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Analytical Data Package Prepared For

Brown and Caldwell

Yerington Air Quality - Event #76

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.: 32431

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31582		000436	J6E080164-9	H4X0R1AG	9H4X0R10	6129243
		000436	J6E080164-9	H4X0R1AA	9H4X0R10	6129247
		000436	J6E080164-9	H4X0R1AE	9H4X0R10	6129253
		000436	J6E080164-9	H4X0R1AF	9H4X0R10	6129255
		000436	J6E080164-9	H4X0R1AC	9H4X0R10	6129266
		000436	J6E080164-9	H4X0R1AD	9H4X0R10	6129270
		000437	J6E080164-10	H4X0W1AG	9H4X0W10	6129243
		000437	J6E080164-10	H4X0W1AA	9H4X0W10	6129247
		000437	J6E080164-10	H4X0W1AE	9H4X0W10	6129253
		000437	J6E080164-10	H4X0W1AF	9H4X0W10	6129255
		000437	J6E080164-10	H4X0W1AC	9H4X0W10	6129266
		000437	J6E080164-10	H4X0W1AD	9H4X0W10	6129270
		000438	J6E080164-11	H4X001AG	9H4X0010	6129243
		000438	J6E080164-11	H4X001AA	9H4X0010	6129247
		000438	J6E080164-11	H4X001AE	9H4X0010	6129253
		000438	J6E080164-11	H4X001AF	9H4X0010	6129255
		000438	J6E080164-11	H4X001AC	9H4X0010	6129266
		000438	J6E080164-11	H4X001AD	9H4X0010	6129270
		000439	J6E080164-12	H4X041AG	9H4X0410	6129243
		000439	J6E080164-12	H4X041AA	9H4X0410	6129247
		000439	J6E080164-12	H4X041AE	9H4X0410	6129253
		000439	J6E080164-12	H4X041AF	9H4X0410	6129255
		000439	J6E080164-12	H4X041AC	9H4X0410	6129266
		000439	J6E080164-12	H4X041AD	9H4X0410	6129270
		000440	J6E080164-13	H4X081AG	9H4X0810	6129243
		000440	J6E080164-13	H4X081AA	9H4X0810	6129247

Report No.: 32431

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31582		000440	J6E080164-13	H4X081AE	9H4X0810	6129253
		000440	J6E080164-13	H4X081AF	9H4X0810	6129255
		000440	J6E080164-13	H4X081AC	9H4X0810	6129266
		000440	J6E080164-13	H4X081AD	9H4X0810	6129270
		000441	J6E080164-14	H4X1A1AG	9H4X1A10	6129243
		000441	J6E080164-14	H4X1A1AA	9H4X1A10	6129247
		000441	J6E080164-14	H4X1A1AE	9H4X1A10	6129253
		000441	J6E080164-14	H4X1A1AF	9H4X1A10	6129255
		000441	J6E080164-14	H4X1A1AC	9H4X1A10	6129266
		000441	J6E080164-14	H4X1A1AD	9H4X1A10	6129270
		000442	J6E080164-15	H4X1F1AG	9H4X1F10	6129243
		000442	J6E080164-15	H4X1F1AA	9H4X1F10	6129247
		000442	J6E080164-15	H4X1F1AE	9H4X1F10	6129253
		000442	J6E080164-15	H4X1F1AF	9H4X1F10	6129255
		000442	J6E080164-15	H4X1F1AC	9H4X1F10	6129266
		000442	J6E080164-15	H4X1F1AD	9H4X1F10	6129270
		P-0606	J6E080164-1	H4XR81AG	9H4XR810	6129243
		P-0606	J6E080164-1	H4XR81AA	9H4XR810	6129247
		P-0606	J6E080164-1	H4XR81AE	9H4XR810	6129253
		P-0606	J6E080164-1	H4XR81AF	9H4XR810	6129255
		P-0606	J6E080164-1	H4XR81AC	9H4XR810	6129266
		P-0606	J6E080164-1	H4XR81AD	9H4XR810	6129270
		P-0607	J6E080164-2	H4XTE1AG	9H4XTE10	6129243
		P-0607	J6E080164-2	H4XTE1AA	9H4XTE10	6129247
		P-0607	J6E080164-2	H4XTE1AE	9H4XTE10	6129253
		P-0607	J6E080164-2	H4XTE1AF	9H4XTE10	6129255
		P-0607	J6E080164-2	H4XTE1AC	9H4XTE10	6129266
		P-0607	J6E080164-2	H4XTE1AD	9H4XTE10	6129270
		P-0608	J6E080164-3	H4XTH1AG	9H4XTH10	6129243
		P-0608	J6E080164-3	H4XTH1AA	9H4XTH10	6129247
		P-0608	J6E080164-3	H4XTH1AE	9H4XTH10	6129253
		P-0608	J6E080164-3	H4XTH1AF	9H4XTH10	6129255
		P-0608	J6E080164-3	H4XTH1AC	9H4XTH10	6129266
		P-0608	J6E080164-3	H4XTH1AD	9H4XTH10	6129270
		P-0609	J6E080164-4	H4XTL1AG	9H4XTL10	6129243
		P-0609	J6E080164-4	H4XTL1AA	9H4XTL10	6129247
		P-0609	J6E080164-4	H4XTL1AE	9H4XTL10	6129253
		P-0609	J6E080164-4	H4XTL1AF	9H4XTL10	6129255
		P-0609	J6E080164-4	H4XTL1AC	9H4XTL10	6129266

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31582		P-0609	J6E080164-4	H4XTL1AD	9H4XTL10	6129270
		P-0610	J6E080164-5	H4XTM1AG	9H4XTM10	6129243
		P-0610	J6E080164-5	H4XTM1AA	9H4XTM10	6129247
		P-0610	J6E080164-5	H4XTM1AE	9H4XTM10	6129253
		P-0610	J6E080164-5	H4XTM1AF	9H4XTM10	6129255
		P-0610	J6E080164-5	H4XTM1AC	9H4XTM10	6129266
		P-0610	J6E080164-5	H4XTM1AD	9H4XTM10	6129270
		P-0611	J6E080164-6	H4XTN1AG	9H4XTN10	6129243
		P-0611	J6E080164-6	H4XTN1AA	9H4XTN10	6129247
		P-0611	J6E080164-6	H4XTN1AE	9H4XTN10	6129253
		P-0611	J6E080164-6	H4XTN1AF	9H4XTN10	6129255
		P-0611	J6E080164-6	H4XTN1AC	9H4XTN10	6129266
		P-0611	J6E080164-6	H4XTN1AD	9H4XTN10	6129270
		P-0612	J6E080164-7	H4XTP1AG	9H4XTP10	6129243
		P-0612	J6E080164-7	H4XTP1AA	9H4XTP10	6129247
		P-0612	J6E080164-7	H4XTP1AE	9H4XTP10	6129253
		P-0612	J6E080164-7	H4XTP1AF	9H4XTP10	6129255
		P-0612	J6E080164-7	H4XTP1AC	9H4XTP10	6129266
		P-0612	J6E080164-7	H4XTP1AD	9H4XTP10	6129270
		P-0613	J6E080164-8	H4XTR1AG	9H4XTR10	6129243
		P-0613	J6E080164-8	H4XTR1AA	9H4XTR10	6129247
		P-0613	J6E080164-8	H4XTR1AE	9H4XTR10	6129253
		P-0613	J6E080164-8	H4XTR1AF	9H4XTR10	6129255
		P-0613	J6E080164-8	H4XTR1AC	9H4XTR10	6129266
		P-0613	J6E080164-8	H4XTR1AD	9H4XTR10	6129270

SEVERN TRENT STL

STL Richland
2800 George Washington Way
Richland, WA 99354

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

Certificate of Analysis

June 21, 2006

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

Attention: Guy Graening

Date Received at Lab	:	May 8, 2006
Project Name	:	Air Quality Monitoring Yerington Mine
Project Number	:	121243
Event Number	:	76
PO Number	:	129682.001
Sample Type	:	Fifteen (15) Filters
SDG Number	:	31582

CASE NARRATIVE

I. Introduction

On May 8, 2006, fifteen 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 J6E080164.

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 do not meet CRDL. The results of the samples are >MDA>CRDL except P-0613 and 000442. 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: 21-Jun-06

Report No. : 32431

SDG No: 31582

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000436	H4X0R1AG	U-234	-0.0422 +- 0.0384	ND	pCi/sample	99%	0.596	
		U-235	-0.0169 +- 0.0240	ND	pCi/sample	99%	0.482	
		U-238	0.0717 +- 0.214	ND	pCi/sample	99%	0.563	
000436	H4X0R1AA	TH-228	0.0725 +- 0.146	ND	pCi/sample	94%	0.29	
		TH-230	0.296 +- 0.251	=	pCi/sample	94%	0.273	
		TH-232	0.114 +- 0.166	ND	pCi/sample	94%	0.273	
000436	H4X0R1AE	ALPHA	0.525 +- 2.53	ND	pCi/sample	100%	6.3	
000436	H4X0R1AF	BETA	11.4 +- 4.16	=	pCi/sample	100%	6.35	
000436	H4X0R1AC	RA-226	0.128 +- 0.304	ND	pCi/sample	91%	0.563	
000436	H4X0R1AD	RA-228	3.08 +- 1.15	=	pCi/sample	80%	1.77	
000437	H4X0W1AG	U-234	-0.0270 +- 0.0315	ND	pCi/sample	93%	0.562	
		U-235	-0.0180 +- 0.0256	ND	pCi/sample	93%	0.514	
		U-238	0.00000 +- 0.276	ND	pCi/sample	93%	0.305	
000437	H4X0W1AA	TH-228	0.0285 +- 0.128	ND	pCi/sample	82%	0.342	
		TH-230	0.162 +- 0.189	ND	pCi/sample	82%	0.146	
		TH-232	0.0269 +- 0.121	ND	pCi/sample	82%	0.323	
000437	H4X0W1AE	ALPHA	3.73 +- 3.56	ND	pCi/sample	100%	5.6	
000437	H4X0W1AF	BETA	15.9 +- 4.60	=	pCi/sample	100%	6.57	
000437	H4X0W1AC	RA-226	-0.1510 +- 0.182	ND	pCi/sample	102%	0.458	
000437	H4X0W1AD	RA-228	2.08 +- 0.976	=	pCi/sample	88%	1.73	
000438	H4X001AG	U-234	0.0839 +- 0.329	ND	pCi/sample	87%	0.958	
		U-235	-0.0129 +- 0.0259	ND	pCi/sample	87%	0.65	
		U-238	0.00000 +- 0.395	ND	pCi/sample	87%	0.438	
000438	H4X001AA	TH-228	0.0394 +- 0.125	ND	pCi/sample	99%	0.29	
		TH-230	0.0743 +- 0.140	ND	pCi/sample	99%	0.273	
		TH-232	0.00000 +- 0.0910	ND	pCi/sample	99%	0.101	
000438	H4X001AE	ALPHA	4.08 +- 4.05	ND	pCi/sample	100%	6.99	
000438	H4X001AF	BETA	15.3 +- 4.47	=	pCi/sample	100%	6.22	
000438	H4X001AC	RA-226	0.202 +- 0.230	ND	pCi/sample	99%	0.361	
000438	H4X001AD	RA-228	2.03 +- 0.916	=	pCi/sample	88%	1.57	

