6.78E-01	**S**	92%	86%
Calc	TF	FILTER	**H4C901AC**	RA-228	**4.34E+00**	**(3.35E-01)**		PCI/SA	A	1.53E-01	3.56E-01	**S**	92%	86%
Calc	TF	FILTER	**H4C901AC**	RA-228	**5.56E+00**	**(1.30E+00)**		PCI/SA	R	1.36E+00	3.21E+00	**S**	92%	110%

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() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:80
RADCALC v4.8.24
STL Richland

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Calculated Results

6/12/2006 11:05:27 AM

Detailed Report

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39LT1AD**	**PCI/SA**		04/14/06 09:15	06/10/06 06:54	06/02/06 14:15	RATA22336	1	1.00 SA	
536403,000423					,J6D270397-1 v4.8.24		FILTER			30.7	06/09/06 11:30	RATA22336 Alq	101%	0.247454 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:38	RA-228	43	254	GPC7A	1	N	N	5.1922E-01	1.0000E+00	N	90%	N		1.3643E+00	4.5045E-01	1.0163E+00	
			50	335			Y		(1.200E-02)	(0.000E+00)		7%			(0.000E+00)	4.04115		
1	06/09/06 15:34	RA-228	36	254	GPC7A	1	N	N	5.1922E-01	1.0000E+00	N	90%	N		1.5135E+00	4.5045E-01	1.0163E+00	
			50	335			Y		(1.200E-02)	(0.000E+00)		7%			(0.000E+00)	4.04115		
2	06/09/06 16:29	RA-228	43	254	GPC7A	1	N	N	5.1922E-01	1.0000E+00	N	90%	N		1.6791E+00	4.5045E-01	1.0163E+00	
			50	335			Y		(1.200E-02)	(0.000E+00)		7%			(0.000E+00)	4.04115		
3	06/10/06 06:54	RA-228	41	310	GPC7A	1	N	N	5.1922E-01	1.0000E+00	N	90%	N		8.5269E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.200E-02)	(0.000E+00)		7%			(0.000E+00)	4.04115		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**0.549469**	**U4**	1.01791E-01	0.296996	0.296996	1.00 SA	90%		3.383551		
				(0.75513)		(1.3951E-01)	(0.407802)	(0.407802)	(0.028284)			1.546407		
	06/12/06	RA-228	R	**-0.228815**	**U4**	-3.82090E-02	-0.123678	-0.123678	1.00 SA	90%		3.753697		
				(0.773384)		(1.2909E-01)	(0.417965)	(0.417965)	(0.028284)			1.715578		
	06/12/06	RA-228	R	**0.676243**	**U4**	1.01791E-01	0.365519	0.365519	1.00 SA	90%		4.164205		
				(0.929354)		(1.3951E-01)	(0.50189)	(0.50189)	(0.028284)			1.903195		
	06/12/06	RA-228	A	**0.332299**	**U4**	5.51244E-02	0.179612	0.179612	1.00 SA	90%		2.174966		
				(0.475166)		(7.8592E-02)	(0.256665)	(0.256665)	(0.01633)			0.994039		
	06/12/06	RA-228	R	**1.518191**	**U4**	4.50000E-02	0.820604	0.820604	1.00 SA	90%		21.359947		
				(4.57119)		(1.3542E-01)	(2.470345)	(2.470345)	(0.028284)			9.771487		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39L21AD**	**PCI/SA**		04/14/06 09:20	06/10/06 06:54	06/02/06 14:15	RATA22337	1	1.00 SA	
536403,000424					,J6D270397-2 v4.8.24		FILTER			30.1	06/09/06 11:30	RATA22337 Alq	96%	0.251183 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:38	RA-228	57	214	GPC7B	1	N	N	5.2122E-01	1.0000E+00	N	84%	N		1.3643E+00	4.5045E-01	1.0163E+00	
			50	335			Y		(1.261E-02)	(0.000E+00)		7%			(0.000E+00)	3.981162		
1	06/09/06 15:34	RA-228	56	214	GPC7B	1	N	N	5.2122E-01	1.0000E+00	N	84%	N		1.5135E+00	4.5045E-01	1.0163E+00	
			50	335			Y		(1.261E-02)	(0.000E+00)		7%			(0.000E+00)	3.981162		
2	06/09/06 16:29	RA-228	40	214	GPC7B	1	N	N	5.2122E-01	1.0000E+00	N	84%	N		1.6791E+00	4.5045E-01	1.0163E+00	
			50	335			Y		(1.261E-02)	(0.000E+00)		7%			(0.000E+00)	3.981162		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:2

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Calculated Results

6/12/2006 11:05:27 AM

3	06/10/06 06:54	RA-228	51	265	GPC7B	1	N	N	5.2122E-01	1.0000E+00	N	84%	N	8.5269E+00	4.5045E-01	1.0163E+00
			50	400			N		(1.261E-02)	(0.000E+00)		7%		(0.000E+00)	3.981162	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**2.854511**		5.01194E-01	1.566155	1.566155	1.00 SA	84%		3.302185		
				(0.940876)		(1.5718E-01)	(0.50832)	(0.50832)	(0.028284)			1.497636		
	06/12/06	RA-228	R	**3.040413**		4.81194E-01	1.668152	1.668152	1.00 SA	84%		3.66343		
				(1.032225)		(1.5591E-01)	(0.558174)	(0.558174)	(0.028284)			1.661471		
	06/12/06	RA-228	R	**1.129885**	U4	1.61194E-01	0.619922	0.619922	1.00 SA	84%		4.064067		
				(0.944957)		(1.3382E-01)	(0.517236)	(0.517236)	(0.028284)			1.843171		
	06/12/06	RA-228	A	**2.341603**		3.81194E-01	1.284743	1.284743	1.00 SA	84%		2.122663		
				(0.562107)		(8.6230E-02)	(0.305047)	(0.305047)	(0.01633)			0.962689		
	06/12/06	RA-228	R	**12.725717**		3.57500E-01	6.982088	6.982088	1.00 SA	84%		20.98249		
				(5.441808)		(1.4851E-01)	(2.958637)	(2.958637)	(0.028284)			9.532242		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39L31AD**	**PCI/SA**		04/14/06 09:40	06/10/06 06:54	06/02/06 14:15	RATA22338	1	1.00 SA	
536403,000425					,J6D270397-3 v4.8.24		FILTER			30.4	06/09/06 11:30	RATA22338 Alq	93%	0.250628 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:38	RA-228	67	266	GPC7C	1	N	N	5.0709E-01	1.0000E+00	N	82%	N		1.3643E+00	4.5045E-01	1.0163E+00	
			50	335			Y		(1.091E-02)	(0.000E+00)		7%			(0.000E+00)	3.989974		
1	06/09/06 15:34	RA-228	56	266	GPC7C	1	N	N	5.0709E-01	1.0000E+00	N	82%	N		1.5135E+00	4.5045E-01	1.0163E+00	
			50	335			Y		(1.091E-02)	(0.000E+00)		7%			(0.000E+00)	3.989974		
2	06/09/06 16:29	RA-228	50	266	GPC7C	1	N	N	5.0709E-01	1.0000E+00	N	82%	N		1.6791E+00	4.5045E-01	1.0163E+00	
			50	335			Y		(1.091E-02)	(0.000E+00)		7%			(0.000E+00)	3.989974		
3	06/10/06 06:54	RA-228	39	339	GPC7C	1	N	N	5.0709E-01	1.0000E+00	N	82%	N		8.5269E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.091E-02)	(0.000E+00)		7%			(0.000E+00)	3.989974		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**3.265458**		5.45970E-01	1.787676	1.787676	1.00 SA	82%		3.828958		
				(1.07325)		(1.7079E-01)	(0.578507)	(0.578507)	(0.028284)			1.753434		
	06/12/06	RA-228	R	**2.162915**		3.25970E-01	1.184089	1.184089	1.00 SA	82%		4.24783		
				(1.066825)		(1.5739E-01)	(0.580059)	(0.580059)	(0.028284)			1.945253		
	06/12/06	RA-228	R	**1.516139**	U4	2.05970E-01	0.830011	0.830011	1.00 SA	82%		4.712377		
				(1.111515)		(1.4957E-01)	(0.606628)	(0.606628)	(0.028284)			2.157988		
	06/12/06	RA-228	A	**2.314837**		3.59303E-01	1.267259	1.267259	1.00 SA	82%		2.461276		
				(0.625872)		(9.2081E-02)	(0.339794)	(0.339794)	(0.01633)			1.127118		
	06/12/06	RA-228	R	**-2.523244**	U4	-6.75000E-02	-1.381351	-1.381351	1.00 SA	82%		24.65653		
				(4.982403)		(1.3311E-01)	(2.726464)	(2.726464)	(0.028284)			11.321952		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

RecCnt:4 RADCALC v4.8.24

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

STL Richland

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118466 — Alpha Beta, Ra-228 by GPC , Calculated Results — 6/12/2006 11:05:27 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39L41AD**	**PCI/SA**		04/14/06 10:00	06/10/06 06:54	06/02/06 14:15	RATA22339	1	1.00 SA	
536403,000426					,J6D270397-4 v4.8.24		FILTER			30.9	06/09/06 11:30	RATA22339 Alq	107%	0.251307 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:39	RA-228	56	237	GPC1A	1	N	N	5.3004E-01	1.0000E+00	N	96%	N		1.3648E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.446E-02)	(0.000E+00)		8%			(0.000E+00)	3.9792		
1	06/09/06 15:29	RA-228	46	237	GPC1A	1	N	N	5.3004E-01	1.0000E+00	N	96%	N		1.4999E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.446E-02)	(0.000E+00)		8%			(0.000E+00)	3.9792		
2	06/09/06 16:24	RA-228	51	237	GPC1A	1	N	N	5.3004E-01	1.0000E+00	N	96%	N		1.6639E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.446E-02)	(0.000E+00)		8%			(0.000E+00)	3.9792		
3	06/10/06 06:54	RA-228	36	262	GPC1A	1	N	N	5.3004E-01	1.0000E+00	N	96%	N		8.5296E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.446E-02)	(0.000E+00)		8%			(0.000E+00)	3.9792		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**2.572892**		5.27500E-01	1.412351	1.412351	1.00 SA	96%		2.733306		
				(0.798299)		(1.5454E-01)	(0.430638)	(0.430638)	(0.028284)			1.235206		
	06/12/06	RA-228	R	**1.755514**		3.27500E-01	0.963664	0.963664	1.00 SA	96%		3.003877		
				(0.776816)		(1.4100E-01)	(0.422813)	(0.422813)	(0.028284)			1.357479		
	06/12/06	RA-228	R	**2.542235**		4.27500E-01	1.395522	1.395522	1.00 SA	96%		3.332489		
				(0.917229)		(1.4792E-01)	(0.497076)	(0.497076)	(0.028284)			1.505982		
	06/12/06	RA-228	A	**2.290214**		4.27500E-01	1.257179	1.257179	1.00 SA	96%		1.745459		
				(0.480975)		(8.5403E-02)	(0.26062)	(0.26062)	(0.01633)			0.788789		
	06/12/06	RA-228	R	**1.981432**	**U4**	6.50000E-02	1.087678	1.087678	1.00 SA	96%		17.876082		
				(3.865725)		(1.2664E-01)	(2.121112)	(2.121112)	(0.028284)			8.116755		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39L61AD**	**PCI/SA**		04/14/06 10:15	06/10/06 06:54	06/02/06 14:15	RATA22340	1	1.00 SA	
536403,000427					,J6D270397-5 v4.8.24		FILTER			31.1	06/09/06 11:30	RATA22340 Alq	98%	0.249737 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:39	RA-228	39	253	GPC1C	1	N	N	5.2154E-01	1.0000E+00	N	88%	N		1.3648E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.167E-02)	(0.000E+00)		7%			(0.000E+00)	4.004207		
1	06/09/06 15:29	RA-228	33	253	GPC1C	1	N	N	5.2154E-01	1.0000E+00	N	88%	N		1.4999E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.167E-02)	(0.000E+00)		7%			(0.000E+00)	4.004207		
2	06/09/06 16:24	RA-228	20	253	GPC1C	1	N	N	5.2154E-01	1.0000E+00	N	88%	N		1.6639E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.167E-02)	(0.000E+00)		7%			(0.000E+00)	4.004207		
3	06/10/06 06:54	RA-228	39	215	GPC1C	1	N	N	5.2154E-01	1.0000E+00	N	88%	N		8.5296E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.167E-02)	(0.000E+00)		7%			(0.000E+00)	4.004207		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:5 RADCALC v4.8.24
STL Richland

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Calculated Results

6/12/2006 11:05:28 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**0.799917**	U4	1.47500E-01	0.436362	0.436362	1.00 SA	88%		3.13023		
				(0.715431)		(1.3108E-01)	(0.389468)	(0.389468)	(0.028284)			1.41899		
	06/12/06	RA-228	R	**0.1639**	U4	2.75000E-02	0.089409	0.089409	1.00 SA	88%		3.440093		
				(0.724796)		(1.2158E-01)	(0.395349)	(0.395349)	(0.028284)			1.559456		
	06/12/06	RA-228	R	**-1.537293**	U4	-2.32500E-01	-0.838607	-0.838607	1.00 SA	88%		3.816425		
				(0.665573)		(9.7884E-02)	(0.359866)	(0.359866)	(0.028284)			1.730054		
	06/12/06	RA-228	A	**-0.191158**	U4	-1.91667E-02	-0.104279	-0.104279	1.00 SA	88%		1.998931		
				(0.405539)		(6.7941E-02)	(0.220477)	(0.220477)	(0.01633)			0.906151		
	06/12/06	RA-228	R	**8.219239**		2.42500E-01	4.483668	4.483668	1.00 SA	88%		18.177983		
				(4.489309)		(1.3017E-01)	(2.435376)	(2.435376)	(0.028284)			8.175324		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39L71AD**	**PCI/SA**		04/14/06 10:35	06/10/06 06:54	06/02/06 14:15	RATA22341	1	1.00 SA	
536403,000428					,J6D270397-6 v4.8.24		FILTER			30.8	06/09/06 11:30	RATA22341 Alq	91%	0.248766 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:39	RA-228	50	222	GPC1D	1	N	N	5.3160E-01	1.0000E+00	N	82%	N		1.3648E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	4.019837		
1	06/09/06 15:29	RA-228	47	222	GPC1D	1	N	N	5.3160E-01	1.0000E+00	N	82%	N		1.4999E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	4.019837		
2	06/09/06 16:24	RA-228	36	222	GPC1D	1	N	N	5.3160E-01	1.0000E+00	N	82%	N		1.6639E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	4.019837		
3	06/10/06 06:54	RA-228	39	264	GPC1D	1	N	N	5.3160E-01	1.0000E+00	N	82%	N		8.5296E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	4.019837		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**2.572507**		4.45000E-01	1.397876	1.397876	1.00 SA	82%		3.145442		
				(0.885055)		(1.4624E-01)	(0.474179)	(0.474179)	(0.028284)			1.416899		
	06/12/06	RA-228	R	**2.445971**		3.85000E-01	1.329117	1.329117	1.00 SA	82%		3.456811		
				(0.936385)		(1.4208E-01)	(0.503062)	(0.503062)	(0.028284)			1.557159		
	06/12/06	RA-228	R	**1.16295**	U4	1.65000E-01	0.631936	0.631936	1.00 SA	82%		3.834971		
				(0.893469)		(1.2565E-01)	(0.484144)	(0.484144)	(0.028284)			1.727506		
	06/12/06	RA-228	A	**2.060476**		3.31667E-01	1.119643	1.119643	1.00 SA	82%		2.008645		
				(0.522646)		(7.9835E-02)	(0.281329)	(0.281329)	(0.01633)			0.904816		
	06/12/06	RA-228	R	**4.335554**	U4	1.20000E-01	2.355898	2.355898	1.00 SA	82%		21.260269		
				(4.765716)		(1.3134E-01)	(2.586105)	(2.586105)	(0.028284)			9.656756		

RecCnt:7

RADCALC v4.8.24
STL Richland

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IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Calculated Results

6/12/2006 11:05:28 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39L81AD**	**PCI/SA**		04/14/06 10:05	06/10/06 06:54	06/02/06 14:15	RATA22342	1	1.00 SA	
536403,000429					,J6D270397-7 v4.8.24		FILTER			30.6	06/09/06 11:30	RATA22342 Alq	93%	0.249978 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:39	RA-228	37	86	GPC2A	1	N	N	4.2847E-01	1.0000E+00	N	82%	N		1.3653E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.186E-02)	(0.000E+00)		7%			(0.000E+00)	4.000349		
1	06/09/06 15:34	RA-228	27	86	GPC2A	1	N	N	4.2847E-01	1.0000E+00	N	82%	N		1.5146E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.186E-02)	(0.000E+00)		7%			(0.000E+00)	4.000349		
2	06/09/06 16:29	RA-228	19	86	GPC2A	1	N	N	4.2847E-01	1.0000E+00	N	82%	N		1.6803E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.186E-02)	(0.000E+00)		7%			(0.000E+00)	4.000349		
3	06/10/06 06:54	RA-228	11	82	GPC2A	1	N	N	4.2847E-01	1.0000E+00	N	82%	N		8.5322E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.186E-02)	(0.000E+00)		7%			(0.000E+00)	4.000349		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**3.719339**		5.25000E-01	2.030884	2.030884	1.00 SA	82%		2.544176		
				(0.956329)		(1.2384E-01)	(0.508989)	(0.508989)	(0.028284)			1.080741		
	06/12/06	RA-228	R	**2.554326**		3.25000E-01	1.394748	1.394748	1.00 SA	82%		2.822498		
				(0.876709)		(1.0648E-01)	(0.47196)	(0.47196)	(0.028284)			1.198969		
	06/12/06	RA-228	R	**1.438677**		1.65000E-01	0.785566	0.785566	1.00 SA	82%		3.131267		
				(0.8002)		(9.0208E-02)	(0.434599)	(0.434599)	(0.028284)			1.330131		
	06/12/06	RA-228	A	**2.570781**		3.38333E-01	1.403733	1.403733	1.00 SA	82%		1.635429		
				(0.508101)		(6.2194E-02)	(0.272986)	(0.272986)	(0.01633)			0.694714		
	06/12/06	RA-228	R	**0.664106**	**U4**	1.50000E-02	0.362624	0.362624	1.00 SA	82%		15.581925		
				(3.103854)		(7.0089E-02)	(1.694681)	(1.694681)	(0.028284)			6.595061		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39MC1AD**	**PCI/SA**		04/14/06 09:05	06/10/06 06:54	06/02/06 14:15	RATA22343	1	1.00 SA	
536403,P-0591					,J6D270397-8 v4.8.24		FILTER			30.6	06/09/06 11:30	RATA22343 Alq	86%	0.249691 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:39	RA-228	22	92	GPC2B	1	N	N	4.4537E-01	1.0000E+00	N	77%	N		1.3653E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.051E-02)	(0.000E+00)		6%			(0.000E+00)	4.004957		
1	06/09/06 15:34	RA-228	21	92	GPC2B	1	N	N	4.4537E-01	1.0000E+00	N	77%	N		1.5146E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.051E-02)	(0.000E+00)		6%			(0.000E+00)	4.004957		
2	06/09/06 16:29	RA-228	24	92	GPC2B	1	N	N	4.4537E-01	1.0000E+00	N	77%	N		1.6803E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.051E-02)	(0.000E+00)		6%			(0.000E+00)	4.004957		
3	06/10/06 06:54	RA-228	14	90	GPC2B	1	N	N	4.4537E-01	1.0000E+00	N	77%	N		8.5322E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.051E-02)	(0.000E+00)		6%			(0.000E+00)	4.004957		

RecCnt:8

RADCALC v4.8.24
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Calculated Results

6/12/2006 11:05:28 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**1.536487**		2.10000E-01	0.837997	0.837997	1.00 SA	77%		2.704058		
				(0.725315)		(9.6825E-02)	(0.392646)	(0.392646)	(0.028284)			1.154435		
	06/12/06	RA-228	R	**1.542232**		1.90000E-01	0.84113	0.84113	1.00 SA	77%		2.999871		
				(0.784678)		(9.4736E-02)	(0.425226)	(0.425226)	(0.028284)			1.280725		
	06/12/06	RA-228	R	**2.251244**		2.50000E-01	1.227824	1.227824	1.00 SA	77%		3.328044		
				(0.936519)		(1.0087E-01)	(0.505882)	(0.505882)	(0.028284)			1.420831		
	06/12/06	RA-228	A	**1.776654**		2.16667E-01	0.968984	0.968984	1.00 SA	77%		1.738204		
				(0.473623)		(5.6298E-02)	(0.256234)	(0.256234)	(0.01633)			0.742086		
	06/12/06	RA-228	R	**2.514848**	**U4**	5.50000E-02	1.371593	1.371593	1.00 SA	77%		16.741184		
				(3.598471)		(7.8502E-02)	(1.961017)	(1.961017)	(0.028284)			7.135694		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39MD1AD**	**PCI/SA**		04/14/06 09:25	06/10/06 06:54	06/02/06 14:15	RATA22344	1	1.00 SA	
536403,P-0592					,J6D270397-9 v4.8.24		FILTER			29.9	06/09/06 11:30	RATA22344 Alq	100%	0.249207 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:39	RA-228	30	91	GPC2C	1	N	N	4.3383E-01	1.0000E+00	N	87%	N		1.3653E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(9.436E-03)	(0.000E+00)		7%			(0.000E+00)	4.012723		
1	06/09/06 15:34	RA-228	22	91	GPC2C	1	N	N	4.3383E-01	1.0000E+00	N	87%	N		1.5146E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(9.436E-03)	(0.000E+00)		7%			(0.000E+00)	4.012723		
2	06/09/06 16:29	RA-228	16	91	GPC2C	1	N	N	4.3383E-01	1.0000E+00	N	87%	N		1.6803E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(9.436E-03)	(0.000E+00)		7%			(0.000E+00)	4.012723		
3	06/10/06 06:54	RA-228	20	98	GPC2C	1	N	N	4.3383E-01	1.0000E+00	N	87%	N		8.5322E+00	4.5045E-01	1.0163E+00	
			50	400			N		(9.436E-03)	(0.000E+00)		7%			(0.000E+00)	4.012723		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**2.487863**		3.72500E-01	1.354256	1.354256	1.00 SA	87%		2.456871		
				(0.789694)		(1.1211E-01)	(0.422768)	(0.422768)	(0.028284)			1.048062		
	06/12/06	RA-228	R	**1.574511**		2.12500E-01	0.857077	0.857077	1.00 SA	87%		2.725642		
				(0.734551)		(9.6792E-02)	(0.396806)	(0.396806)	(0.028284)			1.162715		
	06/12/06	RA-228	R	**0.760352**	**U4**	9.25000E-02	0.413894	0.413894	1.00 SA	87%		3.023816		
				(0.690472)		(8.3479E-02)	(0.375102)	(0.375102)	(0.028284)			1.289911		
	06/12/06	RA-228	A	**1.607576**		2.25833E-01	0.875076	0.875076	1.00 SA	87%		1.579309		
				(0.426866)		(5.6673E-02)	(0.230191)	(0.230191)	(0.01633)			0.673708		
	06/12/06	RA-228	R	**6.469511**		1.55000E-01	3.521646	3.521646	1.00 SA	87%		15.848215		
				(3.928085)		(9.2804E-02)	(2.128641)	(2.128641)	(0.028284)			6.797022		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
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RecCnt:10

RADCALC v4.8.24
STL Richland

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Calculated Results

6/12/2006 11:05:28 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39MF1AD**	**PCI/SA**		04/14/06 09:35	06/10/06 06:54	06/02/06 14:15	RATA22345	1	1.00 SA	
536403,P-0593					,J6D270397-10 v4.8.24		FILTER			30.2	06/09/06 11:30	RATA22345 Alq	103%	0.249103 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:39	RA-228	28	72	GPC2D	1	N	N	4.3880E-01	1.0000E+00	N	90%	N		1.3653E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.312E-02)	(0.000E+00)		7%			(0.000E+00)	4.014402		
1	06/09/06 15:34	RA-228	18	72	GPC2D	1	N	N	4.3880E-01	1.0000E+00	N	90%	N		1.5146E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.312E-02)	(0.000E+00)		7%			(0.000E+00)	4.014402		
2	06/09/06 16:29	RA-228	18	72	GPC2D	1	N	N	4.3880E-01	1.0000E+00	N	90%	N		1.6803E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.312E-02)	(0.000E+00)		7%			(0.000E+00)	4.014402		
3	06/10/06 06:54	RA-228	9	86	GPC2D	1	N	N	4.3880E-01	1.0000E+00	N	90%	N		8.5322E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.312E-02)	(0.000E+00)		7%			(0.000E+00)	4.014402		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**2.404189**		3.80000E-01	1.308164	1.308164	1.00 SA	90%		2.108094		
				(0.726336)		(1.0794E-01)	(0.388002)	(0.388002)	(0.028284)			0.883115		
	06/12/06	RA-228	R	**1.263409**		1.80000E-01	0.687444	0.687444	1.00 SA	90%		2.338711		
				(0.627527)		(8.7464E-02)	(0.339158)	(0.339158)	(0.028284)			0.979724		
	06/12/06	RA-228	R	**1.401621**		1.80000E-01	0.762648	0.762648	1.00 SA	90%		2.594556		
				(0.696176)		(8.7464E-02)	(0.37626)	(0.37626)	(0.028284)			1.086901		
	06/12/06	RA-228	A	**1.689739**		2.46667E-01	0.919419	0.919419	1.00 SA	90%		1.35511		
				(0.395252)		(5.4722E-02)	(0.212693)	(0.212693)	(0.01633)			0.567678		
	06/12/06	RA-228	R	**-1.383861**	**U4**	-3.50000E-02	-0.752985	-0.752985	1.00 SA	90%		14.199243		
				(2.547261)		(6.4323E-02)	(1.385337)	(1.385337)	(0.028284)			6.031699		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39MH1AD**	**PCI/SA**		04/14/06 09:55	06/10/06 06:49	06/02/06 14:15	RATA22346	1	1.00 SA	
536403,P-0594					,J6D270397-11 v4.8.24		FILTER			29.8	06/09/06 11:30	RATA22346 Alq	98%	0.248847 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:34	RA-228	40	81	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	85%	N		1.3529E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.018529		
1	06/09/06 15:29	RA-228	15	81	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	85%	N		1.5010E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.018529		
2	06/09/06 16:24	RA-228	19	81	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	85%	N		1.6651E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.018529		
3	06/10/06 06:49	RA-228	17	50	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	85%	N		8.4548E+00	4.5045E-01	1.0163E+00	
			50	285			N		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.018529		

RecCnt:11 RADCALC v4.8.24

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

STL Richland

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Calculated Results

6/12/2006 11:05:28 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**3.724919**		5.97500E-01	2.024725	2.024725	1.00 SA	85%		2.182735		
				(0.887251)		(1.2848E-01)	(0.46804)	(0.46804)	(0.028284)			0.92297		
	06/12/06	RA-228	R	**0.674326**	U4	9.75000E-02	0.366538	0.366538	1.00 SA	85%		2.421517		
				(0.562131)		(8.0661E-02)	(0.304827)	(0.304827)	(0.028284)			1.023939		
	06/12/06	RA-228	R	**1.361916**		1.77500E-01	0.740286	0.740286	1.00 SA	85%		2.686421		
				(0.704772)		(9.0035E-02)	(0.380719)	(0.380719)	(0.028284)			1.135953		
	06/12/06	RA-228	A	**1.920387**		2.90833E-01	1.04385	1.04385	1.00 SA	85%		1.403091		
				(0.421625)		(5.8802E-02)	(0.225322)	(0.225322)	(0.01633)			0.593297		
	06/12/06	RA-228	R	**6.411105**		1.64561E-01	3.484834	3.484834	1.00 SA	85%		12.842446		
				(3.418603)		(8.6114E-02)	(1.847408)	(1.847408)	(0.028284)			5.368629		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39MJ1AD**	**PCI/SA**		04/14/06 10:20	06/10/06 06:49	06/02/06 14:15	RATA22347	1	1.00 SA	
536403,P-0595					,J6D270397-12 v4.8.24		FILTER			29.7	06/09/06 11:30	RATA22347 Alq	106%	0.249322 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:34	RA-228	31	92	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	92%	N		1.3529E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.010875		
1	06/09/06 15:29	RA-228	25	92	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	92%	N		1.5010E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.010875		
2	06/09/06 16:24	RA-228	16	92	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	92%	N		1.6651E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.010875		
3	06/10/06 06:49	RA-228	12	78	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	92%	N		8.4548E+00	4.5045E-01	1.0163E+00	
			50	285			N		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.010875		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**2.198622**		3.90000E-01	1.197375	1.197375	1.00 SA	92%		2.083495		
				(0.679841)		(1.1391E-01)	(0.363798)	(0.363798)	(0.028284)			0.8895		
	06/12/06	RA-228	R	**1.688637**		2.70000E-01	0.919636	0.919636	1.00 SA	92%		2.31142		
				(0.665606)		(1.0283E-01)	(0.358621)	(0.358621)	(0.028284)			0.986807		
	06/12/06	RA-228	R	**0.624455**	U4	9.00000E-02	0.34008	0.34008	1.00 SA	92%		2.56428		
				(0.582928)		(8.3516E-02)	(0.316862)	(0.316862)	(0.028284)			1.09476		
	06/12/06	RA-228	A	**1.503905**		2.50000E-01	0.81903	0.81903	1.00 SA	92%		1.339298		
				(0.371935)		(5.8238E-02)	(0.200377)	(0.200377)	(0.01633)			0.571782		
	06/12/06	RA-228	R	**-1.186693**	U4	-3.36842E-02	-0.646276	-0.646276	1.00 SA	92%		14.02952		
				(2.676545)		(7.5897E-02)	(1.457181)	(1.457181)	(0.028284)			6.063629		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:13

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Calculated Results

6/12/2006 11:05:28 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39ML1AD**	**PCI/SA**		04/14/06 10:30	06/10/06 06:49	06/02/06 14:15	RATA22348	1	1.00 SA	
536403,P-0596					,J6D270397-13 v4.8.24		FILTER			30.8	06/09/06 11:30	RATA22348 Alq	98%	0.249875 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:34	RA-228	18	87	GPC3C	1	N	N	4.7091E-01	1.0000E+00	N	88%	N		1.3529E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.100E-02)	(0.000E+00)		7%			(0.000E+00)	4.001999		
1	06/09/06 15:29	RA-228	18	87	GPC3C	1	N	N	4.7091E-01	1.0000E+00	N	88%	N		1.5010E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.100E-02)	(0.000E+00)		7%			(0.000E+00)	4.001999		
2	06/09/06 16:24	RA-228	18	87	GPC3C	1	N	N	4.7091E-01	1.0000E+00	N	88%	N		1.6651E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.100E-02)	(0.000E+00)		7%			(0.000E+00)	4.001999		
3	06/10/06 06:49	RA-228	9	72	GPC3C	1	N	N	4.7091E-01	1.0000E+00	N	88%	N		8.4548E+00	4.5045E-01	1.0163E+00	
			50	285			N		(1.100E-02)	(0.000E+00)		7%			(0.000E+00)	4.001999		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**0.852598**	**U4**	1.42500E-01	0.465358	0.465358	1.00 SA	88%		2.159248		
				(0.533534)		(8.7999E-02)	(0.289979)	(0.289979)	(0.028284)			0.918026		
	06/12/06	RA-228	R	**0.945868**	**U4**	1.42500E-01	0.516266	0.516266	1.00 SA	88%		2.39546		
				(0.5919)		(8.7999E-02)	(0.321702)	(0.321702)	(0.028284)			1.018454		
	06/12/06	RA-228	R	**1.049342**	**U4**	1.42500E-01	0.572743	0.572743	1.00 SA	88%		2.657514		
				(0.656652)		(8.7999E-02)	(0.356895)	(0.356895)	(0.028284)			1.129869		
	06/12/06	RA-228	A	**0.94927**		1.42500E-01	0.518122	0.518122	1.00 SA	88%		1.387993		
				(0.344189)		(5.0806E-02)	(0.187069)	(0.187069)	(0.01633)			0.590119		
	06/12/06	RA-228	R	**-2.715694**	**U4**	-7.26316E-02	-1.482257	-1.482257	1.00 SA	88%		14.385075		
				(2.519452)		(6.6981E-02)	(1.372507)	(1.372507)	(0.028284)			6.18294		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	TF	FILTER	*STLE	Ra228WoBS	**H39MN1AD**	**PCI/SA**		04/14/06 09:10	06/10/06 06:49	06/02/06 14:15	RATA22349	1	1.00 SA	
536403,P-0597					,J6D270397-14 v4.8.24		FILTER			30.8	06/09/06 11:30	RATA22349 Alq	98%	0.248417 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:34	RA-228	28	76	GPC3D	1	N	N	4.6786E-01	1.0000E+00	N	87%	N		1.3529E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.025482		
1	06/09/06 15:29	RA-228	18	76	GPC3D	1	N	N	4.6786E-01	1.0000E+00	N	87%	N		1.5010E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.025482		
2	06/09/06 16:24	RA-228	21	76	GPC3D	1	N	N	4.6786E-01	1.0000E+00	N	87%	N		1.6651E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.025482		
3	06/10/06 06:49	RA-228	13	62	GPC3D	1	N	N	4.6786E-01	1.0000E+00	N	87%	N		8.4548E+00	4.5045E-01	1.0163E+00	
			50	285			N		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.025482		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:14

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Calculated Results

6/12/2006 11:05:28 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**2.257856**		3.70000E-01	1.225152	1.225152	1.00 SA	87%		2.079944		
				(0.698039)		(1.0805E-01)	(0.372172)	(0.372172)	(0.028284)			0.875119		
	06/12/06	RA-228	R	**1.15088**		1.70000E-01	0.624488	0.624488	1.00 SA	87%		2.307481		
				(0.60448)		(8.7607E-02)	(0.326034)	(0.326034)	(0.028284)			0.970853		
	06/12/06	RA-228	R	**1.727409**		2.30000E-01	0.937323	0.937323	1.00 SA	87%		2.55991		
				(0.728934)		(9.4207E-02)	(0.391851)	(0.391851)	(0.028284)			1.077061		
	06/12/06	RA-228	A	**1.712048**		2.56667E-01	0.928988	0.928988	1.00 SA	87%		1.337015		
				(0.392145)		(5.6001E-02)	(0.210385)	(0.210385)	(0.01633)			0.562538		
	06/12/06	RA-228	R	**1.619052**	**U4**	4.24561E-02	0.878526	0.878526	1.00 SA	87%		13.763558		
				(2.949437)		(7.7222E-02)	(1.599621)	(1.599621)	(0.028284)			5.851803		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	TF	FILTER	*STLE	Ra228WoBS	**H4C901AA**	**PCI/SA**	**B**	04/14/06 09:15	06/10/06 06:50	06/02/06 14:15	RASC4104	1	1.00 SA	
0,INTRA-LAB BLANK					,J6D280000-466		FILTER			30.9	06/09/06 11:30	RASC4104 Alq	97%	1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:34	RA-228	22	131	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	87%	N		1.3537E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
1	06/09/06 15:29	RA-228	16	131	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	87%	N		1.5017E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
2	06/09/06 16:20	RA-228	18	131	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	87%	N		1.6504E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
3	06/10/06 06:50	RA-228	20	134	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	87%	N		8.4564E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**0.166404**	**U4**	1.12500E-01	0.363477	0.363477	1.00 SA	87%		0.636825		
				(0.145993)		(9.8075E-02)	(0.318312)	(0.318312)	(0.017321)			0.278493		
	06/12/06	RA-228	R	**-0.012307**	**U4**	-7.50000E-03	-0.026883	-0.026883	1.00 SA	87%		0.706491		
				(0.139427)		(8.4963E-02)	(0.304547)	(0.304547)	(0.017321)			0.308959		
	06/12/06	RA-228	R	**0.058611**	**U4**	3.25000E-02	0.128023	0.128023	1.00 SA	87%		0.776427		
				(0.161594)		(8.9547E-02)	(0.352904)	(0.352904)	(0.017321)			0.339543		
	06/12/06	RA-228	A	**0.070903**	**U4**	4.58333E-02	0.154873	0.154873	1.00 SA	87%		0.407945		
				(0.086195)		(5.2553E-02)	(0.188153)	(0.188153)	(0.01)			0.1784		
	06/12/06	RA-228	R	**0.600623**	**U4**	6.50000E-02	1.311942	1.311942	1.00 SA	87%		4.017883		
				(0.870684)		(9.4008E-02)	(1.900569)	(1.900569)	(0.017321)			1.759573		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118466

Alpha Beta, Ra-228 by GPC , Calculated Results

6/12/2006 11:05:29 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	TF	FILTER	*STLE	Ra228WoBS	**H4C901AC**	**PCI/SA**	**S**	04/14/06 09:15	06/10/06 06:50	06/02/06 14:15	RASC4104	1	1.00 SA	
0,INTRA-LAB CHECK					,J6D280000-466		FILTER			30.7	06/09/06 11:30	RASC4104 Alq	103%	1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/09/06 14:34	RA-228	155	100	GPC4B	1	N	N	4.6217E-01	1.0000E+00	N	92%	N		1.3537E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.048E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
1	06/09/06 15:29	RA-228	152	100	GPC4B	1	N	N	4.6217E-01	1.0000E+00	N	92%	N		1.5017E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.048E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
2	06/09/06 16:20	RA-228	136	100	GPC4B	1	N	N	4.6217E-01	1.0000E+00	N	92%	N		1.6504E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.048E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
3	06/10/06 06:50	RA-228	41	83	GPC4B	1	N	N	4.6217E-01	1.0000E+00	N	92%	N		8.4564E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.048E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/12/06	RA-228	R	**4.139703**		2.85000E+00	9.042355	9.042355	1.00 SA	92%	82%	0.556325		
				(0.546441)		(2.5025E-01)	(1.093489)	(1.093489)	(0.017321)			0.238941		
	06/12/06	RA-228	R	**4.495883**		2.79000E+00	9.82036	9.82036	1.00 SA	92%	89%	0.617184		
				(0.596531)		(2.4784E-01)	(1.194901)	(1.194901)	(0.017321)			0.26508		
	06/12/06	RA-228	R	**4.374231**		2.47000E+00	9.554635	9.554635	1.00 SA	92%	86%	0.67828		
				(0.598696)		(2.3457E-01)	(1.206047)	(1.206047)	(0.017321)			0.29132		
	06/12/06	RA-228	A	**4.336606**		2.70333E+00	9.47245	9.47245	1.00 SA	92%	86%	0.356377		
				(0.335474)		(1.4106E-01)	(0.67314)	(0.67314)	(0.01)			0.153063		
	06/12/06	RA-228	R	**5.55785**		6.12500E-01	12.140014	12.140014	1.00 SA	92%	110%	3.20999		
				(1.301199)		(1.3007E-01)	(2.768663)	(2.768663)	(0.017321)			1.359896		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16

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UST Number: H39LT1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-A File: [quad7.sample.A]H39LT1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.A_1;2912

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00043	0050	01152	1700	9-JUN-2006 14:38:50.48
2	00000	00036	0050	01173	1700	9-JUN-2006 15:34:06.17
3	00000	00043	0050	01155	1700	9-JUN-2006 16:29:21.93