STL Richland

rptSTLRchSaSum
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: 21-Jun-06

Report No. : 32431

SDG No: 31582

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000439	H4X041AG	U-234	-0.0442 +- 0.0630	ND	pCi/sample	96%	0.625	
		U-235	0.111 +- 0.222	ND	pCi/sample	96%	0.3	
		U-238	0.00000 +- 0.271	ND	pCi/sample	96%	0.3	
000439	H4X041AA	TH-228	0.0393 +- 0.125	ND	pCi/sample	101%	0.289	
		TH-230	0.204 +- 0.189	ND	pCi/sample	101%	0.223	
		TH-232	0.0186 +- 0.0831	ND	pCi/sample	101%	0.223	
000439	H4X041AE	ALPHA	3.12 +- 3.60	ND	pCi/sample	100%	6.58	
000439	H4X041AF	BETA	16.1 +- 4.70	=	pCi/sample	100%	6.72	
000439	H4X041AC	RA-226	0.330 +- 0.316	ND	pCi/sample	103%	0.485	
000439	H4X041AD	RA-228	2.45 +- 0.923	=	pCi/sample	94%	1.4	
000440	H4X081AG	U-234	0.333 +- 0.388	ND	pCi/sample	90%	0.301	
		U-235	0.00000 +- 0.272	ND	pCi/sample	90%	0.301	
		U-238	0.111 +- 0.223	ND	pCi/sample	90%	0.301	
000440	H4X081AA	TH-228	0.00000 +- 0.132	ND	pCi/sample	82%	0.146	
		TH-230	0.203 +- 0.206	ND	pCi/sample	82%	0.137	
		TH-232	-0.0253 +- 0.0509	ND	pCi/sample	82%	0.304	
000440	H4X081AE	ALPHA	-1.6700 +- 2.31	ND	pCi/sample	100%	7.85	
000440	H4X081AF	BETA	16.3 +- 4.55	=	pCi/sample	100%	6.18	
000440	H4X081AC	RA-226	0.191 +- 0.259	ND	pCi/sample	88%	0.427	
000440	H4X081AD	RA-228	2.57 +- 1.05	=	pCi/sample	80%	1.74	
000441	H4X1A1AG	U-234	0.347 +- 0.419	ND	pCi/sample	91%	0.645	
		U-235	0.00000 +- 0.250	ND	pCi/sample	91%	0.277	
		U-238	0.00000 +- 0.250	ND	pCi/sample	91%	0.277	
000441	H4X1A1AA	TH-228	0.115 +- 0.135	ND	pCi/sample	95%	0.104	
		TH-230	0.0726 +- 0.104	ND	pCi/sample	95%	0.0984	
		TH-232	0.0363 +- 0.0729	ND	pCi/sample	95%	0.0984	
000441	H4X1A1AE	ALPHA	5.27 +- 4.20	ND	pCi/sample	100%	6.33	
000441	H4X1A1AF	BETA	16.8 +- 5.00	=	pCi/sample	100%	6.16	
000441	H4X1A1AC	RA-226	0.251 +- 0.377	ND	pCi/sample	91%	0.648	
000441	H4X1A1AD	RA-228	1.37 +- 0.842	ND	pCi/sample	82%	1.62	

STL Richland

rptSTLRchSaSum
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: 21-Jun-06

Report No. : 32431

SDG No: 31582

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000442	H4X1F1AG	U-234	-0.0246 +- 0.0494	ND	pCi/sample	81%	0.59	
		U-235	0.00000 +- 0.302	ND	pCi/sample	81%	0.334	
		U-238	0.00000 +- 0.302	ND	pCi/sample	81%	0.334	
000442	H4X1F1AA	TH-228	-0.1140 +- 0.134	ND	pCi/sample	53%	0.641	
		TH-230	0.216 +- 0.253	ND	pCi/sample	53%	0.195	
		TH-232	0.108 +- 0.217	ND	pCi/sample	53%	0.432	
000442	H4X1F1AE	ALPHA	0.341 +- 2.12	ND	pCi/sample	100%	5.63	
000442	H4X1F1AF	BETA	-0.2300 +- 3.16	ND	pCi/sample	100%	7.08	
000442	H4X1F1AC	RA-226	0.0946 +- 0.292	ND	pCi/sample	94%	0.549	
000442	H4X1F1AD	RA-228	0.986 +- 0.856	ND	pCi/sample	84%	1.81	
P-0606	H4XR81AG	U-234	0.00000 +- 0.263	ND	pCi/sample	92%	0.291	
		U-235	0.00000 +- 0.263	ND	pCi/sample	92%	0.291	
		U-238	0.00000 +- 0.263	ND	pCi/sample	92%	0.291	
P-0606	H4XR81AA	TH-228	-0.0523 +- 0.135	ND	pCi/sample	101%	0.398	
		TH-230	0.461 +- 0.259	=	pCi/sample	101%	0.0892	
		TH-232	0.00000 +- 0.0806	ND	pCi/sample	101%	0.0892	
P-0606	H4XR81AE	ALPHA	4.01 +- 3.99	ND	pCi/sample	100%	6.88	
P-0606	H4XR81AF	BETA	11.6 +- 4.20	=	pCi/sample	100%	6.8	
P-0606	H4XR81AC	RA-226	0.187 +- 0.292	ND	pCi/sample	101%	0.506	
P-0606	H4XR81AD	RA-228	1.82 +- 1.12	ND	pCi/sample	92%	2.25	
P-0607	H4XTE1AG	U-234	0.235 +- 0.348	ND	pCi/sample	95%	0.618	
		U-235	0.00000 +- 0.240	ND	pCi/sample	95%	0.265	
		U-238	0.0980 +- 0.197	ND	pCi/sample	95%	0.265	
P-0607	H4XTE1AA	TH-228	0.0991 +- 0.186	ND	pCi/sample	91%	0.365	
		TH-230	0.0935 +- 0.133	ND	pCi/sample	91%	0.127	
		TH-232	0.00000 +- 0.114	ND	pCi/sample	91%	0.127	
P-0607	H4XTE1AE	ALPHA	-0.6410 +- 2.10	ND	pCi/sample	100%	6.54	
P-0607	H4XTE1AF	BETA	10.7 +- 3.98	=	pCi/sample	100%	6.44	
P-0607	H4XTE1AC	RA-226	0.393 +- 0.504	ND	pCi/sample	93%	0.847	
P-0607	H4XTE1AD	RA-228	2.46 +- 1.28	ND	pCi/sample	83%	2.51	

STL Richland

rptSTLRchSaSum
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: 21-Jun-06

Report No. : 32431

SDG No: 31582

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
P-0608	H4XTH1AG	U-234	0.0926 +- 0.237	ND	pCi/sample	85%	0.555	
		U-235	0.00000 +- 0.284	ND	pCi/sample	85%	0.314	
		U-238	0.116 +- 0.232	ND	pCi/sample	85%	0.314	
P-0608	H4XTH1AA	TH-228	0.0271 +- 0.0691	ND	pCi/sample	100%	0.162	
		TH-230	0.0511 +- 0.0925	ND	pCi/sample	100%	0.18	
		TH-232	0.0255 +- 0.0653	ND	pCi/sample	100%	0.153	
P-0608	H4XTH1AE	ALPHA	-1.6700 +- 2.31	ND	pCi/sample	100%	7.86	
P-0608	H4XTH1AF	BETA	12.2 +- 4.12	=	pCi/sample	100%	6.31	
P-0608	H4XTH1AC	RA-226	-0.0502 +- 0.370	ND	pCi/sample	90%	0.741	
P-0608	H4XTH1AD	RA-228	2.64 +- 1.35	ND	pCi/sample	81%	2.65	
P-0609	H4XTL1AG	U-234	0.0670 +- 0.232	ND	pCi/sample	88%	0.631	
		U-235	0.0893 +- 0.228	ND	pCi/sample	88%	0.535	
		U-238	-0.0447 +- 0.0636	ND	pCi/sample	88%	0.631	
P-0609	H4XTL1AA	TH-228	0.0693 +- 0.113	ND	pCi/sample	101%	0.216	
		TH-230	0.101 +- 0.122	ND	pCi/sample	101%	0.188	
		TH-232	0.0297 +- 0.0597	ND	pCi/sample	101%	0.0805	
P-0609	H4XTL1AE	ALPHA	3.68 +- 3.69	ND	pCi/sample	100%	6.31	
P-0609	H4XTL1AF	BETA	10.8 +- 3.93	=	pCi/sample	100%	6.29	
P-0609	H4XTL1AC	RA-226	-0.0441 +- 0.367	ND	pCi/sample	103%	0.768	
P-0609	H4XTL1AD	RA-228	2.01 +- 1.00	=	pCi/sample	93%	1.9	
P-0610	H4XTM1AG	U-234	0.0570 +- 0.198	ND	pCi/sample	93%	0.537	
		U-235	-0.0190 +- 0.0381	ND	pCi/sample	93%	0.455	
		U-238	0.0760 +- 0.194	ND	pCi/sample	93%	0.455	
P-0610	H4XTM1AA	TH-228	0.375 +- 0.389	ND	pCi/sample	61%	0.552	
		TH-230	0.142 +- 0.202	ND	pCi/sample	61%	0.192	
		TH-232	0.0708 +- 0.142	ND	pCi/sample	61%	0.192	
P-0610	H4XTM1AE	ALPHA	2.02 +- 2.89	ND	pCi/sample	100%	5.57	
P-0610	H4XTM1AF	BETA	8.52 +- 3.64	=	pCi/sample	100%	6.19	
P-0610	H4XTM1AC	RA-226	0.127 +- 0.392	ND	pCi/sample	93%	0.736	
P-0610	H4XTM1AD	RA-228	1.59 +- 1.01	ND	pCi/sample	84%	2.03	

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.

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Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 21-Jun-06

Report No. : 32431

SDG No: 31582

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
P-0611	H4XTN1AG	U-234	-0.0206 +- 0.0414	ND	pCi/sample	95%	0.494	
		U-235	-0.0206 +- 0.0414	ND	pCi/sample	95%	0.494	
		U-238	0.00000 +- 0.253	ND	pCi/sample	95%	0.28	
P-0611	H4XTN1AA	TH-228	0.00000477 +- 0.117	ND	pCi/sample	102%	0.351	
		TH-230	0.135 +- 0.158	ND	pCi/sample	102%	0.122	
		TH-232	0.00000 +- 0.110	ND	pCi/sample	102%	0.122	
P-0611	H4XTN1AE	ALPHA	2.38 +- 3.44	ND	pCi/sample	100%	6.86	
P-0611	H4XTN1AF	BETA	14.4 +- 4.59	=	pCi/sample	100%	6.52	
P-0611	H4XTN1AC	RA-226	0.0364 +- 0.320	ND	pCi/sample	87%	0.634	
P-0611	H4XTN1AD	RA-228	0.350 +- 1.05	ND	pCi/sample	81%	2.46	
P-0612	H4XTP1AG	U-234	-0.0314 +- 0.0318	ND	pCi/sample	102%	0.523	
		U-235	-0.0314 +- 0.0318	ND	pCi/sample	102%	0.523	
		U-238	0.149 +- 0.281	ND	pCi/sample	102%	0.581	
P-0612	H4XTP1AA	TH-228	-0.0207 +- 0.110	ND	pCi/sample	96%	0.349	
		TH-230	0.352 +- 0.243	=	pCi/sample	96%	0.106	
		TH-232	0.0587 +- 0.118	ND	pCi/sample	96%	0.235	
P-0612	H4XTP1AE	ALPHA	-1.2100 +- 1.87	ND	pCi/sample	100%	6.72	
P-0612	H4XTP1AF	BETA	8.88 +- 3.97	=	pCi/sample	100%	6.7	
P-0612	H4XTP1AC	RA-226	0.0466 +- 0.258	ND	pCi/sample	93%	0.515	
P-0612	H4XTP1AD	RA-228	1.84 +- 0.987	=	pCi/sample	85%	1.83	
P-0613	H4XTR1AG	U-234	0.0755 +- 0.201	ND	pCi/sample	99%	0.496	
		U-235	-0.0239 +- 0.0278	ND	pCi/sample	99%	0.496	
		U-238	-0.0318 +- 0.0322	ND	pCi/sample	99%	0.531	
P-0613	H4XTR1AA	TH-228	0.00000141 +- 0.147	ND	pCi/sample	90%	0.393	
		TH-230	0.340 +- 0.251	=	pCi/sample	90%	0.24	
		TH-232	0.00000 +- 0.0979	ND	pCi/sample	90%	0.108	
P-0613	H4XTR1AE	ALPHA	0.00000 +- 3.00	ND	pCi/sample	100%	7.87	
P-0613	H4XTR1AF	BETA	3.08 +- 3.16	ND	pCi/sample	100%	6.45	
P-0613	H4XTR1AC	RA-226	0.0421 +- 0.370	ND	pCi/sample	95%	0.733	
P-0613	H4XTR1AD	RA-228	1.28 +- 0.946	ND	pCi/sample	84%	1.94	

STL Richland
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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: 21-Jun-06

Report No. : 32431

SDG No: 31582

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2

Number of Results: 150

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

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V4.15.0 A97

QC Results Summary
STL Richland STLR

Ordered by QC Type, Batch No.

Date: 21-Jun-06

Report No. : 32431

SDG No.: 31582

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
BLANK QC	H400D1AA	U-234	0.0128 +- 0.0204	N	pCi/sample	86%			0.0341
		U-235	0.00000 +- 0.0174	N	pCi/sample	86%			0.0193
		U-238	-0.00285 +- 0.00405	N	pCi/sample	86%			0.0402
BLANK QC	H401D1AA	TH-228	0.00000013 +- 0.0134	N	pCi/sample	83%			0.0358
		TH-230	0.0491 +- 0.0288	=	pCi/sample	83%			0.0218
		TH-232	0.00364 +- 0.00730	N	pCi/sample	83%			0.00986
BLANK QC	H401T1AA	ALPHA	0.0614 +- 0.0762	N	pCi/sample	100%			0.144
BLANK QC	H40101AA	BETA	0.0394 +- 0.260	N	pCi/sample	100%			0.573
BLANK QC	H40151AA	RA-226	-0.0342 +- 0.0788	N	pCi/sample	90%			0.173
BLANK QC	H402N1AA	RA-228	0.475 +- 0.239	=	pCi/sample	81%			0.427
LCS	H400D1AC	U-234	1.08 +- 0.230	=	pCi/sample	93%	109%	0.1	0.0335
		U-235	0.0451 +- 0.0344	=	pCi/sample	93%	100%	0.0	0.0335
		U-238	0.977 +- 0.214	=	pCi/sample	93%	94%	-0.1	0.0284
LCS	H401D1AC	TH-230	2.03 +- 0.405	=	pCi/sample	83%	110%	0.1	0.0258
LCS	H401T1AC	ALPHA	1.90 +- 0.487	=	pCi/sample	100%	80%	-0.2	0.137
LCS	H40101AC	BETA	4.32 +- 0.755	=	pCi/sample	100%	92%	-0.1	0.537
LCS	H40151AC	RA-226	1.12 +- 0.319	=	pCi/sample	97%	81%	-0.2	0.0894
LCS	H402N1AC	RA-228	4.90 +- 0.760	=	pCi/sample	87%	95%	0.0	0.393

Number of Results: 18

STL Richland
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Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= 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: 21-Jun-06

Lab Name: STL Richland **SDG:** 31582 **Collection Date:** 4/26/2006 9:30:00 AM

Lot-Sample No.: J6E080164-9 **Report No. :** 32431 **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: 000436 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4X0R1AG			**Report DB ID:** 9H4X0R10								
U-234	-0.0422	ND	0.038	0.038	0.596	pCi/sample	99%	*-0.07*	6/17/06 05:50 p	1.0	0.06194	E908.0
						0.155	1.0	*-(2.2)*		Sample	Sample	ALP83
U-235	-0.0169	ND	0.024	0.024	0.482	pCi/sample	99%	*-0.04*	6/17/06 05:50 p	1.0	0.06194	E908.0
						0.0982	1.0	*-(1.4)*		Sample	Sample	ALP83
U-238	0.0717	ND	0.21	0.21	0.563	pCi/sample	99%	*0.13*	6/17/06 05:50 p	1.0	0.06194	E908.0
						0.139	1.0	*0.67*		Sample	Sample	ALP83
								Ratio U-234/238 = -0.6				
Batch: 6129247	**Work Order:** H4X0R1AA			**Report DB ID:** 9H4X0R10								
TH-228	0.0725	ND	0.14	0.15	0.29	pCi/sample	94%	*0.25*	6/17/06 07:49 p	1.0	0.08303	ISOTH
						0.0795	1.0	*1.*		Sample	Sample	ALP173
TH-230	0.296	=	0.25	0.25	0.273	pCi/sample	94%	*(1.1)*	6/17/06 07:49 p	1.0	0.08303	ISOTH
						0.075	1.0	*(2.4)*		Sample	Sample	ALP173
TH-232	0.114	ND	0.16	0.17	0.273	pCi/sample	94%	*0.42*	6/17/06 07:49 p	1.0	0.08303	ISOTH
						0.075	1.0	*(1.4)*		Sample	Sample	ALP173
Batch: 6129253	**Work Order:** H4X0R1AE			**Report DB ID:** 9H4X0R10								
ALPHA	0.525	ND	2.5	2.5	6.3	pCi/sample	100%	*0.08*	6/9/06 12:56 p	1.0	0.02081	E900.0
						2.44	20.0	*0.41*		Sample	Sample	GPC10D
Batch: 6129255	**Work Order:** H4X0R1AF			**Report DB ID:** 9H4X0R10								
BETA	11.4	=	3.7	4.2	6.35	pCi/sample	100%	*(1.8)*	6/9/06 10:27 a	1.0	0.08268	E900.0
						3.01	5.0	*(5.5)*		Sample	Sample	GPC31B
Batch: 6129266	**Work Order:** H4X0R1AC			**Report DB ID:** 9H4X0R10								

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: 21-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080164-9
Client Sample ID: 000436
Yerington Air Quality - Event #76

SDG: 31582
Report No. : 32431
COC No. :

Collection Date: 4/26/2006 9:30:00 AM
Received Date: 5/8/2006 7:30:00 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	0.128	ND	0.30	0.30	0.563	pCi/sample	91%	*0.23*	6/18/06 01:31 p	0.833	0.24875	E903.1
						0.232	1.0	*0.84*		Sample	Sample	ASCGSA
Batch: 6129270	**Work Order:** H4X0R1AD			**Report DB ID:** 9H4X0R10								
RA-228	3.08	=	1.1	1.1	1.77	pCi/sample	80%	*(1.7)*	6/20/06 06:23 a	1.0	0.24875	E904.0
						0.75	3.1	*(5.4)*		Sample	Sample	GPC2C

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.
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FORM I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name:	STL Richland	**SDG:**	31582	**Collection Date:**	4/26/2006 9:50:00 AM
Lot-Sample No.:	J6E080164-10	**Report No. :**	32431	**Received Date:**	5/8/2006 7:30:00 AM
Client Sample ID:	000437	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4X0W1AG			**Report DB ID:** 9H4X0W10								
U-234	-0.0270	ND	0.031	0.032	0.562	pCi/sample	93%	-0.05	6/17/06 05:50 p	1.0	0.06188	E908.0
						0.128	1.0	-(1.7)		Sample	Sample	ALP84
U-235	-0.0180	ND	0.025	0.026	0.514	pCi/sample	93%	-0.04	6/17/06 05:50 p	1.0	0.06188	E908.0
						0.105	1.0	-(1.4)		Sample	Sample	ALP84
U-238	0.00000	ND	0.0000	0.28	0.305	pCi/sample	93%	0.	6/17/06 05:50 p	1.0	0.06188	E908.0
							1.0	0.		Sample	Sample	ALP84
Batch: 6129247	**Work Order:** H4X0W1AA			**Report DB ID:** 9H4X0W10								
TH-228	0.0285	ND	0.13	0.13	0.342	pCi/sample	82%	0.08	6/17/06 07:49 p	1.0	0.08276	ISOTH
						0.0939	1.0	0.45		Sample	Sample	ALP174
TH-230	0.162	ND	0.19	0.19	0.146	pCi/sample	82%	(1.1)	6/17/06 07:49 p	1.0	0.08276	ISOTH
							1.0	(1.7)		Sample	Sample	ALP174
TH-232	0.0269	ND	0.12	0.12	0.323	pCi/sample	82%	0.08	6/17/06 07:49 p	1.0	0.08276	ISOTH
						0.0886	1.0	0.45		Sample	Sample	ALP174
Batch: 6129253	**Work Order:** H4X0W1AE			**Report DB ID:** 9H4X0W10								
ALPHA	3.73	ND	3.5	3.6	5.6	pCi/sample	100%	0.67	6/9/06 12:56 p	1.0	0.02075	E900.0
						2.03	20.0	(2.1)		Sample	Sample	GPC10E
Batch: 6129255	**Work Order:** H4X0W1AF			**Report DB ID:** 9H4X0W10								
BETA	15.9	=	4.1	4.6	6.57	pCi/sample	100%	(2.4)	6/9/06 10:27 a	1.0	0.08241	E900.0
						3.12	5.0	(6.9)		Sample	Sample	GPC31C
Batch: 6129266	**Work Order:** H4X0W1AC			**Report DB ID:** 9H4X0W10								

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: 21-Jun-06

Lab Name: STL Richland
SDG: 31582
Collection Date: 4/26/2006 9:50:00 AM

Lot-Sample No.: J6E080164-10
Report No. : 32431
Received Date: 5/8/2006 7:30:00 AM

Client Sample ID: 000437
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #76

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	-0.1510	ND	0.18	0.18	0.458	pCi/sample	102%	*-0.33*	6/18/06 01:30 p	0.833	0.24758	E903.1
						0.191	1.0	*-(1.7)*		Sample	Sample	ASCJMB
Batch: 6129270	**Work Order:** H4X0W1AD			**Report DB ID:** 9H4X0W10								
RA-228	2.08	=	0.92	0.98	1.73	pCi/sample	88%	*(1.2)*	6/20/06 06:23 a	1.0	0.24758	E904.0
						0.743	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.
= 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: 21-Jun-06