Bkg File: [quad7.bkgrnd]2006-06-09_0222.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00254	0335	0.76	07709	1700	9-JUN-2006 02:22:51.91

UST Number: H39LT1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 7-A File: [quad7.sample.A]H39LT1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.A_1;2913

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00041	0050	01158	1700	10-JUN-2006 06:54:25.69

Bkg File: [quad7.bkgrnd]2006-06-10_0137.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00310	0400	0.78	09207	1700	10-JUN-2006 01:37:34.72

UST Number: H39L21AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-B File: [quad7.sample.B]H39L21AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.B_1;2899

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00057	0050	01152	1700	9-JUN-2006 14:38:50.48
2	00000	00056	0050	01173	1700	9-JUN-2006 15:34:06.17
3	00000	00040	0050	01155	1700	9-JUN-2006 16:29:21.93

Bkg File: [quad7.bkgrnd]2006-06-09_0222.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00214	0335	0.64	07709	1700	9-JUN-2006 02:22:51.91

UST Number: H39L21AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 7-B File: [quad7.sample.B]H39L21AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.B_1;2900

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00051	0050	01158	1700	10-JUN-2006 06:54:25.69

Bkg File: [quad7.bkgrnd]2006-06-10_0137.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00265	0400	0.66	09207	1700	10-JUN-2006 01:37:34.72

UST Number: H39L31AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-C File: [quad7.sample.C]H39L31AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.C_1;2904

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00067	0050	01152	1700	9-JUN-2006 14:38:50.48
2	00000	00056	0050	01173	1700	9-JUN-2006 15:34:06.17
3	00000	00050	0050	01155	1700	9-JUN-2006 16:29:21.93

Bkg File: [quad7.bkgrnd]2006-06-09_0222.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00266	0335	0.79	07709	1700	9-JUN-2006 02:22:51.91

UST Number: H39L31AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 7-C File: [quad7.sample.C]H39L31AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.C_1;2905

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00039	0050	01158	1700	10-JUN-2006 06:54:25.69

Bkg File: [quad7.bkgrnd]2006-06-10_0137.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00339	0400	0.85	09207	1700	10-JUN-2006 01:37:34.72

UST Number: H39L41AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-A File: [quad1.sample.A]H39L41AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.A_1;2961

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00056	0050	01179	1650	9-JUN-2006 14:39:01.91
2	00000	00046	0050	01160	1650	9-JUN-2006 15:29:16.72
3	00000	00051	0050	01172	1650	9-JUN-2006 16:24:32.50

Bkg File: [quad1.bkgrnd]2006-06-09_0332.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00237	0400	0.59	09307	1650	9-JUN-2006 03:32:26.03

UST Number: H39L41AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-A File: [quad1.sample.A]H39L41AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.A_1;2962

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00036	0050	01163	1650	10-JUN-2006 06:54:35.31

Bkg File: [quad1.bkgrnd]2006-06-10_0141.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00262	0400	0.66	09297	1650	10-JUN-2006 01:41:38.43

UST Number: H39L61AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-C File: [quad1.sample.C]H39L61AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.C_1;2957

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00039	0050	01179	1650	9-JUN-2006 14:39:01.91
2	00000	00033	0050	01160	1650	9-JUN-2006 15:29:16.72
3	00000	00020	0050	01172	1650	9-JUN-2006 16:24:32.50

Bkg File: [quad1.bkgrnd]2006-06-09_0332.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00253	0400	0.63	09307	1650	9-JUN-2006 03:32:26.03

UST Number: H39L61AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-C File: [quad1.sample.C]H39L61AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.C_1;2958

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00039	0050	01163	1650	10-JUN-2006 06:54:35.31

Bkg File: [quad1.bkgrnd]2006-06-10_0141.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00215	0400	0.54	09297	1650	10-JUN-2006 01:41:38.43

UST Number: H39L71AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-D File: [quad1.sample.D]H39L71AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.D_1;2960

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00050	0050	01179	1650	9-JUN-2006 14:39:01.91
2	00000	00047	0050	01160	1650	9-JUN-2006 15:29:16.72
3	00000	00036	0050	01172	1650	9-JUN-2006 16:24:32.50

Bkg File: [quad1.bkgrnd]2006-06-09_0332.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00222	0400	0.56	09307	1650	9-JUN-2006 03:32:26.03

UST Number: H39L71AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-D File: [quad1.sample.D]H39L71AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.D_1;2961

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00039	0050	01163	1650	10-JUN-2006 06:54:35.31

Bkg File: [quad1.bkgrnd]2006-06-10_0141.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00264	0400	0.66	09297	1650	10-JUN-2006 01:41:38.43

UST Number: H39L81AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-A File: [quad2.sample.A]H39L81AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.A_1;3502

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00037	0050	01179	1810	9-JUN-2006 14:39:13.69
2	00000	00027	0050	01159	1810	9-JUN-2006 15:34:29.53
3	00000	00019	0050	01177	1810	9-JUN-2006 16:29:45.44

Bkg File: [quad2.bkgrnd]2006-06-09_0332.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00086	0400	0.22	09369	1810	9-JUN-2006 03:32:30.37

UST Number: H39L81AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-A File: [quad2.sample.A]H39L81AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.A_1;3503

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00011	0050	01183	1810	10-JUN-2006 06:54:45.21

Bkg File: [quad2.bkgrnd]2006-06-10_0141.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00082	0400	0.21	09379	1810	10-JUN-2006 01:41:44.97

UST Number: H39MC1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-B File: [quad2.sample.B]H39MC1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.B_1;3499

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00022	0050	01179	1810	9-JUN-2006 14:39:13.69
2	00000	00021	0050	01159	1810	9-JUN-2006 15:34:29.53
3	00000	00024	0050	01177	1810	9-JUN-2006 16:29:45.44

Bkg File: [quad2.bkgrnd]2006-06-09_0332.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00092	0400	0.23	09369	1810	9-JUN-2006 03:32:30.37

UST Number: H39MC1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-B File: [quad2.sample.B]H39MC1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.B_1;3500

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00014	0050	01183	1810	10-JUN-2006 06:54:45.21

Bkg File: [quad2.bkgrnd]2006-06-10_0141.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00090	0400	0.23	09379	1810	10-JUN-2006 01:41:44.97

UST Number: H39MD1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-C File: [quad2.sample.C]H39MD1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.C_1;3500

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00030	0050	01179	1810	9-JUN-2006 14:39:13.69
2	00000	00022	0050	01159	1810	9-JUN-2006 15:34:29.53
3	00000	00016	0050	01177	1810	9-JUN-2006 16:29:45.44

Bkg File: [quad2.bkgrnd]2006-06-09_0332.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00091	0400	0.23	09369	1810	9-JUN-2006 03:32:30.37

UST Number: H39MD1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-C File: [quad2.sample.C]H39MD1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.C_1;3501

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00020	0050	01183	1810	10-JUN-2006 06:54:45.21

Bkg File: [quad2.bkgrnd]2006-06-10_0141.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00098	0400	0.25	09379	1810	10-JUN-2006 01:41:44.97

UST Number: H39MF1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-D File: [quad2.sample.D]H39MF1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.D_1;3499

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00028	0050	01179	1810	9-JUN-2006 14:39:13.69
2	00000	00018	0050	01159	1810	9-JUN-2006 15:34:29.53
3	00000	00018	0050	01177	1810	9-JUN-2006 16:29:45.44

Bkg File: [quad2.bkgrnd]2006-06-09_0332.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00072	0400	0.18	09369	1810	9-JUN-2006 03:32:30.37

UST Number: H39MF1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-D File: [quad2.sample.D]H39MF1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.D_1;3500

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00009	0050	01183	1810	10-JUN-2006 06:54:45.21

Bkg File: [quad2.bkgrnd]2006-06-10_0141.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00086	0400	0.22	09379	1810	10-JUN-2006 01:41:44.97

UST Number: H39MH1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-A File: [quad3.sample.A]H39MH1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.A_1;5416

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00040	0050	01261	1920	9-JUN-2006 14:34:23.70
2	00000	00015	0050	01250	1920	9-JUN-2006 15:29:39.56
3	00000	00019	0050	01285	1920	9-JUN-2006 16:24:55.51

Bkg File: [quad3.bkgrnd]2006-06-09_0332.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00081	0400	0.20	10031	1920	9-JUN-2006 03:32:44.16

UST Number: H39MH1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-A File: [quad3.sample.A]H39MH1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.A_1;5417

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00017	0050	01279	1920	10-JUN-2006 06:49:54.25

Bkg File: [quad3.bkgrnd]2006-06-09_2341.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00050	0285	0.18	07196	1920	9-JUN-2006 23:41:27.92

UST Number: H39MJ1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-B File: [quad3.sample.B]H39MJ1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.B_1;5425

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00031	0050	01261	1920	9-JUN-2006 14:34:23.70
2	00000	00025	0050	01250	1920	9-JUN-2006 15:29:39.56
3	00000	00016	0050	01285	1920	9-JUN-2006 16:24:55.51

Bkg File: [quad3.bkgrnd]2006-06-09_0332.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00092	0400	0.23	10031	1920	9-JUN-2006 03:32:44.16

UST Number: H39MJ1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-B File: [quad3.sample.B]H39MJ1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.B_1;5426

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00012	0050	01279	1920	10-JUN-2006 06:49:54.25

Bkg File: [quad3.bkgrnd]2006-06-09_2341.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00078	0285	0.27	07196	1920	9-JUN-2006 23:41:27.92

UST Number: H39ML1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-C File: [quad3.sample.C]H39ML1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.C_1;5430

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00018	0050	01261	1920	9-JUN-2006 14:34:23.70
2	00000	00018	0050	01250	1920	9-JUN-2006 15:29:39.56
3	00000	00018	0050	01285	1920	9-JUN-2006 16:24:55.51

Bkg File: [quad3.bkgrnd]2006-06-09_0332.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00087	0400	0.22	10031	1920	9-JUN-2006 03:32:44.16

UST Number: H39ML1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-C File: [quad3.sample.C]H39ML1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.C_1;5431

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00009	0050	01279	1920	10-JUN-2006 06:49:54.25

Bkg File: [quad3.bkgrnd]2006-06-09_2341.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00072	0285	0.25	07196	1920	9-JUN-2006 23:41:27.92

UST Number: H39MN1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-D File: [quad3.sample.D]H39MN1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.D_1;5410

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00028	0050	01261	1920	9-JUN-2006 14:34:23.70
2	00000	00018	0050	01250	1920	9-JUN-2006 15:29:39.56
3	00000	00021	0050	01285	1920	9-JUN-2006 16:24:55.51

Bkg File: [quad3.bkgrnd]2006-06-09_0332.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00076	0400	0.19	10031	1920	9-JUN-2006 03:32:44.16

UST Number: H39MN1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-D File: [quad3.sample.D]H39MN1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.D_1;5411

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00013	0050	01279	1920	10-JUN-2006 06:49:54.25

Bkg File: [quad3.bkgrnd]2006-06-09_2341.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00062	0285	0.22	07196	1920	9-JUN-2006 23:41:27.92

UST Number: H4C901AA Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 4-A File: [quad4.sample.A]H4C901AA.180
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.A_1;5434

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00022	0050	01207	1850	9-JUN-2006 14:34:40.15
2	00000	00016	0050	01204	1850	9-JUN-2006 15:29:56.01
3	00000	00018	0050	01217	1850	9-JUN-2006 16:20:11.08

Bkg File: [quad4.bkgrnd]2006-06-09_0327.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00131	0400	0.33	09646	1850	9-JUN-2006 03:27:47.54

UST Number: H4C901AA Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 4-A File: [quad4.sample.A]H4C901AA.430
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.A_1;5435

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00020	0050	01217	1850	10-JUN-2006 06:50:00.61

Bkg File: [quad4.bkgrnd]2006-06-10_0137.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00134	0400	0.34	09707	1850	10-JUN-2006 01:37:21.90

UST Number: H4C901AC Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 4-B File: [quad4.sample.B]H4C901AC.180
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.B_1;5433

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00155	0050	01207	1850	9-JUN-2006 14:34:40.15
2	00000	00152	0050	01204	1850	9-JUN-2006 15:29:56.01
3	00000	00136	0050	01217	1850	9-JUN-2006 16:20:11.08

Bkg File: [quad4.bkgrnd]2006-06-09_0327.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00100	0400	0.25	09646	1850	9-JUN-2006 03:27:47.54

UST Number: H4C901AC Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 4-B File: [quad4.sample.B]H4C901AC.430
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.B_1;5434

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00041	0050	01217	1850	10-JUN-2006 06:50:00.61

Bkg File: [quad4.bkgrnd]2006-06-10_0137.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00083	0400	0.21	09707	1850	10-JUN-2006 01:37:21.90

RADIUM 226

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/9/2006 2:04:56 PM

Lot No., Due Date: J6D270397; 05/25/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6118465; RRA2267 Ra-226 by ASC-7

SDG, Matrix: 31509; FILTER

1.0 COC

	Yes	No	N/A
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		

2.0 QC Batch

	Yes	No	N/A
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?	✓		

3.0 QC & Samples

	Yes	No	N/A
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?			✓
3.5 Are the sample yields and MDAs within contract limits?	✓		

4.0 Raw Data

	Yes	No	N/A
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?	✓		
4.4 Were spectra reviewed/meet contractual requirements?	✓		
4.5 Were raw counts reviewed for anomalies?	✓		

5.0 Other

	Yes	No	N/A
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level Review Pam Andersen **Date** 4·9·06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6118465

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: Sheryl R Wilson Date: 6-12-06

6/1/2006 3:00:26 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Balance Id:1120373922
Pipet #:

AnalyDueDate: 05/24/2006

Sep1 DT/Tm Tech:

Batch: 6118465 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6118466, BXTF
All Tests: 6118461 7YSR, 6118462 9NS1, 6118463 BAS7, 6118464 BDS8, 6118465 BXTE, 6118466 BXTF,

Sep2 DT/Tm Tech:

Prep Tech: HansenM,HoganS

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:
1 **H39LT-1-AC** J6D270397-1-SAMP	0.833sa,g	505.11sa,g	150.05g,in	0.2475g	RATA22336 05/26/06		G"	1729	6/2/06 OP	
				7.5708 / 7.64 = 0.9909				6/4/06 1217 R 1HB 6/8/06 1148 R		
04/14/2006 09:15		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
2 **H39L2-1-AC** J6D270397-2-SAMP	0.833sa,g	501.89sa,g	151.34g,in	0.2512g	RATA22337 05/26/06		G4	1731	6/2/06 OP	
				7.5807 / 7.257 = 1.0446				6/4/06 1217 R 2RC 6/8/06 1147 R		
04/14/2006 09:20		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
3 **H39L3-1-AC** J6D270397-3-SAMP	0.833sa,g	501.04sa,g	150.75g,in	0.2506g	RATA22338 05/26/06		G7	1731	6/2/06 OP	
				7.5509 / 7.021 = 1.0755				6/4/06 1217 R 3RC 6/8/06 1150 R		
04/14/2006 09:40		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
4 **H39L4-1-AC** J6D270397-4-SAMP	0.833sa,g	500.35sa,g	150.95g,in	0.2513g	RATA22339 05/26/06		G11	1731	6/2/06 OP	
				7.5906 / 8.127 = 0.9340				6/4/06 1217 R 4UA 6/8/06 1148 R		
04/14/2006 10:00		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

6/1/2006 3:00:27 PM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 05/24/2006

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Batch: 6118465 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6118466, BXTF

Balance Id:1120373922
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: HansenM,HoganS

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:
5 H39L6-1-AC J6D270397-5-SAMP	0.833sa,g	501.86sa,g	150.46g,in	0.2497g	RATA22340 05/26/06		G12	1732	6/2/06 OP	
			7.5807 / 7.417 = 1.0221					6/4/06 1217 R; 6RD 6/8/06 1149 R		
04/14/2006 10:15		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
6 H39L7-1-AC J6D270397-6-SAMP	0.833sa,g	504.79sa,g	150.75g,in	0.2488g	RATA22341 05/26/06		G13	1732	6/2/06 OP	
			7.4913 / 6.838 = 1.0955					6/4/06 1217 R; 7HA 6/8/06 1149 R		
04/14/2006 10:35		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
7 H39L8-1-AC J6D270397-7-SAMP	0.833sa,g	500.81sa,g	150.29g,in	0.25g	RATA22342 05/26/06		G6	1732	6/2/06 OP	
			7.5410 / 6.983 = 1.0799					6/4/06 1217 R; 8RD 6/8/06 1148 R		
04/14/2006 10:05		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
8 H39MC-1-AC J6D270397-8-SAMP	0.833sa,g	501.22sa,g	150.24g,in	0.2497g	RATA22343 05/26/06		G8	1733	6/2/06 OP	
			7.5509 / 6.521 = 1.1579					6/4/06 1217 R; 9RA 6/8/06 1146 R		
04/14/2006 09:05		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

6/1/2006 3:00:27 PM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 05/24/2006

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: HansenM,HoganS

Batch: 6118465 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6118466, BXTF

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:
9 H39MD-1-AC J6D270397-9-SAMP	0.833sa,g	501.49sa,g	150.03g,in	0.2492g	RATA22344 05/26/06		9" ~~G10~~ 6/2/06 OKE	1931	6/2/06 OKE	
			7.5509 / 7.520 = 1.0041					6/4/06 1234 R; DSA 6/8/06 1227 R		
04/14/2006 09:25		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
10H39MF-1-AC J6D270397-10-SAMP	0.833sa,g	503.84sa,g	150.67g,in	0.2491g	RATA22345 05/26/06		G4	1931	6/2/06 OKE	
			7.5708 / 7.794 = 0.9714					6/4/06 1234 R; EHA 6/8/06 1224 R		
04/14/2006 09:35		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
11H39MH-1-AC J6D270397-11-SAMP	0.833sa,g	502.45sa,g	150.10g,in	0.2488g	RATA22346 05/26/06		G7	1932	6/2/06 OKE	
			7.5409 / 7.426 = 1.0155					6/4/06 1234 R; FSA 6/8/06 ~~1226~~ 1225		
04/14/2006 09:55		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
12H39MJ-1-AC J6D270397-12-SAMP	0.833sa,g	501.66sa,g	150.15g,in	0.2493g	RATA22347 05/26/06		G11	1932	6/2/06 OKE	
			7.5708 / 8.062 = 0.9391					6/4/06 1234 R; GSB 6/8/06 1225 R		
04/14/2006 10:20		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:

6/1/2006 3:00:27 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Balance Id:1120373922
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: HansenM,HoganS

AnalyDueDate: 05/24/2006

Batch: 6118465 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6118466, BXTF

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:
13H39ML-1-AC J6D270397-13-SAMP	0.833sa,g	502.05sa,g	150.60g,in	0.2499g	RATA22348 05/26/06		G12 RC 9"	1932 2018	6/2/06 ORD 6/2/06 ORD	
			7.5409 / 7.410 = 1.0176						6/4/06 1234 R	
								JSB	6/8/06 1222 R	
04/14/2006 10:30		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
14H39MN-1-AC J6D270397-14-SAMP	0.833sa,g	503.99sa,g	150.30g,in	0.2484g	RATA22349 05/26/06		G13	1933	6/2/06 ORD	
			7.5310 / 7.346 = 1.0252						6/4/06 1234 R	
								LMC	6/8/06 1223 R	
04/14/2006 09:10		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
15H4C9R-1-AA-B J6D280000-465-BLK			1.00sa,in	1.00sa	RATA22350 05/26/06		G6	1933	6/2/06 ORD	
			7.5807 / 7.342 = 1.0325						6/4/06 1234 R	
								QMB	6/8/06 1220 R	
04/14/2006 09:15		AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:	
16H4C9R-1-AC-C J6D280000-465-LCS			1.00sa,in	1.00sa	RS 6/3/06 ~~RATA22350~~ 05/26/06 RASC 4104		G8	1933	6/2/06 ORD	
			7.5355 / 7.795 = 0.9667						6/4/06 1234 R	
								FMA	6/8/06 1226 R	
04/14/2006 09:15		AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:	

6/9/2006 1:46:05 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/9/2005, 6/14/2006, Batch: '6118465', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6118465						
AC		**InSep2**	**HoganS**	5/19/2006 2:14:02 PM		
SC			wagarr	IsBatched	4/28/2006 2:39:32 PM	ICOC_RADCALC v4.8.22
SC			HoganS	InPrep	5/19/2006 2:14:02 PM	RICH-RC-5005 Revision 5
SC			WhelandS	Prep1C	6/2/2006 2:44:38 PM	RICH-RC-5005 REVISION 5
SC			DAWKINSO	InCnt1	6/2/2006 5:01:24 PM	RICH-RD-0007 REVISION 5
SC			DAWKINSO	Cnt1C	6/2/2006 8:05:37 PM	RICH-RD-0007 REVISION 5
SC			StringerR	InSep2	6/4/2006 12:44:24 PM	RICH-RC-5005 REVISION 5
AC			**WhelandS**	6/2/2006 2:44:38 PM		
AC			**DAWKINSO**	6/2/2006 5:01:24 PM		
AC			**DAWKINSO**	6/2/2006 8:05:37 PM		
AC			**StringerR**	6/4/2006 12:44:24 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.18

6/9/2006 1:46:04 PM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Mda	Sample Date / Units	Expected	Yield	Volumes
31509	**9H39L210**			**J6D2703972**	000424	FILTER	4/27/2006 10:30:00		4/14/2006 9:20:00 AM			
ALPHA	BAS7		0	5/29/2006 10:28:04	**1.7348E+00**	1.51E+00	1.521E+00	6.383E+00	PCI/SA	1.0	1.0E+0	2.075E-2
BETA	BDS8		0	5/27/2006 12:07:31 PM	**8.2447E+00**	1.694E+00	1.786E+00	6.161E+00	PCI/SA	1.0	1.0E+0	3.443E-2
RA-226	BXTE		0	6/8/2006 2:47:00 PM	**-8.4317E-02**	1.523E-01	1.526E-01	6.313E-01	PCI/SA	0.957	8.33E-1	2.512E-1
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.1117E-01**	7.861E-02	7.921E-02	2.727E-01	PCI/SA	1.028	1.0E+0	3.543E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**3.1725E-01**	1.058E-01	1.093E-01	9.553E-02	PCI/SA	1.028	1.0E+0	3.543E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**7.0501E-02**	4.985E-02	5.023E-02	9.553E-02	PCI/SA	1.028	1.0E+0	3.543E-2
U-234	7YSR		0	5/29/2006 11:33:23	**1.7024E-01**	1.691E-01	1.697E-01	7.32E-01	PCI/SA	0.816	1.0E+0	3.234E-2
U-235	7YSR		0	5/29/2006 11:33:23	**-5.6791E-02**	2.318E-02	2.365E-02	7.015E-01	PCI/SA	0.816	1.0E+0	3.234E-2
U-238	7YSR		0	5/29/2006 11:33:23	**2.1756E-01**	1.678E-01	1.687E-01	5.405E-01	PCI/SA	0.816	1.0E+0	3.234E-2
31509	**9H39L310**			**J6D2703973**	000425	FILTER	4/27/2006 10:30:00		4/14/2006 9:40:00 AM			
ALPHA	BAS7		0	5/29/2006 10:28:04	**4.891E+00**	1.88E+00	1.947E+00	5.34E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	5/27/2006 12:07:31 PM	**1.1426E+01**	1.851E+00	2.014E+00	6.408E+00	PCI/SA	1.0	1.0E+0	3.406E-2
RA-226	BXTE		0	6/8/2006 2:50:00 PM	**2.6736E-01**	1.3E-01	1.33E-01	4.066E-01	PCI/SA	0.93	8.33E-1	2.506E-1
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**4.3868E-02**	6.936E-02	6.947E-02	3.229E-01	PCI/SA	1.075	1.0E+0	3.517E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**3.7557E-01**	1.252E-01	1.296E-01	1.131E-01	PCI/SA	1.075	1.0E+0	3.517E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**0.0E+00**	0.0E+00	5.111E-02	1.131E-01	PCI/SA	1.075	1.0E+0	3.517E-2
U-234	7YSR		0	5/29/2006 11:33:28	**2.1744E-01**	1.677E-01	1.686E-01	5.402E-01	PCI/SA	0.878	1.0E+0	3.241E-2
U-235	7YSR		0	5/29/2006 11:33:28	**-2.8384E-02**	1.639E-02	1.655E-02	5.896E-01	PCI/SA	0.878	1.0E+0	3.241E-2
U-238	7YSR		0	5/29/2006 11:33:28	**-2.8384E-02**	1.639E-02	1.655E-02	5.896E-01	PCI/SA	0.878	1.0E+0	3.241E-2
31509	**9H39L410**			**J6D2703974**	000426	FILTER	4/27/2006 10:30:00		4/14/2006 10:00:00 AM			
ALPHA	BAS7		0	5/29/2006 10:28:04	**4.845E+00**	1.991E+00	2.052E+00	6.537E+00	PCI/SA	1.0	1.0E+0	2.109E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.188E+01**	1.917E+00	2.087E+00	6.639E+00	PCI/SA	1.0	1.0E+0	3.359E-2
RA-226	BXTE		0	6/8/2006 2:48:01 PM	**2.2227E-01**	1.426E-01	1.447E-01	4.838E-01	PCI/SA	1.071	8.33E-1	2.513E-1
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.361E-01**	7.858E-02	7.952E-02	1.229E-01	PCI/SA	0.999	1.0E+0	3.427E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**1.7263E-01**	8.631E-02	8.77E-02	1.17E-01	PCI/SA	0.999	1.0E+0	3.427E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**4.3157E-02**	4.316E-02	4.333E-02	1.17E-01	PCI/SA	0.999	1.0E+0	3.427E-2
U-234	7YSR		0	5/29/2006 11:33:30	**-8.2472E-03**	8.247E-03	8.274E-03	4.148E-01	PCI/SA	1.047	1.0E+0	3.27E-2
U-235	7YSR		0	5/29/2006 11:33:30	**8.6551E-02**	1.037E-01	1.039E-01	4.71E-01	PCI/SA	1.047	1.0E+0	3.27E-2
U-238	7YSR		0	5/29/2006 11:33:30	**1.0305E-01**	1.03E-01	1.034E-01	2.793E-01	PCI/SA	1.047	1.0E+0	3.27E-2
31509	**9H39L610**			**J6D2703975**	000427	FILTER	4/27/2006 10:30:00		4/14/2006 10:15:00 AM			
ALPHA	BAS7		0	5/29/2006 10:28:04	**2.8178E+00**	1.533E+00	1.56E+00	5.233E+00	PCI/SA	1.0	1.0E+0	2.078E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.7494E+01**	2.091E+00	2.528E+00	6.677E+00	PCI/SA	1.0	1.0E+0	3.364E-2
RA-226	BXTE		0	6/8/2006 2:49:00 PM	**1.622E-01**	1.357E-01	1.368E-01	4.79E-01	PCI/SA	0.978	8.33E-1	2.497E-1
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**9.5632E-02**	6.896E-02	6.947E-02	2.294E-01	PCI/SA	0.999	1.0E+0	3.452E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**1.2736E-01**	7.502E-02	7.585E-02	2.183E-01	PCI/SA	0.999	1.0E+0	3.452E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**1.8195E-02**	4.068E-02	4.072E-02	2.183E-01	PCI/SA	0.999	1.0E+0	3.452E-2
U-234	7YSR		0	5/29/2006 11:33:38	**2.9481E-01**	2.273E-01	2.287E-01	7.323E-01	PCI/SA	0.873	1.0E+0	3.224E-2
U-235	7YSR		0	5/29/2006 11:33:38	**-3.8476E-02**	2.221E-02	2.246E-02	7.993E-01	PCI/SA	0.873	1.0E+0	3.224E-2
U-238	7YSR		0	5/29/2006 11:33:38	**-3.8476E-02**	2.221E-02	2.246E-02	7.993E-01	PCI/SA	0.873	1.0E+0	3.224E-2
31509	**9H39L710**			**J6D2703976**	000428	FILTER	4/27/2006 10:30:00		4/14/2006 10:35:00 AM			
ALPHA	BAS7		0	5/29/2006 12:20:19 PM	**3.2765E+00**	1.795E+00	1.827E+00	6.559E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	5/27/2006 12:07:24 PM	**1.0598E+01**	1.871E+00	2.069E+00	6.56E+00	PCI/SA	1.0	1.0E+0	3.263E-2
RA-226	BXTE		0	6/8/2006 2:49:00 PM	**-2.0647E-01**	1.803E-01	1.818E-01	7.459E-01	PCI/SA	0.913	8.33E-1	2.488E-1
TH-228	9NS1		0	5/28/2006 5:02:33 PM	**1.3245E-01**	9.366E-02	9.44E-02	3.249E-01	PCI/SA	0.885	1.0E+0	3.322E-2
TH-230	9NS1		0	5/28/2006 5:02:33 PM	**2.9401E-01**	1.111E-01	1.142E-01	1.138E-01	PCI/SA	0.885	1.0E+0	3.322E-2
TH-232	9NS1		0	5/28/2006 5:02:33 PM	**1.26E-01**	7.275E-02	7.361E-02	1.138E-01	PCI/SA	0.885	1.0E+0	3.322E-2
U-234	7YSR		0	5/29/2006 7:59:40 AM	**0.0E+00**	0.0E+00	1.378E-01	3.049E-01	PCI/SA	0.826	1.0E+0	3.206E-2
U-235	7YSR		0	5/29/2006 7:59:40 AM	**0.0E+00**	0.0E+00	1.378E-01	3.049E-01	PCI/SA	0.826	1.0E+0	3.206E-2
U-238	7YSR		0	5/29/2006 7:59:40 AM	**0.0E+00**	0.0E+00	1.378E-01	3.049E-01	PCI/SA	0.826	1.0E+0	3.206E-2
31509	**9H39L810**			**J6D2703977**	000429	FILTER	4/27/2006 10:30:00		4/14/2006 10:05:00 AM			
ALPHA	BAS7		0	5/29/2006 12:20:19 PM	**1.0743E-01**	1.172E+00	1.172E+00	6.325E+00	PCI/SA	1.0	1.0E+0	2.089E-2

6118465, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 16 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / MDA	Units	Expected	Yield	Volumes	
BETA	BDS8	0		5/27/2006 12:07:13 PM	**2.3544E+00**	1.536E+00	1.545E+00	6.442E+00	PCI/SA		1.0	1.0E+0	3.341E-2
RA-226	BXTE	0		6/8/2006 2:48:01 PM	**1.0515E-01**	1.67E-01	1.674E-01	6.362E-01	PCI/SA		0.926	8.33E-1	2.5E-1
TH-228	9NS1	0		5/28/2006 5:02:33 PM	**4.3305E-02**	4.331E-02	4.347E-02	1.174E-01	PCI/SA		1.109	1.0E+0	3.378E-2
TH-230	9NS1	0		5/28/2006 5:02:33 PM	**-2.0598E-02**	2.06E-02	2.068E-02	2.471E-01	PCI/SA		1.109	1.0E+0	3.378E-2
TH-232	9NS1	0		5/28/2006 5:02:33 PM	**0.0E+00**	0.0E+00	5.045E-02	1.116E-01	PCI/SA		1.109	1.0E+0	3.378E-2
U-234	7YSR	0		5/29/2006 7:59:37 AM	**1.4904E-01**	1.48E-01	1.485E-01	6.409E-01	PCI/SA		0.927	1.0E+0	3.272E-2
U-235	7YSR	0		5/29/2006 7:59:37 AM	**5.3808E-02**	1.055E-01	1.056E-01	6.141E-01	PCI/SA		0.927	1.0E+0	3.272E-2
U-238	7YSR	0		5/29/2006 7:59:37 AM	**-8.2859E-03**	8.286E-03	8.313E-03	4.167E-01	PCI/SA		0.927	1.0E+0	3.272E-2
31509	**9H39LT10**			**J6D2703971**	000423	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM					
ALPHA	BAS7	0		5/29/2006 10:28:04	**4.3704E+00**	1.954E+00	2.007E+00	6.561E+00	PCI/SA		1.0	1.0E+0	2.085E-2
BETA	BDS8	0		5/27/2006 12:07:31 PM	**1.0432E+01**	1.652E+00	1.964E+00	5.664E+00	PCI/SA		1.0	1.0E+0	3.289E-2
RA-226	BXTE	0		6/8/2006 2:48:01 PM	**1.0443E-01**	1.444E-01	1.448E-01	5.317E-01	PCI/SA		1.009	8.33E-1	2.475E-1
TH-228	9NS1	0		5/28/2006 5:02:33 PM	**-4.5049E-02**	3.185E-02	3.211E-02	3.316E-01	PCI/SA		0.858	1.0E+0	3.437E-2
TH-230	9NS1	0		5/28/2006 5:02:33 PM	**3.8568E-01**	1.286E-01	1.331E-01	1.161E-01	PCI/SA		0.858	1.0E+0	3.437E-2
TH-232	9NS1	0		5/28/2006 5:02:33 PM	**7.1498E-07**	5.248E-02	5.248E-02	3.154E-01	PCI/SA		0.858	1.0E+0	3.437E-2
U-234	7YSR	0		5/29/2006 11:33:38	**9.3115E-02**	9.312E-02	9.341E-02	2.523E-01	PCI/SA		1.005	1.0E+0	3.191E-2
U-235	7YSR	0		5/29/2006 11:33:38	**1.8623E-01**	1.317E-01	1.325E-01	2.523E-01	PCI/SA		1.005	1.0E+0	3.191E-2
U-238	7YSR	0		5/29/2006 11:33:38	**9.3115E-02**	9.311E-02	9.341E-02	2.523E-01	PCI/SA		1.005	1.0E+0	3.191E-2
31509	**9H39MC10**			**J6D2703978**	P-0591	FILTER	4/27/2006 10:30:00	4/14/2006 9:05:00 AM					
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**1.5469E+00**	1.289E+00	1.299E+00	5.308E+00	PCI/SA		1.0	1.0E+0	2.097E-2
BETA	BDS8	0		5/27/2006 12:07:13 PM	**1.1377E+01**	1.764E+00	2.012E+00	5.95E+00	PCI/SA		1.0	1.0E+0	3.466E-2
RA-226	BXTE	0		6/8/2006 2:46:00 PM	**6.6496E-02**	1.95E-01	1.951E-01	7.346E-01	PCI/SA		0.864	8.33E-1	2.497E-1
TH-228	9NS1	0		5/28/2006 5:02:33 PM	**6.3589E-07**	4.668E-02	4.668E-02	2.805E-01	PCI/SA		0.941	1.0E+0	3.433E-2
TH-230	9NS1	0		5/28/2006 5:02:33 PM	**1.0877E-01**	6.28E-02	6.352E-02	9.825E-02	PCI/SA		0.941	1.0E+0	3.433E-2
TH-232	9NS1	0		5/28/2006 5:02:33 PM	**3.6255E-02**	3.626E-02	3.64E-02	9.825E-02	PCI/SA		0.941	1.0E+0	3.433E-2
U-234	7YSR	0		5/29/2006 7:59:29 AM	**-1.7998E-02**	1.273E-02	1.281E-02	5.141E-01	PCI/SA		0.922	1.0E+0	3.247E-2
U-235	7YSR	0		5/29/2006 7:59:29 AM	**8.5484E-02**	1.136E-01	1.138E-01	5.611E-01	PCI/SA		0.922	1.0E+0	3.247E-2
U-238	7YSR	0		5/29/2006 7:59:29 AM	**-2.6998E-02**	1.559E-02	1.574E-02	5.611E-01	PCI/SA		0.922	1.0E+0	3.247E-2
31509	**9H39MD10**			**J6D2703979**	P-0592	FILTER	4/27/2006 10:30:00	4/14/2006 9:25:00 AM					
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**2.0697E-01**	1.259E+00	1.259E+00	6.562E+00	PCI/SA		1.0	1.0E+0	2.101E-2
BETA	BDS8	0		5/27/2006 12:07:13 PM	**6.3374E+00**	1.711E+00	1.766E+00	6.564E+00	PCI/SA		1.0	1.0E+0	3.343E-2
RA-226	BXTE	0		6/8/2006 3:27:00 PM	**3.1077E-01**	1.546E-01	1.577E-01	4.9E-01	PCI/SA		0.996	8.33E-1	2.492E-1
TH-228	9NS1	0		5/28/2006 5:03:34 PM	**2.73E-05**	1.091E-01	1.091E-01	5.851E-01	PCI/SA		0.559	1.0E+0	3.458E-2
TH-230	9NS1	0		5/28/2006 5:03:34 PM	**5.9945E-02**	5.995E-02	6.021E-02	1.625E-01	PCI/SA		0.559	1.0E+0	3.458E-2
TH-232	9NS1	0		5/28/2006 5:03:34 PM	**2.9979E-02**	6.702E-02	6.708E-02	3.595E-01	PCI/SA		0.559	1.0E+0	3.458E-2
U-234	7YSR	0		5/29/2006 7:59:43 AM	**-8.3293E-03**	8.329E-03	8.356E-03	4.189E-01	PCI/SA		0.996	1.0E+0	3.234E-2
U-235	7YSR	0		5/29/2006 7:59:43 AM	**-1.6659E-02**	1.178E-02	1.186E-02	4.756E-01	PCI/SA		0.996	1.0E+0	3.234E-2
U-238	7YSR	0		5/29/2006 7:59:43 AM	**0.0E+00**	0.0E+00	1.274E-01	2.82E-01	PCI/SA		0.996	1.0E+0	3.234E-2
31509	**9H39MF10**			**J6D27039710**	P-0593	FILTER	4/27/2006 10:30:00	4/14/2006 9:35:00 AM					
ALPHA	BAS7	0		5/29/2006 12:20:19 PM	**2.2454E+00**	1.42E+00	1.439E+00	5.213E+00	PCI/SA		1.0	1.0E+0	2.08E-2
BETA	BDS8	0		5/27/2006 12:07:13 PM	**8.5854E+00**	1.743E+00	1.844E+00	6.29E+00	PCI/SA		1.0	1.0E+0	3.275E-2
RA-226	BXTE	0		6/8/2006 3:24:01 PM	**3.3808E-01**	1.494E-01	1.538E-01	4.714E-01	PCI/SA		1.029	8.33E-1	2.491E-1
TH-228	9NS1	0		5/28/2006 5:03:56 PM	**-1.4722E-01**	5.564E-02	5.717E-02	4.799E-01	PCI/SA		0.805	1.0E+0	3.511E-2
TH-230	9NS1	0		5/28/2006 5:03:56 PM	**1.2004E-01**	6.93E-02	7.012E-02	1.084E-01	PCI/SA		0.805	1.0E+0	3.511E-2
TH-232	9NS1	0		5/28/2006 5:03:56 PM	**4.0012E-02**	4.001E-02	4.017E-02	1.084E-01	PCI/SA		0.805	1.0E+0	3.511E-2
U-234	7YSR	0		5/29/2006 7:59:45 AM	**-2.6824E-02**	1.897E-02	1.911E-02	7.66E-01	PCI/SA		0.836	1.0E+0	3.218E-2
U-235	7YSR	0		5/29/2006 7:59:45 AM	**-5.3648E-02**	2.682E-02	2.722E-02	8.952E-01	PCI/SA		0.836	1.0E+0	3.218E-2
U-238	7YSR	0		5/29/2006 7:59:45 AM	**-4.0236E-02**	2.323E-02	2.349E-02	8.361E-01	PCI/SA		0.836	1.0E+0	3.218E-2
31509	**9H39MH10**			**J6D27039711**	P-0594	FILTER	4/27/2006 10:30:00	4/14/2006 9:55:00 AM					
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**-1.7294E+00**	1.393E+00	1.404E+00	8.661E+00	PCI/SA		1.0	1.0E+0	2.107E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5329E+00**	1.82E+00	1.935E+00	6.522E+00	PCI/SA		1.0	1.0E+0	3.397E-2
RA-226	BXTE	0		6/8/2006 3:25:00 PM	**-1.261E-01**	1.307E-01	1.314E-01	6.103E-01	PCI/SA		0.985	8.33E-1	2.488E-1
TH-228	9NS1	0		5/28/2006 5:04:17 PM	**3.7622E-06**	5.53E-02	5.53E-02	3.323E-01	PCI/SA		0.966	1.0E+0	3.51E-2
TH-230	9NS1	0		5/28/2006 5:04:17 PM	**1.2885E-01**	7.439E-02	7.529E-02	1.164E-01	PCI/SA		0.966	1.0E+0	3.51E-2