Lab Name: STL Richland
SDG: 31582
Collection Date: 4/26/2006 10:05:00 AM
Lot-Sample No.: J6E080164-11
Report No. : 32431
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: 000438
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4X001AG			**Report DB ID:** 9H4X0010								
U-234	0.0839	ND	0.33	0.33	0.958	pCi/sample	87%	*0.09*	6/17/06 05:49 p	1.0	0.06195	E908.0
						0.26	1.0	*0.51*		Sample	Sample	ALP85
U-235	-0.0129	ND	0.026	0.026	0.65	pCi/sample	87%	*-0.02*	6/17/06 05:49 p	1.0	0.06195	E908.0
						0.106	1.0	*-1.*		Sample	Sample	ALP85
U-238	0.00000	ND	0.0000	0.40	0.438	pCi/sample	87%	*0.*	6/17/06 05:49 p	1.0	0.06195	E908.0
							1.0	*0.*		Sample	Sample	ALP85
Batch: 6129247	**Work Order:** H4X001AA			**Report DB ID:** 9H4X0010								
TH-228	0.0394	ND	0.12	0.12	0.29	pCi/sample	99%	*0.14*	6/17/06 07:49 p	1.0	0.08382	ISOTH
						0.0916	1.0	*0.63*		Sample	Sample	ALP175
TH-230	0.0743	ND	0.14	0.14	0.273	pCi/sample	99%	*0.27*	6/17/06 07:49 p	1.0	0.08382	ISOTH
						0.0864	1.0	*(1.1)*		Sample	Sample	ALP175
TH-232	0.00000	ND	0.0000	0.091	0.101	pCi/sample	99%	*0.*	6/17/06 07:49 p	1.0	0.08382	ISOTH
							1.0	*0.*		Sample	Sample	ALP175
Batch: 6129253	**Work Order:** H4X001AE			**Report DB ID:** 9H4X0010								
ALPHA	4.08	ND	4.0	4.1	6.99	pCi/sample	100%	*0.58*	6/9/06 02:50 p	1.0	0.02063	E900.0
						2.75	20.0	*(2.)*		Sample	Sample	GPC10A
Batch: 6129255	**Work Order:** H4X001AF			**Report DB ID:** 9H4X0010								
BETA	15.3	=	3.9	4.5	6.22	pCi/sample	100%	*(2.5)*	6/9/06 10:27 a	1.0	0.08275	E900.0
						2.94	5.0	*(6.9)*		Sample	Sample	GPC31D
Batch: 6129266	**Work Order:** H4X001AC			**Report DB ID:** 9H4X0010								

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: 21-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080164-11
Client Sample ID: 000438
Yerington Air Quality - Event #76

SDG: 31582
Report No. : 32431
COC No. :

Collection Date: 4/26/2006 10:05:00 AM
Received Date: 5/8/2006 7:30:00 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	0.202	ND	0.23	0.23	0.361	pCi/sample	99%	*0.56*	6/18/06 01:27 p	0.833	0.2477	E903.1
						0.141	1.0	*(1.8)*		Sample	Sample	ASCHMA
Batch: 6129270	**Work Order:** H4X001AD			**Report DB ID:** 9H4X0010								
RA-228	2.03	=	0.88	0.92	1.57	pCi/sample	88%	*(1.3)*	6/20/06 06:23 a	1.0	0.2477	E904.0
						0.669	3.1	*(4.4)*		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: 21-Jun-06

Lab Name: STL Richland | **SDG:** 31582 | **Collection Date:** 4/26/2006 10:20:00 AM

Lot-Sample No.: J6E080164-12 | **Report No. :** 32431 | **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: 000439 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4X041AG			**Report DB ID:** 9H4X0410								
U-234	-0.0442	ND	0.063	0.063	0.625	pCi/sample	96%	-0.07	6/17/06 05:51 p	1.0	0.06229	E908.0
						0.163	1.0	-(1.4)		Sample	Sample	ALP87
U-235	0.111	ND	0.22	0.22	0.3	pCi/sample	96%	0.37	6/17/06 05:51 p	1.0	0.06229	E908.0
							1.0	1.		Sample	Sample	ALP87
U-238	0.00000	ND	0.0000	0.27	0.3	pCi/sample	96%	0.	6/17/06 05:51 p	1.0	0.06229	E908.0
							1.0	0.		Sample	Sample	ALP87
Batch: 6129247	**Work Order:** H4X041AA			**Report DB ID:** 9H4X0410								
TH-228	0.0393	ND	0.12	0.12	0.289	pCi/sample	101%	0.14	6/17/06 07:49 p	1.0	0.08337	ISOTH
						0.0915	1.0	0.63		Sample	Sample	ALP176
TH-230	0.204	ND	0.19	0.19	0.223	pCi/sample	101%	0.92	6/17/06 07:49 p	1.0	0.08337	ISOTH
						0.0611	1.0	(2.2)		Sample	Sample	ALP176
TH-232	0.0186	ND	0.083	0.083	0.223	pCi/sample	101%	0.08	6/17/06 07:49 p	1.0	0.08337	ISOTH
						0.0611	1.0	0.45		Sample	Sample	ALP176
Batch: 6129253	**Work Order:** H4X041AE			**Report DB ID:** 9H4X0410								
ALPHA	3.12	ND	3.5	3.6	6.58	pCi/sample	100%	0.47	6/9/06 02:50 p	1.0	0.02084	E900.0
						2.56	20.0	(1.7)		Sample	Sample	GPC10B
Batch: 6129255	**Work Order:** H4X041AF			**Report DB ID:** 9H4X0410								
BETA	16.1	=	4.1	4.7	6.72	pCi/sample	100%	(2.4)	6/9/06 10:28 a	1.0	0.0834	E900.0
						3.19	5.0	(6.9)		Sample	Sample	GPC32A
Batch: 6129266	**Work Order:** H4X041AC			**Report DB ID:** 9H4X0410								

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: 21-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080164-12
Client Sample ID: 000439
Yerington Air Quality - Event #76

SDG: 31582
Report No. : 32431
COC No. :

Collection Date: 4/26/2006 10:20:00 AM
Received Date: 5/8/2006 7:30:00 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	0.330	ND	0.31	0.32	0.485	pCi/sample 0.2	103% 1.0	*0.68* *(2.1)*	6/18/06 01:30 p	0.833 Sample	0.24899 Sample	E903.1 ASCBMA
Batch: 6129270	**Work Order:** H4X041AD			**Report DB ID:** 9H4X0410								
RA-228	2.45	=	0.88	0.92	1.4	pCi/sample 0.594	94% 3.1	*(1.8)* *(5.3)*	6/20/06 06:23 a	1.0 Sample	0.24899 Sample	E904.0 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.
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FORM I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name: STL Richland | **SDG:** 31582 | **Collection Date:** 4/26/2006 10:40:00 AM

Lot-Sample No.: J6E080164-13 | **Report No. :** 32431 | **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: 000440 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4X081AG			**Report DB ID:** 9H4X0810								
U-234	**0.333**	ND	0.38	0.39	0.301	pCi/sample	90%	*(1.1)*	6/18/06 07:59 a	1.0	0.062	E908.0
							1.0	*(1.7)*		Sample	Sample	ALP7
U-235	**0.00000**	ND	0.0000	0.27	0.301	pCi/sample	90%	*0.*	6/18/06 07:59 a	1.0	0.062	E908.0
							1.0	*0.*		Sample	Sample	ALP7
U-238	**0.111**	ND	0.22	0.22	0.301	pCi/sample	90%	*0.37*	6/18/06 07:59 a	1.0	0.062	E908.0
							1.0	*1.*		Sample	Sample	ALP7
								Ratio U-234/238 = 3.0				
Batch: 6129247	**Work Order:** H4X081AA			**Report DB ID:** 9H4X0810								
TH-228	**0.00000**	ND	0.0000	0.13	0.146	pCi/sample	82%	*0.*	6/17/06 07:49 p	1.0	0.08269	ISOTH
							1.0	*0.*		Sample	Sample	ALP177
TH-230	**0.203**	ND	0.20	0.21	0.137	pCi/sample	82%	*(1.5)*	6/17/06 07:49 p	1.0	0.08269	ISOTH
							1.0	*(2.)*		Sample	Sample	ALP177
TH-232	**-0.0253**	ND	0.051	0.051	0.304	pCi/sample	82%	*-0.08*	6/17/06 07:49 p	1.0	0.08269	ISOTH
						0.0834	1.0	*-1.*		Sample	Sample	ALP177
Batch: 6129253	**Work Order:** H4X081AE			**Report DB ID:** 9H4X0810								
ALPHA	**-1.6700**	ND	2.3	2.3	7.85	pCi/sample	100%	*-0.21*	6/9/06 02:50 p	1.0	0.0208	E900.0
						3.17	20.0	*-(1.4)*		Sample	Sample	GPC10C
Batch: 6129255	**Work Order:** H4X081AF			**Report DB ID:** 9H4X0810								
BETA	**16.3**	=	4.0	4.5	6.18	pCi/sample	100%	*(2.6)*	6/9/06 10:28 a	1.0	0.08264	E900.0
						2.92	5.0	*(7.1)*		Sample	Sample	GPC32B
Batch: 6129266	**Work Order:** H4X081AC			**Report DB ID:** 9H4X0810								

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: 21-Jun-06

Lab Name: STL Richland
SDG: 31582
Collection Date: 4/26/2006 10:40:00 AM
Lot-Sample No.: J6E080164-13
Report No. : 32431
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: 000440
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #76

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	0.191	ND	0.26	0.26	0.427	pCi/sample	88%	*0.45*	6/18/06 02:06 p	0.833	0.24813	E903.1
						0.156	1.0	*(1.5)*		Sample	Sample	ASCKME
Batch: 6129270	**Work Order:** H4X081AD			**Report DB ID:** 9H4X0810								
RA-228	2.57	=	0.99	1.0	1.74	pCi/sample	80%	*(1.5)*	6/20/06 06:23 a	1.0	0.24813	E904.0
						0.745	3.1	*(4.9)*		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
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FORM I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080164-14
Client Sample ID: 000441
Yerington Air Quality - Event #76

SDG: 31582
Report No. : 32431
COC No. :

Collection Date: 4/26/2006 10:55:00 AM
Received Date: 5/8/2006 7:30:00 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: 6129243	**Work Order:** H4X1A1AG			**Report DB ID:** 9H4X1A10								
U-234	**0.347**	ND	0.41	0.42	0.645	pCi/sample	91%	*0.54*	6/18/06 07:59 a	1.0	0.06195	E908.0
						0.184	1.0	*(1.7)*		Sample	Sample	ALP8
U-235	**0.00000**	ND	0.0000	0.25	0.277	pCi/sample	91%	*0.*	6/18/06 07:59 a	1.0	0.06195	E908.0
							1.0	*0.*		Sample	Sample	ALP8
U-238	**0.00000**	ND	0.0000	0.25	0.277	pCi/sample	91%	*0.*	6/18/06 07:59 a	1.0	0.06195	E908.0
							1.0	*0.*		Sample	Sample	ALP8
Batch: 6129247	**Work Order:** H4X1A1AA			**Report DB ID:** 9H4X1A10								
TH-228	**0.115**	ND	0.13	0.13	0.104	pCi/sample	95%	*(1.1)*	6/17/06 07:49 p	1.0	0.08307	ISOTH
							1.0	*(1.7)*		Sample	Sample	ALP178
TH-230	**0.0726**	ND	0.10	0.10	0.0984	pCi/sample	95%	*0.74*	6/17/06 07:49 p	1.0	0.08307	ISOTH
							1.0	*(1.4)*		Sample	Sample	ALP178
TH-232	**0.0363**	ND	0.073	0.073	0.0984	pCi/sample	95%	*0.37*	6/17/06 07:49 p	1.0	0.08307	ISOTH
							1.0	*1.*		Sample	Sample	ALP178
Batch: 6129253	**Work Order:** H4X1A1AE			**Report DB ID:** 9H4X1A10								
ALPHA	**5.27**	ND	4.1	4.2	6.33	pCi/sample	100%	*0.83*	6/9/06 02:50 p	1.0	0.02064	E900.0
						2.45	20.0	*(2.5)*		Sample	Sample	GPC10D
Batch: 6129255	**Work Order:** H4X1A1AF			**Report DB ID:** 9H4X1A10								
BETA	**16.8**	=	4.0	5.0	6.16	pCi/sample	100%	*(2.7)*	6/9/06 10:28 a	1.0	0.08257	E900.0
						2.91	5.0	*(6.7)*		Sample	Sample	GPC32C
Batch: 6129266	**Work Order:** H4X1A1AC			**Report DB ID:** 9H4X1A10								

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: 21-Jun-06

Lab Name: STL Richland
SDG: 31582
Collection Date: 4/26/2006 10:55:00 AM
Lot-Sample No.: J6E080164-14
Report No. : 32431
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: 000441
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #76

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	0.251	ND	0.37	0.38	0.648	pCi/sample	91%	*0.39*	6/18/06 02:06 p	0.833	0.25053	E903.1
						0.281	1.0	*(1.3)*		Sample	Sample	ASCLMC
Batch: 6129270	**Work Order:** H4X1A1AD			**Report DB ID:** 9H4X1A10								
RA-228	1.37	ND	0.78	0.84	1.62	pCi/sample	82%	*0.84*	6/20/06 06:23 a	1.0	0.25053	E904.0
						0.69	3.1	*(3.2)*		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 I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name:	STL Richland	**SDG:**	31582	**Collection Date:**	4/26/2006 10:10:00 AM
Lot-Sample No.:	J6E080164-15	**Report No. :**	32431	**Received Date:**	5/8/2006 7:30:00 AM
Client Sample ID:	000442	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4X1F1AG			**Report DB ID:** 9H4X1F10								
U-234	-0.0246	ND	0.049	0.049	0.59	pCi/sample	81%	*-0.04*	6/18/06 07:59 a	1.0	0.06142	E908.0
						0.128	1.0	*-1.*		Sample	Sample	ALP9
U-235	0.00000	ND	0.0000	0.30	0.334	pCi/sample	81%	*0.*	6/18/06 07:59 a	1.0	0.06142	E908.0
							1.0	*0.*		Sample	Sample	ALP9
U-238	0.00000	ND	0.0000	0.30	0.334	pCi/sample	81%	*0.*	6/18/06 07:59 a	1.0	0.06142	E908.0
							1.0	*0.*		Sample	Sample	ALP9
Batch: 6129247	**Work Order:** H4X1F1AA			**Report DB ID:** 9H4X1F10								
TH-228	-0.1140	ND	0.13	0.13	0.641	pCi/sample	53%	*-0.18*	6/18/06 10:09 a	1.0	0.08195	ISOTH
						0.217	1.0	*-(1.7)*		Sample	Sample	ALP171
TH-230	0.216	ND	0.25	0.25	0.195	pCi/sample	53%	*(1.1)*	6/18/06 10:09 a	1.0	0.08195	ISOTH
							1.0	*(1.7)*		Sample	Sample	ALP171
TH-232	0.108	ND	0.22	0.22	0.432	pCi/sample	53%	*0.25*	6/18/06 10:09 a	1.0	0.08195	ISOTH
						0.118	1.0	*1.*		Sample	Sample	ALP171
Batch: 6129253	**Work Order:** H4X1F1AE			**Report DB ID:** 9H4X1F10								
ALPHA	0.341	ND	2.1	2.1	5.63	pCi/sample	100%	*0.06*	6/9/06 02:50 p	1.0	0.02054	E900.0
						2.05	20.0	*0.32*		Sample	Sample	GPC10E
Batch: 6129255	**Work Order:** H4X1F1AF			**Report DB ID:** 9H4X1F10								
BETA	-0.2300	ND	3.2	3.2	7.08	pCi/sample	100%	*-0.03*	6/9/06 10:28 a	1.0	0.08213	E900.0
						3.37	5.0	*-0.15*		Sample	Sample	GPC32D
Batch: 6129266	**Work Order:** H4X1F1AC			**Report DB ID:** 9H4X1F10								

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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: 21-Jun-06

Lab Name: STL Richland
SDG: 31582
Collection Date: 4/26/2006 10:10:00 AM
Lot-Sample No.: J6E080164-15
Report No. : 32431
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: 000442
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #76

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	0.0946	ND	0.29	0.29	0.549	pCi/sample	94%	*0.17*	6/18/06 02:06 p	0.833	0.24619	E903.1
						0.232	1.0	*0.65*		Sample	Sample	ASCNMA
Batch: 6129270	**Work Order:** H4X1F1AD			**Report DB ID:** 9H4X1F10								
RA-228	0.986	ND	0.84	0.86	1.81	pCi/sample	84%	*0.54*	6/20/06 06:23 a	1.0	0.24619	E904.0
						0.787	3.1	*(2.3)*		Sample	Sample	GPC4A

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: 21-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080164-1
Client Sample ID: P-0606
Yerington Air Quality - Event #76

SDG: 31582
Report No. : 32431
COC No. :

Collection Date: 4/26/2006 9:20:00 AM
Received Date: 5/8/2006 7:30:00 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: 6129243	**Work Order:** H4XR81AG			**Report DB ID:** 9H4XR810								
U-234	0.00000	ND	0.0000	0.26	0.291	pCi/sample	92%	0.	6/17/06 05:48 p	1.0	0.06252	E908.0
							1.0	0.		Sample	Sample	ALP7
U-235	0.00000	ND	0.0000	0.26	0.291	pCi/sample	92%	0.	6/17/06 05:48 p	1.0	0.06252	E908.0
							1.0	0.		Sample	Sample	ALP7
U-238	0.00000	ND	0.0000	0.26	0.291	pCi/sample	92%	0.	6/17/06 05:48 p	1.0	0.06252	E908.0
							1.0	0.		Sample	Sample	ALP7
Batch: 6129247	**Work Order:** H4XR81AA			**Report DB ID:** 9H4XR810								
TH-228	-0.0523	ND	0.14	0.14	0.398	pCi/sample	101%	-0.13	6/17/06 07:45 p	1.0	0.08326	ISOTH
						0.152	1.0	-0.77		Sample	Sample	ALP114
TH-230	0.461	=	0.25	0.26	0.0892	pCi/sample	101%	(5.2)	6/17/06 07:45 p	1.0	0.08326	ISOTH
							1.0	(3.6)		Sample	Sample	ALP114
TH-232	0.00000	ND	0.0000	0.081	0.0892	pCi/sample	101%	0.	6/17/06 07:45 p	1.0	0.08326	ISOTH
							1.0	0.		Sample	Sample	ALP114
Batch: 6129253	**Work Order:** H4XR81AE			**Report DB ID:** 9H4XR810								
ALPHA	4.01	ND	3.9	4.0	6.88	pCi/sample	100%	0.58	6/9/06 11:02 a	1.0	0.02097	E900.0
						2.71	20.0	(2.)		Sample	Sample	GPC10A
Batch: 6129255	**Work Order:** H4XR81AF			**Report DB ID:** 9H4XR810								
BETA	11.6	=	3.8	4.2	6.8	pCi/sample	100%	(1.7)	6/9/06 10:27 a	1.0	0.08428	E900.0
						3.25	5.0	(5.5)		Sample	Sample	GPC26A
Batch: 6129266	**Work Order:** H4XR81AC			**Report DB ID:** 9H4XR810								

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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: 21-Jun-06

Lab Name: STL Richland
SDG: 31582
Collection Date: 4/26/2006 9:20:00 AM
Lot-Sample No.: J6E080164-1
Report No. : 32431
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: P-0606
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #76

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	0.187	ND	0.29	0.29	0.506	pCi/sample	101%	*0.37*	6/18/06 12:53 p	0.833	0.24996	E903.1
						0.204	1.0	*(1.3)*		Sample	Sample	ASC3RA
Batch: 6129270	**Work Order:** H4XR81AD			**Report DB ID:** 9H4XR810								
RA-228	1.82	ND	1.1	1.1	2.25	pCi/sample	92%	*0.81*	6/20/06 06:22 a	1.0	0.24996	E904.0
						1.03	3.1	*(3.3)*		Sample	Sample	GPC7A

Number of Results: 10

Comments:

STL Richland
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FORM I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name: STL Richland
SDG: 31582
Collection Date: 4/26/2006 9:45:00 AM
Lot-Sample No.: J6E080164-2
Report No. : 32431
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: P-0607
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4XTE1AG			**Report DB ID:** 9H4XTE10								
U-234	0.235	ND	0.35	0.35	0.618	pCi/sample	95%	*0.38*	6/17/06 05:48 p	1.0	0.06212	E908.0
						0.177	1.0	*(1.4)*		Sample	Sample	ALP8
U-235	0.00000	ND	0.0000	0.24	0.265	pCi/sample	95%	*0.*	6/17/06 05:48 p	1.0	0.06212	E908.0
							1.0	*0.*		Sample	Sample	ALP8
U-238	0.0980	ND	0.20	0.20	0.265	pCi/sample	95%	*0.37*	6/17/06 05:48 p	1.0	0.06212	E908.0
							1.0	*1.*		Sample	Sample	ALP8
								Ratio U-234/238 = 2.4				
Batch: 6129247	**Work Order:** H4XTE1AA			**Report DB ID:** 9H4XTE10								
TH-228	0.0991	ND	0.19	0.19	0.365	pCi/sample	91%	*0.27*	6/17/06 07:46 p	1.0	0.08314	ISOTH
						0.115	1.0	*(1.1)*		Sample	Sample	ALP116
TH-230	0.0935	ND	0.13	0.13	0.127	pCi/sample	91%	*0.74*	6/17/06 07:46 p	1.0	0.08314	ISOTH
							1.0	*(1.4)*		Sample	Sample	ALP116
TH-232	0.00000	ND	0.0000	0.11	0.127	pCi/sample	91%	*0.*	6/17/06 07:46 p	1.0	0.08314	ISOTH
							1.0	*0.*		Sample	Sample	ALP116
Batch: 6129253	**Work Order:** H4XTE1AE			**Report DB ID:** 9H4XTE10								
ALPHA	-0.6410	ND	2.1	2.1	6.54	pCi/sample	100%	*-0.1*	6/9/06 11:02 a	1.0	0.02097	E900.0
						2.55	20.0	*-0.61*		Sample	Sample	GPC10B
Batch: 6129255	**Work Order:** H4XTE1AF			**Report DB ID:** 9H4XTE10								
BETA	10.7	=	3.7	4.0	6.44	pCi/sample	100%	*(1.7)*	6/9/06 10:27 a	1.0	0.08341	E900.0
						3.06	5.0	*(5.4)*		Sample	Sample	GPC26B
Batch: 6129266	**Work Order:** H4XTE1AC			**Report DB ID:** 9H4XTE10								