6118465, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 16 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes	
TH-232	9NS1	0		5/28/2006 5:04:17 PM	**0.0E+00**	0.0E+00	5.26E-02	1.164E-01	PCI/SA		0.966	1.0E+0	3.51E-2
U-234	7YSR	0		5/29/2006 7:59:52 AM	**7.0785E-02**	1.226E-01	1.228E-01	6.669E-01	PCI/SA		0.899	1.0E+0	3.224E-2
U-235	7YSR	0		5/29/2006 7:59:52 AM	**0.0E+00**	0.0E+00	1.445E-01	3.198E-01	PCI/SA		0.899	1.0E+0	3.224E-2
U-238	7YSR	0		5/29/2006 7:59:52 AM	**0.0E+00**	0.0E+00	1.445E-01	3.198E-01	PCI/SA		0.899	1.0E+0	3.224E-2
31509	**9H39MJ10**			**J6D27039712**	P-0595	FILTER	4/27/2006 10:30:00	4/14/2006 10:20:00 AM					
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**1.2881E+00**	1.261E+00	1.268E+00	5.479E+00	PCI/SA		1.0	1.0E+0	2.089E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.5189E+00**	1.783E+00	1.901E+00	6.353E+00	PCI/SA		1.0	1.0E+0	3.351E-2
RA-226	BXTE	0		6/8/2006 3:25:00 PM	**4.364E-01**	1.841E-01	1.898E-01	5.764E-01	PCI/SA		1.065	8.33E-1	2.493E-1
TH-228	9NS1	0		5/28/2006 5:04:41 PM	**6.7544E-02**	5.36E-02	5.392E-02	1.797E-01	PCI/SA		0.892	1.0E+0	3.417E-2
TH-230	9NS1	0		5/28/2006 5:04:41 PM	**1.6421E-01**	8.046E-02	8.174E-02	2.017E-01	PCI/SA		0.892	1.0E+0	3.417E-2
TH-232	9NS1	0		5/28/2006 5:04:41 PM	**-7.1407E-03**	7.141E-03	7.168E-03	1.71E-01	PCI/SA		0.892	1.0E+0	3.417E-2
U-234	7YSR	0		5/29/2006 3:07:05 PM	**6.4911E-02**	1.124E-01	1.126E-01	6.114E-01	PCI/SA		0.978	1.0E+0	3.24E-2
U-235	7YSR	0		5/29/2006 3:07:05 PM	**0.0E+00**	0.0E+00	1.325E-01	2.932E-01	PCI/SA		0.978	1.0E+0	3.24E-2
U-238	7YSR	0		5/29/2006 3:07:05 PM	**0.0E+00**	0.0E+00	1.325E-01	2.932E-01	PCI/SA		0.978	1.0E+0	3.24E-2
31509	**9H39ML10**			**J6D27039713**	P-0596	FILTER	4/27/2006 10:30:00	4/14/2006 10:30:00 AM					
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**7.8233E-01**	1.188E+00	1.191E+00	5.704E+00	PCI/SA		1.0	1.0E+0	2.079E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**9.8848E+00**	1.729E+00	1.944E+00	6.023E+00	PCI/SA		1.0	1.0E+0	3.435E-2
RA-226	BXTE	0		6/8/2006 3:22:00 PM	**2.026E-01**	1.164E-01	1.183E-01	3.794E-01	PCI/SA		0.983	8.33E-1	2.499E-1
TH-228	9NS1	0		5/28/2006 5:04:53 PM	**1.9206E-01**	8.289E-02	8.454E-02	2.128E-01	PCI/SA		0.993	1.0E+0	3.457E-2
TH-230	9NS1	0		5/28/2006 5:04:53 PM	**1.5914E-01**	7.291E-02	7.419E-02	1.86E-01	PCI/SA		0.993	1.0E+0	3.457E-2
TH-232	9NS1	0		5/28/2006 5:04:53 PM	**0.0E+00**	0.0E+00	3.609E-02	7.986E-02	PCI/SA		0.993	1.0E+0	3.457E-2
U-234	7YSR	0		5/29/2006 3:07:05 PM	**-4.3241E-02**	3.058E-02	3.078E-02	6.108E-01	PCI/SA		0.981	1.0E+0	3.225E-2
U-235	7YSR	0		5/29/2006 3:07:05 PM	**0.0E+00**	0.0E+00	1.324E-01	2.929E-01	PCI/SA		0.981	1.0E+0	3.225E-2
U-238	7YSR	0		5/29/2006 3:07:05 PM	**1.081E-01**	1.081E-01	1.085E-01	2.929E-01	PCI/SA		0.981	1.0E+0	3.225E-2
31509	**9H39MN10**			**J6D27039714**	P-0597	FILTER	4/27/2006 10:30:00	4/14/2006 9:10:00 AM					
ALPHA	BAS7	0		5/30/2006 6:26:17 AM	**1.9987E+00**	1.763E+00	1.775E+00	7.515E+00	PCI/SA		1.0	1.0E+0	2.073E-2
BETA	BDS8	0		5/27/2006 12:07:25 PM	**1.1678E+01**	2.019E+00	2.186E+00	7.182E+00	PCI/SA		1.0	1.0E+0	3.274E-2
RA-226	BXTE	0		6/8/2006 3:23:00 PM	**5.0688E-02**	1.143E-01	1.144E-01	4.414E-01	PCI/SA		0.975	8.33E-1	2.484E-1
TH-228	9NS1	0		5/28/2006 5:05:13 PM	**-3.0288E-06**	5.566E-02	5.566E-02	3.345E-01	PCI/SA		1.057	1.0E+0	3.282E-2
TH-230	9NS1	0		5/28/2006 5:05:13 PM	**8.6453E-02**	6.113E-02	6.161E-02	1.171E-01	PCI/SA		1.057	1.0E+0	3.282E-2
TH-232	9NS1	0		5/28/2006 5:05:13 PM	**4.3227E-02**	4.323E-02	4.34E-02	1.171E-01	PCI/SA		1.057	1.0E+0	3.282E-2
U-234	7YSR	0		5/30/2006 7:42:31 AM	**2.63E-01**	1.775E-01	1.788E-01	5.716E-01	PCI/SA		0.98	1.0E+0	3.21E-2
U-235	7YSR	0		5/30/2006 7:42:31 AM	**-6.0691E-02**	3.504E-02	3.538E-02	6.385E-01	PCI/SA		0.98	1.0E+0	3.21E-2
U-238	7YSR	0		5/30/2006 7:42:31 AM	**6.0693E-02**	1.051E-01	1.052E-01	5.716E-01	PCI/SA		0.98	1.0E+0	3.21E-2
31509	**H4C9R1AB**			**J6D280000465**	INTRA-LAB BLANK	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM					
RA-226	BXTE	0	B	6/8/2006 3:20:00 PM	**9.3022E-02**	3.076E-02	3.211E-02	7.488E-02	PCI/SA		0.969	1.0E+0	1.0E+0
31509	**H4C9R1CS**			**J6D280000465**	INTRA-LAB CHECK	FILTER	4/27/2006 10:30:00	4/14/2006 9:15:00 AM					
RA-226	BXTE	0	S	6/8/2006 3:26:00 PM	**1.2883E+00**	1.003E-01	1.649E-01	1.075E-01	PCI/SA	1.3828E+00	1.034	1.0E+0	1.0E+0

6118465, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 14,
**Results Inserted | ReTestInserted | Updated | NotInserted => 16 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6118465

Alpha Beta, Ra-226 by ASC-7 , Results

Summary Report

6/9/2006 6:12:46 AM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Ra-226 by ASC-7				Richland Standard Ra-226/Ra-228 Deem Wo Blk Subt.										
Calc	TE	FILTER	**H39LT1AC**	RA-226	**1.04E-01**	**(1.45E-01)**	**U4**	PCI/SA	R	2.32E-01	5.32E-01		101%	
Calc	TE	FILTER	**H39L21AC**	RA-226	**-8.43E-02**	**(1.53E-01)**	**U4**	PCI/SA	R	2.75E-01	6.31E-01		96%	
Calc	TE	FILTER	**H39L31AC**	RA-226	**2.67E-01**	**(1.33E-01)**		PCI/SA	R	1.64E-01	4.07E-01		93%	
Calc	TE	FILTER	**H39L41AC**	RA-226	**2.22E-01**	**(1.45E-01)**	**U4**	PCI/SA	R	2.04E-01	4.84E-01		107%	
Calc	TE	FILTER	**H39L61AC**	RA-226	**1.62E-01**	**(1.37E-01)**	**U4**	PCI/SA	R	2.07E-01	4.79E-01		98%	
Calc	TE	FILTER	**H39L71AC**	RA-226	**-2.06E-01**	**(1.82E-01)**	**U4**	PCI/SA	R	3.36E-01	7.46E-01		91%	
Calc	TE	FILTER	**H39L81AC**	RA-226	**1.05E-01**	**(1.67E-01)**	**U4**	PCI/SA	R	2.65E-01	6.36E-01		93%	
Calc	TE	FILTER	**H39MC1AC**	RA-226	**6.65E-02**	**(1.95E-01)**	**U4**	PCI/SA	R	3.26E-01	7.35E-01		86%	
Calc	TE	FILTER	**H39MD1AC**	RA-226	**3.11E-01**	**(1.58E-01)**		PCI/SA	R	2.00E-01	4.90E-01		100%	
Calc	TE	FILTER	**H39MF1AC**	RA-226	**3.38E-01**	**(1.54E-01)**		PCI/SA	R	2.01E-01	4.71E-01		103%	
Calc	TE	FILTER	**H39MH1AC**	RA-226	**-1.26E-01**	**(1.31E-01)**	**U4**	PCI/SA	R	2.54E-01	6.10E-01		98%	
Calc	TE	FILTER	**H39MJ1AC**	RA-226	**4.36E-01**	**(1.90E-01)**		PCI/SA	R	2.48E-01	5.76E-01		106%	
Calc	TE	FILTER	**H39ML1AC**	RA-226	**2.03E-01**	**(1.18E-01)**		PCI/SA	R	1.51E-01	3.79E-01		98%	
Calc	TE	FILTER	**H39MN1AC**	RA-226	**5.07E-02**	**(1.14E-01)**	**U4**	PCI/SA	R	1.86E-01	4.41E-01		98%	
Calc	TE	FILTER	**H4C9R1AA**	RA-226	**9.30E-02**	**(3.21E-02)**		PCI/SA	R	2.74E-02	7.49E-02	**B**	97%	
Calc	TE	FILTER	**H4C9R1AC**	RA-226	**1.29E+00**	**(1.65E-01)**		PCI/SA	R	4.39E-02	1.08E-01	**S**	103%	93%

RDC

P Anderson
6-9-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16
RADCALC v4.8.24
STL Richland

Batch Nbr: 6118465

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/9/2006 6:12:47 AM

Detailed Report

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39LT1AC**	**PCI/SA**		04/14/06 09:15	06/08/06 14:48	06/04/06 12:17	RATA22336	1	0.833 Sa	
CID:000423LOT:J6D2703971 v4.8.24							FILTER				06/08/06 11:48	RATA22336 Alq	101%	0.247454 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 14:48	RA-226	20	19	ASC1HB	ASC		N	2.4125E+00	1.0000E+00	N	101%	N		1.9938E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(7.648E-02)	(0.000E+00)		8%			(0.000E+00)	3.366278		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.104434**	**U4**	8.33333E-02	0.068868	0.068868	0.833 Sa	101%		0.531682		
				(0.14481)		(1.1523E-01)	(0.095412)	(0.095412)	(0.023561)			0.232017		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39L21AC**	**PCI/SA**		04/14/06 09:20	06/08/06 14:47	06/04/06 12:17	RATA22337	1	0.833 Sa	
CID:000424LOT:J6D2703972 v4.8.24							FILTER				06/08/06 11:47	RATA22337 Alq	96%	0.251183 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 14:47	RA-226	13	19	ASC2RC	ASC		N	2.0913E+00	1.0000E+00	N	96%	N		1.9940E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(6.818E-02)	(0.000E+00)		8%			(0.000E+00)	3.316308		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**-0.084317**	**U4**	-5.66667E-02	-0.05644	-0.05644	0.833 Sa	96%		0.631271		
				(0.152558)		(1.0236E-01)	(0.102068)	(0.102068)	(0.023561)			0.275476		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39L31AC**	**PCI/SA**		04/14/06 09:40	06/08/06 14:50	06/04/06 12:17	RATA22338	1	0.833 Sa	
CID:000425LOT:J6D2703973 v4.8.24							FILTER				06/08/06 11:50	RATA22338 Alq	93%	0.250628 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 14:50	RA-226	15	7	ASC3RC	ASC		N	2.2010E+00	1.0000E+00	N	93%	N		1.9933E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(8.122E-02)	(0.000E+00)		7%			(0.000E+00)	3.323648		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.267358**		1.83333E-01	0.178568	0.178568	0.833 Sa	93%		0.406602		
				(0.132989)		(8.9132E-02)	(0.088229)	(0.088229)	(0.023561)			0.163878		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39L41AC**	**PCI/SA**		04/14/06 10:00	06/08/06 14:48	06/04/06 12:17	RATA22339	1	0.833 Sa	
CID:000426LOT:J6D2703974 v4.8.24							FILTER				06/08/06 11:48	RATA22339 Alq	107%	0.251307 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 14:48	RA-226	18	12	ASC4UA	ASC		N	2.1431E+00	1.0000E+00	N	107%	N		1.9938E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.080E-01)	(0.000E+00)		9%			(0.000E+00)	3.314674		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118465

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/9/2006 6:12:47 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.222266**	U4	1.60000E-01	0.148853	0.148853	0.833 Sa	107%		0.483833		
				(0.144677)		(1.0263E-01)	(0.096514)	(0.096514)	(0.023561)			0.204392		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39L61AC**	**PCI/SA**		04/14/06 10:15	06/08/06 14:49	06/04/06 12:17	RATA22340	1	0.833 Sa	
CID:000427LOT:J6D2703975 v4.8.24							FILTER				06/08/06 11:49	RATA22340 Alq	98%	0.249737 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 14:49	RA-226	20	16	ASC6RD	ASC		N	2.5167E+00	1.0000E+00	N	98%	N		1.9935E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.070E-01)	(0.000E+00)		8%			(0.000E+00)	3.335504		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.162201**	U4	1.33333E-01	0.107949	0.107949	0.833 Sa	98%		0.479045		
				(0.136817)		(1.1155E-01)	(0.090844)	(0.090844)	(0.023561)			0.206678		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39L71AC**	**PCI/SA**		04/14/06 10:35	06/08/06 14:49	06/04/06 12:17	RATA22341	1	0.833 Sa	
CID:000428LOT:J6D2703976 v4.8.24							FILTER				06/08/06 11:49	RATA22341 Alq	91%	0.248766 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 14:49	RA-226	20	33	ASC7HA	ASC		N	2.3933E+00	1.0000E+00	N	91%	N		1.9935E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.225E-01)	(0.000E+00)		7%			(0.000E+00)	3.348524		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**-0.206468**	U4	-1.50000E-01	-0.136876	-0.136876	0.833 Sa	91%		0.745895		
				(0.181796)		(1.3102E-01)	(0.120263)	(0.120263)	(0.023561)			0.335845		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39L81AC**	**PCI/SA**		04/14/06 10:05	06/08/06 14:48	06/04/06 12:17	RATA22342	1	0.833 Sa	
CID:000429LOT:J6D2703977 v4.8.24							FILTER				06/08/06 11:48	RATA22342 Alq	93%	0.249978 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 14:48	RA-226	11	10	ASC8RD	ASC		N	1.6393E+00	1.0000E+00	N	93%	N		1.9938E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(4.623E-02)	(0.000E+00)		7%			(0.000E+00)	3.332291		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.105152**	U4	5.33333E-02	0.070049	0.070049	0.833 Sa	93%		0.636172		
				(0.167384)		(8.4722E-02)	(0.111434)	(0.111434)	(0.023561)			0.264813		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39MC1AC**	**PCI/SA**		04/14/06 09:05	06/08/06 14:46	06/04/06 12:17	RATA22343	1	0.833 Sa	
CID:P-0591LOT:J6D2703978 v4.8.24							FILTER				06/08/06 11:46	RATA22343 Alq	86%	0.249691 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24
STL Richland

Batch Nbr: 6118465

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/9/2006 6:12:48 AM

1	06/08/06 14:46	RA-226	23	25	ASC9RA	ASC		N	2.2615E+00	1.0000E+00	N	86%	N		1.9942E+00	4.5045E-01	1.0001E+00
			50	60			Y		(4.229E-02)	(0.000E+00)		7%			(0.000E+00)	3.336129	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.066496**	**U4**	4.33333E-02	0.044247	0.044247	0.833 Sa	86%		0.734554		
				(0.195092)		(1.2706E-01)	(0.12979)	(0.12979)	(0.023561)			0.325885		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39MD1AC**	**PCI/SA**		04/14/06 09:25	06/08/06 15:27	06/04/06 12:34	RATA22344	1	0.833 Sa	
CID:P-0592LOT:J6D2703979 v4.8.24							FILTER				06/08/06 12:27	RATA22344 Alq	100%	0.249207 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 15:27	RA-226	16	8	ASCDSA	ASC		N	1.8059E+00	1.0000E+00	N	100%	N		1.9886E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(3.449E-02)	(0.000E+00)		8%			(0.000E+00)	3.342598		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.31077**		1.86667E-01	0.206387	0.206387	0.833 Sa	100%		0.490004		
				(0.157703)		(9.2856E-02)	(0.10406)	(0.10406)	(0.023561)			0.200004		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39MF1AC**	**PCI/SA**		04/14/06 09:35	06/08/06 15:24	06/04/06 12:34	RATA22345	1	0.833 Sa	
CID:P-0593LOT:J6D27039710 v4.8.24							FILTER				06/08/06 12:24	RATA22345 Alq	103%	0.249103 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 15:24	RA-226	25	14	ASCEHA	ASC		N	2.3636E+00	1.0000E+00	N	103%	N		1.9893E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.057E-01)	(0.000E+00)		8%			(0.000E+00)	3.343997		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.338084**		2.66667E-01	0.224433	0.224433	0.833 Sa	103%		0.471444		
				(0.153823)		(1.1785E-01)	(0.101296)	(0.101296)	(0.023561)			0.201484		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39MH1AC**	**PCI/SA**		04/14/06 09:55	06/08/06 15:25	06/04/06 12:34	RATA22346	1	0.833 Sa	
CID:P-0594LOT:J6D27039711 v4.8.24							FILTER				06/08/06 12:25	RATA22346 Alq	98%	0.248847 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 15:25	RA-226	5	10	ASCFSA	ASC		N	1.6102E+00	1.0000E+00	N	98%	N		1.9890E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(2.979E-02)	(0.000E+00)		8%			(0.000E+00)	3.347435		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**-0.126104**	**U4**	-6.66667E-02	-0.083627	-0.083627	0.833 Sa	98%		0.610347		
				(0.131357)		(6.9121E-02)	(0.086977)	(0.086977)	(0.023561)			0.254063		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:12

RADCALC v4.8.24

STL Richland

Batch Nbr: 6118465

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/9/2006 6:12:48 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39MJ1AC**	**PCI/SA**		04/14/06 10:20	06/08/06 15:25	06/04/06 12:34	RATA22347	1	0.833 Sa	
CID:P-0595LOT:J6D27039712 v4.8.24							FILTER				06/08/06 12:25	RATA22347 Alq	106%	0.249322 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 15:25	RA-226	27	15	ASCGSB	ASC		N	1.9894E+00	1.0000E+00	N	106%	N		1.9890E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(7.938E-02)	(0.000E+00)		9%			(0.000E+00)	3.341059		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.436397**		2.90000E-01	0.289951	0.289951	0.833 Sa	106%		0.576352		
				(0.189848)		(1.2234E-01)	(0.125034)	(0.125034)	(0.023561)			0.247542		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39ML1AC**	**PCI/SA**		04/14/06 10:30	06/08/06 15:22	06/04/06 12:34	RATA22348	1	0.833 Sa	
CID:P-0596LOT:J6D27039713 v4.8.24							FILTER				06/08/06 12:22	RATA22348 Alq	98%	0.249875 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 15:22	RA-226	12	6	ASCJSB	ASC		N	2.1011E+00	1.0000E+00	N	98%	N		1.9897E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(7.837E-02)	(0.000E+00)		8%			(0.000E+00)	3.333665		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.202601**		1.40000E-01	0.134911	0.134911	0.833 Sa	98%		0.379376		
				(0.118313)		(8.0416E-02)	(0.078402)	(0.078402)	(0.023561)			0.15056		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	TE	FILTER	*STLE	Ra226WoBS	**H39MN1AC**	**PCI/SA**		04/14/06 09:10	06/08/06 15:23	06/04/06 12:34	RATA22349	1	0.833 Sa	
CID:P-0597LOT:J6D27039714 v4.8.24							FILTER				06/08/06 12:23	RATA22349 Alq	98%	0.248417 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 15:23	RA-226	12	12	ASCLMC	ASC		N	2.4313E+00	1.0000E+00	N	98%	N		1.9895E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.218E-01)	(0.000E+00)		8%			(0.000E+00)	3.353227		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.050688**	**U4**	4.00000E-02	0.033556	0.033556	0.833 Sa	98%		0.44136		
				(0.114421)		(9.0185E-02)	(0.075723)	(0.075723)	(0.023561)			0.186449		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	TE	FILTER	*STLE	Ra226WoBS	**H4C9R1AA**	**PCI/SA**	**B**	04/14/06 09:15	06/08/06 15:20	06/04/06 12:34	RATA22350	1	1.00 Sa	
CID:INTRA-LAB BLANKLOT:J6D280000465 v4.8.24							FILTER				06/08/06 12:20	RATA22350 Alq	97%	1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 15:20	RA-226	15	3	ASCQMB	ASC		N	2.4878E+00	1.0000E+00	N	97%	N		1.9902E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(6.220E-02)	(0.000E+00)		8%			(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24

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Batch Nbr: 6118465

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/9/2006 6:12:48 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**0.093022**		2.50000E-01	0.206497	0.206497	1.00 Sa	97%		0.074881		
				(0.032111)		(8.2664E-02)	(0.070439)	(0.070439)	(0.017321)			0.027373		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	TE	FILTER	*STLE	Ra226WoBS	**H4C9R1AC**	**PCI/SA**	**S**	04/14/06 09:15	06/08/06 15:26	06/04/06 12:34	rasc4104	1	1.00 Sa	
CID:INTRA-LAB CHECKLOT:J6D280000465 v4.8.24							FILTER				06/08/06 12:26	RATA22350 Alq	103%	1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/08/06 15:26	RA-226	183	8	ASCPMA	ASC		N	2.4525E+00	1.0000E+00	N	103%	N		1.9888E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(8.241E-02)	(0.000E+00)		8%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/09/06	RA-226	R	**1.288287**		3.52667E+00	2.859826	2.859826	1.00 Sa	103%	93%	0.107517		
				(0.164947)		(2.7463E-01)	(0.333426)	(0.333426)	(0.017321)			0.043885		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16

RADCALC v4.8.24

STL Richland

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39LT1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: .9909
Technician: MT

Analysis Size: .2475 Analysis Unit: SA

Report Date: 8-JUN-2006 15:38:01.20
First Separation Date: 4-JUN-2006 12:17:00.00
Second Separation Date: 8-JUN-2006 11:48:00.00

Detector ID: 1 Cell ID: 1HB

Bkg Date: 8-JUN-2006 08:46:39.34
Bkg Counts: 000019 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 14:48:00.52
Counts: 000020 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39L21AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 1.0446
Technician: MT

Analysis Size: .2512 Analysis Unit: SA

Report Date: 8-JUN-2006 15:37:00.61
First Separation Date: 4-JUN-2006 12:17:00.00
Second Separation Date: 8-JUN-2006 11:47:00.00

Detector ID: 2 Cell ID: 2RC

Bkg Date: 8-JUN-2006 08:46:49.22
Bkg Counts: 000019 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 14:47:00.28
Counts: 000013 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39L31AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 1.0755
Technician: MT

Analysis Size: .2506 Analysis Unit: SA

Report Date: 8-JUN-2006 15:40:00.71
First Separation Date: 4-JUN-2006 12:17:00.00
Second Separation Date: 8-JUN-2006 11:50:00.00

Detector ID: 3 Cell ID: 3RC

Bkg Date: 8-JUN-2006 08:57:54.81
Bkg Counts: 000007 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 14:50:00.31
Counts: 000015 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39L41AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 0.934
Technician: RS

Analysis Size: 0.2513 Analysis Unit: SA

Report Date: 8-JUN-2006 15:38:01.43
First Separation Date: 4-JUN-2006 12:17:00.00
Second Separation Date: 8-JUN-2006 11:48:00.00

Detector ID: 4 Cell ID: 4UA

Bkg Date: 8-JUN-2006 09:47:41.39
Bkg Counts: 000012 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 14:48:00.55
Counts: 000018 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39L61AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 1.0221
Technician: RS

Analysis Size: 0.2497 Analysis Unit: SA

Report Date: 8-JUN-2006 15:39:01.02
First Separation Date: 4-JUN-2006 12:17:00.00
Second Separation Date: 8-JUN-2006 11:49:00.00

Detector ID: 6 Cell ID: 6RD

Bkg Date: 8-JUN-2006 08:58:38.46
Bkg Counts: 000016 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 14:49:00.49
Counts: 000020 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39L71AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 1.0955
Technician: RS

Analysis Size: 0.2488 Analysis Unit: SA

Report Date: 8-JUN-2006 15:39:00.96
First Separation Date: 4-JUN-2006 12:17:00.00
Second Separation Date: 8-JUN-2006 11:49:00.00

Detector ID: 7 Cell ID: 7HA

Bkg Date: 8-JUN-2006 08:10:50.97
Bkg Counts: 000033 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 14:49:00.41
Counts: 000020 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39L81AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 1.0799
Technician: RS

Analysis Size: 0.25 Analysis Unit: SA

Report Date: 8-JUN-2006 15:38:01.52
First Separation Date: 4-JUN-2006 12:17:00.00
Second Separation Date: 8-JUN-2006 11:48:00.00

Detector ID: 8 Cell ID: 8RD

Bkg Date: 8-JUN-2006 07:47:34.37
Bkg Counts: 000010 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 14:48:00.62
Counts: 000011 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39MC1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 1.1579
Technician: RS

Analysis Size: 0.2497 Analysis Unit: SA

Report Date: 8-JUN-2006 15:36:00.93
First Separation Date: 4-JUN-2006 12:17:00.00
Second Separation Date: 8-JUN-2006 11:46:00.00

Detector ID: 9 Cell ID: 9RA

Bkg Date: 8-JUN-2006 07:47:27.66
Bkg Counts: 000025 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 14:46:00.38
Counts: 000023 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39MD1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 1.0041
Technician: RS

Analysis Size: 0.2492 Analysis Unit: SA

Report Date: 8-JUN-2006 16:17:00.62
First Separation Date: 4-JUN-2006 12:34:00.00
Second Separation Date: 8-JUN-2006 12:27:00.00

Detector ID: 13 Cell ID: DSA

Bkg Date: 8-JUN-2006 07:38:29.59
Bkg Counts: 000008 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 15:27:00.29
Counts: 000016 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39MF1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 0.9714
Technician: RS

Analysis Size: 0.2491 Analysis Unit: SA

Report Date: 8-JUN-2006 16:14:00.87
First Separation Date: 4-JUN-2006 12:34:00.00
Second Separation Date: 8-JUN-2006 12:24:00.00

Detector ID: 14 Cell ID: EHA

Bkg Date: 8-JUN-2006 07:38:40.12
Bkg Counts: 000014 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 15:24:00.53
Counts: 000025 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39MH1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 1.0155
Technician: RS

Analysis Size: 0.2488 Analysis Unit: SA

Report Date: 8-JUN-2006 16:15:00.91
First Separation Date: 4-JUN-2006 12:34:00.00
Second Separation Date: 8-JUN-2006 12:25:00.00

Detector ID: 15 Cell ID: FSA

Bkg Date: 8-JUN-2006 07:38:13.98
Bkg Counts: 000010 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 15:25:00.39
Counts: 000005 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39MJ1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 0.9391
Technician: RS

Analysis Size: 0.2493 Analysis Unit: SA

Report Date: 8-JUN-2006 16:15:01.19
First Separation Date: 4-JUN-2006 12:34:00.00
Second Separation Date: 8-JUN-2006 12:25:00.00

Detector ID: 16 Cell ID: GSB

Bkg Date: 8-JUN-2006 07:35:38.91
Bkg Counts: 000015 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 15:25:00.49
Counts: 000027 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39ML1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 1.0176
Technician: RS

Analysis Size: 0.2499 Analysis Unit: SA

Report Date: 8-JUN-2006 16:12:00.59
First Separation Date: 4-JUN-2006 12:34:00.00
Second Separation Date: 8-JUN-2006 12:22:00.00

Detector ID: 18 Cell ID: JSB

Bkg Date: 8-JUN-2006 08:11:03.33
Bkg Counts: 000006 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 15:22:00.27
Counts: 000012 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H39MN1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 1.0252
Technician: RS

Analysis Size: 0.2484 Analysis Unit: SA

Report Date: 8-JUN-2006 16:13:00.56
First Separation Date: 4-JUN-2006 12:34:00.00
Second Separation Date: 8-JUN-2006 12:23:00.00

Detector ID: 20 Cell ID: LMC

Bkg Date: 5-JUN-2006 06:57:36.08
Bkg Counts: 000012 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 15:23:00.24
Counts: 000012 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4C9R1AA Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 1.0325
Technician: RS

Analysis Size: 1.0 Analysis Unit: SA

Report Date: 8-JUN-2006 16:10:00.72
First Separation Date: 4-JUN-2006 12:34:00.00
Second Separation Date: 8-JUN-2006 12:20:00.00

Detector ID: 24 Cell ID: QMB

Bkg Date: 8-JUN-2006 07:38:05.45
Bkg Counts: 000003 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 15:20:00.29
Counts: 000015 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4C9R1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6118465 Activity Unit: PCI/SA Multiplier: 0.9667
Technician: RS

Analysis Size: 1.0 Analysis Unit: SA

Report Date: 8-JUN-2006 16:16:00.61
First Separation Date: 4-JUN-2006 12:34:00.00
Second Separation Date: 8-JUN-2006 12:26:00.00

Detector ID: 23 Cell ID: PMA

Bkg Date: 8-JUN-2006 07:38:22.11
Bkg Counts: 000008 Bkg Duration: 000060.0

Count Date: 8-JUN-2006 15:26:00.29
Counts: 000183 Count Duration: 000050.0

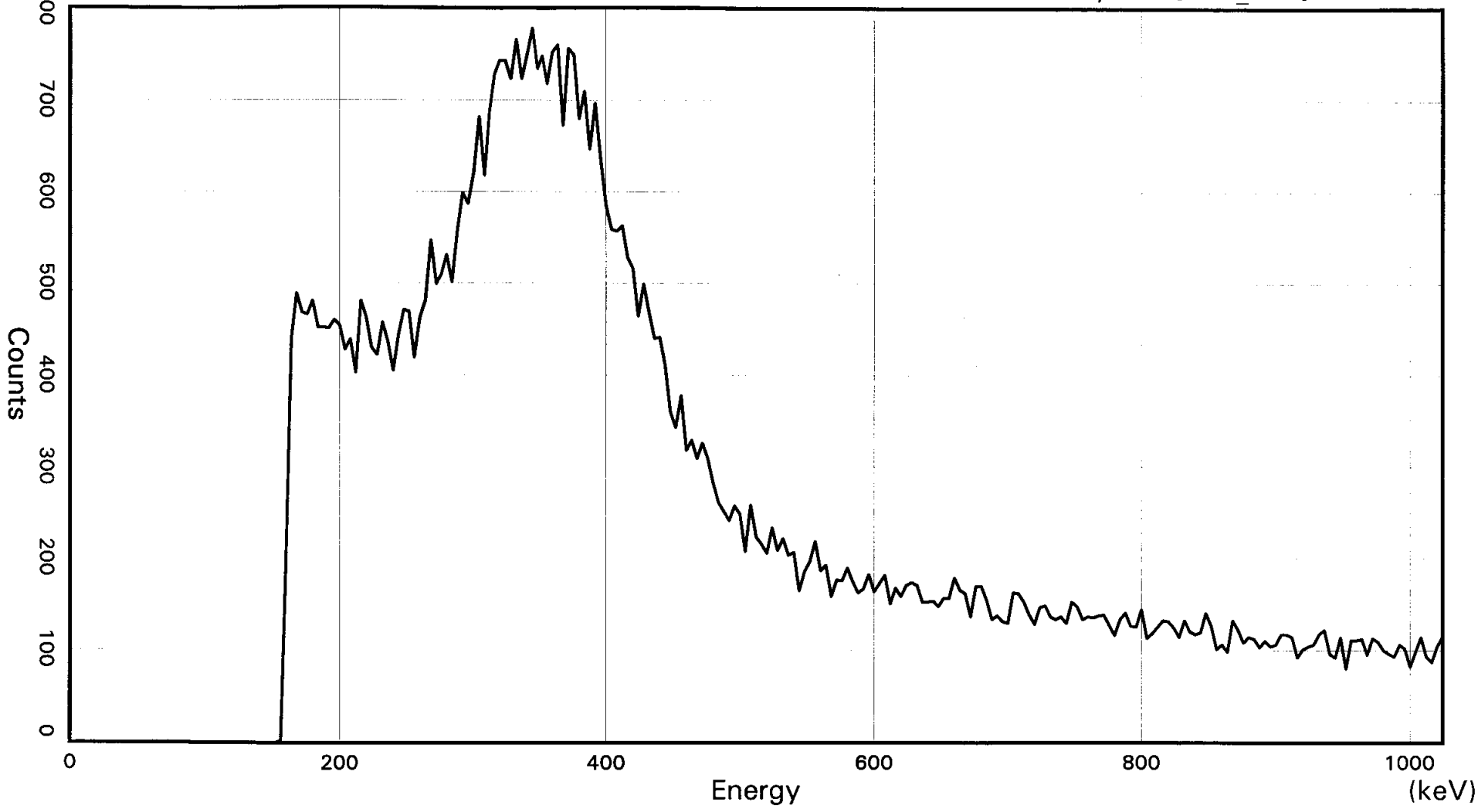
End of Report

STL Richland WA.

BA133

Sample ID: H39LT1AC
Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start:	2-JUN-2006 16:59:53.12	Start Channel:	80
Preset Live Time:	0 00:30:00	End Channel:	113
Elapsed Live Time:	0 00:30:00	Iterations:	5
Weighting:	DERIVED	Gain shift:	Iter

SAMPLE IDENTIFICATION: H39LT1AC

CONFIGURATION ID: NAI1:H39LT1AC_020661659
TITLE : BA133
SAMPLE ID : H39LT1AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 16:59:53
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 17-NOV-1993 10:39:59.60
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY:

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 0.0000E+00 keV
ENERGY SLOPE: 4.0000E+00 keV/C
ENERGY Q COEFF: 0.0000E+00 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: -.2302E+02 keV
FWHM SLOPE: 5.7163E+00 sqr keV
ITERATIONS: 5
GAUSSIAN SENSITIVITY: 35.00 %

ABUNDANCE LIMIT: 75.00 %
ENERGY TOLERANCE: 20.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]BA133.NLB

VMS NAI Report V1.2 Generated 2-JUN-2006 17:29:58

Configuration	: RDND06$DKA100:[NAI1.SAMPLE]H39LT1AC_020661659.CNF;1		
Analyses by	: NAI V3.0		
Sample title	: BA133		
Sample date	: 26-MAY-2006 12:00:00	Acquisition date	: 2-JUN-2006 16:59:53
Sample ID	: H39LT1AC	Sample quantity	: 1.0000 sampl
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.67 0.0%
Sample Multiplier	: 1.00	Rejection Coeff.	: 0.00
Gain shift type	: ITER	Threshold Shift	: No
Weighting type	: DERIVED	Calculated counts	: No
Iterations	: 5		

NAI Residuals Report

Ratio of Residuals Over Standard Deviation Per Channel

80:	6.7	6.9	4.6	4.5	2.4	2.9	4.7	1.7
88:	1.6	0.3	0.0	0.2	-1.2	0.1	1.7	-1.3
96:	-0.2	-2.3	-1.0	-3.0	-4.4	-3.2	-3.6	-3.1
104:	-5.0	-3.4	-4.4	-2.7	-4.4	-4.9	-4.4	-4.1
112:	-5.2	-6.4						

List of Suspicious Channels

81 82 83 84 85

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.55E+01	0.00E+00	1.02E+00
2	6.77E+00	0.00E+00	1.04E+00
3	2.84E+00	0.00E+00	1.06E+00
4	8.85E-01	0.00E+00	1.08E+00

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	764.	8.61
Total Activity :	764.	

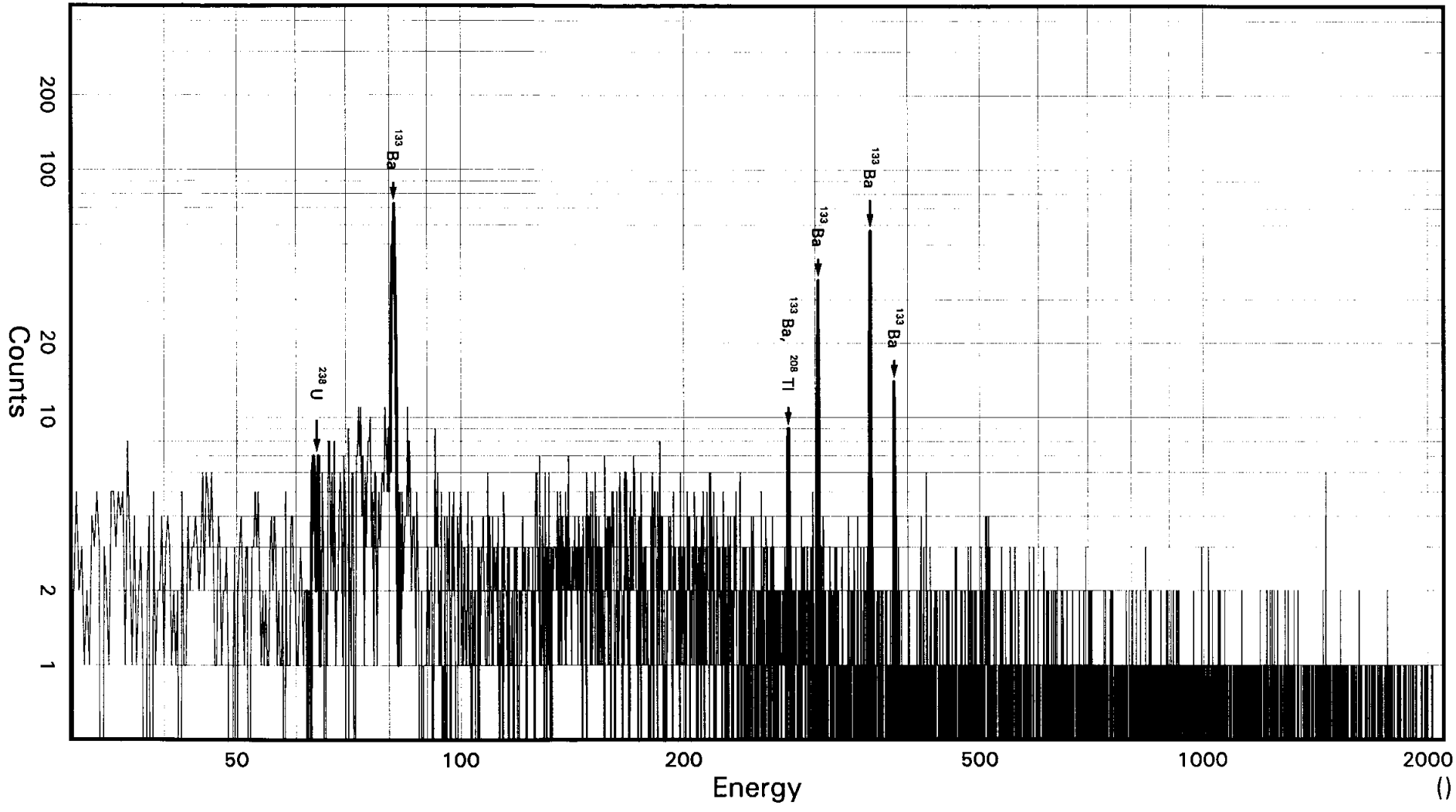
STL Richland WA.

BA133

Sample ID: H39L21AC

Detector ID: GER4 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 17:01:16.21

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: -1.09040E-01

Slope: 2.48919E-01

Quadrature: 5.02993E-09

SAMPLE IDENTIFICATION: H39L21AC

CONFIGURATION ID: GER4:H39L21AC_020661701
TITLE : BA133
SAMPLE ID : H39L21AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 17:01:16
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:16:46.15
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.1090E+00 keV
ENERGY SLOPE: 2.4892E-01 keV/C
ENERGY Q COEFF: 5.0299E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.7629E-01 keV
FWHM SLOPE: 4.1550E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 17:31:37

```
Configuration     : $DISK1:[GER4.SAMPLE]H39L21AC_020661701.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:01:16
Sample ID         : H39L21AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.41   0.0%
Start energy      :    19.80             End energy       :  2039.37
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	64.04*	15	19	1.45	257.70	249	12	8.37E-03	64.1	
2	0	81.14	225	46	0.81	326.42	321	11	1.25E-01	8.9	
3	0	276.40	54	4	1.47	1110.81	1104	15	3.00E-02	15.7	
4	0	303.08	113	28	0.85	1218.01	1208	19	6.26E-02	14.7	
5	0	356.03	298	12	1.24	1430.68	1421	17	1.65E-01	6.4	
6	0	383.78	54	7	1.03	1542.18	1535	13	2.97E-02	16.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:31:37

Configuration : $DISK1:[GER4.SAMPLE]H39L21AC_020661701.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:01:16
Sample ID : H39L21AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.41 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	225	33.00	2.043E+00	1.113E+03	1.114E+03	10.49
	276.40	54	6.90	2.202E+00	1.183E+03	1.185E+03	16.67
	302.84	113	17.80	2.205E+00	9.574E+02	9.586E+02	15.74
	356.00	298	62.05*	2.207E+00	7.247E+02	7.257E+02	9.40
	383.85	54	8.70	2.207E+00	9.288E+02	9.300E+02	17.94

Flag: "*" = Keyline

Unidentified Energy Lines
Page : 2
Sample ID : H39L21AC
Acquisition date : 2-JUN-2006 17:01:16

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	64.04	15	19	1.45	257.70	249	12	8.37E-03	64.1	1.99E+00	T

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : H39L21AC

Acquisition date : 2-JUN-2006 17:01:16

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	1.201E+03	16.67	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	6.647E+02	64.39	Abun.
			92.59	5.41	--- Not Found ---		
		% Abundances Found =		41.26			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:31:39

Configuration : $DISK1:[GER4.SAMPLE]H39L21AC_020661701.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:01:16
Sample ID : H39L21AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.41 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.257E+02	6.824E+01	5.396E+01	2.529E+00	13.449

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	8.554E+01		5.337E+01	2.565E+02	9.364E+00	0.334
NA-22	6.435E+00		3.243E+00	1.931E+01	7.445E-01	0.333
K-40	1.331E+02		8.979E+01	4.342E+02	1.696E+01	0.307
SC-46	1.242E+00		4.856E+00	2.131E+01	8.125E-01	0.058
CR-51	4.542E+01		9.912E+01	3.918E+02	9.094E+00	0.116
MN-54	8.133E+00		5.607E+00	2.618E+01	9.777E-01	0.311
CO-57	4.013E+01		1.139E+02	4.203E+02	1.007E+01	0.095
CO-58	3.119E+00		4.806E+00	2.188E+01	8.156E-01	0.143
FE-59	3.372E+00		6.888E+00	3.364E+01	1.281E+00	0.100
CO-60	-1.670E+00		1.673E+00	4.352E+00	1.685E-01	-0.384
ZN-65	3.206E-01		7.661E+00	3.421E+01	1.304E+00	0.009
SE-75	2.701E+00		1.481E+01	5.598E+01	1.303E+00	0.048
SR-85	1.058E+01		1.047E+01	4.151E+01	1.518E+00	0.255
Y-88	-1.750E+00		3.917E+00	1.625E+01	6.506E-01	-0.108
NB-94	-1.341E+00		4.031E+00	1.671E+01	6.257E-01	-0.080
NB-95	1.637E+00		4.754E+00	2.135E+01	7.935E-01	0.077
TC-95M	-1.014E+01		1.834E+01	6.517E+01	1.529E+00	-0.156
ZR-95	-6.337E+00		9.634E+00	3.616E+01	1.343E+00	-0.175
ZRNB-95	2.665E+00		8.833E+00	3.954E+01	1.469E+00	0.067
MO-99	2.171E+01		8.047E+01	2.949E+02	7.056E+00	0.074
RH-101	-1.119E+00		1.468E+01	5.484E+01	1.288E+00	-0.020
RH-102M	-5.857E+00		6.281E+00	2.257E+01	8.241E-01	-0.259
RU-103	7.305E+00		7.614E+00	3.319E+01	1.213E+00	0.220
RU-106DA	-3.293E+01		5.193E+01	1.991E+02	7.326E+00	-0.165
AG-108M	-2.727E+00		7.195E+00	2.667E+01	9.721E-01	-0.102
AG-110M	5.475E+00		5.511E+00	2.734E+01	1.025E+00	0.200
SN-113DA	3.456E+00		1.037E+01	4.173E+01	1.519E+00	0.083

Sample ID : H39L21AC Acquisition date : 2-JUN-2006 17:01:16

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-3.825E+00		4.951E+00	1.821E+01	6.695E-01	-0.210
SB-125	-1.984E+00		1.853E+01	7.300E+01	2.660E+00	-0.027
SN-126DA	4.733E+00		4.560E+00	2.159E+01	7.968E-01	0.219
I-131	2.794E+01		1.487E+01	6.768E+01	2.464E+00	0.413
CS-134	5.062E+00		7.165E+00	3.033E+01	1.129E+00	0.167
CS-137DA	2.919E-01		5.599E+00	2.357E+01	8.698E-01	0.012
LA-138	1.486E-01		5.880E+00	2.609E+01	1.017E+00	0.006
CE-139	-1.409E+01		1.598E+01	5.343E+01	1.266E+00	-0.264
BA-140	-2.768E+01		3.503E+01	1.266E+02	4.637E+00	-0.219
BALA-140	8.257E+00		6.488E+00	4.376E+01	1.725E+00	0.189
LA-140	-7.688E-01		4.852E+01	2.494E+02	9.831E+00	-0.003
CE-141	6.585E+00		2.695E+01	9.902E+01	2.364E+00	0.066
CE-144	-3.229E+01		1.065E+02	3.796E+02	9.113E+00	-0.085
CEPR-144	-6.457E+01		2.131E+02	7.593E+02	1.823E+01	-0.085
PM-144	5.297E+00		5.921E+00	2.564E+01	9.433E-01	0.207
PM-146	1.437E+01		9.197E+00	4.210E+01	1.536E+00	0.341
EU-152	-6.079E+00		3.039E+01	1.138E+02	2.640E+00	-0.053
EU-154	1.805E+01		9.097E+00	5.416E+01	2.088E+00	0.333
EU-155	-3.206E+01		4.492E+01	1.605E+02	3.926E+00	-0.200
HF-181	-3.452E+00		9.062E+00	3.429E+01	1.252E+00	-0.101
BI-207	-4.018E-01		3.822E+00	1.641E+01	6.019E-01	-0.024
TL-208	2.048E+00		8.360E+00	3.502E+01	1.286E+00	0.058
BI-210M	-3.273E+01		1.800E+01	5.580E+01	1.299E+00	-0.587
BI-212	-8.684E+01		6.766E+01	2.278E+02	9.914E+00	-0.381
PB-212	-4.449E-01		2.082E+01	8.030E+01	1.874E+00	-0.006
BI-214	4.652E+00		1.593E+01	6.842E+01	2.516E+00	0.068
PB-214	-1.136E+01		2.704E+01	8.647E+01	2.006E+00	-0.131
RA-223	8.997E+00		6.254E+01	2.353E+02	5.475E+00	0.038
RA-224DA	-4.481E-01		2.097E+01	8.088E+01	1.887E+00	-0.006
RA-226DA	4.784E+00		1.594E+01	6.850E+01	2.519E+00	0.070
AC-227DA	-2.710E+01		9.022E+01	3.246E+02	7.578E+00	-0.083
AC-228	-2.124E+01		2.199E+01	8.939E+01	3.357E+00	-0.238
RA-228DA	-2.129E+01		2.204E+01	8.961E+01	3.365E+00	-0.238
TH-228DA	5.741E+00		2.344E+01	9.818E+01	3.605E+00	0.058
TH-232DA	2.292E+01		6.574E+01	2.568E+02	5.959E+00	0.089
TH-234DA	4.891E+02		5.987E+02	2.914E+03	1.102E+02	0.168
U-234DA	-6.378E+01		4.943E+01	1.691E+02	3.929E+00	-0.377
U-235HP	1.116E+02		1.057E+02	4.083E+02	9.754E+00	0.273
NP-237DA	-2.630E+01		2.201E+01	7.589E+01	1.762E+00	-0.347
U-238DA	-1.136E+01		2.704E+01	8.647E+01	2.006E+00	-0.131
U-238DHP	6.647E+02	+	4.280E+02	1.227E+03	3.165E+01	0.542
AM-241HP	-5.266E+00		2.805E+01	1.023E+02	2.658E+00	-0.051

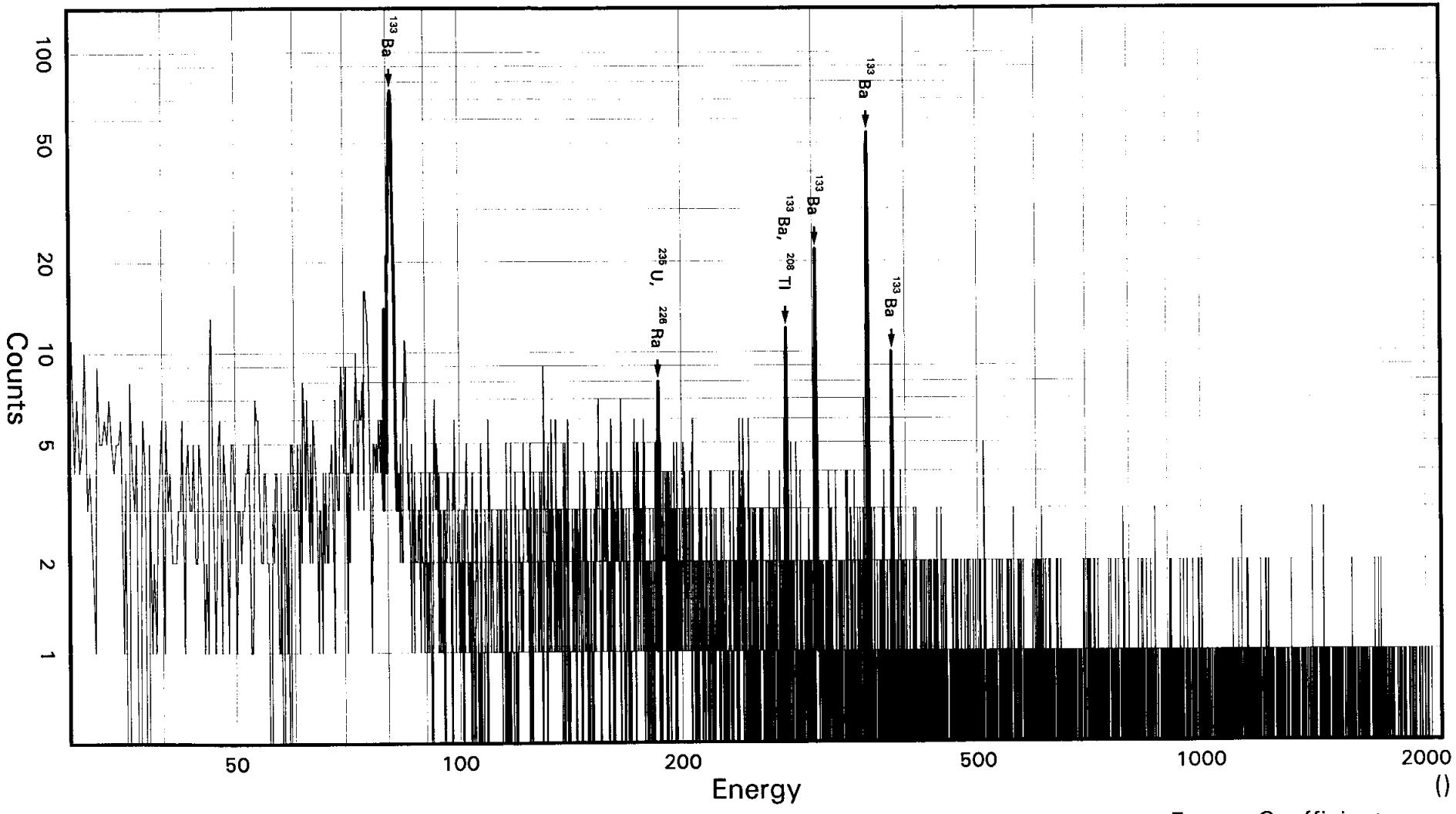
STL Richland WA.

BA133

Sample ID: H39L31AC

Detector ID: GER7 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 17:01:44.92

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: 5.50354E-01

Slope: 2.49270E-01

Quadrature: 1.11404E-07

SAMPLE IDENTIFICATION: H39L31AC

CONFIGURATION ID: GER7:H39L31AC_020661701
TITLE : BA133
SAMPLE ID : H39L31AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 17:01:44
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:17:21.79
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 5.5035E-01 keV
ENERGY SLOPE: 2.4927E-01 keV/C
ENERGY Q COEFF: 1.1140E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.8304E-01 keV
FWHM SLOPE: 3.5977E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 17:31:58

Configuration : $DISK1:[GER7.SAMPLE]H39L31AC_020661701.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:01:44
Sample ID : H39L31AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.20 0.0%
Start energy : 20.49 End energy : 2050.04
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	74.93*	26	37	1.15	298.35	292	12	1.45E-02	57.1	
2	0	80.98	313	73	0.91	322.60	313	17	1.74E-01	8.4	
3	0	186.27*	11	8	0.74	744.79	741	8	6.19E-03	59.9	
4	0	276.32	53	11	1.23	1105.76	1099	14	2.96E-02	18.8	
5	0	302.76	96	12	0.73	1211.71	1204	16	5.33E-02	13.0	
6	0	355.99	272	12	1.11	1425.01	1417	17	1.51E-01	6.8	
7	0	384.29	25	16	1.16	1538.40	1527	16	1.39E-02	41.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:31:59

Configuration : $DISK1:[GER7.SAMPLE]H39L31AC_020661701.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:01:44
Sample ID : H39L31AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.20 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	313	33.00	1.923E+00	1.643E+03	1.646E+03	10.02
	276.40	53	6.90	2.076E+00	1.241E+03	1.243E+03	19.58
	302.84	96	17.80	2.078E+00	8.641E+02	8.652E+02	14.09
	356.00	272	62.05*	2.080E+00	7.012E+02	7.021E+02	8.65
	383.85	25	8.70	2.080E+00	4.605E+02	4.611E+02	41.34

Flag: "*" = Keyline

Unidentified Energy Lines

Sample ID : H39L31AC
Acquisition date : 2-JUN-2006 17:01:44

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	74.93	26	37	1.15	298.35	292	12	1.45E-02	57.1	1.91E+00	
0	186.27	11	8	0.74	744.79	741	8	6.19E-03	59.9	2.05E+00	T

Flags: "T" = Tentatively associated

Sample ID : H39L31AC Acquisition date : 2-JUN-2006 17:01:44

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	1.260E+03	19.58	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			
RA-226DA	1600.00Y	0.00	186.21	3.50	5.180E+02	60.14	Abun.
			241.98	7.49	--- Not Found ---		
			295.22	19.20	--- Not Found ---		
			351.92	37.20	--- Not Found ---		
			609.32*	46.30	--- Not Found ---		
			1120.28	15.10	--- Not Found ---		
			1238.11	5.94	--- Not Found ---		
			1764.49	15.80	--- Not Found ---		
		% Abundances Found =		2.33			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	3.357E+01	60.14	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:32:01

Configuration : $DISK1:[GER7.SAMPLE]H39L31AC_020661701.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:01:44
Sample ID : H39L31AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.20 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.021E+02	6.075E+01	5.528E+01	1.106E+00	12.700

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-6.123E+01		6.142E+01	2.152E+02	4.317E+00	-0.285
NA-22	1.635E+00		3.855E+00	1.838E+01	3.897E-01	0.089
K-40	-3.605E+01		6.946E+01	3.140E+02	6.747E+00	-0.115
SC-46	8.995E+00		5.346E+00	2.676E+01	5.610E-01	0.336
CR-51	-7.899E+01		1.043E+02	3.645E+02	7.293E+00	-0.217
MN-54	1.869E+00		5.485E+00	2.356E+01	4.836E-01	0.079
CO-57	-1.410E+02		1.253E+02	4.229E+02	8.743E+00	-0.333
CO-58	-1.599E+00		3.887E+00	1.645E+01	3.371E-01	-0.097
FE-59	-1.594E+01		9.779E+00	3.081E+01	6.450E-01	-0.517
CO-60	5.067E+00		3.863E+00	2.053E+01	4.370E-01	0.247
ZN-65	-9.731E+00		8.800E+00	3.134E+01	6.568E-01	-0.311
SE-75	-9.762E+00		1.653E+01	5.904E+01	1.185E+00	-0.165
SR-85	-3.001E+01		1.012E+01	2.639E+01	5.305E-01	-1.137
Y-88	3.722E+00		2.640E+00	1.727E+01	3.805E-01	0.216
NB-94	-1.068E+01		5.561E+00	1.642E+01	3.379E-01	-0.650
NB-95	7.354E+00		5.439E+00	2.665E+01	5.444E-01	0.276
TC-95M	-8.456E+00		2.011E+01	7.248E+01	1.466E+00	-0.117
ZR-95	1.375E+01		9.414E+00	4.626E+01	9.443E-01	0.297
ZRNB-95	1.378E+01		1.019E+01	4.994E+01	1.020E+00	0.276
MO-99	3.047E+01		8.293E+01	3.112E+02	6.420E+00	0.098
RH-101	-1.719E+01		1.668E+01	5.916E+01	1.198E+00	-0.290
RH-102M	5.678E+00		5.818E+00	2.617E+01	5.250E-01	0.217
RU-103	-2.655E+00		7.571E+00	2.893E+01	5.809E-01	-0.092
RU-106DA	1.037E+00		5.776E+01	2.362E+02	4.777E+00	0.004
AG-108M	-1.655E+01		8.577E+00	2.641E+01	5.290E-01	-0.626
AG-110M	4.676E+00		6.553E+00	3.039E+01	6.261E-01	0.154
SN-113DA	-9.894E+00		1.476E+01	5.291E+01	1.059E+00	-0.187

Sample ID : H39L31AC Acquisition date : 2-JUN-2006 17:01:44

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-6.800E+00		7.541E+00	2.696E+01	5.446E-01	-0.252
SB-125	-1.715E+01		2.257E+01	8.182E+01	1.638E+00	-0.210
SN-126DA	-3.357E+00		5.178E+00	1.951E+01	3.958E-01	-0.172
I-131	-4.353E+00		1.268E+01	5.005E+01	1.001E+00	-0.087
CS-134	-3.347E+00		6.550E+00	2.532E+01	5.184E-01	-0.132
CS-137DA	4.082E+00		4.756E+00	2.326E+01	4.717E-01	0.175
LA-138	-2.514E+00		2.518E+00	6.962E+00	1.493E-01	-0.361
CE-139	7.046E+00		1.596E+01	5.911E+01	1.207E+00	0.119
BA-140	-6.528E+00		3.073E+01	1.249E+02	2.514E+00	-0.052
BALA-140	5.498E-01		1.342E+01	5.889E+01	1.277E+00	0.009
LA-140	-4.145E+01		9.545E+01	3.830E+02	8.305E+00	-0.108
CE-141	-4.041E+01		2.920E+01	9.633E+01	1.983E+00	-0.419
CE-144	6.771E+01		1.236E+02	4.622E+02	9.568E+00	0.147
CEPR-144	1.392E+02		2.474E+02	9.258E+02	1.917E+01	0.150
PM-144	-1.034E-01		6.130E+00	2.465E+01	4.985E-01	-0.004
PM-146	1.683E+01		8.941E+00	4.277E+01	8.572E-01	0.393
EU-152	-1.794E+01		3.311E+01	1.215E+02	2.431E+00	-0.148
EU-154	2.877E+00		1.042E+01	4.919E+01	1.043E+00	0.059
EU-155	8.762E+00		4.949E+01	1.890E+02	3.987E+00	0.046
HF-181	1.025E+00		9.078E+00	3.592E+01	7.208E-01	0.029
BI-207	4.189E+00		5.732E+00	2.532E+01	5.104E-01	0.165
TL-208	-1.169E+01		6.822E+00	2.410E+01	4.862E-01	-0.485
BI-210M	2.574E+01		1.772E+01	7.396E+01	1.484E+00	0.348
BI-212	2.097E+01		7.570E+01	3.249E+02	9.933E+00	0.065
PB-212	-1.619E+01		2.733E+01	9.978E+01	2.007E+00	-0.162
BI-214	2.029E+01		1.467E+01	6.508E+01	1.315E+00	0.312
PB-214	-5.341E+00		3.114E+01	1.012E+02	2.024E+00	-0.053
RA-223	1.381E+01		6.202E+01	2.397E+02	4.808E+00	0.058
RA-224DA	-1.630E+01		2.753E+01	1.005E+02	2.022E+00	-0.162
RA-226DA	2.029E+01		1.467E+01	6.508E+01	1.315E+00	0.312
AC-227DA	1.272E+01		9.570E+01	3.580E+02	7.204E+00	0.036
AC-228	-7.667E-01		2.188E+01	9.467E+01	1.954E+00	-0.008
RA-228DA	-7.686E-01		2.194E+01	9.489E+01	1.959E+00	-0.008
TH-228DA	-3.277E+01		1.912E+01	6.756E+01	1.363E+00	-0.485
TH-232DA	2.790E+01		6.930E+01	2.677E+02	5.354E+00	0.104
TH-234DA	-1.080E+03		7.463E+02	2.377E+03	4.940E+01	-0.454
U-234DA	2.053E+01		4.716E+01	1.824E+02	3.652E+00	0.113
U-235HP	4.497E+01		1.042E+02	3.946E+02	8.128E+00	0.114
NP-237DA	-1.112E+01		2.337E+01	8.428E+01	1.687E+00	-0.132
U-238DA	-5.341E+00		3.114E+01	1.012E+02	2.024E+00	-0.053
U-238DHP	1.535E+01		4.249E+02	1.541E+03	3.431E+01	0.010
AM-241HP	-1.878E+01		4.128E+01	1.441E+02	3.233E+00	-0.130

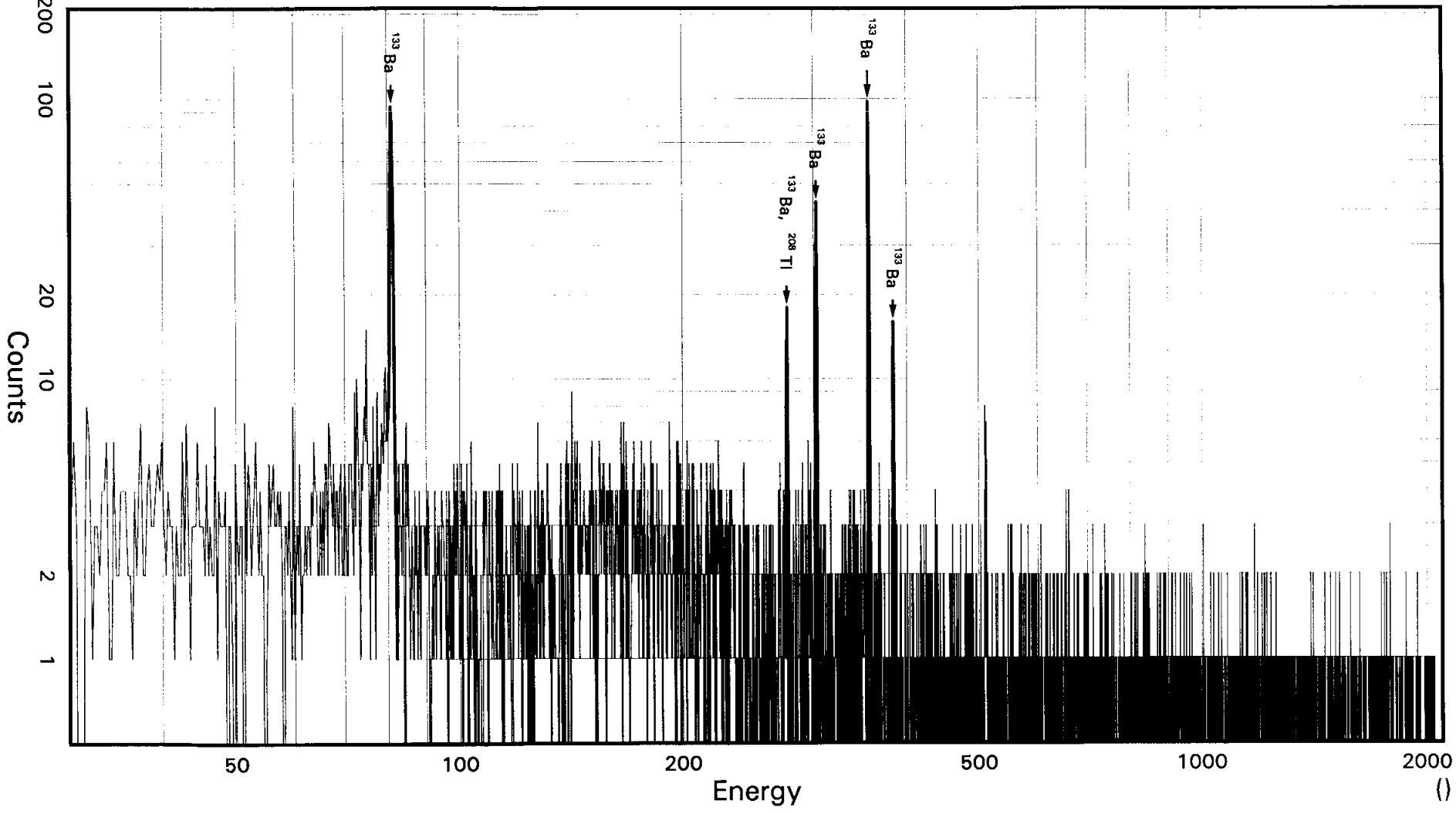
STL Richland WA.

BA133

Sample ID: H39L41AC

Detector ID: GER11 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 17:01:56.44

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: -1.93499E+00

Slope: 2.50322E-01

Quadrature: 3.82000E-08

SAMPLE IDENTIFICATION: H39L41AC

CONFIGURATION ID: GER11:H39L41AC_020661701
TITLE : BA133
SAMPLE ID : H39L41AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 17:01:56
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:17:54.29
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.1935E+01 keV
ENERGY SLOPE: 2.5032E-01 keV/C
ENERGY Q COEFF: 3.8200E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.3498E-01 keV
FWHM SLOPE: 3.9587E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 17:32:17

Configuration : $DISK1:[GER11.SAMPLE]H39L41AC_020661701.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:01:56
Sample ID : H39L41AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.98 0.1%
Start energy : 0.57 End energy : 2051.27
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.07	245	55	0.63	331.57	326	11	1.36E-01	8.8	
2	0	276.22	60	16	0.77	1110.99	1104	13	3.32E-02	19.0	
3	0	302.81	144	23	0.84	1217.19	1210	16	8.01E-02	11.6	
4	0	355.82	435	0	0.97	1428.88	1421	18	2.42E-01	4.8	
5	0	383.56	63	11	0.75	1539.63	1533	14	3.52E-02	16.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:32:17

Configuration : $DISK1:[GER11.SAMPLE]H39L41AC_020661701.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:01:56
Sample ID : H39L41AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.98 0.1%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	245	33.00	2.679E+00	9.226E+02	9.238E+02	10.31
	276.40	60	6.90	2.873E+00	1.006E+03	1.007E+03	19.73
	302.84	144	17.80	2.877E+00	9.382E+02	9.394E+02	12.78
	356.00	435	62.05*	2.879E+00	8.117E+02	8.127E+02	7.21
	383.85	63	8.70	2.878E+00	8.424E+02	8.435E+02	17.48

Flag: "*" = Keyline

Sample ID : H39L41AC Acquisition date : 2-JUN-2006 17:01:56

None

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : H39L41AC

Acquisition date : 2-JUN-2006 17:01:56

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	1.020E+03	19.73	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:32:19

Configuration : $DISK1:[GER11.SAMPLE]H39L41AC_020661701.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00
Sample ID : H39L41AC
Sample type :
Elapsed live time: 0 00:30:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 2-JUN-2006 17:01:56
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.98 0.1%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	8.127E+02	5.860E+01	2.938E+01	5.877E-01	27.659

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-7.442E+01		5.163E+01	1.743E+02	3.496E+00	-0.427
NA-22	3.716E+00		3.246E+00	1.610E+01	3.396E-01	0.231
K-40	-9.575E+01		4.038E+01	1.930E+02	4.121E+00	-0.496
SC-46	2.136E+00		3.636E+00	1.652E+01	3.450E-01	0.129
CR-51	1.412E+01		6.763E+01	2.684E+02	5.370E+00	0.053
MN-54	-3.931E+00		4.439E+00	1.579E+01	3.234E-01	-0.249
CO-57	4.864E+01		6.274E+01	2.494E+02	5.142E+00	0.195
CO-58	-3.991E+00		3.893E+00	1.375E+01	2.812E-01	-0.290
FE-59	1.712E+00		5.292E+00	2.498E+01	5.210E-01	0.069
CO-60	-1.254E+00		2.761E+00	1.141E+01	2.416E-01	-0.110
ZN-65	-2.699E+00		5.558E+00	2.255E+01	4.709E-01	-0.120
SE-75	-6.343E+00		9.679E+00	3.450E+01	6.920E-01	-0.184
SR-85	-2.605E+01		7.987E+00	2.152E+01	4.324E-01	-1.210
Y-88	-2.573E+00		1.825E+00	3.606E+00	7.879E-02	-0.714
NB-94	-3.650E-01		4.225E+00	1.675E+01	3.440E-01	-0.022
NB-95	6.820E+00		3.072E+00	1.787E+01	3.644E-01	0.382
TC-95M	-1.270E+01		1.249E+01	4.336E+01	8.760E-01	-0.293
ZR-95	-4.479E+00		7.956E+00	3.022E+01	6.158E-01	-0.148
ZRNB-95	1.278E+01		5.758E+00	3.349E+01	6.829E-01	0.382
MO-99	2.047E+01		5.693E+01	2.147E+02	4.418E+00	0.095
RH-101	-5.537E+00		1.146E+01	4.206E+01	8.509E-01	-0.132
RH-102M	-1.819E+00		3.777E+00	1.496E+01	3.000E-01	-0.122
RU-103	8.516E-01		5.095E+00	2.133E+01	4.282E-01	0.040
RU-106DA	-7.184E+01		4.775E+01	1.524E+02	3.079E+00	-0.471
AG-108M	-8.202E+00		6.059E+00	1.980E+01	3.965E-01	-0.414
AG-110M	1.381E+00		4.536E+00	2.007E+01	4.125E-01	0.069
SN-113DA	1.380E+01		8.309E+00	3.689E+01	7.381E-01	0.374

---- Non-Identified Nuclides ----

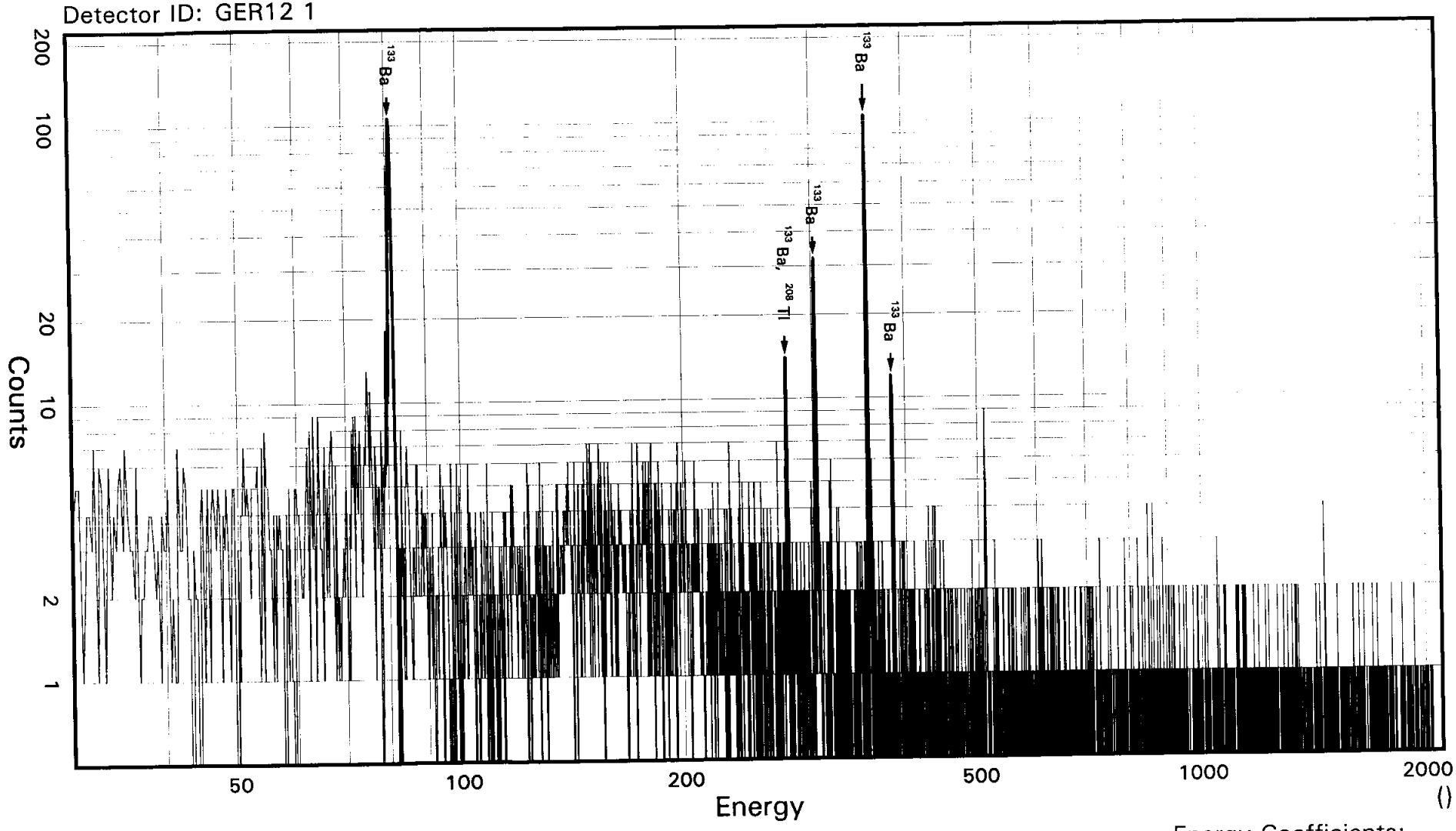
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-7.655E+00		5.397E+00	1.761E+01	3.554E-01	-0.435
SB-125	-1.329E+01		1.698E+01	6.022E+01	1.206E+00	-0.221
SN-126DA	2.627E+00		3.264E+00	1.545E+01	3.130E-01	0.170
I-131	7.860E+00		1.150E+01	4.793E+01	9.585E-01	0.164
CS-134	2.793E+00		3.975E+00	1.832E+01	3.743E-01	0.152
CS-137DA	-4.668E+00		7.116E+00	3.092E+01	6.263E-01	-0.151
LA-138	-1.467E-01		3.775E+00	1.717E+01	3.661E-01	-0.009
CE-139	5.314E+00		1.182E+01	4.309E+01	8.785E-01	0.123
BA-140	3.352E+01		2.462E+01	1.137E+02	2.287E+00	0.295
BALA-140	7.805E+00		9.437E+00	4.636E+01	9.984E-01	0.168
LA-140	5.228E+01		6.322E+01	3.105E+02	6.688E+00	0.168
CE-141	-2.449E+01		2.137E+01	7.080E+01	1.454E+00	-0.346
CE-144	-3.992E+01		6.412E+01	2.270E+02	4.686E+00	-0.176
CEPR-144	-7.895E+01		1.283E+02	4.546E+02	9.383E+00	-0.174
PM-144	-2.288E+00		6.080E+00	2.223E+01	4.490E-01	-0.103
PM-146	1.884E+00		6.797E+00	2.760E+01	5.531E-01	0.068
EU-152	3.062E+01		2.396E+01	9.958E+01	1.992E+00	0.307
EU-154	1.042E+01		9.103E+00	4.515E+01	9.526E-01	0.231
EU-155	-2.726E+01		2.978E+01	1.057E+02	2.219E+00	-0.258
HF-181	4.056E+00		7.836E+00	3.164E+01	6.347E-01	0.128
BI-207	-7.146E-02		4.157E+00	1.683E+01	3.390E-01	-0.004
TL-208	7.133E+00		4.236E+00	2.102E+01	4.238E-01	0.339
BI-210M	1.291E-01		1.028E+01	3.965E+01	7.953E-01	0.003
BI-212	-1.528E+01		5.857E+01	2.344E+02	7.162E+00	-0.065
PB-212	1.179E+01		1.408E+01	5.663E+01	1.139E+00	0.208
BI-214	-1.416E+01		8.452E+00	2.276E+01	4.595E-01	-0.622
PB-214	2.575E+00		2.101E+01	6.907E+01	1.381E+00	0.037
RA-223	1.456E+02		4.756E+01	2.153E+02	4.316E+00	0.677
RA-224DA	1.188E+01		1.418E+01	5.704E+01	1.147E+00	0.208
RA-226DA	-1.426E+01		8.438E+00	2.259E+01	4.560E-01	-0.631
AC-227DA	-1.097E+02		5.653E+01	1.752E+02	3.524E+00	-0.626
AC-228	5.336E+00		1.397E+01	6.064E+01	1.249E+00	0.088
RA-228DA	5.348E+00		1.400E+01	6.079E+01	1.252E+00	0.088
TH-228DA	2.000E+01		1.188E+01	5.894E+01	1.188E+00	0.339
TH-232DA	4.598E+00		5.630E+01	2.134E+02	4.267E+00	0.022
TH-234DA	-2.369E+02		5.992E+02	2.350E+03	4.869E+01	-0.101
U-234DA	3.914E+01		3.871E+01	1.508E+02	3.019E+00	0.260
U-235HP	1.122E+02		8.661E+01	3.346E+02	6.875E+00	0.335
NP-237DA	4.904E+00		1.488E+01	6.007E+01	1.202E+00	0.082
U-238DA	2.575E+00		2.101E+01	6.907E+01	1.381E+00	0.037
U-238DHP	2.556E+02		2.187E+02	8.578E+02	1.893E+01	0.298
AM-241HP	1.488E+01		2.139E+01	8.282E+01	1.840E+00	0.180

STL Richland WA.

BA133

Sample ID: H39L61AC
Detector ID: GER12 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 17:02:24.90
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.25271E+01
Slope: 2.47763E-01
Quadrature: -4.04485E-09

SAMPLE IDENTIFICATION: H39L61AC

CONFIGURATION ID: GER12:H39L61AC_020661702
TITLE : BA133
SAMPLE ID : H39L61AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 17:02:24
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:18:38.29
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.2527E+01 keV
ENERGY SLOPE: 2.4776E-01 keV/C
ENERGY Q COEFF: -.4045E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.7633E-01 keV
FWHM SLOPE: 3.7348E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 2.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 17:32:43

Configuration : $DISK1:[GER12.SAMPLE]H39L61AC_020661702.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:02:24
Sample ID : H39L61AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Start energy : 12.77 End energy : 2041.93
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.84	377	40	0.79	275.73	268	14	2.10E-01	6.2	
2	0	276.29	57	12	0.83	1064.60	1056	14	3.18E-02	17.9	
3	0	302.81	134	28	0.91	1171.66	1163	16	7.43E-02	12.4	
4	0	356.06	429	10	0.90	1386.56	1377	20	2.38E-01	5.2	
5	0	383.84	57	9	1.32	1498.69	1492	12	3.16E-02	17.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:32:43

Configuration : $DISK1:[GER12.SAMPLE]H39L61AC_020661702.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:02:24
Sample ID : H39L61AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	377	33.00	2.899E+00	1.315E+03	1.317E+03	8.27
	276.40	57	6.90	3.105E+00	8.916E+02	8.928E+02	18.74
	302.84	134	17.80	3.109E+00	8.061E+02	8.072E+02	13.49
	356.00	429	62.05*	3.111E+00	7.407E+02	7.417E+02	7.45
	383.85	57	8.70	3.111E+00	7.001E+02	7.010E+02	17.80

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H39L61AC
Acquisition date : 2-JUN-2006 17:02:24

None

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : H39L61AC

Acquisition date : 2-JUN-2006 17:02:24

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	9.047E+02	18.74	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:32:45

Configuration : $DISK1:[GER12.SAMPLE]H39L61AC_020661702.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:02:24
Sample ID : H39L61AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.417E+02	5.529E+01	4.354E+01	8.708E-01	17.035

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	9.900E+00		3.445E+01	1.483E+02	2.975E+00	0.067
NA-22	-2.510E+00		3.670E+00	1.363E+01	2.873E-01	-0.184
K-40	-3.349E+01		5.053E+01	2.367E+02	5.048E+00	-0.141
SC-46	5.544E+00		3.863E+00	1.844E+01	3.848E-01	0.301
CR-51	-7.367E+01		6.778E+01	2.290E+02	4.582E+00	-0.322
MN-54	-7.316E-01		3.692E+00	1.485E+01	3.041E-01	-0.049
CO-57	-5.546E+00		7.516E+01	2.755E+02	5.676E+00	-0.020
CO-58	4.012E-01		4.058E+00	1.683E+01	3.440E-01	0.024
FE-59	-2.061E+00		4.876E+00	2.050E+01	4.272E-01	-0.100
CO-60	9.234E+00		4.243E+00	2.059E+01	4.356E-01	0.448
ZN-65	-1.531E+01		8.635E+00	2.697E+01	5.626E-01	-0.568
SE-75	1.098E+01		1.118E+01	4.475E+01	8.975E-01	0.245
SR-85	-2.144E+01		7.923E+00	2.231E+01	4.482E-01	-0.961
Y-88	0.000E+00		0.000E+00	3.330E+00	7.263E-02	0.000
NB-94	4.356E+00		3.105E+00	1.544E+01	3.169E-01	0.282
NB-95	-3.395E+00		3.661E+00	1.357E+01	2.766E-01	-0.250
TC-95M	-2.062E+01		1.282E+01	4.299E+01	8.684E-01	-0.480
ZR-95	3.703E+00		4.232E+00	2.236E+01	4.555E-01	0.166
ZRNB-95	-6.362E+00		6.860E+00	2.543E+01	5.184E-01	-0.250
MO-99	-2.725E+01		6.404E+01	2.284E+02	4.697E+00	-0.119
RH-101	-1.063E+00		1.289E+01	4.649E+01	9.402E-01	-0.023
RH-102M	-6.218E+00		3.824E+00	1.185E+01	2.377E-01	-0.525
RU-103	-4.805E+00		6.145E+00	2.175E+01	4.366E-01	-0.221
RU-106DA	-1.504E+01		4.795E+01	1.825E+02	3.686E+00	-0.082
AG-108M	-1.904E+01		7.025E+00	1.987E+01	3.980E-01	-0.958
AG-110M	6.184E+00		4.387E+00	2.179E+01	4.476E-01	0.284
SN-113DA	1.406E+01		8.362E+00	3.661E+01	7.324E-01	0.384

Sample ID : H39L61AC Acquisition date : 2-JUN-2006 17:02:24

---- Non-Identified Nuclides ----

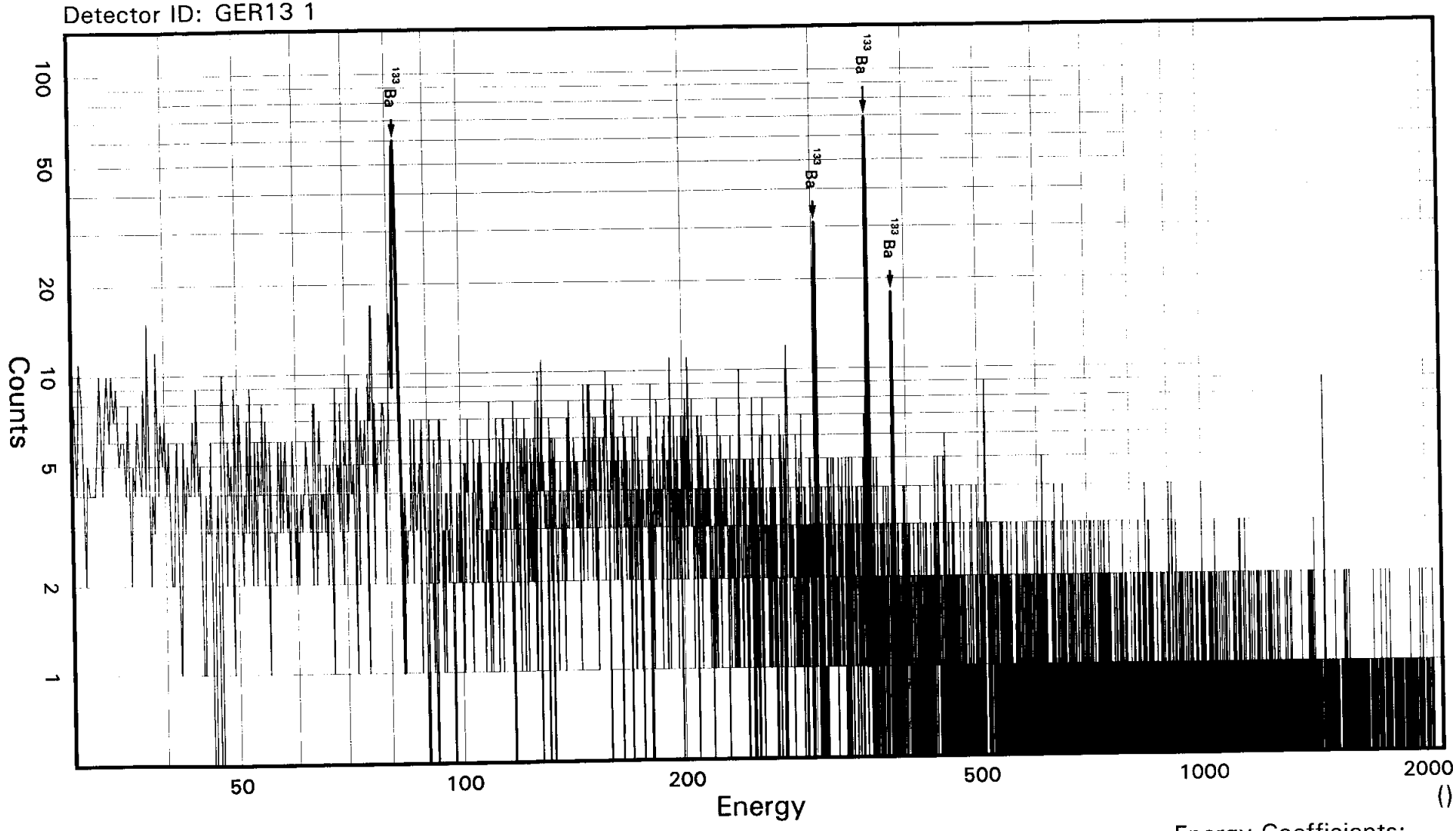
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	1.111E+01		5.257E+00	2.424E+01	4.891E-01	0.458
SB-125	1.102E+01		1.510E+01	6.385E+01	1.278E+00	0.173
SN-126DA	-1.533E+00		3.576E+00	1.385E+01	2.805E-01	-0.111
I-131	-8.655E+00		1.108E+01	4.043E+01	8.085E-01	-0.214
CS-134	-7.461E-02		2.486E+00	1.168E+01	2.384E-01	-0.006
CS-137DA	3.313E+00		4.183E+00	1.873E+01	3.793E-01	0.177
LA-138	1.782E+00		4.498E+00	2.052E+01	4.370E-01	0.087
CE-139	8.679E+00		1.024E+01	3.909E+01	7.967E-01	0.222
BA-140	-2.033E+00		1.683E+01	7.219E+01	1.452E+00	-0.028
BALA-140	6.832E+00		1.021E+01	4.674E+01	1.005E+00	0.146
LA-140	1.811E+00		6.016E+01	2.622E+02	5.639E+00	0.007
CE-141	-5.230E+00		2.055E+01	7.358E+01	1.510E+00	-0.071
CE-144	-3.945E+01		6.649E+01	2.376E+02	4.902E+00	-0.166
CEPR-144	-9.779E+01		1.347E+02	4.760E+02	9.820E+00	-0.205
PM-144	3.945E+00		4.054E+00	1.800E+01	3.635E-01	0.219
PM-146	1.541E+00		6.868E+00	2.758E+01	5.526E-01	0.056
EU-152	1.120E+01		2.367E+01	9.050E+01	1.810E+00	0.124
EU-154	-7.040E+00		1.029E+01	3.823E+01	8.057E-01	-0.184
EU-155	-1.255E+01		3.211E+01	1.191E+02	2.499E+00	-0.105
HF-181	-2.047E+00		4.413E+00	1.714E+01	3.437E-01	-0.119
BI-207	1.899E+00		3.515E+00	1.593E+01	3.209E-01	0.119
TL-208	5.297E+00		4.404E+00	2.033E+01	4.099E-01	0.261
BI-210M	-2.206E+01		1.353E+01	4.398E+01	8.819E-01	-0.502
BI-212	4.654E+01		5.592E+01	2.484E+02	7.587E+00	0.187
PB-212	6.946E+00		1.643E+01	6.266E+01	1.260E+00	0.111
BI-214	1.766E+01		1.079E+01	4.758E+01	9.605E-01	0.371
PB-214	2.456E+01		1.981E+01	7.229E+01	1.446E+00	0.340
RA-223	4.254E+01		4.832E+01	1.912E+02	3.833E+00	0.223
RA-224DA	6.996E+00		1.655E+01	6.312E+01	1.269E+00	0.111
RA-226DA	1.766E+01		1.080E+01	4.758E+01	9.605E-01	0.371
AC-227DA	-1.484E+02		5.833E+01	1.738E+02	3.495E+00	-0.854
AC-228	1.153E+01		1.548E+01	6.617E+01	1.361E+00	0.174
RA-228DA	1.156E+01		1.552E+01	6.632E+01	1.365E+00	0.174
TH-228DA	1.485E+01		1.235E+01	5.700E+01	1.149E+00	0.261
TH-232DA	-4.600E+00		3.093E+01	1.210E+02	2.420E+00	-0.038
TH-234DA	-2.459E+01		4.280E+02	1.835E+03	3.799E+01	-0.013
U-234DA	-5.363E+01		3.374E+01	1.088E+02	2.178E+00	-0.493
U-235HP	2.767E+01		7.875E+01	2.933E+02	6.023E+00	0.094
NP-237DA	6.090E+00		1.506E+01	5.901E+01	1.181E+00	0.103
U-238DA	2.456E+01		1.981E+01	7.229E+01	1.446E+00	0.340
U-238DHP	1.843E+02		2.594E+02	9.681E+02	2.131E+01	0.190
AM-241HP	2.509E+01		2.145E+01	8.536E+01	1.892E+00	0.294

STL Richland WA.

BA133

Sample ID: H39L71AC
Detector ID: GER13 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 17:02:36.89
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -6.38464E-01
Slope: 2.50756E-01
Quadrature: -9.95410E-08

SAMPLE IDENTIFICATION: H39L71AC

CONFIGURATION ID: GER13:H39L71AC_020661702
TITLE : BA133
SAMPLE ID : H39L71AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 17:02:36
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:18:24.03
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.6385E+00 keV
ENERGY SLOPE: 2.5076E-01 keV/C
ENERGY Q COEFF: -.9954E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.4456E-01 keV
FWHM SLOPE: 3.7038E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 17:32:58

Configuration : $DISK1:[GER13.SAMPLE]H39L71AC_020661702.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:02:36
Sample ID : H39L71AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Start energy : 19.42 End energy : 2046.88
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	76.22*	10	60	0.46	306.56	298	12	5.51E-03	166.9	
2	0	81.88	182	76	0.80	329.11	324	12	1.01E-01	12.7	
3	0	302.54	136	17	0.87	1209.63	1201	17	7.56E-02	11.0	
4	0	355.81	369	39	1.30	1422.29	1412	19	2.05E-01	6.6	
5	0	383.69	69	12	0.87	1533.60	1525	16	3.85E-02	16.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:32:58

Configuration : $DISK1:[GER13.SAMPLE]H39L71AC_020661702.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:02:36
Sample ID : H39L71AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	182	33.00	2.704E+00	6.799E+02	6.808E+02	13.84
	276.40	------	6.90	2.897E+00	------	Line Not Found	------
	302.84	136	17.80	2.900E+00	8.781E+02	8.792E+02	12.28
	356.00	369	62.05*	2.903E+00	6.829E+02	6.838E+02	8.50
	383.85	69	8.70	2.902E+00	9.138E+02	9.150E+02	17.27

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H39L71AC Acquisition date : 2-JUN-2006 17:02:36

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	76.22	10	60	0.46	306.56	298	12	5.51E-03	****	2.69E+00	

Flags: "T" = Tentatively associated

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:33:00

Configuration : $DISK1:[GER13.SAMPLE]H39L71AC_020661702.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:02:36
Sample ID : H39L71AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.838E+02	5.811E+01	5.446E+01	1.089E+00	12.556

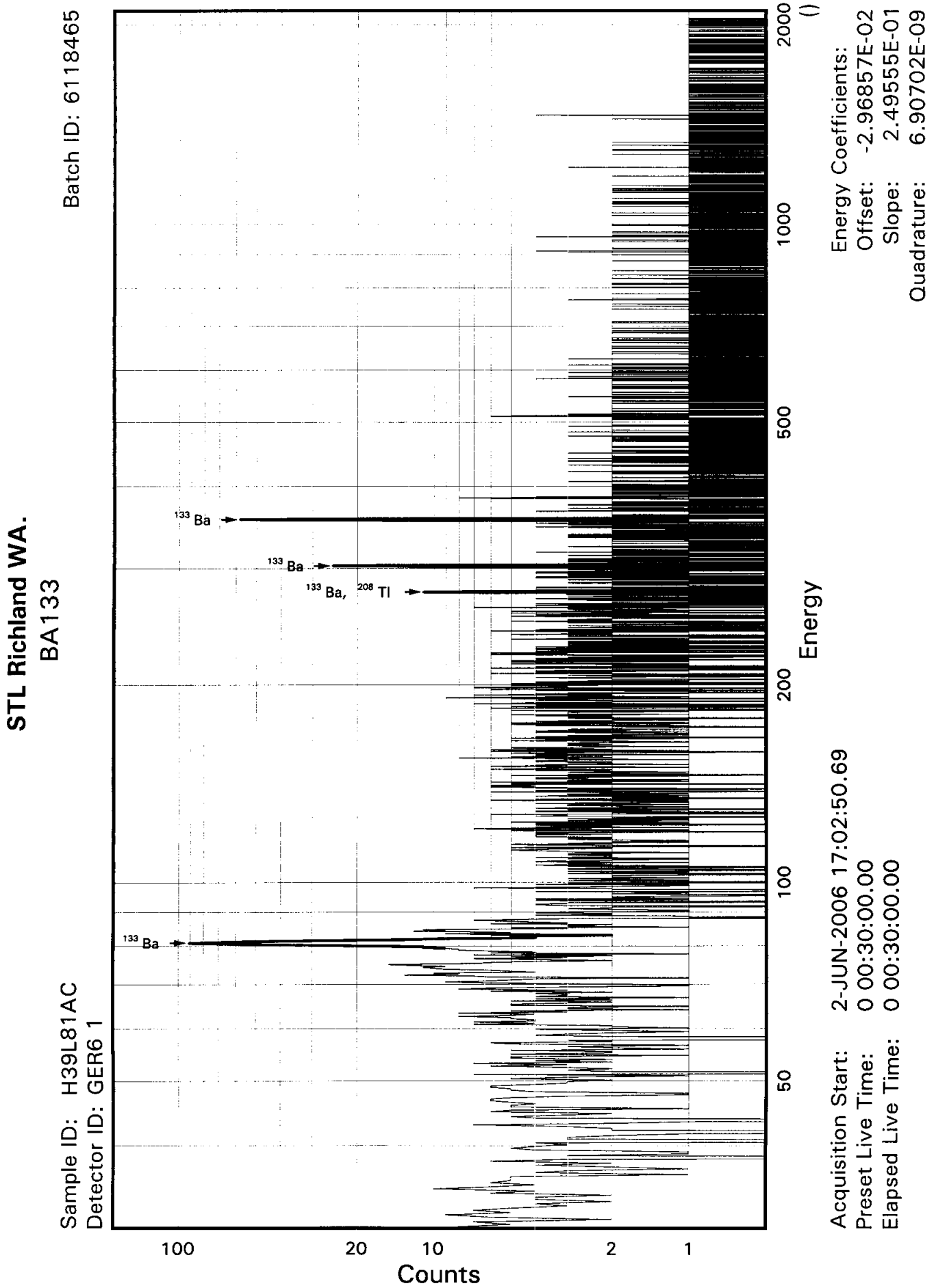
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	1.059E+01		5.856E+01	2.284E+02	4.580E+00	0.046
NA-22	-1.329E+00		4.075E+00	1.596E+01	3.367E-01	-0.083
K-40	-4.702E+01		9.909E+01	4.651E+02	9.931E+00	-0.101
SC-46	-2.596E+00		6.315E+00	2.495E+01	5.209E-01	-0.104
CR-51	-4.809E+01		1.117E+02	3.919E+02	7.840E+00	-0.123
MN-54	-4.210E+00		5.744E+00	2.080E+01	4.261E-01	-0.202
CO-57	-9.916E+01		1.017E+02	3.485E+02	7.183E+00	-0.285
CO-58	5.566E+00		5.850E+00	2.468E+01	5.047E-01	0.226
FE-59	5.133E-01		8.064E+00	3.341E+01	6.966E-01	0.015
CO-60	3.466E+00		4.453E+00	1.933E+01	4.093E-01	0.179
ZN-65	-1.100E+01		1.136E+01	4.014E+01	8.379E-01	-0.274
SE-75	8.648E-02		1.583E+01	5.775E+01	1.158E+00	0.001
SR-85	-3.602E+01		1.145E+01	3.264E+01	6.558E-01	-1.103
Y-88	1.399E+00		3.472E+00	1.588E+01	3.469E-01	0.088
NB-94	2.584E+00		4.683E+00	1.968E+01	4.040E-01	0.131
NB-95	2.337E+00		5.864E+00	2.362E+01	4.816E-01	0.099
TC-95M	8.748E+00		2.064E+01	7.319E+01	1.479E+00	0.120
ZR-95	-1.233E+01		9.117E+00	2.997E+01	6.107E-01	-0.412
ZRNB-95	4.683E+00		1.102E+01	4.449E+01	9.071E-01	0.105
MO-99	5.764E+01		7.819E+01	2.893E+02	5.952E+00	0.199
RH-101	-3.381E+00		1.587E+01	5.511E+01	1.115E+00	-0.061
RH-102M	2.639E-02		6.498E+00	2.461E+01	4.935E-01	0.001
RU-103	1.187E+01		8.729E+00	3.560E+01	7.147E-01	0.333
RU-106DA	1.945E+01		4.955E+01	2.038E+02	4.117E+00	0.095
AG-108M	-9.529E+00		8.984E+00	3.077E+01	6.162E-01	-0.310
AG-110M	1.008E+01		6.623E+00	3.005E+01	6.176E-01	0.335
SN-113DA	-1.007E+01		1.105E+01	3.891E+01	7.785E-01	-0.259

Sample ID : H39L71AC Acquisition date : 2-JUN-2006 17:02:36

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-8.313E+00		6.311E+00	2.143E+01	4.324E-01	-0.388
SB-125	-2.636E+01		2.303E+01	7.890E+01	1.580E+00	-0.334
SN-126DA	1.221E-01		5.934E+00	2.271E+01	4.601E-01	0.005
I-131	-4.103E+00		1.810E+01	6.457E+01	1.291E+00	-0.064
CS-134	1.133E-01		5.341E+00	2.156E+01	4.405E-01	0.005
CS-137DA	-2.108E+00		6.736E+00	2.515E+01	5.094E-01	-0.084
LA-138	2.654E-01		5.720E+00	2.404E+01	5.125E-01	0.011
CE-139	-8.279E+00		1.491E+01	5.144E+01	1.049E+00	-0.161
BA-140	-2.778E+01		3.765E+01	1.317E+02	2.650E+00	-0.211
BALA-140	-7.799E+00		9.447E+00	3.553E+01	7.652E-01	-0.219
LA-140	-5.225E+01		6.330E+01	2.381E+02	5.127E+00	-0.219
CE-141	-5.048E+01		2.800E+01	9.077E+01	1.864E+00	-0.556
CE-144	1.275E+02		9.782E+01	3.761E+02	7.764E+00	0.339
CEPR-144	2.558E+02		1.957E+02	7.526E+02	1.553E+01	0.340
PM-144	5.013E+00		5.261E+00	2.233E+01	4.511E-01	0.224
PM-146	-1.509E+01		1.141E+01	3.816E+01	7.648E-01	-0.395
EU-152	5.022E+00		3.222E+01	1.174E+02	2.349E+00	0.043
EU-154	-3.925E+00		1.140E+01	4.456E+01	9.401E-01	-0.088
EU-155	1.047E+02		4.706E+01	1.916E+02	4.023E+00	0.547
HF-181	2.806E+00		7.385E+00	2.939E+01	5.895E-01	0.095
BI-207	-5.668E+00		5.684E+00	2.013E+01	4.056E-01	-0.282
TL-208	-9.292E+00		7.780E+00	2.981E+01	6.010E-01	-0.312
BI-210M	-4.558E-02		1.729E+01	6.334E+01	1.270E+00	-0.001
BI-212	-9.418E+00		8.386E+01	3.186E+02	9.732E+00	-0.030
PB-212	3.446E+01		2.356E+01	9.091E+01	1.828E+00	0.379
BI-214	3.921E+00		1.776E+01	7.310E+01	1.476E+00	0.054
PB-214	-2.402E+01		3.509E+01	1.055E+02	2.110E+00	-0.228
RA-223	2.561E+01		6.653E+01	2.477E+02	4.966E+00	0.103
RA-224DA	3.471E+01		2.372E+01	9.157E+01	1.841E+00	0.379
RA-226DA	4.022E+00		1.776E+01	7.315E+01	1.477E+00	0.055
AC-227DA	-2.284E+02		9.073E+01	2.825E+02	5.681E+00	-0.808
AC-228	2.170E+01		2.135E+01	9.803E+01	2.018E+00	0.221
RA-228DA	2.175E+01		2.140E+01	9.826E+01	2.023E+00	0.221
TH-228DA	-2.605E+01		2.181E+01	8.358E+01	1.685E+00	-0.312
TH-232DA	5.611E+01		7.536E+01	2.812E+02	5.625E+00	0.200
TH-234DA	1.563E+03		7.561E+02	3.520E+03	7.292E+01	0.444
U-234DA	5.933E+00		4.784E+01	1.744E+02	3.491E+00	0.034
U-235HP	5.091E+01		1.058E+02	3.882E+02	7.976E+00	0.131
NP-237DA	3.117E+01		2.381E+01	9.297E+01	1.860E+00	0.335
U-238DA	-2.402E+01		3.509E+01	1.055E+02	2.110E+00	-0.228
U-238DHP	1.979E+02		3.100E+02	1.142E+03	2.520E+01	0.173
AM-241HP	-3.703E+01		3.158E+01	1.063E+02	2.362E+00	-0.348


STL Richland WA.
BA133
Batch ID: 6118465
Sample ID: H39L81AC
Detector ID: GER6 1
133 Ba
133 Ba
133 Ba, 208 Tl
133 Ba
Counts
100
20
10
2
1
Energy
50
100
200
500
1000
2000
()
Acquisition Start: 2-JUN-2006 17:02:50.69
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00
Energy Coefficients:
Offset: -2.96857E-02
Slope: 2.49555E-01
Quadrature: 6.90702E-09

SAMPLE IDENTIFICATION: H39L81AC

CONFIGURATION ID: GER6:H39L81AC_020661702
TITLE : BA133
SAMPLE ID : H39L81AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 17:02:50
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:29:05.09
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.2969E-01 keV
ENERGY SLOPE: 2.4956E-01 keV/C
ENERGY Q COEFF: 6.9070E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.2873E-01 keV
FWHM SLOPE: 6.6727E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 17:33:13