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FORM I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name: STL Richland | **SDG:** 31582 | **Collection Date:** 4/26/2006 9:45:00 AM

Lot-Sample No.: J6E080164-2 | **Report No. :** 32431 | **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: P-0607 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #76

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	0.393	ND	0.50	0.50	0.847	pCi/sample	93%	*0.46*	6/18/06 12:52 p	0.833	0.24819	E903.1
						0.378	1.0	*(1.6)*		Sample	Sample	ASC4HB
Batch: 6129270	**Work Order:** H4XTE1AD			**Report DB ID:** 9H4XTE10								
RA-228	2.46	ND	1.2	1.3	2.51	pCi/sample	83%	*0.98*	6/20/06 06:22 a	1.0	0.24819	E904.0
						1.15	3.1	*(3.8)*		Sample	Sample	GPC7B

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: 21-Jun-06

Lab Name:	**STL Richland**	**SDG:**	31582	**Collection Date:**	4/26/2006 10:00:00 AM
Lot-Sample No.:	**J6E080164-3**	**Report No. :**	32431	**Received Date:**	5/8/2006 7:30:00 AM
Client Sample ID:	**P-0608**	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4XTH1AG			**Report DB ID:** 9H4XTH10								
U-234	0.0926	ND	0.24	0.24	0.555	pCi/sample	85%	*0.17*	6/17/06 05:48 p	1.0	0.06262	E908.0
						0.12	1.0	*0.78*		Sample	Sample	ALP9
U-235	0.00000	ND	0.0000	0.28	0.314	pCi/sample	85%	*0.*	6/17/06 05:48 p	1.0	0.06262	E908.0
							1.0	*0.*		Sample	Sample	ALP9
U-238	0.116	ND	0.23	0.23	0.314	pCi/sample	85%	*0.37*	6/17/06 05:48 p	1.0	0.06262	E908.0
							1.0	*1.*		Sample	Sample	ALP9
								Ratio U-234/238 = 0.8				
Batch: 6129247	**Work Order:** H4XTH1AA			**Report DB ID:** 9H4XTH10								
TH-228	0.0271	ND	0.069	0.069	0.162	pCi/sample	100%	*0.17*	6/17/06 07:46 p	1.0	0.08439	ISOTH
						0.0352	1.0	*0.78*		Sample	Sample	ALP117
TH-230	0.0511	ND	0.092	0.092	0.18	pCi/sample	100%	*0.28*	6/17/06 07:46 p	1.0	0.08439	ISOTH
						0.047	1.0	*(1.1)*		Sample	Sample	ALP117
TH-232	0.0255	ND	0.065	0.065	0.153	pCi/sample	100%	*0.17*	6/17/06 07:46 p	1.0	0.08439	ISOTH
						0.0332	1.0	*0.78*		Sample	Sample	ALP117
Batch: 6129253	**Work Order:** H4XTH1AE			**Report DB ID:** 9H4XTH10								
ALPHA	-1.6700	ND	2.3	2.3	7.86	pCi/sample	100%	*-0.21*	6/9/06 11:02 a	1.0	0.02086	E900.0
						3.18	20.0	*-(1.4)*		Sample	Sample	GPC10C
Batch: 6129255	**Work Order:** H4XTH1AF			**Report DB ID:** 9H4XTH10								
BETA	12.2	=	3.8	4.1	6.31	pCi/sample	100%	*(1.9)*	6/9/06 10:27 a	1.0	0.08379	E900.0
						2.98	5.0	*(5.9)*		Sample	Sample	GPC26C
Batch: 6129266	**Work Order:** H4XTH1AC			**Report DB ID:** 9H4XTH10								

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FORM I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name: STL Richland | **SDG:** 31582 | **Collection Date:** 4/26/2006 10:00:00 AM

Lot-Sample No.: J6E080164-3 | **Report No. :** 32431 | **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: P-0608 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #76

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	-0.0502	ND	0.37	0.37	0.741	pCi/sample	90%	*-0.07*	6/18/06 12:50 p	0.833	0.25031	E903.1
						0.326	1.0	*-0.27*		Sample	Sample	ASC7HA
Batch: 6129270	**Work Order:** H4XTH1AD			**Report DB ID:** 9H4XTH10								
RA-228	2.64	ND	1.3	1.4	2.65	pCi/sample	81%	*1.*	6/20/06 06:22 a	1.0	0.25031	E904.0
						1.21	3.1	*(3.9)*		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: 21-Jun-06

Lab Name:	**STL Richland**	**SDG:**	31582	**Collection Date:**	4/26/2006 10:15:00 AM
Lot-Sample No.:	**J6E080164-4**	**Report No. :**	32431	**Received Date:**	5/8/2006 7:30:00 AM
Client Sample ID:	**P-0609**	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4XTL1AG			**Report DB ID:** 9H4XTL10								
U-234	**0.0670**	ND	0.23	0.23	0.631	pCi/sample	88%	*0.11*	6/17/06 05:48 p	1.0	0.06205	E908.0
						0.164	1.0	*0.58*		Sample	Sample	ALP10
U-235	**0.0893**	ND	0.23	0.23	0.535	pCi/sample	88%	*0.17*	6/17/06 05:48 p	1.0	0.06205	E908.0
						0.116	1.0	*0.78*		Sample	Sample	ALP10
U-238	**-0.0447**	ND	0.063	0.064	0.631	pCi/sample	88%	*-0.07*	6/17/06 05:48 p	1.0	0.06205	E908.0
						0.164	1.0	*-(1.4)*		Sample	Sample	ALP10
								Ratio U-234/238 = -1.5				
Batch: 6129247	**Work Order:** H4XTL1AA			**Report DB ID:** 9H4XTL10								
TH-228	**0.0693**	ND	0.11	0.11	0.216	pCi/sample	101%	*0.32*	6/17/06 07:46 p	1.0	0.08326	ISOTH
						0.0655	1.0	*(1.2)*		Sample	Sample	ALP118
TH-230	**0.101**	ND	0.12	0.12	0.188	pCi/sample	101%	*0.54*	6/17/06 07:46 p	1.0	0.08326	ISOTH
						0.0536	1.0	*(1.7)*		Sample	Sample	ALP118
TH-232	**0.0297**	ND	0.059	0.060	0.0805	pCi/sample	101%	*0.37*	6/17/06 07:46 p	1.0	0.08326	ISOTH
							1.0	*1.*		Sample	Sample	ALP118
Batch: 6129253	**Work Order:** H4XTL1AE			**Report DB ID:** 9H4XTL10								
ALPHA	**3.68**	ND	3.6	3.7	6.31	pCi/sample	100%	*0.58*	6/9/06 11:02 a	1.0	0.02072	E900.0
						2.44	20.0	*(2.)*		Sample	Sample	GPC10D
Batch: 6129255	**Work Order:** H4XTL1AF			**Report DB ID:** 9H4XTL10								
BETA	**10.8**	=	3.6	3.9	6.29	pCi/sample	100%	*(1.7)*	6/9/06 10:27 a	1.0	0.08401	E900.0
						2.98	5.0	*(5.5)*		Sample	Sample	GPC26D
Batch: 6129266	**Work Order:** H4XTL1AC			**Report DB ID:** 9H4XTL10								

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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: 21-Jun-06

Lab Name:	**STL Richland**	**SDG:**	31582	**Collection Date:**	4/26/2006 10:15:00 AM
Lot-Sample No.:	**J6E080164-4**	**Report No. :**	32431	**Received Date:**	5/8/2006 7:30:00 AM
Client Sample ID:	**P-0609**	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #76

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	**-0.0441**	ND	0.37	0.37	0.768	pCi/sample	103%	*-0.06*	6/18/06 12:51 p	0.833	0.24924	E903.1
						0.324	1.0	*-0.24*		Sample	Sample	ASC8RD
Batch: 6129270	**Work Order:** H4XTL1AD			**Report DB ID:** 9H4XTL10								
RA-228	**2.01**	=	0.96	1.0	1.9	pCi/sample	93%	*(1.1)*	6/20/06 06:22 a	1.0	0.24924	E904.0
						0.857	3.1	*(4.)*		Sample	Sample	GPC1A

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: 21-Jun-06

Lab Name:	**STL Richland**	**SDG:**	31582	**Collection Date:**	4/26/2006 10:35:00 AM
Lot-Sample No.:	**J6E080164-5**	**Report No. :**	32431	**Received Date:**	5/8/2006 7:30:00 AM
Client Sample ID:	**P-0610**	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4XTM1AG			**Report DB ID:** 9H4XTM10								
U-234	**0.0570**	ND	0.20	0.20	0.537	pCi/sample	93%	*0.11*	6/17/06 05:48 p	1.0	0.06252	E908.0
						0.14	1.0	*0.58*		Sample	Sample	ALP11
U-235	**-0.0190**	ND	0.038	0.038	0.455	pCi/sample	93%	*-0.04*	6/17/06 05:48 p	1.0	0.06252	E908.0
						0.0989	1.0	*-1.*		Sample	Sample	ALP11
U-238	**0.0760**	ND	0.19	0.19	0.455	pCi/sample	93%	*0.17*	6/17/06 05:48 p	1.0	0.06252	E908.0
						0.0989	1.0	*0.78*		Sample	Sample	ALP11
								Ratio U-234/238 = 0.7				
Batch: 6129247	**Work Order:** H4XTM1AA			**Report DB ID:** 9H4XTM10								
TH-228	**0.375**	ND	0.38	0.39	0.552	pCi/sample	61%	*0.68*	6/17/06 07:46 p	1.0	0.08357	ISOTH
						0.175	1.0	*(1.9)*		Sample	Sample	ALP119
TH-230	**0.142**	ND	0.20	0.20	0.192	pCi/sample	61%	*0.74*	6/17/06 07:46 p	1.0	0.08357	ISOTH
							1.0	*(1.4)*		Sample	Sample	ALP119
TH-232	**0.0708**	ND	0.14	0.14	0.192	pCi/sample	61%	*0.37*	6/17/06 07:46 p	1.0	0.08357	ISOTH
							1.0	*1.*		Sample	Sample	ALP119
Batch: 6129253	**Work Order:** H4XTM1AE			**Report DB ID:** 9H4XTM10								
ALPHA	**2.02**	ND	2.9	2.9	5.57	pCi/sample	100%	*0.36*	6/9/06 11:02 a	1.0	0.02076	E900.0
						2.02	20.0	*(1.4)*		Sample	Sample	GPC10E
Batch: 6129255	**Work Order:** H4XTM1AF			**Report DB ID:** 9H4XTM10								
BETA	**8.52**	=	3.4	3.6	6.19	pCi/sample	100%	*(1.4)*	6/9/06 10:27 a	1.0	0.08364	E900.0
						2.93	5.0	*(4.7)*		Sample	Sample	GPC28B
Batch: 6129266	**Work Order:** H4XTM1AC			**Report DB ID:** 9H4XTM10								

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: 21-Jun-06

Lab Name: STL Richland
SDG: 31582
Collection Date: 4/26/2006 10:35:00 AM
Lot-Sample No.: J6E080164-5
Report No. : 32431
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: P-0610
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #76