```
Configuration     : $DISK1:[GER6.SAMPLE]H39L81AC_020661702.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:02:50
Sample ID         : H39L81AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.26   0.0%
Start energy      :    19.93             End energy       :  2044.79
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.94	338	92	0.89	324.44	318	16	1.88E-01	8.5	
2	0	276.41	61	5	1.23	1107.70	1099	19	3.39E-02	15.4	
3	0	302.81	114	16	1.17	1213.49	1205	16	6.36E-02	12.2	
4	0	356.06	304	14	1.27	1426.85	1418	20	1.69E-01	6.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:33:13

Configuration : $DISK1:[GER6.SAMPLE]H39L81AC_020661702.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:02:50
Sample ID : H39L81AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.26 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	338	33.00	2.167E+00	1.574E+03	1.576E+03	10.12
	276.40	61	6.90	2.334E+00	1.262E+03	1.263E+03	16.36
	302.84	114	17.80	2.337E+00	9.169E+02	9.181E+02	13.31
	356.00	304	62.05*	2.339E+00	6.974E+02	6.983E+02	8.46
	383.85	------	8.70	2.338E+00	------	Line Not Found	------

Flag: "*" = Keyline

Sample ID : H39L81AC Acquisition date : 2-JUN-2006 17:02:50

None

Flags: "T" = Tentatively associated

Sample ID : H39L81AC Acquisition date : 2-JUN-2006 17:02:50

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	1.280E+03	16.36	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:33:15

Configuration : $DISK1:[GER6.SAMPLE]H39L81AC_020661702.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:02:50
Sample ID : H39L81AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.26 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.983E+02	5.910E+01	5.382E+01	1.076E+00	12.975

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-6.630E+01		6.718E+01	2.389E+02	4.792E+00	-0.278
NA-22	3.016E+00		3.728E+00	1.821E+01	3.855E-01	0.166
K-40	3.517E+01		9.065E+01	4.212E+02	9.029E+00	0.084
SC-46	-1.134E+01		6.229E+00	1.901E+01	3.981E-01	-0.596
CR-51	-1.208E+02		1.109E+02	3.791E+02	7.586E+00	-0.319
MN-54	-1.710E+00		4.533E+00	1.783E+01	3.658E-01	-0.096
CO-57	8.734E+00		1.031E+02	3.718E+02	7.678E+00	0.023
CO-58	1.474E+00		4.762E+00	2.064E+01	4.227E-01	0.071
FE-59	-2.252E+00		1.156E+01	4.497E+01	9.402E-01	-0.050
CO-60	-1.571E+00		5.142E+00	2.010E+01	4.271E-01	-0.078
ZN-65	5.818E+00		1.045E+01	4.501E+01	9.421E-01	0.129
SE-75	5.150E+00		1.781E+01	6.589E+01	1.322E+00	0.078
SR-85	-1.995E+01		1.148E+01	3.721E+01	7.478E-01	-0.536
Y-88	-6.585E+00		4.052E+00	1.214E+01	2.666E-01	-0.542
NB-94	5.632E+00		4.977E+00	2.290E+01	4.710E-01	0.246
NB-95	4.758E+00		7.250E+00	3.017E+01	6.158E-01	0.158
TC-95M	-3.315E-01		1.641E+01	6.125E+01	1.238E+00	-0.005
ZR-95	-1.264E+00		1.034E+01	4.123E+01	8.412E-01	-0.031
ZRNB-95	8.917E+00		1.359E+01	5.654E+01	1.154E+00	0.158
MO-99	1.116E+02		8.564E+01	3.331E+02	6.865E+00	0.335
RH-101	2.331E+01		1.657E+01	6.339E+01	1.283E+00	0.368
RH-102M	2.564E+00		6.807E+00	2.762E+01	5.541E-01	0.093
RU-103	-2.819E+00		8.825E+00	3.320E+01	6.666E-01	-0.085
RU-106DA	3.163E+01		5.530E+01	2.363E+02	4.777E+00	0.134
AG-108M	-9.212E+00		8.248E+00	2.813E+01	5.634E-01	-0.327
AG-110M	-3.003E+00		6.565E+00	2.569E+01	5.289E-01	-0.117
SN-113DA	-1.438E+01		1.132E+01	3.860E+01	7.722E-01	-0.373

Sample ID : H39L81AC Acquisition date : 2-JUN-2006 17:02:50

---- Non-Identified Nuclides ----

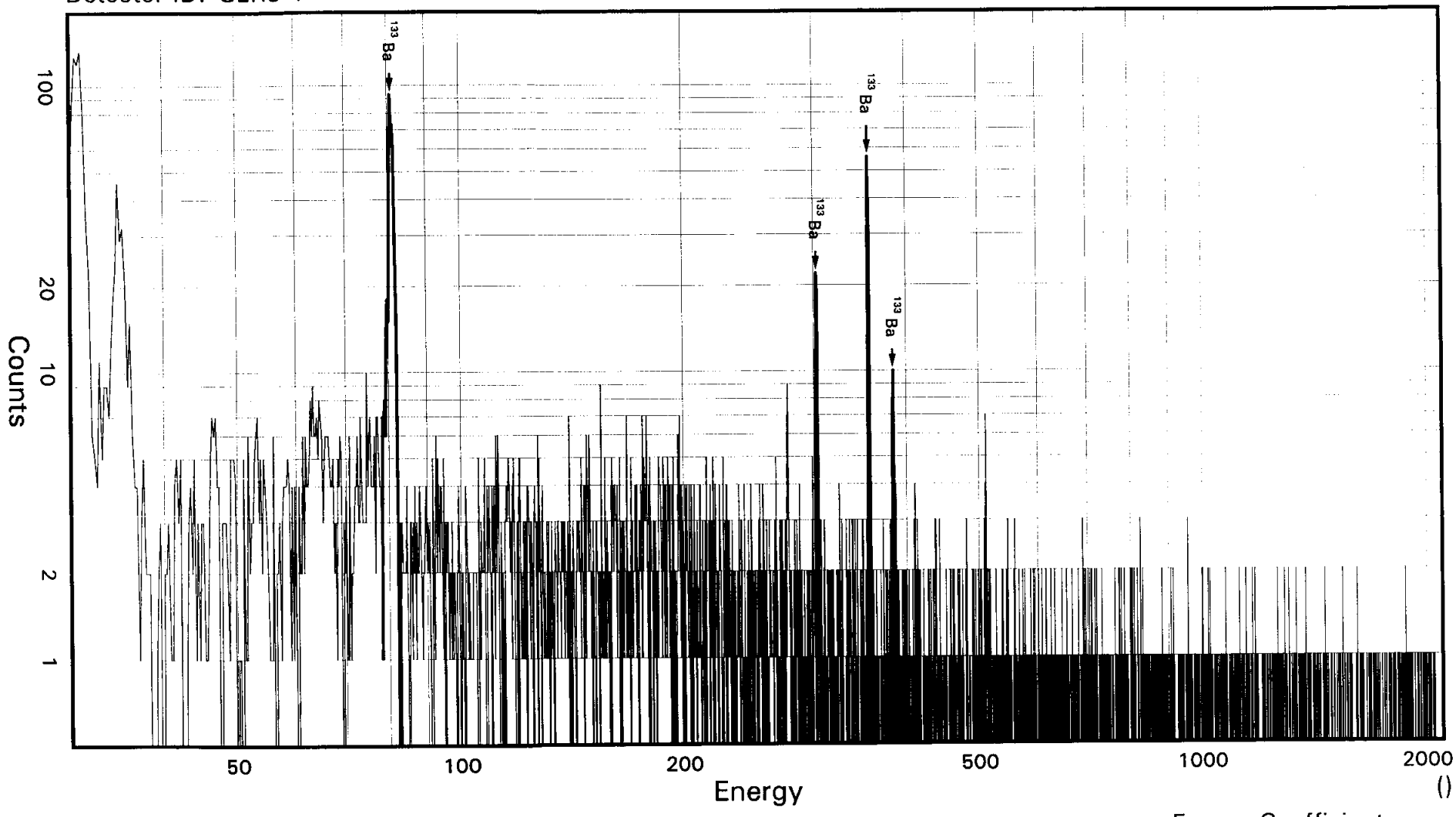
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-1.115E+01		7.431E+00	2.467E+01	4.982E-01	-0.452
SB-125	4.174E+00		2.135E+01	8.484E+01	1.699E+00	0.049
SN-126DA	2.234E+00		6.104E+00	2.478E+01	5.023E-01	0.090
I-131	-1.178E+01		1.946E+01	6.847E+01	1.370E+00	-0.172
CS-134	-2.249E+00		4.476E+00	1.782E+01	3.646E-01	-0.126
CS-137DA	-1.838E+00		7.435E+00	2.828E+01	5.732E-01	-0.065
LA-138	-4.553E+00		6.465E+00	2.460E+01	5.264E-01	-0.185
CE-139	2.316E+01		1.356E+01	5.456E+01	1.114E+00	0.425
BA-140	1.380E+01		3.146E+01	1.321E+02	2.659E+00	0.104
BALA-140	5.002E+00		1.425E+01	6.256E+01	1.353E+00	0.080
LA-140	8.498E+01		9.367E+01	4.392E+02	9.500E+00	0.193
CE-141	-4.242E+00		2.574E+01	9.466E+01	1.947E+00	-0.045
CE-144	3.295E+01		9.565E+01	3.540E+02	7.321E+00	0.093
CEPR-144	6.811E+01		1.915E+02	7.090E+02	1.466E+01	0.096
PM-144	-1.474E+00		5.214E+00	2.054E+01	4.152E-01	-0.072
PM-146	-8.408E+00		1.069E+01	3.769E+01	7.554E-01	-0.223
EU-152	-7.716E+01		3.240E+01	9.496E+01	1.899E+00	-0.813
EU-154	8.459E+00		1.046E+01	5.108E+01	1.081E+00	0.166
EU-155	-1.981E+01		4.700E+01	1.700E+02	3.580E+00	-0.117
HF-181	2.110E+01		8.816E+00	4.100E+01	8.226E-01	0.515
BI-207	6.595E+00		6.094E+00	2.633E+01	5.307E-01	0.250
TL-208	9.793E+00		8.898E+00	3.796E+01	7.656E-01	0.258
BI-210M	-1.498E+01		1.897E+01	6.537E+01	1.311E+00	-0.229
BI-212	-1.483E+02		6.473E+01	1.621E+02	4.955E+00	-0.915
PB-212	2.479E+00		2.416E+01	9.222E+01	1.855E+00	0.027
BI-214	-1.547E+01		1.606E+01	6.123E+01	1.237E+00	-0.253
PB-214	1.768E+01		3.192E+01	1.082E+02	2.164E+00	0.163
RA-223	6.662E+01		6.174E+01	2.471E+02	4.955E+00	0.270
RA-224DA	2.497E+00		2.433E+01	9.288E+01	1.868E+00	0.027
RA-226DA	-1.547E+01		1.606E+01	6.123E+01	1.237E+00	-0.253
AC-227DA	-1.194E+02		9.118E+01	3.055E+02	6.145E+00	-0.391
AC-228	2.376E+00		2.614E+01	1.067E+02	2.200E+00	0.022
RA-228DA	2.382E+00		2.620E+01	1.069E+02	2.205E+00	0.022
TH-228DA	2.746E+01		2.495E+01	1.064E+02	2.146E+00	0.258
TH-232DA	-7.625E+01		7.526E+01	2.567E+02	5.135E+00	-0.297
TH-234DA	-2.844E+02		8.366E+02	3.207E+03	6.658E+01	-0.089
U-234DA	8.733E+01		5.527E+01	2.210E+02	4.425E+00	0.395
U-235HP	1.925E+01		1.055E+02	3.948E+02	8.126E+00	0.049
NP-237DA	-4.443E+00		2.240E+01	8.341E+01	1.669E+00	-0.053
U-238DA	1.768E+01		3.192E+01	1.082E+02	2.164E+00	0.163
U-238DHP	3.416E+01		3.569E+02	1.311E+03	2.908E+01	0.026
AM-241HP	-3.686E+01		2.919E+01	9.908E+01	2.215E+00	-0.372

STL Richland WA.