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	**0.127**	ND	0.39	0.39	0.736	pCi/sample	93%	*0.17*	6/18/06 12:50 p	0.833	0.25066	E903.1
						0.311	1.0	*0.65*		Sample	Sample	ASC9RC
Batch: 6129270	**Work Order:** H4XTM1AD			**Report DB ID:** 9H4XTM10								
RA-228	**1.59**	ND	0.95	1.0	2.03	pCi/sample	84%	*0.78*	6/20/06 06:22 a	1.0	0.25066	E904.0
						0.911	3.1	*(3.2)*		Sample	Sample	GPC1C

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: 21-Jun-06

Lab Name: STL Richland | **SDG:** 31582 | **Collection Date:** 4/26/2006 10:50:00 AM

Lot-Sample No.: J6E080164-6 | **Report No. :** 32431 | **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: P-0611 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4XTN1AG			**Report DB ID:** 9H4XTN10								
U-234	-0.0206	ND	0.041	0.041	0.494	pCi/sample	95%	-0.04	6/17/06 05:49 p	1.0	0.06249	E908.0
						0.107	1.0	-1.		Sample	Sample	ALP12
U-235	-0.0206	ND	0.041	0.041	0.494	pCi/sample	95%	-0.04	6/17/06 05:49 p	1.0	0.06249	E908.0
						0.107	1.0	-1.		Sample	Sample	ALP12
U-238	0.00000	ND	0.0000	0.25	0.28	pCi/sample	95%	0.	6/17/06 05:49 p	1.0	0.06249	E908.0
							1.0	0.		Sample	Sample	ALP12
Batch: 6129247	**Work Order:** H4XTN1AA			**Report DB ID:** 9H4XTN10								
TH-228	0.00000477	ND	0.12	0.12	0.351	pCi/sample	102%	0.	6/17/06 07:46 p	1.0	0.0832	ISOTH
						0.111	1.0	0.		Sample	Sample	ALP120
TH-230	0.135	ND	0.16	0.16	0.122	pCi/sample	102%	(1.1)	6/17/06 07:46 p	1.0	0.0832	ISOTH
							1.0	(1.7)		Sample	Sample	ALP120
TH-232	0.00000	ND	0.0000	0.11	0.122	pCi/sample	102%	0.	6/17/06 07:46 p	1.0	0.0832	ISOTH
							1.0	0.		Sample	Sample	ALP120
Batch: 6129253	**Work Order:** H4XTN1AE			**Report DB ID:** 9H4XTN10								
ALPHA	2.38	ND	3.4	3.4	6.86	pCi/sample	100%	0.35	6/9/06 12:56 p	1.0	0.02105	E900.0
						2.7	20.0	(1.4)		Sample	Sample	GPC10A
Batch: 6129255	**Work Order:** H4XTN1AF			**Report DB ID:** 9H4XTN10								
BETA	14.4	=	3.9	4.6	6.52	pCi/sample	100%	(2.2)	6/9/06 10:27 a	1.0	0.08402	E900.0
						3.09	5.0	(6.3)		Sample	Sample	GPC28C
Batch: 6129266	**Work Order:** H4XTN1AC			**Report DB ID:** 9H4XTN10								

STL Richland
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V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name: STL Richland **SDG:** 31582 **Collection Date:** 4/26/2006 10:50:00 AM

Lot-Sample No.: J6E080164-6 **Report No. :** 32431 **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: P-0611 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #76

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	0.0364	ND	0.32	0.32	0.634	pCi/sample	87%	*0.06*	6/18/06 01:32 p	0.833	0.24895	E903.1
						0.268	1.0	*0.23*		Sample	Sample	ASCASA
Batch: 6129270	**Work Order:** H4XTN1AD			**Report DB ID:** 9H4XTN10								
RA-228	0.350	ND	1.0	1.1	2.46	pCi/sample	81%	*0.14*	6/20/06 06:23 a	1.0	0.24895	E904.0
						1.12	3.1	*0.66*		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.
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FORM I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080164-7
Client Sample ID: P-0612
Yerington Air Quality - Event #76

SDG: 31582
Report No. : 32431
COC No. :

Collection Date: 4/26/2006 9:25:00 AM
Received Date: 5/8/2006 7:30:00 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: 6129243	**Work Order:** H4XTP1AG			**Report DB ID:** 9H4XTP10								
U-234	-0.0314	ND	0.031	0.032	0.523	pCi/sample	102%	-0.06	6/17/06 05:49 p	1.0	0.06139	E908.0
						0.129	1.0	-(2.)		Sample	Sample	ALP69
U-235	-0.0314	ND	0.031	0.032	0.523	pCi/sample	102%	-0.06	6/17/06 05:49 p	1.0	0.06139	E908.0
						0.129	1.0	-(2.)		Sample	Sample	ALP69
U-238	0.149	ND	0.28	0.28	0.581	pCi/sample	102%	0.26	6/17/06 05:49 p	1.0	0.06139	E908.0
						0.158	1.0	(1.1)		Sample	Sample	ALP69
								Ratio U-234/238 = -0.2				
Batch: 6129247	**Work Order:** H4XTP1AA			**Report DB ID:** 9H4XTP10								
TH-228	-0.0207	ND	0.11	0.11	0.349	pCi/sample	96%	-0.06	6/17/06 07:49 p	1.0	0.08264	ISOTH
						0.118	1.0	-0.38		Sample	Sample	ALP171
TH-230	0.352	=	0.23	0.24	0.106	pCi/sample	96%	(3.3)	6/17/06 07:49 p	1.0	0.08264	ISOTH
							1.0	(2.9)		Sample	Sample	ALP171
TH-232	0.0587	ND	0.12	0.12	0.235	pCi/sample	96%	0.25	6/17/06 07:49 p	1.0	0.08264	ISOTH
						0.0644	1.0	1.		Sample	Sample	ALP171
Batch: 6129253	**Work Order:** H4XTP1AE			**Report DB ID:** 9H4XTP10								
ALPHA	-1.2100	ND	1.9	1.9	6.72	pCi/sample	100%	-0.18	6/9/06 12:56 p	1.0	0.02041	E900.0
						2.62	20.0	-(1.3)		Sample	Sample	GPC10B
Batch: 6129255	**Work Order:** H4XTP1AF			**Report DB ID:** 9H4XTP10								
BETA	8.88	=	3.7	4.0	6.7	pCi/sample	100%	(1.3)	6/9/06 10:27 a	1.0	0.08176	E900.0
						3.18	5.0	(4.5)		Sample	Sample	GPC28D
Batch: 6129266	**Work Order:** H4XTP1AC			**Report DB ID:** 9H4XTP10								

STL Richland
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FORM I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name: STL Richland
SDG: 31582
Collection Date: 4/26/2006 9:25:00 AM
Lot-Sample No.: J6E080164-7
Report No. : 32431
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: P-0612
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #76

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	0.0466	ND	0.26	0.26	0.515	pCi/sample	93%	*0.09*	6/18/06 01:30 p	0.833	0.24502	E903.1
						0.21	1.0	*0.36*		Sample	Sample	ASCCSA
Batch: 6129270	**Work Order:** H4XTP1AD			**Report DB ID:** 9H4XTP10								
RA-228	1.84	=	0.94	0.99	1.83	pCi/sample	85%	*(1.)*	6/20/06 06:23 a	1.0	0.24502	E904.0
						0.784	3.1	*(3.7)*		Sample	Sample	GPC2A

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
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FORM I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name: STL Richland **SDG:** 31582 **Collection Date:** 4/26/2006 9:35:00 AM

Lot-Sample No.: J6E080164-8 **Report No. :** 32431 **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: P-0613 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #76

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: 6129243	**Work Order:** H4XTR1AG			**Report DB ID:** 9H4XTR10								
U-234	**0.0755**	ND	0.20	0.20	0.496	pCi/sample	99%	*0.15*	6/17/06 05:49 p	1.0	0.06242	E908.0
						0.113	1.0	*0.75*		Sample	Sample	ALP71
U-235	**-0.0239**	ND	0.028	0.028	0.496	pCi/sample	99%	*-0.05*	6/17/06 05:49 p	1.0	0.06242	E908.0
						0.113	1.0	*-(1.7)*		Sample	Sample	ALP71
U-238	**-0.0318**	ND	0.032	0.032	0.531	pCi/sample	99%	*-0.06*	6/17/06 05:49 p	1.0	0.06242	E908.0
						0.131	1.0	*-(2.)*		Sample	Sample	ALP71
								Ratio U-234/238 = -2.4				
Batch: 6129247	**Work Order:** H4XTR1AA			**Report DB ID:** 9H4XTR10								
TH-228	**0.00000141**	ND	0.15	0.15	0.393	pCi/sample	90%	*0.*	6/17/06 07:49 p	1.0	0.08358	ISOTH
						0.139	1.0	*0.*		Sample	Sample	ALP172
TH-230	**0.340**	=	0.24	0.25	0.24	pCi/sample	90%	*(1.4)*	6/17/06 07:49 p	1.0	0.08358	ISOTH
						0.0657	1.0	*(2.7)*		Sample	Sample	ALP172
TH-232	**0.00000**	ND	0.0000	0.098	0.108	pCi/sample	90%	*0.*	6/17/06 07:49 p	1.0	0.08358	ISOTH
							1.0	*0.*		Sample	Sample	ALP172
Batch: 6129253	**Work Order:** H4XTR1AE			**Report DB ID:** 9H4XTR10								
ALPHA	**0.00000**	ND	0.0000	3.0	7.87	pCi/sample	100%	*0.*	6/9/06 12:56 p	1.0	0.02076	E900.0
						3.18	20.0	*0.*		Sample	Sample	GPC10C
Batch: 6129255	**Work Order:** H4XTR1AF			**Report DB ID:** 9H4XTR10								
BETA	**3.08**	ND	3.1	3.2	6.45	pCi/sample	100%	*0.48*	6/9/06 10:27 a	1.0	0.08303	E900.0
						3.06	5.0	*(1.9)*		Sample	Sample	GPC31A
Batch: 6129266	**Work Order:** H4XTR1AC			**Report DB ID:** 9H4XTR10								

STL Richland
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V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 21-Jun-06

Lab Name: STL Richland
SDG: 31582
Collection Date: 4/26/2006 9:35:00 AM
Lot-Sample No.: J6E080164-8
Report No. : 32431
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: P-0613
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #76

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	0.0421	ND	0.37	0.37	0.733	pCi/sample	95%	*0.06*	6/18/06 01:32 p	0.833	0.24879	E903.1
						0.31	1.0	*0.23*		Sample	Sample	ASCDSA
Batch: 6129270	**Work Order:** H4XTR1AD			**Report DB ID:** 9H4XTR10								
RA-228	1.28	ND	0.90	0.95	1.94	pCi/sample	84%	*0.66*	6/20/06 06:23 a	1.0	0.24879	E904.0
						0.846	3.1	*(2.7)*		Sample	Sample	GPC2B

Number of Results: 10

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
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: 21-Jun-06