BA133

Sample ID: H39MC1AC
Detector ID: GER8 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 17:03:07.14
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 2.99960E-01
Slope: 2.49800E-01
Quadrature: 2.31623E-08

SAMPLE IDENTIFICATION: H39MC1AC

CONFIGURATION ID: GER8:H39MC1AC_020661703
TITLE : BA133
SAMPLE ID : H39MC1AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 17:03:07
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:17:38.45
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 2.9996E-01 keV
ENERGY SLOPE: 2.4980E-01 keV/C
ENERGY Q COEFF: 2.3162E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.6476E-01 keV
FWHM SLOPE: 2.0964E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 17:33:28

Configuration : $DISK1:[GER8.SAMPLE]H39MC1AC_020661703.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:03:07
Sample ID : H39MC1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.21 0.0%
Start energy : 20.28 End energy : 2048.22
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	30.75	605	144	1.12	121.88	113	17	3.36E-01	6.1	
2	0	35.10	165	85	0.89	139.33	131	17	9.16E-02	15.0	
3	0	80.85	462	37	1.15	322.45	312	18	2.57E-01	5.6	
4	0	302.77	118	4	1.12	1210.72	1204	15	6.55E-02	9.9	
5	0	355.94	288	0	1.33	1423.50	1414	18	1.60E-01	5.9	
6	0	383.61	47	8	1.37	1534.23	1526	16	2.62E-02	19.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:33:29

Configuration : $DISK1:[GER8.SAMPLE]H39MC1AC_020661703.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:03:07
Sample ID : H39MC1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.21 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	462	33.00	2.201E+00	2.119E+03	2.122E+03	7.79
	276.40	------	6.90	2.371E+00	------ Line Not Found		------
	302.84	118	17.80	2.374E+00	9.303E+02	9.315E+02	11.26
	356.00	288	62.05*	2.376E+00	6.512E+02	6.521E+02	7.98
	383.85	47	8.70	2.375E+00	7.605E+02	7.614E+02	20.50

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H39MC1AC Acquisition date : 2-JUN-2006 17:03:07

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	30.75	605	144	1.12	121.88	113	17	3.36E-01	6.1	1.93E+00	
0	35.10	165	85	0.89	139.33	131	17	9.16E-02	15.0	1.97E+00	

Flags: "T" = Tentatively associated

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 17:33:31

Configuration : $DISK1:[GER8.SAMPLE]H39MC1AC_020661703.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 17:03:07
Sample ID : H39MC1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.21 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.521E+02	5.205E+01	4.365E+01	8.730E-01	14.939

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.327E+02		5.810E+01	1.671E+02	3.353E+00	-0.794
NA-22	1.407E+00		3.379E+00	1.606E+01	3.399E-01	0.088
K-40	-4.982E+00		4.009E+01	1.986E+02	4.256E+00	-0.025
SC-46	6.346E+00		4.443E+00	2.208E+01	4.621E-01	0.287
CR-51	-1.966E+02		9.563E+01	2.931E+02	5.864E+00	-0.671
MN-54	1.253E+00		3.950E+00	1.755E+01	3.600E-01	0.071
CO-57	5.823E+01		1.071E+02	3.990E+02	8.238E+00	0.146
CO-58	2.972E+00		3.856E+00	1.862E+01	3.812E-01	0.160
FE-59	-2.884E+00		5.020E+00	2.135E+01	4.462E-01	-0.135
CO-60	-4.773E+00		4.072E+00	1.387E+01	2.946E-01	-0.344
ZN-65	-3.157E-01		5.824E+00	2.687E+01	5.622E-01	-0.012
SE-75	1.216E+01		1.513E+01	5.968E+01	1.197E+00	0.204
SR-85	-1.885E+01		1.025E+01	3.315E+01	6.661E-01	-0.569
Y-88	3.221E+00		3.267E+00	1.747E+01	3.837E-01	0.184
NB-94	2.836E-01		3.981E+00	1.731E+01	3.560E-01	0.016
NB-95	4.761E+00		5.556E+00	2.483E+01	5.068E-01	0.192
TC-95M	5.289E+00		1.710E+01	6.436E+01	1.301E+00	0.082
ZR-95	8.394E+00		4.868E+00	3.010E+01	6.140E-01	0.279
ZRNB-95	8.922E+00		1.041E+01	4.653E+01	9.498E-01	0.192
MO-99	-3.075E+01		7.789E+01	2.734E+02	5.634E+00	-0.112
RH-101	5.245E+01		1.627E+01	6.798E+01	1.376E+00	0.772
RH-102M	-9.524E-01		5.219E+00	2.097E+01	4.207E-01	-0.045
RU-103	2.436E+00		7.258E+00	2.993E+01	6.009E-01	0.081
RU-106DA	-1.399E+01		4.386E+01	1.762E+02	3.563E+00	-0.079
AG-108M	-1.054E+01		8.260E+00	2.731E+01	5.469E-01	-0.386
AG-110M	-1.654E+00		5.229E+00	2.183E+01	4.493E-01	-0.076
SN-113DA	-9.182E+00		1.092E+01	3.830E+01	7.663E-01	-0.240

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-3.004E+00		5.410E+00	2.061E+01	4.161E-01	-0.146
SB-125	1.806E+01		1.836E+01	8.015E+01	1.605E+00	0.225
SN-126DA	1.337E+00		3.172E+00	1.521E+01	3.083E-01	0.088
I-131	-7.152E+00		1.307E+01	4.832E+01	9.664E-01	-0.148
CS-134	-8.781E+00		3.955E+00	4.572E+00	9.351E-02	-1.921
CS-137DA	1.666E+00		2.900E+00	1.551E+01	3.144E-01	0.107
LA-138	4.501E+00		3.192E+00	2.088E+01	4.467E-01	0.216
CE-139	-7.545E+00		1.499E+01	5.192E+01	1.060E+00	-0.145
BA-140	1.831E+01		3.083E+01	1.324E+02	2.663E+00	0.138
BALA-140	0.000E+00		0.000E+00	1.270E+01	2.746E-01	0.000
LA-140	0.000E+00		0.000E+00	8.510E+01	1.840E+00	0.000
CE-141	1.082E+00		3.012E+01	1.076E+02	2.212E+00	0.010
CE-144	-3.278E+01		9.696E+01	3.450E+02	7.134E+00	-0.095
CEPR-144	-6.556E+01		1.939E+02	6.900E+02	1.427E+01	-0.095
PM-144	-1.202E-01		4.539E+00	1.881E+01	3.803E-01	-0.006
PM-146	-1.310E+01		8.010E+00	2.464E+01	4.938E-01	-0.532
EU-152	-4.001E+01		2.561E+01	8.268E+01	1.654E+00	-0.484
EU-154	3.948E+00		9.476E+00	4.505E+01	9.533E-01	0.088
EU-155	-1.592E+01		5.298E+01	1.894E+02	3.988E+00	-0.084
HF-181	4.391E+00		7.013E+00	3.033E+01	6.085E-01	0.145
BI-207	-5.530E+00		4.948E+00	1.737E+01	3.501E-01	-0.318
TL-208	-8.091E+00		6.443E+00	2.201E+01	4.440E-01	-0.368
BI-210M	5.790E+00		1.757E+01	6.714E+01	1.347E+00	0.086
BI-212	1.943E+01		7.268E+01	3.059E+02	9.348E+00	0.064
PB-212	6.173E+00		1.945E+01	7.792E+01	1.567E+00	0.079
BI-214	2.994E+00		1.007E+01	4.291E+01	8.669E-01	0.070
PB-214	-3.647E+01		2.713E+01	7.114E+01	1.423E+00	-0.513
RA-223	-1.392E+01		6.510E+01	2.393E+02	4.800E+00	-0.058
RA-224DA	6.217E+00		1.959E+01	7.848E+01	1.578E+00	0.079
RA-226DA	2.749E+00		1.003E+01	4.268E+01	8.621E-01	0.064
AC-227DA	-3.175E+01		7.800E+01	2.840E+02	5.714E+00	-0.112
AC-228	1.108E+01		1.456E+01	6.842E+01	1.411E+00	0.162
RA-228DA	1.111E+01		1.460E+01	6.858E+01	1.414E+00	0.162
TH-228DA	-2.268E+01		1.806E+01	6.172E+01	1.245E+00	-0.368
TH-232DA	5.252E+01		6.114E+01	2.463E+02	4.926E+00	0.213
TH-234DA	2.441E+02		6.655E+02	2.935E+03	6.091E+01	0.083
U-234DA	-2.183E+01		4.312E+01	1.555E+02	3.114E+00	-0.140
U-235HP	-6.084E+01		1.099E+02	3.812E+02	7.845E+00	-0.160
NP-237DA	-2.307E+01		2.216E+01	7.623E+01	1.526E+00	-0.303
U-238DA	-3.647E+01		2.713E+01	7.114E+01	1.423E+00	-0.513
U-238DHP	7.304E+02		4.806E+02	1.854E+03	4.112E+01	0.394
AM-241HP	-4.942E+01		4.094E+01	1.385E+02	3.095E+00	-0.357

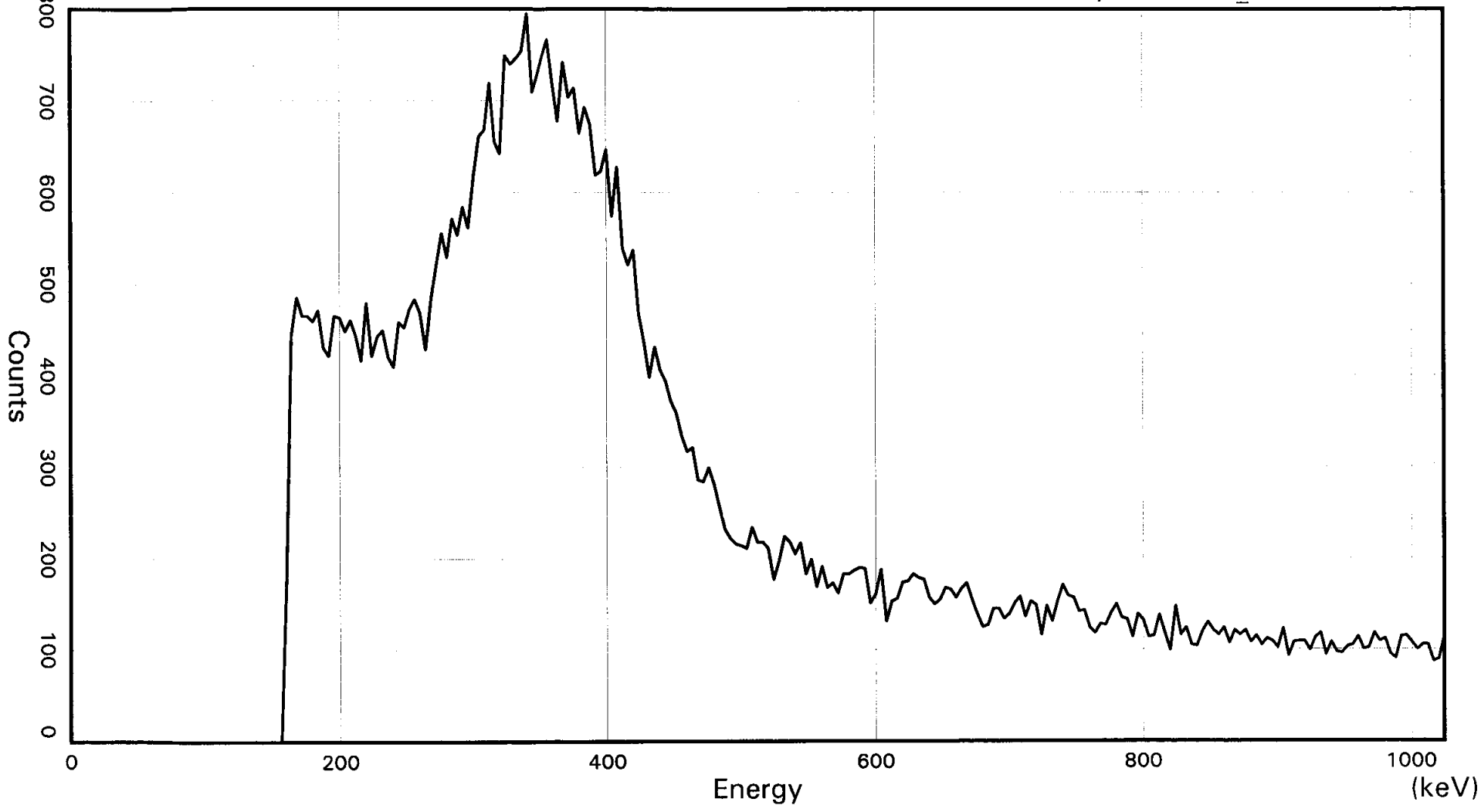
STL Richland WA.

BA133

Sample ID: H39MD1AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start:	2-JUN-2006 19:01:09.11
Preset Live Time:	0 00:30:00
Elapsed Live Time:	0 00:30:00
Weighting:	DERIVED

Start Channel:	80
End Channel:	113
Iterations:	5
Gain shift:	Iter

SAMPLE IDENTIFICATION: H39MD1AC

CONFIGURATION ID: NAI1:H39MD1AC_020661901
TITLE : BA133
SAMPLE ID : H39MD1AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 19:01:09
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 17-NOV-1993 10:39:59.60
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY:

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 0.0000E+00 keV
ENERGY SLOPE: 4.0000E+00 keV/C
ENERGY Q COEFF: 0.0000E+00 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: -.2302E+02 keV
FWHM SLOPE: 5.7163E+00 sqr keV
ITERATIONS: 5
GAUSSIAN SENSITIVITY: 35.00 %

ABUNDANCE LIMIT: 75.00 %
ENERGY TOLERANCE: 20.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]BA133.NLB

VMS NAI Report V1.2 Generated 2-JUN-2006 19:31:14

```
Configuration     : RDND06$DKA100:[NAI1.SAMPLE]H39MD1AC_020661901.CNF;1
Analyses by       : NAI V3.0
Sample title      : BA133
Sample date       : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:01:09
Sample ID         : H39MD1AC             Sample quantity  : 1.0000 sampl
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.66   0.0%
Sample Multiplier:     1.00              Rejection Coeff. :     0.00
Gain shift type   : ITER                 Threshold Shift  : No
Weighting type    : DERIVED              Calculated counts: No
Iterations        :  5
```

NAI Residuals Report

Ratio of Residuals Over Standard Deviation Per Channel

80:	2.6	6.8	5.8	5.7	5.0	4.3	1.2	1.5
88:	1.8	2.1	-0.1	-1.6	1.1	-2.4	0.7	-0.4
96:	-0.1	-2.1	-3.4	-2.2	-2.3	-3.1	-0.9	-3.3
104:	-4.9	-4.0	-5.4	-5.6	-6.7	-4.0	-5.9	-5.1
112:	-3.8	-4.2						

List of Suspicious Channels

81 82 83 84

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.36E+01	0.00E+00	1.02E+00
2	7.95E+00	0.00E+00	1.04E+00
3	3.20E+00	0.00E+00	1.06E+00
4	1.15E+00	0.00E+00	1.07E+00

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	752.	9.87

Total Activity :	752.	

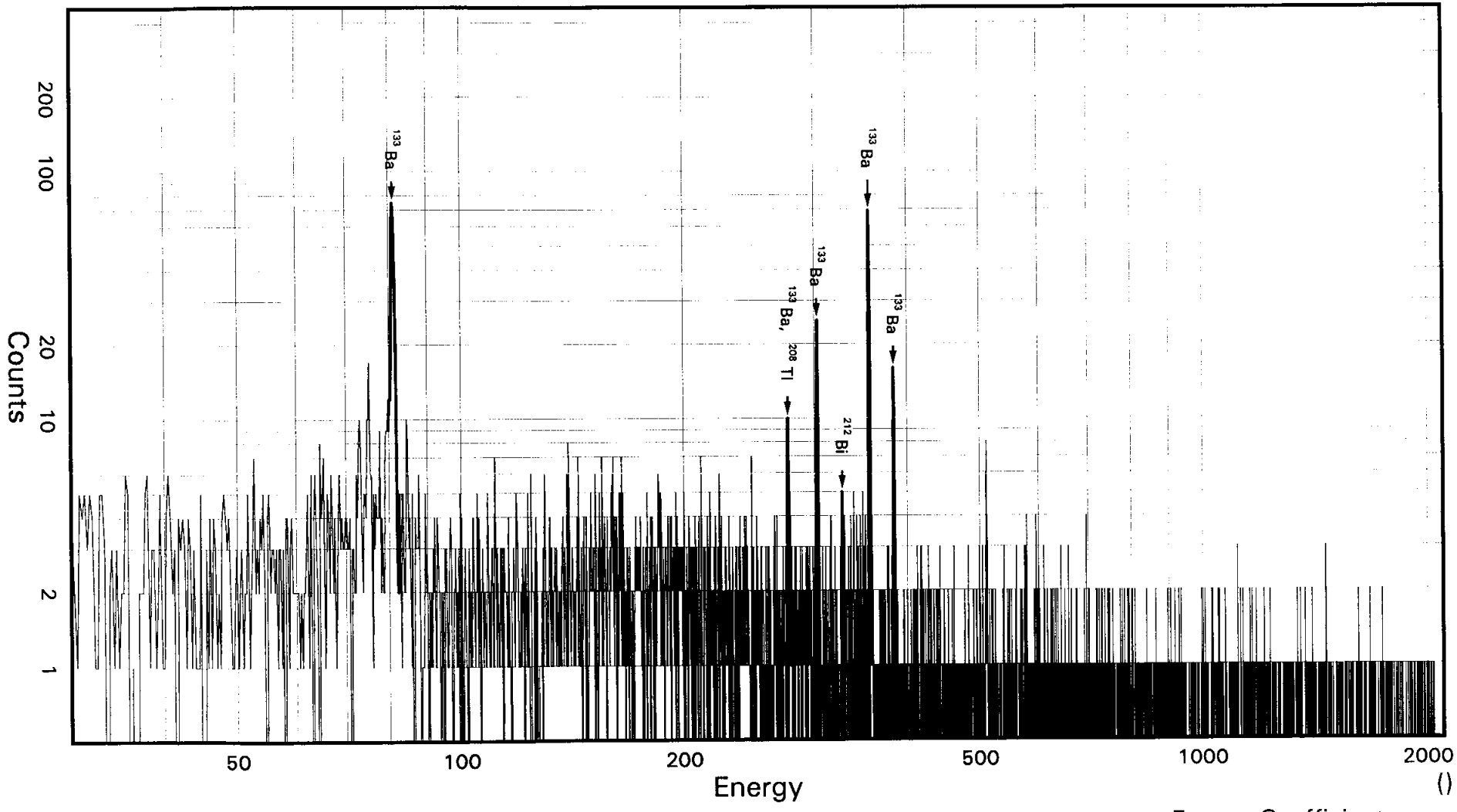
STL Richland WA.

BA133

Sample ID: H39MF1AC

Detector ID: GER4 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 19:01:52.63

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: -1.09040E-01

Slope: 2.48919E-01

Quadrature: 5.02993E-09

SAMPLE IDENTIFICATION: H39MF1AC

CONFIGURATION ID: GER4:H39MF1AC_020661901
TITLE : BA133
SAMPLE ID : H39MF1AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 19:01:52
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:16:46.15
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.1090E+00 keV
ENERGY SLOPE: 2.4892E-01 keV/C
ENERGY Q COEFF: 5.0299E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.7629E-01 keV
FWHM SLOPE: 4.1550E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 19:32:10

Configuration : $DISK1:[GER4.SAMPLE]H39MF1AC_020661901.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:01:52
Sample ID : H39MF1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Start energy : 19.80 End energy : 2039.37
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	75.19*	6	29	0.40	302.51	298	9	3.27E-03	195.4	
2	0	81.12	235	66	0.81	326.32	321	11	1.31E-01	9.4	
3	0	276.41	36	20	0.89	1110.87	1103	16	1.98E-02	32.8	
4	0	302.85	95	7	0.88	1217.09	1210	13	5.25E-02	11.7	
5	0	327.11	13	5	1.11	1314.54	1309	10	7.22E-03	42.5	
6	0	356.04	320	9	1.07	1430.74	1424	16	1.78E-01	5.9	
7	0	383.74	60	9	1.04	1542.01	1532	17	3.32E-02	17.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:32:10

Configuration : $DISK1:[GER4.SAMPLE]H39MF1AC_020661901.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:01:52
Sample ID : H39MF1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	235	33.00	2.043E+00	1.163E+03	1.165E+03	10.94
	276.40	36	6.90	2.202E+00	7.802E+02	7.813E+02	33.24
	302.84	95	17.80	2.205E+00	8.024E+02	8.035E+02	12.93
	356.00	320	62.05*	2.207E+00	7.784E+02	7.794E+02	9.08
	383.85	60	8.70	2.207E+00	1.037E+03	1.038E+03	18.24

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H39MF1AC Acquisition date : 2-JUN-2006 19:01:52

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	75.19	6	29	0.40	302.51	298	9	3.27E-03	****	2.03E+00	
0	327.11	13	5	1.11	1314.54	1309	10	7.22E-03	42.5	2.21E+00	T

Flags: "T" = Tentatively associated

Sample ID : H39MF1AC
Acquisition date : 2-JUN-2006 19:01:52

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	7.917E+02	33.24	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	1.413E+04	43.56	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	--- Not Found ---		
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		1.22			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:32:12

Configuration : $DISK1:[GER4.SAMPLE]H39MF1AC_020661901.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:01:52
Sample ID : H39MF1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.794E+02	7.080E+01	4.240E+01	1.987E+00	18.383

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	8.911E+01		5.397E+01	2.596E+02	9.477E+00	0.343
NA-22	-3.278E+00		2.327E+00	4.349E+00	1.677E-01	-0.754
K-40	1.173E+02		8.032E+01	4.080E+02	1.593E+01	0.288
SC-46	3.415E+00		3.341E+00	1.808E+01	6.893E-01	0.189
CR-51	5.273E+01		8.234E+01	3.412E+02	7.920E+00	0.155
MN-54	3.489E+00		5.341E+00	2.359E+01	8.808E-01	0.148
CO-57	-5.776E+00		9.712E+01	3.553E+02	8.517E+00	-0.016
CO-58	6.538E+00		4.797E+00	2.355E+01	8.781E-01	0.278
FE-59	1.279E+01		7.693E+00	4.117E+01	1.568E+00	0.311
CO-60	-1.788E-01		4.018E+00	1.732E+01	6.705E-01	-0.010
ZN-65	-9.116E+00		6.946E+00	2.339E+01	8.916E-01	-0.390
SE-75	2.264E+01		1.460E+01	6.089E+01	1.417E+00	0.372
SR-85	-4.651E+01		1.123E+01	2.566E+01	9.384E-01	-1.813
Y-88	5.265E-04		2.478E+00	1.289E+01	5.158E-01	0.000
NB-94	1.660E+00		3.428E+00	1.671E+01	6.257E-01	0.099
NB-95	7.060E+00		5.094E+00	2.515E+01	9.346E-01	0.281
TC-95M	2.179E+01		1.579E+01	6.418E+01	1.506E+00	0.339
ZR-95	6.905E+00		1.069E+01	4.623E+01	1.717E+00	0.149
ZRNB-95	1.322E+01		9.540E+00	4.710E+01	1.750E+00	0.281
MO-99	1.583E+02		7.614E+01	3.109E+02	7.438E+00	0.509
RH-101	6.021E+00		1.462E+01	5.625E+01	1.321E+00	0.107
RH-102M	4.206E+00		5.127E+00	2.330E+01	8.507E-01	0.181
RU-103	-5.448E+00		7.907E+00	2.907E+01	1.062E+00	-0.187
RU-106DA	1.294E+02		6.280E+01	2.968E+02	1.092E+01	0.436
AG-108M	-9.854E-01		6.958E+00	2.662E+01	9.705E-01	-0.037
AG-110M	-4.060E+00		6.078E+00	2.351E+01	8.812E-01	-0.173
SN-113DA	2.974E+00		9.699E+00	3.944E+01	1.436E+00	0.075

---- Non-Identified Nuclides ----

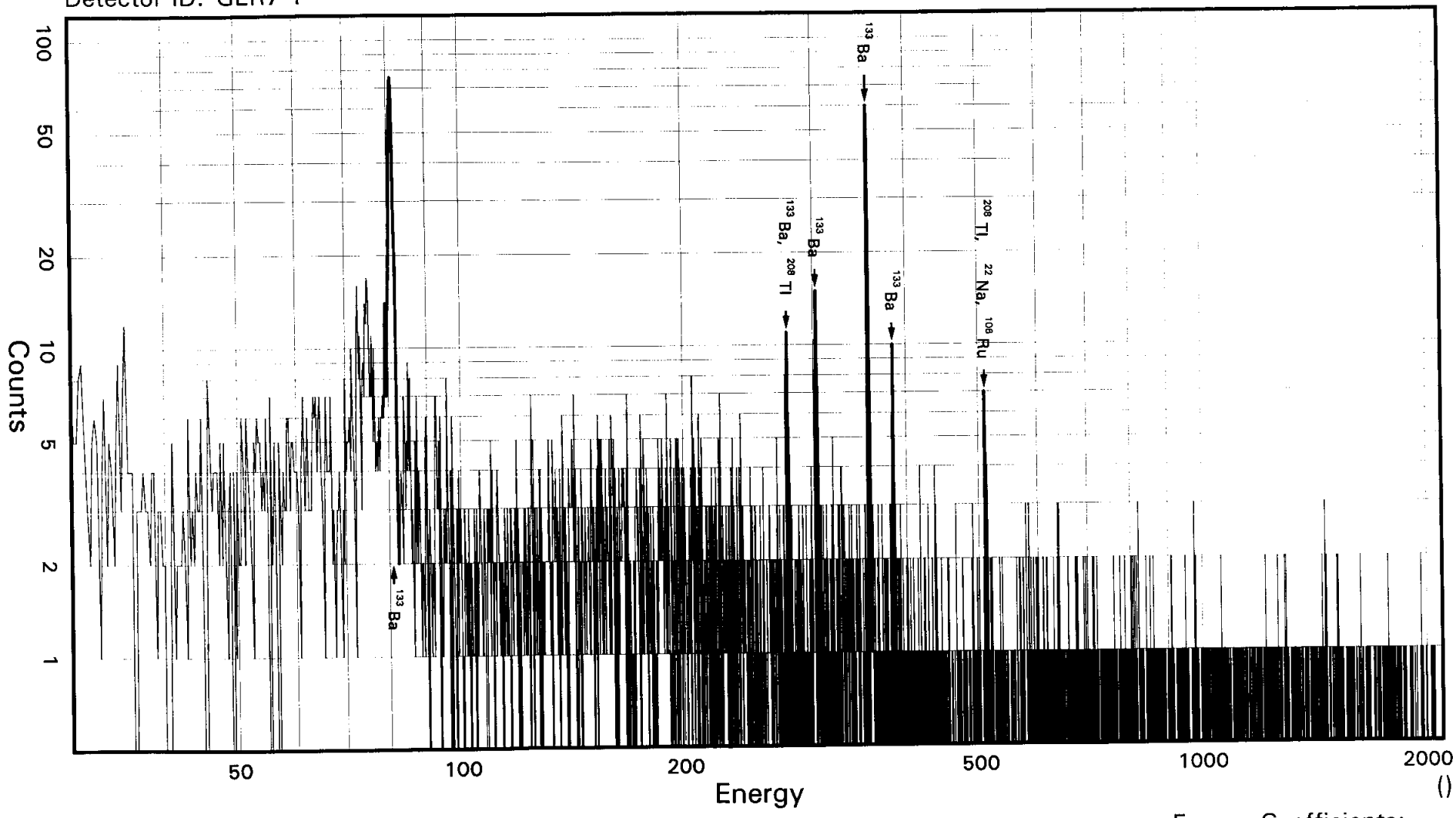
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-2.687E+00		6.713E+00	2.517E+01	9.254E-01	-0.107
SB-125	1.290E+01		2.321E+01	9.390E+01	3.422E+00	0.137
SN-126DA	-2.666E+00		4.780E+00	1.853E+01	6.839E-01	-0.144
I-131	-1.281E+01		1.332E+01	4.712E+01	1.715E+00	-0.272
CS-134	-3.978E+00		5.277E+00	1.959E+01	7.296E-01	-0.203
CS-137DA	-6.673E+00		6.607E+00	2.357E+01	8.698E-01	-0.283
LA-138	-2.276E+00		5.358E+00	2.250E+01	8.774E-01	-0.101
CE-139	-7.790E+00		1.459E+01	5.030E+01	1.191E+00	-0.155
BA-140	2.294E+01		3.464E+01	1.475E+02	5.399E+00	0.156
BALA-140	-5.203E+00		5.213E+00	1.375E+01	5.420E-01	-0.378
LA-140	-3.591E+01		3.599E+01	9.492E+01	3.741E+00	-0.378
CE-141	-8.654E-01		2.647E+01	9.574E+01	2.285E+00	-0.009
CE-144	2.782E+01		9.273E+01	3.496E+02	8.392E+00	0.080
CEPR-144	5.327E+01		1.853E+02	6.979E+02	1.676E+01	0.076
PM-144	-7.112E+00		6.093E+00	2.046E+01	7.528E-01	-0.348
PM-146	7.382E+00		8.229E+00	3.679E+01	1.342E+00	0.201
EU-152	-2.434E+01		3.281E+01	1.164E+02	2.701E+00	-0.209
EU-154	-9.194E+00		6.527E+00	1.220E+01	4.702E-01	-0.754
EU-155	9.249E+00		4.947E+01	1.871E+02	4.576E+00	0.049
HF-181	1.377E+01		8.352E+00	3.812E+01	1.392E+00	0.361
BI-207	-6.707E+00		6.365E+00	2.196E+01	8.055E-01	-0.305
TL-208	-2.935E+00		6.858E+00	2.868E+01	1.053E+00	-0.102
BI-210M	1.022E+01		1.764E+01	6.827E+01	1.589E+00	0.150
BI-212	-2.599E-01		7.397E+01	3.061E+02	1.332E+01	-0.001
PB-212	-3.605E+00		2.381E+01	8.895E+01	2.076E+00	-0.041
BI-214	-2.242E+01		1.461E+01	5.484E+01	2.017E+00	-0.409
PB-214	-4.015E+01		3.083E+01	9.105E+01	2.113E+00	-0.441
RA-223	-5.777E+01		6.100E+01	2.082E+02	4.845E+00	-0.277
RA-224DA	-3.631E+00		2.398E+01	8.960E+01	2.091E+00	-0.041
RA-226DA	-2.229E+01		1.462E+01	5.494E+01	2.020E+00	-0.406
AC-227DA	3.329E+00		8.184E+01	3.049E+02	7.118E+00	0.011
AC-228	-2.939E+01		1.596E+01	6.517E+01	2.447E+00	-0.451
RA-228DA	-2.946E+01		1.599E+01	6.533E+01	2.453E+00	-0.451
TH-228DA	-8.229E+00		1.923E+01	8.041E+01	2.952E+00	-0.102
TH-232DA	1.080E+01		7.299E+01	2.769E+02	6.425E+00	0.039
TH-234DA	7.304E+02		6.464E+02	3.177E+03	1.201E+02	0.230
U-234DA	2.006E+01		4.679E+01	1.827E+02	4.245E+00	0.110
U-235HP	1.129E+02		9.888E+01	3.879E+02	9.267E+00	0.291
NP-237DA	-4.497E+01		2.397E+01	7.685E+01	1.784E+00	-0.585
U-238DA	-4.015E+01		3.083E+01	9.105E+01	2.113E+00	-0.441
U-238DHP	-5.723E+02		3.528E+02	1.157E+03	2.982E+01	-0.495
AM-241HP	1.345E+01		2.793E+01	1.072E+02	2.785E+00	0.125

STL Richland WA.

BA133

Sample ID: H39MH1AC
Detector ID: GER7 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 19:02:03.63
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 5.50354E-01
Slope: 2.49270E-01
Quadrature: 1.11404E-07

SAMPLE IDENTIFICATION: H39MH1AC

CONFIGURATION ID: GER7:H39MH1AC_020661902
TITLE : BA133
SAMPLE ID : H39MH1AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 19:02:03
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:17:21.79
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 5.5035E-01 keV
ENERGY SLOPE: 2.4927E-01 keV/C
ENERGY Q COEFF: 1.1140E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.8304E-01 keV
FWHM SLOPE: 3.5977E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 19:32:25

Configuration : $DISK1:[GER7.SAMPLE]H39MH1AC_020661902.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:02:03
Sample ID : H39MH1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.20 0.0%
Start energy : 20.49 End energy : 2050.04
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.92	331	73	0.99	322.36	312	17	1.84E-01	7.9	
2	0	276.63	38	19	1.20	1106.99	1098	15	2.12E-02	29.6	
3	0	302.83	88	4	1.51	1212.02	1205	16	4.86E-02	11.9	
4	0	356.05	287	29	1.06	1425.24	1417	20	1.60E-01	7.3	
5	0	383.98	39	7	0.73	1537.16	1529	16	2.14E-02	22.9	
6	0	510.65*	9	0	1.91	2044.51	2034	19	5.15E-03	68.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:32:26

Configuration : $DISK1:[GER7.SAMPLE]H39MH1AC_020661902.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:02:03
Sample ID : H39MH1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.20 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	331	33.00	1.923E+00	1.741E+03	1.744E+03	9.63
	276.40	38	6.90	2.076E+00	8.871E+02	8.882E+02	30.09
	302.84	88	17.80	2.078E+00	7.889E+02	7.899E+02	13.03
	356.00	287	62.05*	2.080E+00	7.417E+02	7.426E+02	9.08
	383.85	39	8.70	2.080E+00	7.100E+02	7.109E+02	23.54

Flag: "*" = Keyline

Sample ID : H39MH1AC
Acquisition date : 2-JUN-2006 19:02:03

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	510.65	9	0	1.91	2044.51	2034	19	5.15E-03	68.4	2.07E+00	T

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : H39MH1AC

Acquisition date : 2-JUN-2006 19:02:03

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.01	511.00	179.68	8.351E+00	68.58	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
RU-106DA	368.20D	0.02	511.85	20.60	7.345E+01	68.58	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
TL-208	1.41E+10Y	0.00	277.35	6.80	9.001E+02	30.09	Abun.
			510.84	21.60	6.910E+01	68.58	
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		22.71			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:32:28

Configuration : $DISK1:[GER7.SAMPLE]H39MH1AC_020661902.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:02:03
Sample ID : H39MH1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.20 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.426E+02	6.744E+01	5.082E+01	1.016E+00	14.614

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.289E+01		6.776E+01	2.615E+02	5.246E+00	-0.049
NA-22	-3.686E-02		2.443E+00	1.256E+01	2.664E-01	-0.003
K-40	3.476E+01		7.724E+01	3.564E+02	7.657E+00	0.098
SC-46	1.864E+00		3.956E+00	1.920E+01	4.025E-01	0.097
CR-51	-1.032E+02		1.174E+02	4.027E+02	8.056E+00	-0.256
MN-54	-1.143E+01		4.363E+00	4.519E+00	9.276E-02	-2.529
CO-57	-3.234E+01		1.197E+02	4.287E+02	8.862E+00	-0.075
CO-58	-4.858E+00		6.274E+00	2.324E+01	4.763E-01	-0.209
FE-59	7.045E+00		6.689E+00	3.617E+01	7.571E-01	0.195
CO-60	1.518E+00		4.599E+00	2.053E+01	4.371E-01	0.074
ZN-65	-9.052E+00		8.930E+00	3.244E+01	6.798E-01	-0.279
SE-75	-5.510E+00		1.735E+01	6.308E+01	1.266E+00	-0.087
SR-85	9.917E+00		9.149E+00	3.429E+01	6.892E-01	0.289
Y-88	1.071E+00		2.960E+00	1.584E+01	3.490E-01	0.068
NB-94	-2.564E+00		6.216E+00	2.380E+01	4.899E-01	-0.108
NB-95	-6.103E+00		4.437E+00	1.393E+01	2.845E-01	-0.438
TC-95M	-3.621E+00		1.980E+01	7.247E+01	1.466E+00	-0.050
ZR-95	-7.226E+00		9.355E+00	3.443E+01	7.028E-01	-0.210
ZRNB-95	-1.143E+01		8.309E+00	2.608E+01	5.327E-01	-0.438
MO-99	-3.048E+01		9.424E+01	3.358E+02	6.928E+00	-0.091
RH-101	-4.071E+00		1.726E+01	6.396E+01	1.295E+00	-0.064
RH-102M	1.410E+00		6.210E+00	2.551E+01	5.116E-01	0.055
RU-103	-5.482E+00		7.794E+00	2.831E+01	5.686E-01	-0.194
RU-106DA	-3.523E+00		5.203E+01	2.150E+02	4.348E+00	-0.016
AG-108M	-4.457E+00		8.673E+00	3.176E+01	6.361E-01	-0.140
AG-110M	2.357E+00		6.126E+00	2.785E+01	5.738E-01	0.085
SN-113DA	7.719E+00		9.846E+00	4.265E+01	8.532E-01	0.181

Sample ID : H39MH1AC Acquisition date : 2-JUN-2006 19:02:03

---- Non-Identified Nuclides ----

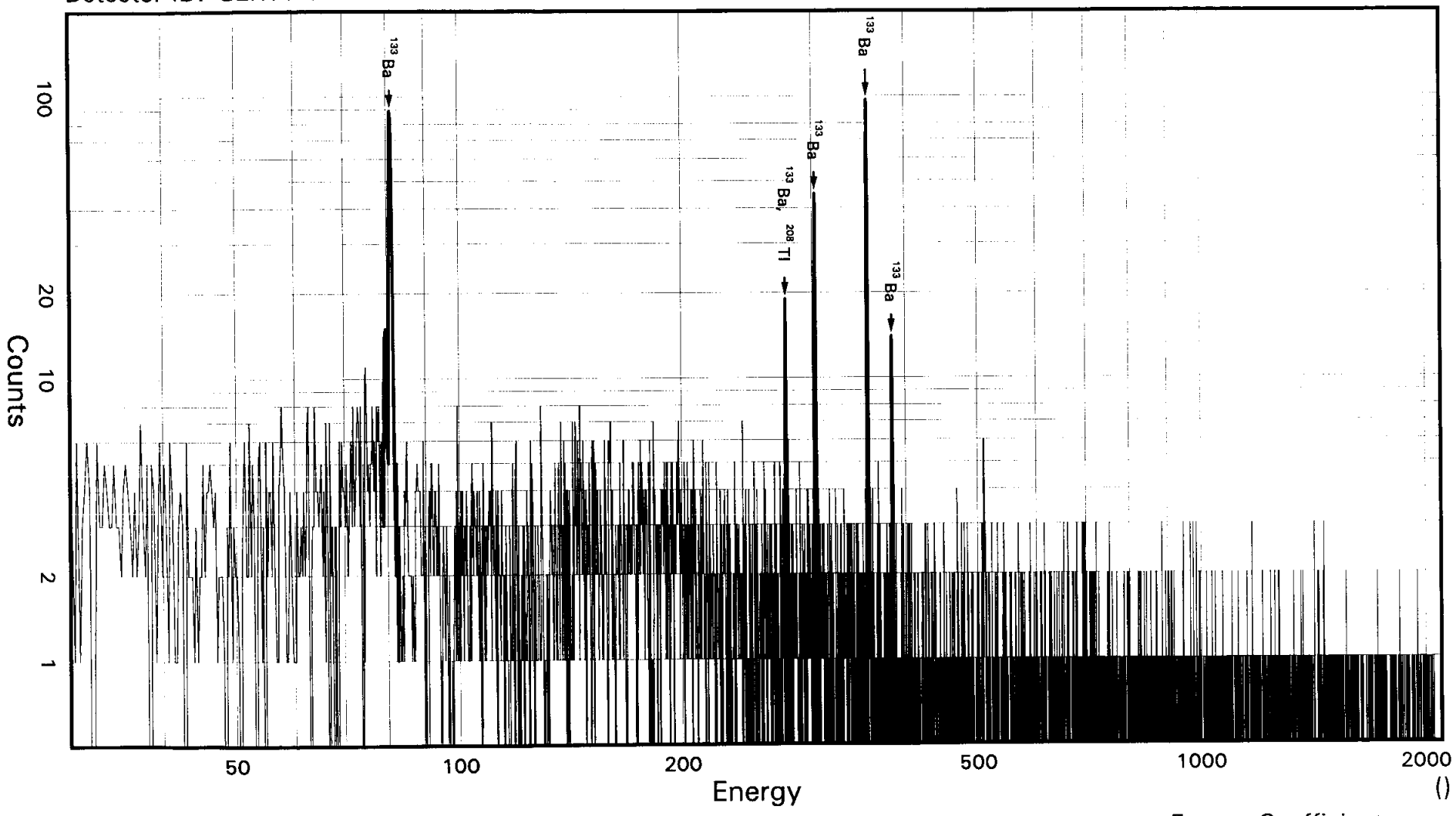
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-2.627E+00		6.748E+00	2.599E+01	5.250E-01	-0.101
SB-125	2.752E+01		1.986E+01	9.154E+01	1.833E+00	0.301
SN-126DA	-3.339E+00		4.633E+00	1.749E+01	3.547E-01	-0.191
I-131	9.141E+00		1.546E+01	6.477E+01	1.295E+00	0.141
CS-134	-1.374E+00		4.301E+00	1.848E+01	3.783E-01	-0.074
CS-137DA	-7.770E+00		6.667E+00	2.292E+01	4.648E-01	-0.339
LA-138	-4.966E+00		5.067E+00	1.894E+01	4.062E-01	-0.262
CE-139	7.037E+00		1.685E+01	6.191E+01	1.264E+00	0.114
BA-140	1.674E+01		3.893E+01	1.619E+02	3.258E+00	0.103
BALA-140	5.334E+00		9.408E+00	5.016E+01	1.088E+00	0.106
LA-140	1.497E+01		5.830E+01	3.072E+02	6.661E+00	0.049
CE-141	-8.042E+00		2.801E+01	1.005E+02	2.068E+00	-0.080
CE-144	3.686E+01		1.154E+02	4.297E+02	8.895E+00	0.086
CEPR-144	7.748E+01		2.311E+02	8.610E+02	1.782E+01	0.090
PM-144	7.859E+00		5.421E+00	2.587E+01	5.232E-01	0.304
PM-146	7.306E+00		7.466E+00	3.485E+01	6.984E-01	0.210
EU-152	-1.175E+01		3.265E+01	1.219E+02	2.437E+00	-0.096
EU-154	-1.034E-01		6.851E+00	3.524E+01	7.472E-01	-0.003
EU-155	4.351E+01		5.234E+01	2.065E+02	4.356E+00	0.211
HF-181	-9.618E+00		7.720E+00	2.591E+01	5.200E-01	-0.371
BI-207	-5.958E+00		6.869E+00	2.481E+01	5.002E-01	-0.240
TL-208	2.733E+00		8.593E+00	3.611E+01	7.285E-01	0.076
BI-210M	1.601E+01		1.964E+01	7.730E+01	1.551E+00	0.207
BI-212	9.063E+01		5.982E+01	3.169E+02	9.687E+00	0.286
PB-212	2.529E+00		2.473E+01	9.553E+01	1.922E+00	0.026
BI-214	2.476E+01		1.441E+01	6.578E+01	1.329E+00	0.376
PB-214	3.107E+01		2.504E+01	9.746E+01	1.949E+00	0.319
RA-223	-1.074E+02		7.457E+01	2.457E+02	4.928E+00	-0.437
RA-224DA	2.548E+00		2.491E+01	9.622E+01	1.936E+00	0.026
RA-226DA	2.476E+01		1.441E+01	6.578E+01	1.329E+00	0.376
AC-227DA	-1.335E+02		9.323E+01	3.109E+02	6.256E+00	-0.429
AC-228	-4.636E+00		1.960E+01	8.609E+01	1.777E+00	-0.054
RA-228DA	-4.647E+00		1.965E+01	8.630E+01	1.782E+00	-0.054
TH-228DA	7.662E+00		2.409E+01	1.012E+02	2.043E+00	0.076
TH-232DA	-5.350E+01		7.236E+01	2.514E+02	5.029E+00	-0.213
TH-234DA	2.103E+02		8.636E+02	3.610E+03	7.502E+01	0.058
U-234DA	-1.937E+01		4.827E+01	1.742E+02	3.489E+00	-0.111
U-235HP	-1.431E+02		1.206E+02	4.040E+02	8.322E+00	-0.354
NP-237DA	-1.710E+01		2.281E+01	8.017E+01	1.605E+00	-0.213
U-238DA	3.107E+01		2.504E+01	9.746E+01	1.949E+00	0.319
U-238DHP	2.826E+02		4.657E+02	1.714E+03	3.817E+01	0.165
AM-241HP	-5.636E+00		4.682E+01	1.651E+02	3.704E+00	-0.034

STL Richland WA.

BA133

Sample ID: H39MJ1AC
Detector ID: GER11 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 19:02:37.07
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -1.93499E+00
Slope: 2.50322E-01
Quadrature: 3.82000E-08

SAMPLE IDENTIFICATION: H39MJ1AC

CONFIGURATION ID: GER11:H39MJ1AC_020661902
TITLE : BA133
SAMPLE ID : H39MJ1AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 19:02:37
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:17:54.29
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.1935E+01 keV
ENERGY SLOPE: 2.5032E-01 keV/C
ENERGY Q COEFF: 3.8200E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.3498E-01 keV
FWHM SLOPE: 3.9587E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 19:32:55

Configuration : $DISK1:[GER11.SAMPLE]H39MJ1AC_020661902.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:02:37
Sample ID : H39MJ1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.98 0.1%
Start energy : 0.57 End energy : 2051.27
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	79.55	27	26	0.69	325.51	322	16	1.52E-02	32.0	7.52E-01
2	2	81.01	257	21	0.64	331.35	322	16	1.43E-01	7.0	
3	0	129.83	10	14	0.33	526.34	518	10	5.37E-03	81.1	
4	0	276.22	73	8	0.66	1111.01	1105	14	4.06E-02	14.0	
5	0	302.73	168	20	0.89	1216.87	1209	16	9.33E-02	9.8	
6	0	355.83	432	10	1.11	1428.91	1422	19	2.40E-01	5.1	
7	0	383.77	58	12	1.19	1540.47	1534	12	3.22E-02	17.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:32:55

Configuration : $DISK1:[GER11.SAMPLE]H39MJ1AC_020661902.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:02:37
Sample ID : H39MJ1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.98 0.1%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	257	33.00	2.679E+00	9.681E+02	9.694E+02	8.89
	276.40	73	6.90	2.873E+00	1.230E+03	1.232E+03	15.04
	302.84	168	17.80	2.876E+00	1.093E+03	1.094E+03	11.14
	356.00	432	62.05*	2.879E+00	8.052E+02	8.062E+02	7.42
	383.85	58	8.70	2.878E+00	7.724E+02	7.734E+02	18.54

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H39MJ1AC
Acquisition date : 2-JUN-2006 19:02:37

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	79.55	27	26	0.69	325.51	322	16	1.52E-02	32.0	2.67E+00	
0	129.83	10	14	0.33	526.34	518	10	5.37E-03	81.1	2.78E+00	

Flags: "T" = Tentatively associated

Sample ID : H39MJ1AC
Acquisition date : 2-JUN-2006 19:02:37

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	1.248E+03	15.04	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:32:58

Configuration : $DISK1:[GER11.SAMPLE]H39MJ1AC_020661902.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:02:37
Sample ID : H39MJ1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.98 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	8.062E+02	5.985E+01	3.837E+01	7.674E-01	21.011

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-7.307E+01		5.689E+01	1.958E+02	3.928E+00	-0.373
NA-22	3.701E+00		2.748E+00	1.475E+01	3.112E-01	0.251
K-40	4.017E+01		5.381E+01	2.704E+02	5.774E+00	0.149
SC-46	7.500E+00		4.097E+00	2.028E+01	4.234E-01	0.370
CR-51	-3.129E+01		5.675E+01	2.148E+02	4.298E+00	-0.146
MN-54	-2.608E+00		3.482E+00	1.297E+01	2.656E-01	-0.201
CO-57	4.264E+01		7.821E+01	2.956E+02	6.094E+00	0.144
CO-58	-1.357E+00		2.897E+00	1.187E+01	2.428E-01	-0.114
FE-59	6.574E+00		5.277E+00	2.810E+01	5.860E-01	0.234
CO-60	-1.262E+00		3.266E+00	1.322E+01	2.801E-01	-0.095
ZN-65	-7.831E+00		7.486E+00	2.615E+01	5.460E-01	-0.299
SE-75	-6.266E+00		1.249E+01	4.422E+01	8.870E-01	-0.142
SR-85	-2.466E+01		7.504E+00	1.975E+01	3.967E-01	-1.249
Y-88	1.335E+00		1.337E+00	9.815E+00	2.145E-01	0.136
NB-94	3.384E+00		3.633E+00	1.675E+01	3.440E-01	0.202
NB-95	1.310E+00		4.081E+00	1.782E+01	3.634E-01	0.073
TC-95M	-7.266E+00		1.342E+01	4.807E+01	9.713E-01	-0.151
ZR-95	8.147E+00		8.464E+00	3.752E+01	7.645E-01	0.217
ZRNB-95	2.193E+00		7.598E+00	3.310E+01	6.749E-01	0.066
MO-99	-5.968E+01		5.759E+01	1.973E+02	4.060E+00	-0.303
RH-101	2.224E+01		1.314E+01	5.269E+01	1.066E+00	0.422
RH-102M	5.683E+00		5.130E+00	2.243E+01	4.499E-01	0.253
RU-103	1.678E+00		3.858E+00	1.782E+01	3.578E-01	0.094
RU-106DA	-2.756E+01		3.937E+01	1.452E+02	2.935E+00	-0.190
AG-108M	-5.384E+00		6.891E+00	2.400E+01	4.806E-01	-0.224
AG-110M	4.533E+00		6.172E+00	2.652E+01	5.450E-01	0.171
SN-113DA	-7.811E+00		8.006E+00	2.798E+01	5.598E-01	-0.279

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	1.279E+00		3.979E+00	1.717E+01	3.465E-01	0.075
SB-125	6.276E+00		1.725E+01	6.914E+01	1.384E+00	0.091
SN-126DA	-4.866E+00		3.076E+00	9.858E+00	1.997E-01	-0.494
I-131	-2.095E+01		1.360E+01	4.455E+01	8.911E-01	-0.470
CS-134	5.765E+00		4.007E+00	1.986E+01	4.057E-01	0.290
CS-137DA	2.161E+00		6.265E+00	3.040E+01	6.158E-01	0.071
LA-138	1.630E+00		4.981E+00	2.221E+01	4.736E-01	0.073
CE-139	9.204E+00		9.825E+00	3.794E+01	7.735E-01	0.243
BA-140	1.333E+01		2.164E+01	9.667E+01	1.944E+00	0.138
BALA-140	-7.597E+00		9.446E+00	3.600E+01	7.753E-01	-0.211
LA-140	-5.246E+01		6.522E+01	2.485E+02	5.353E+00	-0.211
CE-141	1.204E+01		2.332E+01	8.566E+01	1.759E+00	0.141
CE-144	4.288E+01		6.913E+01	2.670E+02	5.512E+00	0.161
CEPR-144	8.485E+01		1.382E+02	5.336E+02	1.102E+01	0.159
PM-144	-5.258E+00		3.895E+00	1.273E+01	2.571E-01	-0.413
PM-146	3.475E+00		7.005E+00	2.891E+01	5.794E-01	0.120
EU-152	2.397E+01		2.253E+01	9.350E+01	1.870E+00	0.256
EU-154	1.038E+01		7.708E+00	4.136E+01	8.728E-01	0.251
EU-155	2.054E+01		3.692E+01	1.436E+02	3.016E+00	0.143
HF-181	-2.433E+00		6.488E+00	2.494E+01	5.004E-01	-0.098
BI-207	-7.140E+00		5.133E+00	1.698E+01	3.422E-01	-0.420
TL-208	2.920E+00		4.460E+00	1.978E+01	3.987E-01	0.148
BI-210M	1.240E+01		1.389E+01	5.471E+01	1.097E+00	0.227
BI-212	-4.788E+00		5.478E+01	2.270E+02	6.936E+00	-0.021
PB-212	5.408E+00		1.493E+01	5.751E+01	1.156E+00	0.094
BI-214	1.663E+01		1.166E+01	4.915E+01	9.924E-01	0.338
PB-214	-1.859E+01		1.994E+01	6.073E+01	1.215E+00	-0.306
RA-223	-1.227E+02		5.158E+01	1.488E+02	2.984E+00	-0.825
RA-224DA	5.448E+00		1.504E+01	5.793E+01	1.165E+00	0.094
RA-226DA	1.663E+01		1.166E+01	4.915E+01	9.924E-01	0.338
AC-227DA	4.925E+01		6.279E+01	2.465E+02	4.957E+00	0.200
AC-228	2.623E+01		1.355E+01	6.823E+01	1.405E+00	0.384
RA-228DA	2.629E+01		1.359E+01	6.839E+01	1.408E+00	0.384
TH-228DA	8.187E+00		1.251E+01	5.545E+01	1.118E+00	0.148
TH-232DA	-3.586E+01		4.966E+01	1.788E+02	3.577E+00	-0.201
TH-234DA	-1.481E+02		4.172E+02	1.762E+03	3.650E+01	-0.084
U-234DA	3.381E+01		3.601E+01	1.414E+02	2.832E+00	0.239
U-235HP	2.848E+01		8.743E+01	3.199E+02	6.574E+00	0.089
NP-237DA	-1.275E+01		1.664E+01	6.032E+01	1.207E+00	-0.211
U-238DA	-1.859E+01		1.994E+01	6.073E+01	1.215E+00	-0.306
U-238DHP	1.761E+02		2.410E+02	9.061E+02	1.999E+01	0.194
AM-241HP	-2.127E+01		2.037E+01	6.839E+01	1.520E+00	-0.311

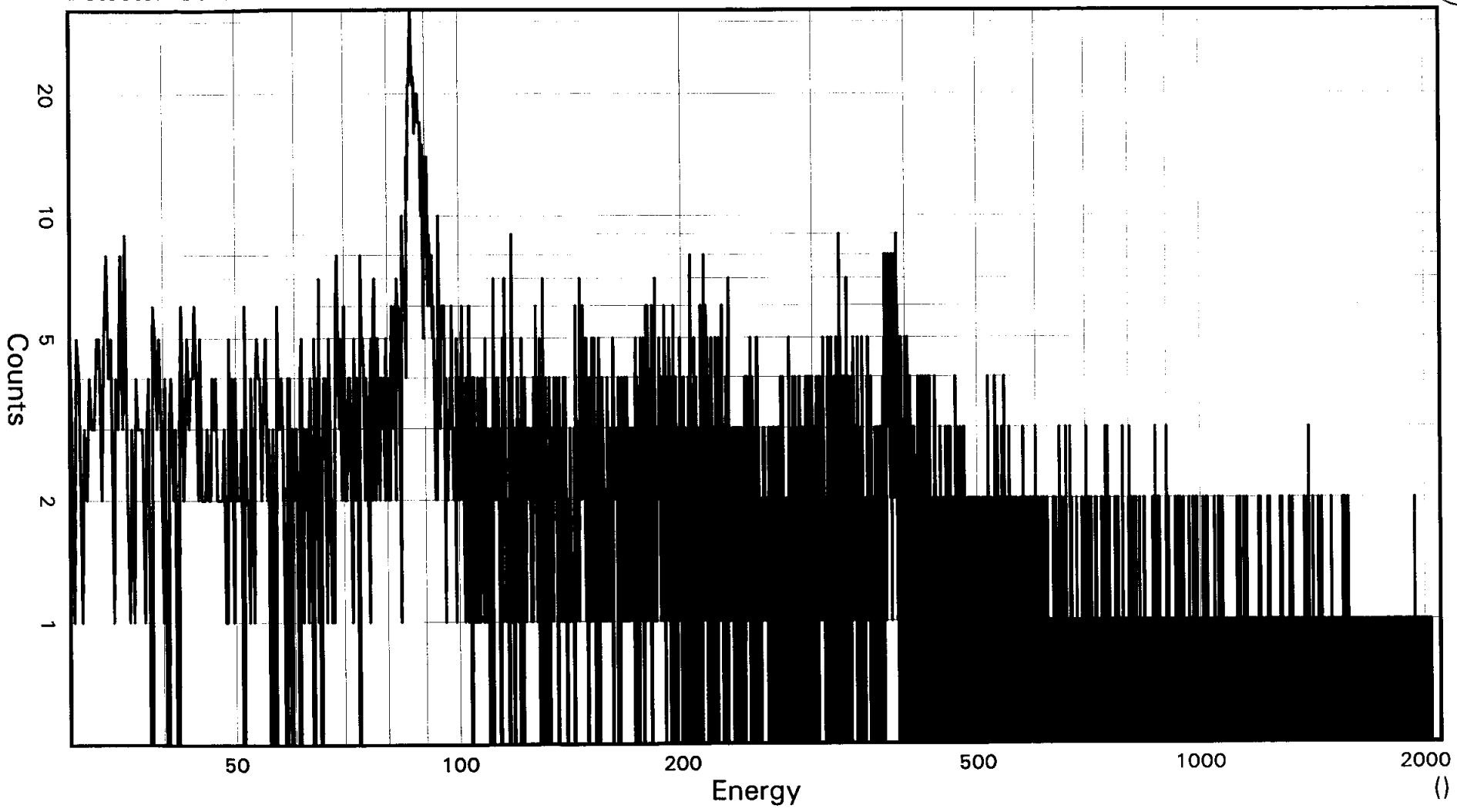
STL Richland WA.

BA133

Sample ID: H39ML1AC

Detector ID: GER12 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 19:02:51.75

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: 1.25271E+01

Slope: 2.47763E-01

Quadrature: -4.04485E-09

Single only

Recorded on NaI 1

SAMPLE IDENTIFICATION: H39ML1AC

CONFIGURATION ID: GER12:H39ML1AC_020661902
TITLE : BA133
SAMPLE ID : H39ML1AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 19:02:51
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:18:38.29
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.2527E+01 keV
ENERGY SLOPE: 2.4776E-01 keV/C
ENERGY Q COEFF: -.4045E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.7633E-01 keV
FWHM SLOPE: 3.7348E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 2.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

```
VMS Peak Search Report V1.9 Generated  2-JUN-2006 19:33:11

Configuration     : $DISK1:[GER12.SAMPLE]H39ML1AC_020661902.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:02:51
Sample ID         : H39ML1AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.35   0.0%
Start energy      :    12.77             End energy       :  2041.93
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
No peaks were found
```

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:33:11

```
Configuration     : $DISK1:[GER12.SAMPLE]H39ML1AC_020661902.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title      : BA133
Sample date       : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:02:51
Sample ID         : H39ML1AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.35   0.0%
Energy tolerance :     2.00              Half life ratio  :     8.00
Errors propagated: Yes                   Systematic Error :     5.00 %
Efficiency type  : Empirical             Efficiencies at  : Peak Energy
Abundance limit  :    80.00
```

Nuclide Line Activity Report

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H39ML1AC
Acquisition date : 2-JUN-2006 19:02:51

None

Flags: "T" = Tentatively associated

Sample ID : H39ML1AC
Acquisition date : 2-JUN-2006 19:02:51

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:33:13

Configuration : $DISK1:[GER12.SAMPLE]H39ML1AC_020661902.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:02:51
Sample ID : H39ML1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.35 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-3.792E+01		5.035E+01	1.797E+02	3.604E+00	-0.211
NA-22	-1.357E+00		2.572E+00	1.037E+01	2.185E-01	-0.131
K-40	-1.939E+02		3.738E+01	1.336E+02	2.849E+00	-1.452
SC-46	4.378E+00		4.034E+00	1.846E+01	3.851E-01	0.237
CR-51	-3.234E+00		9.798E+01	3.526E+02	7.054E+00	-0.009
MN-54	6.955E+00		3.210E+00	1.694E+01	3.468E-01	0.411
CO-57	-1.314E+01		7.009E+01	2.568E+02	5.290E+00	-0.051
CO-58	-3.289E+00		3.850E+00	1.420E+01	2.903E-01	-0.232
FE-59	-5.084E+00		5.165E+00	1.905E+01	3.968E-01	-0.267
CO-60	-9.496E-01		1.940E+00	8.559E+00	1.810E-01	-0.111
ZN-65	-1.093E+01		7.387E+00	2.418E+01	5.043E-01	-0.452
SE-75	-5.244E+00		1.137E+01	4.106E+01	8.235E-01	-0.128
SR-85	1.721E+00		4.791E+00	1.940E+01	3.897E-01	0.089
Y-88	-2.455E+00		2.464E+00	9.064E+00	1.977E-01	-0.271
NB-94	5.508E+00		3.308E+00	1.650E+01	3.385E-01	0.334
NB-95	5.750E+00		3.642E+00	1.834E+01	3.737E-01	0.314
TC-95M	-1.940E+01		1.155E+01	3.847E+01	7.771E-01	-0.504
ZR-95	-7.205E+00		6.687E+00	2.297E+01	4.679E-01	-0.314
ZRNB-95	1.105E+01		6.872E+00	3.460E+01	7.052E-01	0.319
MO-99	-2.014E+01		4.498E+01	1.668E+02	3.430E+00	-0.121
RH-101	-1.243E+01		1.044E+01	3.593E+01	7.267E-01	-0.346
RH-102M	-9.493E+00		4.674E+00	1.364E+01	2.735E-01	-0.696
RU-103	8.654E-01		6.448E+00	2.499E+01	5.015E-01	0.035
RU-106DA	5.632E+01		3.715E+01	1.775E+02	3.586E+00	0.317
AG-108M	-9.539E+00		6.326E+00	2.075E+01	4.156E-01	-0.460
AG-110M	-3.438E+00		4.841E+00	1.816E+01	3.731E-01	-0.189
SN-113DA	-4.063E+01		1.636E+01	5.102E+01	1.021E+00	-0.796
SB-124	-6.109E+00		5.129E+00	1.766E+01	3.564E-01	-0.346
SB-125	-1.793E+01		2.106E+01	7.388E+01	1.479E+00	-0.243
SN-126DA	3.814E+00		3.377E+00	1.586E+01	3.212E-01	0.240
I-131	-1.185E+01		1.438E+01	5.130E+01	1.026E+00	-0.231
BA-133	1.870E+01		1.070E+01	4.474E+01	8.948E-01	0.418
CS-134	2.776E+00		4.019E+00	1.817E+01	3.711E-01	0.153

Sample ID : H39ML1AC Acquisition date : 2-JUN-2006 19:02:51

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
CS-137DA	4.586E+00		3.980E+00	1.872E+01	3.790E-01	0.245
LA-138	-6.673E+00		5.367E+00	1.839E+01	3.916E-01	-0.363
CE-139	6.024E+00		9.407E+00	3.592E+01	7.321E-01	0.168
BA-140	-8.576E+00		2.770E+01	1.066E+02	2.144E+00	-0.080
BALA-140	-4.067E-01		1.028E+01	4.302E+01	9.251E-01	-0.009
LA-140	2.263E+01		6.629E+01	2.970E+02	6.387E+00	0.076
CE-141	4.961E-01		1.882E+01	6.915E+01	1.419E+00	0.007
CE-144	-5.081E+01		6.721E+01	2.370E+02	4.890E+00	-0.214
CEPR-144	-8.207E+01		1.328E+02	4.736E+02	9.770E+00	-0.173
PM-144	-5.935E+00		4.471E+00	1.507E+01	3.043E-01	-0.394
PM-146	-3.082E+00		7.865E+00	2.914E+01	5.838E-01	-0.106
EU-152	9.692E+00		2.716E+01	1.010E+02	2.020E+00	0.096
EU-154	-8.260E+00		7.705E+00	2.703E+01	5.696E-01	-0.306
EU-155	-1.609E+01		3.495E+01	1.280E+02	2.686E+00	-0.126
HF-181	-2.202E+00		5.728E+00	2.165E+01	4.342E-01	-0.102
BI-207	-6.521E-01		3.439E+00	1.447E+01	2.915E-01	-0.045
TL-208	-2.188E+00		5.037E+00	1.924E+01	3.879E-01	-0.114
BI-210M	6.787E+00		1.270E+01	4.944E+01	9.915E-01	0.137
BI-212	-3.622E+01		4.188E+01	1.536E+02	4.691E+00	-0.236
PB-212	-9.252E+00		1.407E+01	5.060E+01	1.017E+00	-0.183
BI-214	-2.090E+00		7.673E+00	3.060E+01	6.177E-01	-0.068
PB-214	-5.230E+00		1.639E+01	6.115E+01	1.223E+00	-0.086
RA-223	7.968E+00		4.670E+01	1.772E+02	3.552E+00	0.045
RA-224DA	-9.319E+00		1.417E+01	5.096E+01	1.025E+00	-0.183
RA-226DA	-2.090E+00		7.673E+00	3.060E+01	6.177E-01	-0.068
AC-227DA	3.087E+01		5.787E+01	2.258E+02	4.541E+00	0.137
AC-228	3.842E+00		1.058E+01	4.776E+01	9.828E-01	0.080
RA-228DA	3.852E+00		1.061E+01	4.788E+01	9.851E-01	0.080
TH-228DA	-6.133E+00		1.412E+01	5.395E+01	1.088E+00	-0.114
TH-232DA	-7.145E+01		6.491E+01	2.154E+02	4.308E+00	-0.332
TH-234DA	-1.639E+01		3.495E+02	1.583E+03	3.277E+01	-0.010
U-234DA	7.536E+01		4.009E+01	1.620E+02	3.244E+00	0.465
U-235HP	-8.474E+00		6.875E+01	2.523E+02	5.182E+00	-0.034
NP-237DA	-6.732E+00		1.845E+01	6.614E+01	1.324E+00	-0.102
U-238DA	-5.230E+00		1.639E+01	6.115E+01	1.223E+00	-0.086
U-238DHP	-4.716E+01		2.004E+02	7.274E+02	1.602E+01	-0.065
AM-241HP	8.981E+00		2.067E+01	7.913E+01	1.754E+00	0.114

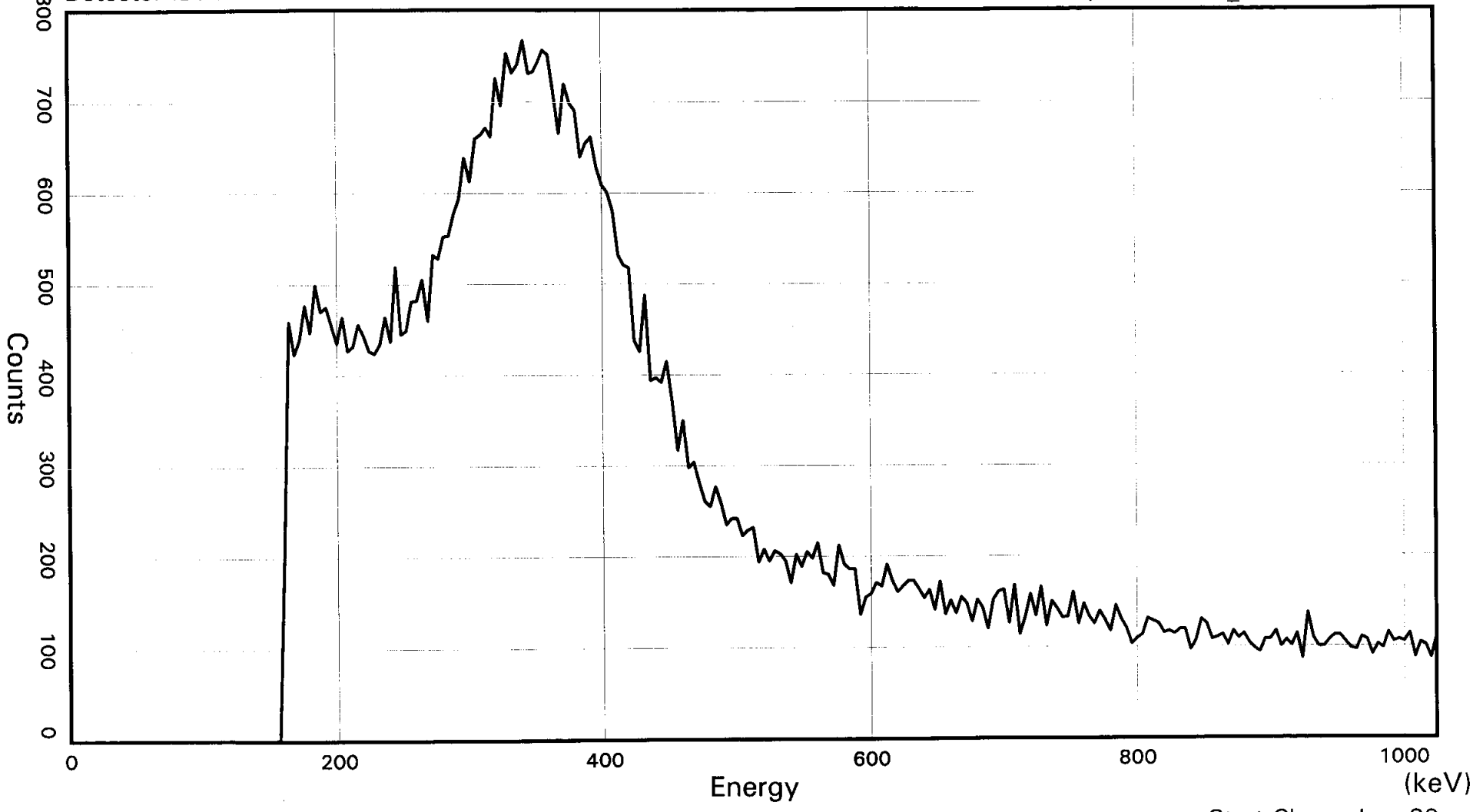
STL Richland WA.

BA133

Sample ID: H39ML1AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start:	2-JUN-2006 19:48:26.93
Preset Live Time:	0 00:30:00
Elapsed Live Time:	0 00:30:00
Weighting:	DERIVED

Start Channel:	80
End Channel:	113
Iterations:	5
Gain shift:	Iter

SAMPLE IDENTIFICATION: H39ML1AC

CONFIGURATION ID: NAI1:H39ML1AC_020661948
TITLE : BA133
SAMPLE ID : H39ML1AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 19:48:26
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 17-NOV-1993 10:39:59.60
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY:

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 0.0000E+00 keV
ENERGY SLOPE: 4.0000E+00 keV/C
ENERGY Q COEFF: 0.0000E+00 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: -.2302E+02 keV
FWHM SLOPE: 5.7163E+00 sqr keV
ITERATIONS: 5
GAUSSIAN SENSITIVITY: 35.00 %

ABUNDANCE LIMIT: 75.00 %
ENERGY TOLERANCE: 20.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]BA133.NLB

VMS NAI Report V1.2 Generated 2-JUN-2006 20:18:31

Configuration	: RDND06$DKA100:[NAI1.SAMPLE]H39ML1AC_020661948.CNF;1		
Analyses by	: NAI V3.0		
Sample title	: BA133		
Sample date	: 26-MAY-2006 12:00:00	Acquisition date	: 2-JUN-2006 19:48:26
Sample ID	: H39ML1AC	Sample quantity	: 1.0000 sampl
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.65 0.0%
Sample Multiplier	: 1.00	Rejection Coeff.	: 0.00
Gain shift type	: ITER	Threshold Shift	: No
Weighting type	: DERIVED	Calculated counts	: No
Iterations	: 5		

NAI Residuals Report

Ratio of Residuals Over Standard Deviation Per Channel

80:	7.2	5.3	6.6	5.0	4.7	4.3	3.1	2.0
88:	1.9	2.2	0.9	-0.7	-1.3	-1.1	0.2	-0.2
96:	-2.3	-1.9	-1.1	-2.2	-4.1	-1.9	-2.5	-4.0
104:	-5.2	-4.4	-6.6	-6.1	-3.1	-6.3	-6.2	-5.4
112:	-3.0	-4.5						

List of Suspicious Channels

81	82	83	84	85

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.45E+01	0.00E+00	1.02E+00
2	8.09E+00	0.00E+00	1.04E+00
3	3.24E+00	0.00E+00	1.06E+00
4	1.31E+00	0.00E+00	1.07E+00
5	7.18E-01	0.00E+00	1.08E+00

Sample ID : H39ML1AC
Acquisition date : 2-JUN-2006 19:48:26

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	741.	7.78

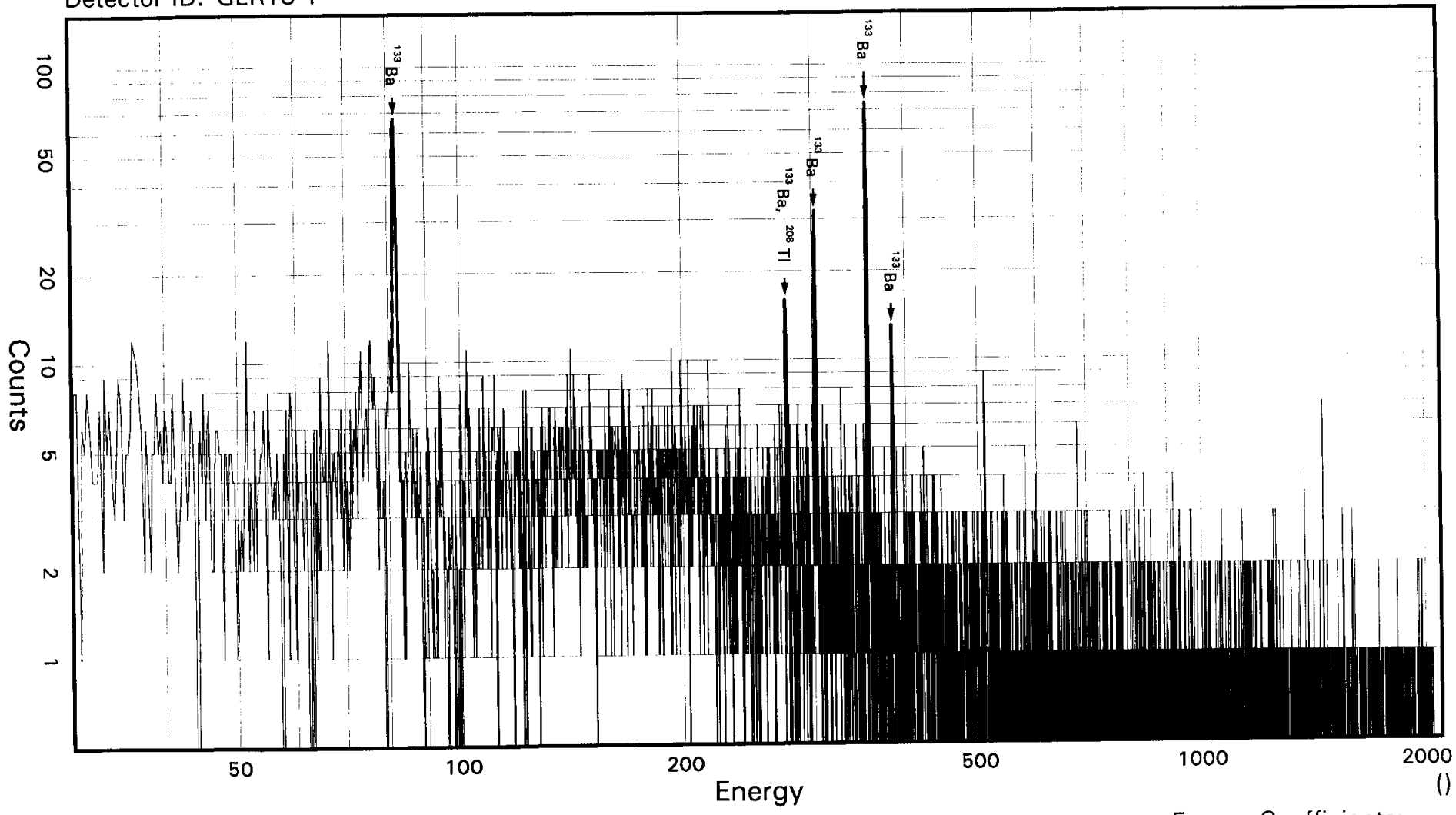
Total Activity :	741.	

STL Richland WA.

BA133

Sample ID: H39MN1AC
Detector ID: GER13 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 19:03:03.19
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -6.38464E-01
Slope: 2.50756E-01
Quadrature: -9.95410E-08

SAMPLE IDENTIFICATION: H39MN1AC

CONFIGURATION ID: GER13:H39MN1AC_020661903
TITLE : BA133
SAMPLE ID : H39MN1AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 19:03:03
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:18:24.03
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.6385E+00 keV
ENERGY SLOPE: 2.5076E-01 keV/C
ENERGY Q COEFF: -.9954E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.4456E-01 keV
FWHM SLOPE: 3.7038E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 19:33:26

```
Configuration     : $DISK1:[GER13.SAMPLE]H39MN1AC_020661903.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:03:03
Sample ID         : H39MN1AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.38   0.0%
Start energy      :    19.42             End energy       :  2046.88
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.92	211	67	0.79	329.29	324	13	1.17E-01	11.1	
2	0	276.24	64	22	1.15	1104.66	1099	13	3.54E-02	19.8	
3	0	302.69	133	33	0.90	1210.23	1202	17	7.41E-02	13.2	
4	0	355.77	396	15	1.12	1422.14	1413	20	2.20E-01	5.6	
5	0	383.85	48	16	0.94	1534.24	1527	12	2.69E-02	21.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:33:27

Configuration : $DISK1:[GER13.SAMPLE]H39MN1AC_020661903.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:03:03
Sample ID : H39MN1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	211	33.00	2.704E+00	7.866E+02	7.877E+02	12.32
	276.40	64	6.90	2.897E+00	1.064E+03	1.065E+03	20.55
	302.84	133	17.80	2.900E+00	8.614E+02	8.625E+02	14.26
	356.00	396	62.05*	2.903E+00	7.337E+02	7.346E+02	7.74
	383.85	48	8.70	2.902E+00	6.400E+02	6.409E+02	22.20

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H39MN1AC
Acquisition date : 2-JUN-2006 19:03:03

None

Flags: "T" = Tentatively associated

Sample ID : H39MN1AC
Acquisition date : 2-JUN-2006 19:03:03

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	1.079E+03	20.55	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:33:29

Configuration : $DISK1:[GER13.SAMPLE]H39MN1AC_020661903.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:03:03
Sample ID : H39MN1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.346E+02	5.687E+01	4.942E+01	9.883E-01	14.866

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	1.268E+02		6.997E+01	2.953E+02	5.922E+00	0.430
NA-22	4.837E+00		3.469E+00	1.717E+01	3.623E-01	0.282
K-40	-2.076E+02		9.138E+01	4.200E+02	8.968E+00	-0.494
SC-46	3.465E+00		5.391E+00	2.408E+01	5.028E-01	0.144
CR-51	-5.883E+01		1.113E+02	3.881E+02	7.765E+00	-0.152
MN-54	5.230E+00		6.015E+00	2.476E+01	5.071E-01	0.211
CO-57	5.689E+01		1.134E+02	4.149E+02	8.552E+00	0.137
CO-58	-6.904E+00		5.247E+00	1.793E+01	3.666E-01	-0.385
FE-59	1.050E+01		9.446E+00	4.167E+01	8.690E-01	0.252
CO-60	-2.706E+00		4.303E+00	1.597E+01	3.382E-01	-0.169
ZN-65	-1.055E+01		9.262E+00	3.236E+01	6.756E-01	-0.326
SE-75	-1.028E+01		1.618E+01	5.674E+01	1.138E+00	-0.181
SR-85	-4.727E+01		1.169E+01	3.040E+01	6.106E-01	-1.555
Y-88	-2.520E+00		3.701E+00	1.424E+01	3.110E-01	-0.177
NB-94	1.678E-01		4.366E+00	1.769E+01	3.632E-01	0.009
NB-95	4.952E+00		6.172E+00	2.549E+01	5.197E-01	0.194
TC-95M	-3.440E+01		1.969E+01	6.244E+01	1.262E+00	-0.551
ZR-95	-1.305E+01		1.218E+01	4.138E+01	8.432E-01	-0.315
ZRNB-95	9.273E+00		1.156E+01	4.773E+01	9.732E-01	0.194
MO-99	2.598E+01		8.905E+01	3.202E+02	6.589E+00	0.081
RH-101	-4.533E+00		1.634E+01	5.644E+01	1.142E+00	-0.080
RH-102M	-5.833E+00		6.874E+00	2.402E+01	4.818E-01	-0.243
RU-103	-5.841E+00		9.027E+00	3.182E+01	6.387E-01	-0.184
RU-106DA	9.669E+01		6.072E+01	2.614E+02	5.282E+00	0.370
AG-108M	3.336E+00		9.346E+00	3.504E+01	7.017E-01	0.095
AG-110M	-3.341E+00		6.946E+00	2.607E+01	5.357E-01	-0.128
SN-113DA	-9.562E+00		1.020E+01	3.598E+01	7.198E-01	-0.266

Sample ID : H39MN1AC Acquisition date : 2-JUN-2006 19:03:03

---- Non-Identified Nuclides ----

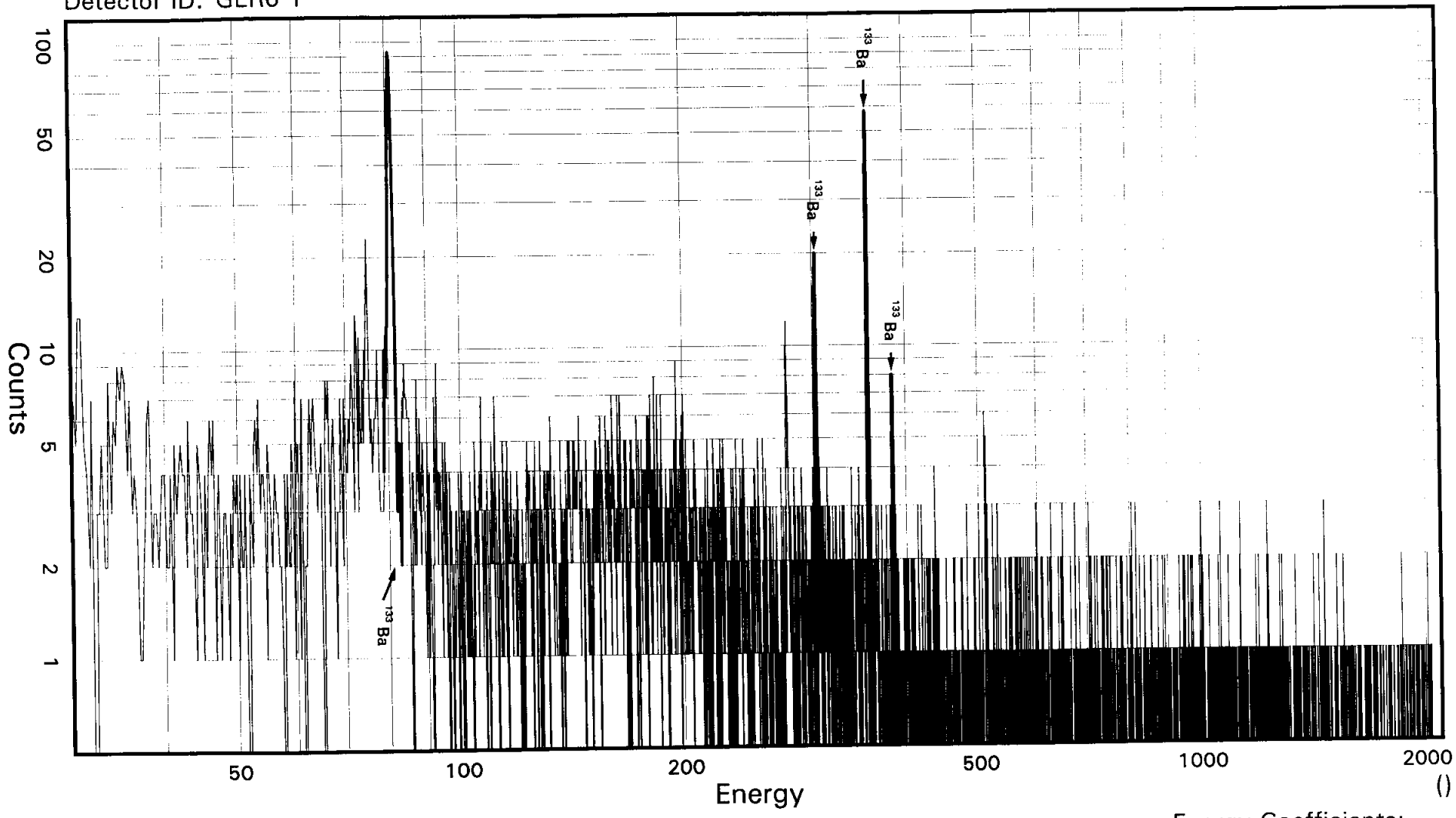
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-6.225E-02		6.636E+00	2.547E+01	5.140E-01	-0.002
SB-125	3.236E+01		2.413E+01	9.833E+01	1.969E+00	0.329
SN-126DA	1.194E+00		5.327E+00	2.109E+01	4.273E-01	0.057
I-131	-1.769E+01		1.854E+01	6.248E+01	1.250E+00	-0.283
CS-134	-1.927E+00		6.317E+00	2.409E+01	4.920E-01	-0.080
CS-137DA	2.141E+00		6.328E+00	2.527E+01	5.118E-01	0.085
LA-138	-5.240E+00		4.764E+00	1.703E+01	3.630E-01	-0.308
CE-139	9.767E+00		1.551E+01	5.637E+01	1.149E+00	0.173
BA-140	4.996E+01		4.082E+01	1.645E+02	3.308E+00	0.304
BALA-140	-4.092E+00		1.394E+01	5.422E+01	1.167E+00	-0.075
LA-140	-1.459E+00		9.243E+01	3.743E+02	8.061E+00	-0.004
CE-141	-7.942E+00		2.604E+01	9.212E+01	1.892E+00	-0.086
CE-144	-7.779E+01		1.096E+02	3.802E+02	7.847E+00	-0.205
CEPR-144	-1.538E+02		2.193E+02	7.609E+02	1.571E+01	-0.202
PM-144	-1.186E+01		6.147E+00	1.931E+01	3.901E-01	-0.614
PM-146	8.854E+00		1.047E+01	4.159E+01	8.334E-01	0.213
EU-152	1.198E+01		3.206E+01	1.185E+02	2.370E+00	0.101
EU-154	1.357E+01		9.730E+00	4.816E+01	1.016E+00	0.282
EU-155	-6.415E+01		5.098E+01	1.746E+02	3.666E+00	-0.367
HF-181	-1.047E+01		8.625E+00	2.906E+01	5.829E-01	-0.360
BI-207	6.266E+00		6.424E+00	2.632E+01	5.303E-01	0.238
TL-208	-1.073E+01		7.423E+00	2.820E+01	5.685E-01	-0.380
BI-210M	-7.116E+00		1.857E+01	6.611E+01	1.326E+00	-0.108
BI-212	3.090E+01		8.424E+01	3.338E+02	1.020E+01	0.093
PB-212	3.152E+01		2.365E+01	9.076E+01	1.825E+00	0.347
BI-214	-3.219E+01		1.549E+01	5.753E+01	1.162E+00	-0.559
PB-214	3.402E+01		2.562E+01	9.545E+01	1.909E+00	0.356
RA-223	-2.514E+01		7.720E+01	2.731E+02	5.477E+00	-0.092
RA-224DA	3.175E+01		2.382E+01	9.142E+01	1.838E+00	0.347
RA-226DA	-3.209E+01		1.549E+01	5.759E+01	1.163E+00	-0.557
AC-227DA	-4.355E+00		9.289E+01	3.360E+02	6.757E+00	-0.013
AC-228	2.206E+01		2.139E+01	9.822E+01	2.022E+00	0.225
RA-228DA	2.211E+01		2.144E+01	9.845E+01	2.027E+00	0.225
TH-228DA	-3.007E+01		2.081E+01	7.906E+01	1.594E+00	-0.380
TH-232DA	-9.320E+01		6.841E+01	2.241E+02	4.482E+00	-0.416
TH-234DA	6.446E+02		7.790E+02	3.279E+03	6.792E+01	0.197
U-234DA	7.482E+01		4.700E+01	1.849E+02	3.702E+00	0.405
U-235HP	-6.424E+01		1.102E+02	3.829E+02	7.868E+00	-0.168
NP-237DA	2.223E+01		2.735E+01	1.022E+02	2.045E+00	0.218
U-238DA	3.402E+01		2.562E+01	9.545E+01	1.909E+00	0.356
U-238DHP	-6.701E+02		2.899E+02	8.965E+02	1.978E+01	-0.747
AM-241HP	4.371E+01		3.018E+01	1.168E+02	2.595E+00	0.374

STL Richland WA.

BA133

Sample ID: H4C9R1AA
Detector ID: GER6 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 19:03:16.06
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -2.96857E-02
Slope: 2.49555E-01
Quadrature: 6.90702E-09

SAMPLE IDENTIFICATION: H4C9R1AA

CONFIGURATION ID: GER6:H4C9R1AA_020661903
TITLE : BA133
SAMPLE ID : H4C9R1AA

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 19:03:16
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:29:05.09
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.2969E-01 keV
ENERGY SLOPE: 2.4956E-01 keV/C
ENERGY Q COEFF: 6.9070E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.2873E-01 keV
FWHM SLOPE: 6.6727E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 19:33:42

Configuration : $DISK1:[GER6.SAMPLE]H4C9R1AA_020661903.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:03:16
Sample ID : H4C9R1AA Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.26 0.0%
Start energy : 19.93 End energy : 2044.79
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.83	390	63	0.94	324.02	316	18	2.17E-01	7.0	
2	0	303.11	91	43	1.26	1214.68	1205	19	5.08E-02	20.1	
3	0	356.03	319	13	1.42	1426.70	1418	17	1.77E-01	6.2	
4	0	383.78	53	0	1.68	1537.91	1530	14	2.94E-02	13.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:33:42

Configuration : $DISK1:[GER6.SAMPLE]H4C9R1AA_020661903.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:03:16
Sample ID : H4C9R1AA Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.26 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	390	33.00	2.166E+00	1.818E+03	1.821E+03	8.84
	276.40	------	6.90	2.334E+00	------ Line Not Found		------
	302.84	91	17.80	2.337E+00	7.331E+02	7.341E+02	20.78
	356.00	319	62.05*	2.339E+00	7.332E+02	7.342E+02	8.18
	383.85	53	8.70	2.338E+00	8.684E+02	8.696E+02	14.75

Flag: "*" = Keyline

Sample ID : H4C9R1AA
Acquisition date : 2-JUN-2006 19:03:16

None

Flags: "T" = Tentatively associated

Sample ID : H4C9R1AA
Acquisition date : 2-JUN-2006 19:03:16

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:33:44

Configuration : $DISK1:[GER6.SAMPLE]H4C9R1AA_020661903.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:03:16
Sample ID : H4C9R1AA Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.26 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.342E+02	6.005E+01	4.990E+01	9.980E-01	14.713

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.102E+02		6.879E+01	2.263E+02	4.540E+00	-0.487
NA-22	3.319E+00		6.132E+00	2.554E+01	5.405E-01	0.130
K-40	-9.660E+01		7.434E+01	3.494E+02	7.491E+00	-0.276
SC-46	3.934E+00		6.089E+00	2.586E+01	5.414E-01	0.152
CR-51	9.688E+01		1.119E+02	4.392E+02	8.787E+00	0.221
MN-54	5.630E+00		6.386E+00	2.693E+01	5.525E-01	0.209
CO-57	-1.463E+02		9.705E+01	3.091E+02	6.383E+00	-0.473
CO-58	-1.284E+01		5.107E+00	1.159E+01	2.374E-01	-1.108
FE-59	8.831E+00		7.840E+00	3.869E+01	8.089E-01	0.228
CO-60	-1.259E-01		3.771E+00	1.633E+01	3.471E-01	-0.008
ZN-65	-1.450E+01		1.019E+01	3.332E+01	6.973E-01	-0.435
SE-75	-2.012E+01		1.680E+01	5.594E+01	1.122E+00	-0.360
SR-85	-1.499E+01		1.118E+01	3.743E+01	7.521E-01	-0.401
Y-88	-3.292E+00		3.303E+00	1.214E+01	2.668E-01	-0.271
NB-94	2.373E+00		4.463E+00	1.994E+01	4.101E-01	0.119
NB-95	3.421E+00		4.747E+00	2.206E+01	4.503E-01	0.155
TC-95M	-2.205E+01		1.789E+01	6.143E+01	1.242E+00	-0.359
ZR-95	-1.101E+01		9.769E+00	3.415E+01	6.967E-01	-0.323
ZRNB-95	6.407E+00		8.890E+00	4.131E+01	8.433E-01	0.155
MO-99	-2.810E+01		8.083E+01	2.931E+02	6.042E+00	-0.096
RH-101	-2.640E+01		1.872E+01	6.064E+01	1.227E+00	-0.435
RH-102M	4.104E+00		5.632E+00	2.449E+01	4.912E-01	0.168
RU-103	-1.300E+01		7.744E+00	2.491E+01	5.002E-01	-0.522
RU-106DA	-2.737E+01		5.514E+01	2.101E+02	4.247E+00	-0.130
AG-108M	-9.157E+00		8.559E+00	2.930E+01	5.868E-01	-0.313
AG-110M	-6.899E+00		7.736E+00	2.796E+01	5.755E-01	-0.247
SN-113DA	-1.414E+01		9.930E+00	3.326E+01	6.654E-01	-0.425

Sample ID : H4C9R1AA Acquisition date : 2-JUN-2006 19:03:16

---- Non-Identified Nuclides ----

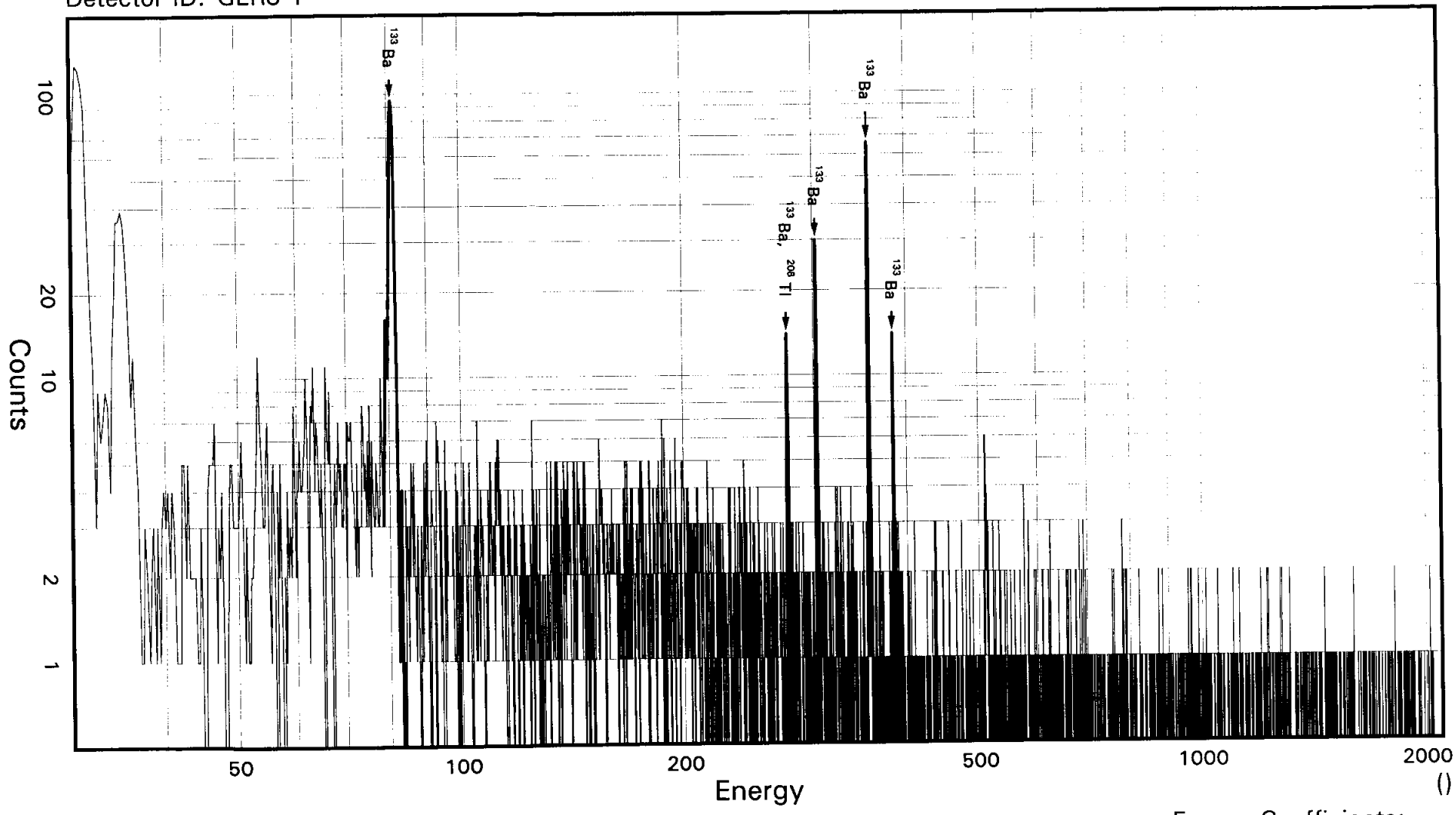
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-1.342E+01		8.151E+00	2.662E+01	5.376E-01	-0.504
SB-125	3.009E+01		2.317E+01	9.894E+01	1.981E+00	0.304
SN-126DA	2.334E+00		3.449E+00	1.673E+01	3.392E-01	0.140
I-131	2.309E+01		1.957E+01	7.862E+01	1.573E+00	0.294
CS-134	1.202E+01		5.200E+00	2.725E+01	5.574E-01	0.441
CS-137DA	-1.796E+00		6.151E+00	2.393E+01	4.851E-01	-0.075
LA-138	2.295E+00		5.111E+00	2.460E+01	5.264E-01	0.093
CE-139	1.568E+01		1.632E+01	6.168E+01	1.259E+00	0.254
BA-140	-2.592E+01		2.572E+01	9.165E+01	1.844E+00	-0.283
BALA-140	1.711E-01		1.168E+01	5.160E+01	1.116E+00	0.003
LA-140	6.663E+01		6.614E+01	3.563E+02	7.707E+00	0.187
CE-141	-2.794E+00		2.994E+01	1.091E+02	2.244E+00	-0.026
CE-144	9.832E+01		1.047E+02	3.965E+02	8.200E+00	0.248
CEPR-144	2.000E+02		2.096E+02	7.944E+02	1.643E+01	0.252
PM-144	1.611E+00		4.377E+00	1.931E+01	3.903E-01	0.083
PM-146	6.053E+00		9.207E+00	3.829E+01	7.673E-01	0.158
EU-152	-1.420E+01		4.017E+01	1.425E+02	2.850E+00	-0.100
EU-154	-2.344E-01		1.811E+01	7.087E+01	1.500E+00	-0.003
EU-155	1.028E+02		5.118E+01	2.101E+02	4.426E+00	0.489
HF-181	5.619E+00		8.657E+00	3.596E+01	7.214E-01	0.156
BI-207	-1.929E+00		6.176E+00	2.331E+01	4.699E-01	-0.083
TL-208	9.170E+00		8.836E+00	3.761E+01	7.586E-01	0.244
BI-210M	1.004E+01		1.600E+01	6.270E+01	1.258E+00	0.160
BI-212	-1.248E+02		8.083E+01	2.647E+02	8.089E+00	-0.471
PB-212	-2.302E+01		2.503E+01	8.956E+01	1.801E+00	-0.257
BI-214	5.431E+00		1.389E+01	6.109E+01	1.234E+00	0.089
PB-214	-5.027E+01		3.031E+01	8.184E+01	1.637E+00	-0.614
RA-223	-1.069E+02		6.063E+01	1.895E+02	3.800E+00	-0.564
RA-224DA	-2.319E+01		2.521E+01	9.021E+01	1.814E+00	-0.257
RA-226DA	5.182E+00		1.387E+01	6.093E+01	1.231E+00	0.085
AC-227DA	-2.226E+00		8.503E+01	3.139E+02	6.315E+00	-0.007
AC-228	-3.501E+01		1.451E+01	4.923E+01	1.015E+00	-0.711
RA-228DA	-3.510E+01		1.455E+01	4.935E+01	1.018E+00	-0.711
TH-228DA	2.571E+01		2.477E+01	1.054E+02	2.127E+00	0.244
TH-232DA	-3.724E+01		7.634E+01	2.713E+02	5.426E+00	-0.137
TH-234DA	4.065E+02		8.650E+02	3.608E+03	7.491E+01	0.113
U-234DA	-9.768E+01		5.014E+01	1.607E+02	3.218E+00	-0.608
U-235HP	1.855E+02		1.194E+02	4.685E+02	9.643E+00	0.396
NP-237DA	1.029E+00		2.601E+01	9.685E+01	1.938E+00	0.011
U-238DA	-5.027E+01		3.031E+01	8.184E+01	1.637E+00	-0.614
U-238DHP	8.249E+02		3.228E+02	1.344E+03	2.982E+01	0.614
AM-241HP	3.192E+01		3.231E+01	1.258E+02	2.812E+00	0.254

STL Richland WA.

BA133

Sample ID: H4C9R1AC
Detector ID: GER8 1

Batch ID: 6118465



Acquisition Start: 2-JUN-2006 19:03:32.47
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 2.99960E-01
Slope: 2.49800E-01
Quadrature: 2.31623E-08

SAMPLE IDENTIFICATION: H4C9R1AC

CONFIGURATION ID: GER8:H4C9R1AC_020661903
TITLE : BA133
SAMPLE ID : H4C9R1AC

REPORT DATE: 02-JUN-06
ACQUIRE DATE: 02-JUN-06 19:03:32
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 26-MAY-2006 12:00:00.00
CALIB DATE: 2-JUN-2006 05:17:38.45
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 2.9996E-01 keV
ENERGY SLOPE: 2.4980E-01 keV/C
ENERGY Q COEFF: 2.3162E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.6476E-01 keV
FWHM SLOPE: 2.0964E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 2-JUN-2006 19:33:57

Configuration : $DISK1:[GER8.SAMPLE]H4C9R1AC_020661903.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:03:32
Sample ID : H4C9R1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.22 0.0%
Start energy : 20.28 End energy : 2048.22
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	30.71	626	121	1.14	121.74	113	16	3.48E-01	5.6	
2	0	35.16	200	85	1.33	139.56	130	19	1.11E-01	13.3	
3	0	80.93	487	38	1.07	322.79	313	20	2.70E-01	5.5	
4	0	276.40	57	15	0.96	1105.17	1096	16	3.15E-02	20.5	
5	0	302.78	109	14	0.80	1210.76	1204	12	6.05E-02	11.9	
6	0	356.01	344	8	1.29	1423.80	1416	18	1.91E-01	5.8	
7	0	383.77	51	0	0.57	1534.90	1528	14	2.83E-02	14.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:33:57

Configuration : $DISK1:[GER8.SAMPLE]H4C9R1AC_020661903.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:03:32
Sample ID : H4C9R1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.22 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	487	33.00	2.202E+00	2.232E+03	2.235E+03	7.76
	276.40	57	6.90	2.371E+00	1.157E+03	1.158E+03	21.24
	302.84	109	17.80	2.374E+00	8.595E+02	8.606E+02	13.06
	356.00	344	62.05*	2.376E+00	7.785E+02	7.795E+02	7.88
	383.85	51	8.70	2.375E+00	8.226E+02	8.237E+02	15.00

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4C9R1AC Acquisition date : 2-JUN-2006 19:03:32

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	30.71	626	121	1.14	121.74	113	16	3.48E-01	5.6	1.93E+00	
0	35.16	200	85	1.33	139.56	130	19	1.11E-01	13.3	1.97E+00	

Flags: "T" = Tentatively associated

Sample ID : H4C9R1AC Acquisition date : 2-JUN-2006 19:03:32

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	1.174E+03	21.24	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 2-JUN-2006 19:33:59

Configuration : $DISK1:[GER8.SAMPLE]H4C9R1AC_020661903.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 26-MAY-2006 12:00:00 Acquisition date : 2-JUN-2006 19:03:32
Sample ID : H4C9R1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.22 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.795E+02	6.143E+01	4.592E+01	9.185E-01	16.974

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-5.262E+01		5.384E+01	1.945E+02	3.902E+00	-0.271
NA-22	-1.622E+00		3.398E+00	1.386E+01	2.932E-01	-0.117
K-40	5.037E+01		4.053E+01	2.234E+02	4.788E+00	0.225
SC-46	3.118E+00		3.826E+00	1.873E+01	3.920E-01	0.167
CR-51	3.253E+01		1.060E+02	4.028E+02	8.059E+00	0.081
MN-54	2.855E+00		2.965E+00	1.573E+01	3.227E-01	0.181
CO-57	-5.513E+00		1.212E+02	4.312E+02	8.904E+00	-0.013
CO-58	5.116E+00		3.625E+00	1.923E+01	3.937E-01	0.266
FE-59	2.896E-02		7.109E+00	3.127E+01	6.536E-01	0.001
CO-60	4.425E+00		3.376E+00	1.794E+01	3.811E-01	0.247
ZN-65	-1.181E+01		7.260E+00	2.171E+01	4.544E-01	-0.544
SE-75	1.341E+01		1.445E+01	5.790E+01	1.162E+00	0.232
SR-85	-3.096E+01		1.153E+01	3.466E+01	6.965E-01	-0.893
Y-88	-2.770E-02		2.318E+00	1.195E+01	2.624E-01	-0.002
NB-94	7.284E+00		3.811E+00	2.033E+01	4.180E-01	0.358
NB-95	3.213E+00		4.106E+00	1.989E+01	4.061E-01	0.162
TC-95M	3.227E-02		1.819E+01	6.687E+01	1.352E+00	0.000
ZR-95	6.773E+00		8.258E+00	3.812E+01	7.776E-01	0.178
ZRNB-95	6.017E+00		7.689E+00	3.726E+01	7.604E-01	0.162
MO-99	-3.234E+01		8.720E+01	3.045E+02	6.276E+00	-0.106
RH-101	7.424E+00		1.656E+01	6.184E+01	1.252E+00	0.120
RH-102M	-5.341E+00		4.989E+00	1.786E+01	3.583E-01	-0.299
RU-103	-1.400E+00		5.268E+00	2.160E+01	4.337E-01	-0.065
RU-106DA	1.029E+02		4.891E+01	2.443E+02	4.940E+00	0.421
AG-108M	-8.789E+00		7.054E+00	2.345E+01	4.697E-01	-0.375
AG-110M	4.693E-01		6.272E+00	2.659E+01	5.473E-01	0.018
SN-113DA	2.293E+00		1.062E+01	4.154E+01	8.311E-01	0.055

Sample ID : H4C9R1AC Acquisition date : 2-JUN-2006 19:03:32

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-7.730E+00		4.694E+00	1.461E+01	2.950E-01	-0.529
SB-125	-1.881E+01		1.611E+01	5.452E+01	1.092E+00	-0.345
SN-126DA	-2.873E+00		3.500E+00	1.320E+01	2.677E-01	-0.218
I-131	-4.176E+00		1.576E+01	5.881E+01	1.176E+00	-0.071
CS-134	-3.642E+00		4.254E+00	1.570E+01	3.210E-01	-0.232
CS-137DA	4.440E+00		4.326E+00	2.130E+01	4.318E-01	0.208
LA-138	-2.072E+00		3.797E+00	1.655E+01	3.540E-01	-0.125
CE-139	2.691E+00		1.436E+01	5.213E+01	1.064E+00	0.052
BA-140	-3.463E+01		3.031E+01	1.062E+02	2.136E+00	-0.326
BALA-140	9.593E+00		1.151E+01	5.666E+01	1.225E+00	0.169
LA-140	6.624E+01		7.950E+01	3.912E+02	8.460E+00	0.169
CE-141	5.210E+01		2.938E+01	1.145E+02	2.355E+00	0.455
CE-144	1.247E+02		1.131E+02	4.294E+02	8.880E+00	0.290
CEPR-144	2.482E+02		2.260E+02	8.585E+02	1.775E+01	0.289
PM-144	1.136E+00		4.275E+00	1.862E+01	3.764E-01	0.061
PM-146	7.888E+00		8.867E+00	3.769E+01	7.553E-01	0.209
EU-152	-1.958E+01		1.891E+01	6.623E+01	1.325E+00	-0.296
EU-154	-4.549E+00		9.531E+00	3.886E+01	8.223E-01	-0.117
EU-155	5.096E+01		5.646E+01	2.146E+02	4.520E+00	0.237
HF-181	-1.090E+00		8.122E+00	3.181E+01	6.382E-01	-0.034
BI-207	-2.043E+00		4.160E+00	1.646E+01	3.317E-01	-0.124
TL-208	1.021E+01		6.279E+00	2.925E+01	5.900E-01	0.349
BI-210M	2.976E+00		1.734E+01	6.568E+01	1.318E+00	0.045
BI-212	8.736E+01		4.384E+01	2.611E+02	7.981E+00	0.335
PB-212	-2.176E+01		2.362E+01	8.491E+01	1.708E+00	-0.256
BI-214	2.366E-01		1.139E+01	4.593E+01	9.278E-01	0.005
PB-214	1.296E+01		2.201E+01	7.654E+01	1.531E+00	0.169
RA-223	2.298E+01		5.805E+01	2.262E+02	4.536E+00	0.102
RA-224DA	-2.191E+01		2.379E+01	8.553E+01	1.720E+00	-0.256
RA-226DA	2.366E-01		1.139E+01	4.593E+01	9.278E-01	0.005
AC-227DA	9.991E+01		8.635E+01	3.417E+02	6.875E+00	0.292
AC-228	5.435E+00		8.930E+00	4.846E+01	9.994E-01	0.112
RA-228DA	5.448E+00		8.951E+00	4.858E+01	1.002E+00	0.112
TH-228DA	2.862E+01		1.760E+01	8.202E+01	1.654E+00	0.349
TH-232DA	4.947E+01		7.260E+01	2.808E+02	5.617E+00	0.176
TH-234DA	-4.229E+02		6.252E+02	2.410E+03	5.001E+01	-0.176
U-234DA	-2.224E+01		3.921E+01	1.418E+02	2.840E+00	-0.157
U-235HP	1.298E+02		1.180E+02	4.452E+02	9.162E+00	0.292
NP-237DA	-3.537E-01		2.206E+01	8.294E+01	1.660E+00	-0.004
U-238DA	1.296E+01		2.201E+01	7.654E+01	1.531E+00	0.169
U-238DHP	5.166E+01		4.900E+02	1.802E+03	3.997E+01	0.029
AM-241HP	-2.095E+01		4.444E+01	1.558E+02	3.481E+00	-0.134

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	BA13306A000			Ref: 10/4/2004		1.1069E+04	±		DPM/G		
RATA22336	BA-133	**7.5708E+02**	± **1.405E+00**	DPM	0.0762	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22337	BA-133	**7.5807E+02**	± **1.405E+00**	DPM	0.0763	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22338	BA-133	**7.5509E+02**	± **1.405E+00**	DPM	0.076	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22339	BA-133	**7.5906E+02**	± **1.405E+00**	DPM	0.0764	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22340	BA-133	**7.5807E+02**	± **1.405E+00**	DPM	0.0763	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22341	BA-133	**7.4913E+02**	± **1.405E+00**	DPM	0.0754	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22342	BA-133	**7.5410E+02**	± **1.405E+00**	DPM	0.0759	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22343	BA-133	**7.5509E+02**	± **1.405E+00**	DPM	0.076	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22344	BA-133	**7.5509E+02**	± **1.405E+00**	DPM	0.076	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22345	BA-133	**7.5708E+02**	± **1.405E+00**	DPM	0.0762	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22346	BA-133	**7.5409E+02**	± **1.405E+00**	DPM	0.0759	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22347	BA-133	**7.5708E+02**	± **1.405E+00**	DPM	0.0762	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22348	BA-133	**7.5409E+02**	± **1.405E+00**	DPM	0.0759	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22349	BA-133	**7.5310E+02**	± **1.405E+00**	DPM	0.0758	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
RATA22350	BA-133	**7.5807E+02**	± **1.405E+00**	DPM	0.0763	g	5/26/2006	5/26/2006	Armstron	9.9354E+03	± 0.000E+00	DPM/G
		7.5562E+002	± 2.571E+000	(15)		0.340%	7.4913E+002 , 7.5906E+002					

* - Isotope is an Impurity

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	BA13306A000		Ref:	10/4/2004		1.1069E+04	±		DPM/G		
RASC4104	BA-133	**7.5355E+02**	± **1.410E+00**	DPM	0.0756	g	5/8/2006	5/8/2006	Armstron	9.9675E+03	± 0.000E+00	DPM/G
		7.5355E+002	± 7.535E+002	(1)			7.5355E+002 , 7.5355E+002					

* - Isotope is an Impurity

6/2/2006 5:07:43 PM

Standard Material Fractions (Vials)

Vial Prep: 6/ 1/05 to 6/ 3/06,SMFractionIdentifier Between RATA22336 and RATA22350, Order by

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	BA-30-6092		Ref:			2.9100E+01	± 1.920E-01	mg/g			
RATA22336	BA	**3.0285E+01**	± **1.999E-01**	mg	1.0407	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22337	BA	**3.0218E+01**	± **1.994E-01**	mg	1.0384	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22338	BA	**3.0250E+01**	± **1.996E-01**	mg	1.0395	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22339	BA	**3.0221E+01**	± **1.994E-01**	mg	1.0385	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22340	BA	**3.0229E+01**	± **1.995E-01**	mg	1.0388	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22341	BA	**3.0285E+01**	± **1.999E-01**	mg	1.0407	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22342	BA	**3.0189E+01**	± **1.992E-01**	mg	1.0374	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22343	BA	**3.0194E+01**	± **1.993E-01**	mg	1.0376	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22344	BA	**3.0186E+01**	± **1.992E-01**	mg	1.0373	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22345	BA	**3.0215E+01**	± **1.994E-01**	mg	1.0383	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22346	BA	**3.0264E+01**	± **1.997E-01**	mg	1.04	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22347	BA	**3.0186E+01**	± **1.992E-01**	mg	1.0373	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22348	BA	**3.0107E+01**	± **1.987E-01**	mg	1.0346	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22349	BA	**3.0232E+01**	± **1.995E-01**	mg	1.0389	g	5/26/2006	5/26/2006	Armstron		±	mg/g
RATA22350	BA	**3.0206E+01**	± **1.993E-01**	mg	1.038	g	5/26/2006	5/26/2006	Armstron		±	mg/g

3.0218E+001 ± 4.497E-002 (15) 0.149% 3.0107E+001 , 3.0285E+001

* - Isotope is an Impurity

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 05/24/2006

Sep1 DT/Tm Tech:

Batch: 6118465 pCi/sampl
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,HoganS

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:

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H39LT1AC-SAMP Constituent List:

Ba-133	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	Ra-226	RDL:1.00E+00	pCi/sam	LCL:	UCL:	RPD:

H4C9R1AA-BLK:

Ba-133	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	Ra-226	RDL:1.00E+00	pCi/sam	LCL:	UCL:	RPD:

H4C9R1AC-LCS:

Ba-133	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	Ra-226	RDL:1	pCi/sam	LCL:70	UCL:130	RPD:20

H39LT1AC-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C9R1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H4C9R1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

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