Lab Name: STL Richland

SDG: 31582

Lot-Sample No.: J6E090000-243

Report No. : 32431

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: 6129243	Work Order:	H400D1AA		Report DB ID:	H400D1AB							
U-234	0.0128	ND	0.020	0.020	0.0341	pCi/sample	86%	0.38	6/18/06 07:59 a	1.0	1.0	E908.0
					0.0074	1.0		(1.3)		Sample	Sample	ALP10
U-235	0.00000	ND	0.0000	0.017	0.0193	pCi/sample	86%	0.	6/18/06 07:59 a	1.0	1.0	E908.0
						1.0		0.		Sample	Sample	ALP10
U-238	-0.00285	ND	0.0040	0.0040	0.0402	pCi/sample	86%	-0.07	6/18/06 07:59 a	1.0	1.0	E908.0
					0.0105	1.0		-(1.4)		Sample	Sample	ALP10

Ratio U-234/238 = -4.5

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: 21-Jun-06

Lab Name: STL Richland SDG: 31582

Lot-Sample No.: J6E090000-247 Report No. : 32431 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: 6129247	Work Order:	H401D1AA		Report DB ID:	H401D1AB							
TH-228	0.00000013	ND	0.013	0.013	0.0358	pCi/sample	83%	0.	6/18/06 10:09 a	1.0	1.0	ISOTH
					0.0127	1.0		0.		Sample	Sample	ALP172
TH-230	0.0491	=	0.027	0.029	0.0218	pCi/sample	83%	(2.3)	6/18/06 10:09 a	1.0	1.0	ISOTH
					0.00598	1.0		(3.4)		Sample	Sample	ALP172
TH-232	0.00364	ND	0.0073	0.0073	0.00986	pCi/sample	83%	0.37	6/18/06 10:09 a	1.0	1.0	ISOTH
						1.0		1.		Sample	Sample	ALP172

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.
= 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: 21-Jun-06

Lab Name: STL Richland

SDG: 31582

Lot-Sample No.: J6E090000-253

Report No. : 32431

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: 6129253	Work Order:	H401T1AA		Report DB ID:	H401T1AB							
ALPHA	0.0614	ND	0.075	0.076	0.144	pCi/sample	100%	0.43	6/9/06 04:45 p	1.0	1.0	E900.0
					0.0568	20.0		(1.6)		Sample	Sample	GPC10A

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: 21-Jun-06

Lab Name: STL Richland

SDG: 31582

Lot-Sample No.: J6E090000-255

Report No. : 32431

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: 6129255	Work Order: H40101AA			Report DB ID: H40101AB								
BETA	0.0394	ND	0.26	0.26	0.573	pCi/sample	100%	0.07	6/9/06 12:14 p	1.0	1.0	E900.0
					0.273	5.0		0.3		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: 21-Jun-06

Lab Name: STL Richland

SDG: 31582

Lot-Sample No.: J6E090000-266

Report No. : 32431

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: 6129266	Work Order: H40151AA			Report DB ID: H40151AB								
RA-226	-0.0342	ND	0.078	0.079	0.173	pCi/sample	90%	-0.2	6/18/06 02:05 p	1.0	1.0	E903.1
					0.0741	1.0		-0.87		Sample	Sample	ASCMMA

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: 21-Jun-06

Lab Name: STL Richland

SDG: 31582

Lot-Sample No.: J6E090000-270

Report No. : 32431

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: 6129270	Work Order: H402N1AA			Report DB ID: H402N1AB								
RA-228	0.475	=	0.23	0.24	0.427	pCi/sample	81%	(1.1)	6/20/06 06:23 a	1.0	1.0	E904.0
					0.182	3.1		(4.)		Sample	Sample	GPC4B

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.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 21-Jun-06

Lab Name: STL Richland **SDG:** 31582

Lot-Sample No.: J6E090000-243 **Report No. :** 32431 **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: 6129243	Work Order: H400D1AC			Report DB ID: H400D1CS									
U-234	1.08	=	0.16	0.23	0.0335	pCi/sample	92.79%	0.99	0.0057	109%	6/18/06 07:59 a	1.0	E908.0
						Rec Limits:				0.1		Sample	ALP11
U-235	0.0451	=	0.034	0.034	0.0335	pCi/sample	92.79%	0.0452	0.00026	100%	6/18/06 07:59 a	1.0	E908.0
						Rec Limits:				0.0		Sample	ALP11
U-238	0.977	=	0.15	0.21	0.0284	pCi/sample	92.79%	1.04	0.006	94%	6/18/06 07:59 a	1.0	E908.0
						Rec Limits:				-0.1		Sample	ALP11

Number of Results: 3

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: 21-Jun-06

Lab Name: STL Richland

SDG: 31582

Lot-Sample No.: J6E090000-247

Report No. : 32431

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: 6129247	Work Order: H401D1AC			Report DB ID: H401D1CS									
TH-230	2.03	=	0.19	0.40	0.0258	pCi/sample	82.52%	1.84	0.061	110%	6/18/06 10:09 a	1.0	ISOTH
						Rec Limits:		70.	130.	0.1		Sample	ALP173

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: 21-Jun-06

Lab Name: STL Richland

SDG: 31582

Lot-Sample No.: J6E090000-253

Report No. : 32431

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: 6129253	Work Order: H401T1AC			Report DB ID: H401T1CS									
ALPHA	1.90	=	0.30	0.49	0.137	pCi/sample	100.00%	2.39	0.075	80%	6/9/06 04:45 p	1.0	E900.0
							Rec Limits:			-0.2		Sample	GPC10B

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: 21-Jun-06

Lab Name: STL Richland

SDG: 31582

Lot-Sample No.: J6E090000-255

Report No. : 32431

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: 6129255	Work Order: H40101AC			Report DB ID: H40101CS									
BETA	4.32	=	0.49	0.76	0.537	pCi/sample	100.00%	4.68	0.037	92%	6/9/06 12:14 p	1.0	E900.0
							Rec Limits:			-0.1		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: 21-Jun-06

Lab Name: STL Richland **SDG:** 31582

Lot-Sample No.: J6E090000-266 **Report No. :** 32431 **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: 6129266	**Work Order:** H40151AC			**Report DB ID:** H40151CS									
RA-226	1.12	=	0.20	0.32	0.0894	pCi/sample	96.63%	1.38	0.021	81%	6/18/06 02:07 p	1.0	E903.1
							Rec Limits:	70.	130.	-0.2		Sample	ASCQMC

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: 21-Jun-06

Lab Name: STL Richland

SDG: 31582

Lot-Sample No.: J6E090000-270

Report No. : 32431

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: 6129270	Work Order: H402N1AC			Report DB ID: H402N1CS									
RA-228	4.90	=	0.51	0.76	0.393	pCi/sample	87.36%	5.15	0.021	95%	6/20/06 06:23 a	1.0	E904.0
							Rec Limits:	70.	130.	0.0		Sample	GPC4C

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

STD RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No._____

J6E080164
31582
Due 6-6-06

☐ 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: [illegible] Air Qlty

PROJECT NUMBER: [illegible]

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS WEST SACRAMENTO

1/6 OF THE EXPOSED FILTER WAS UTILIZED FOR THE METALS ANALYSIS. SACRAMENTO LOT # G6E020171

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-0606	4/26/06	9:20	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)					---- H4XR8	
02	P-0607		9:45		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)					---- H4XTE	
03	P-0608		10:00		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)					---- H4XTH	
04	P-0609		10:15		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)					---- H4XTL	
05	P-0610		10:35		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)					---- H4XTM	
06	P-0611		10:50		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)					---- H4XTN	
07	P-0612		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)					---- H4XTP	
08	P-0613		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)					---- H4XTR	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE	TIME	COOLER I.D.:	DATE	TIME
[illegible]	5/1/06	[illegible]			
RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME
C. Long Use	5/2/06	10:20	Steve Valmora	5/5/06	1600
S. Welch	5806	0730			
RECORD RETURNED BY:	DATE	TIME			
COURIER: [illegible]			SHIPPING NUMBER: [illegible]		

COMMENTS (see note on back):

RECEIVED IN GOOD CONDITION UNDER COC
MAY - 2 2006
INI

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: 5.8.06 0730

Client: Brn & Caldwell SDG #: 31582 NA [ ] SAF #: _____ NA [ ]

Work Order Number: J6E080164 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: 8
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: 5.8.06 0730

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

STL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No._____

~~16E080170~~
~~31583~~
Due 6.6.06

☑ 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: Tuscarora Air Quality

PROJECT NUMBER: 121243

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, WEST SACRAMENTO

1/6 OF THE EXPOSED FILTER WAS UTILIZED FOR THE METALS ANALYSIS. SACRAMENTO LOT # 66E020171

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	000436	1/26/06	9:30	MS	1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H4XOR		---- ~~H4XT5~~	
02	000437		9:50		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H4XOW		---- ~~H4XT7~~	
03	000438		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)			H4XOO		---- ~~H4XT9~~	
04	000439		10:20		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H4XO4		---- ~~H4XVA~~	
05	000440		10:40		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H4XO8		---- ~~H4XVD~~	
06	000441		10:55		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H4X1A		---- ~~H4XVF~~	
07	000442		10:10		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)			H4X1F		---- ~~H4XVH~~	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: [illegible]	DATE [illegible]	TIME [illegible]	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY: [illegible]	DATE 5/2/06	TIME 10:20	RELINQUISHED BY:	DATE / /	TIME :	RECEIVED IN GOOD CONDITION WATER COC MAY - 2 2006
			Steve Valmoos	5/5/06	1600	
S. Welch	5/8/06	0730				
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER: [illegible]			SHIPPING NUMBER: [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: 5-8-06 0730

Client: Burns & Caldwell SDG #: 31583 NA [ ] SAF #: _____ NA [ ]

Work Order Number: JLE080170 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: 7
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: 5-8-06 0730

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

THORIUM

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/19/2006 1:13:21 PM

Lot No., Due Date: J6E080164; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129247; RTHISO Thiso by ALP

SDG, Matrix: 31582; 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 Steven E. Richland **Date** 6/19/06

STL Richland

QAS_RADCALCv4.8.18

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6129247

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: 6-20-06

6/19/2006 1:12:57 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
31582	**9H4X0010**			**J6E08016411**	000438	FILTER	5/8/2006 7:30:00	4/26/2006 10:05:00 AM				
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**4.0776E+00**	1.981E+00	2.026E+00	6.989E+00	PCI/SA	1.0	1.0E+0	2.063E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.5337E+01**	1.958E+00	2.235E+00	6.222E+00	PCI/SA	1.0	1.0E+0	8.275E-2
RA-226	BXTE		0	6/18/2006 1:27:00 PM	**2.0231E-01**	1.126E-01	1.148E-01	3.612E-01	PCI/SA	0.994	8.33E-1	2.477E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**3.9362E-02**	6.224E-02	6.233E-02	2.897E-01	PCI/SA	0.987	1.0E+0	8.382E-2
TH-230	9NS1		0	6/17/2006 7:49:15 PM	**7.4289E-02**	6.949E-02	6.98E-02	2.734E-01	PCI/SA	0.987	1.0E+0	8.382E-2
TH-232	9NS1		0	6/17/2006 7:49:15 PM	**0.0E+00**	0.0E+00	4.549E-02	1.007E-01	PCI/SA	0.987	1.0E+0	8.382E-2
U-234	7YSR		0	6/17/2006 5:49:52 PM	**8.3926E-02**	1.645E-01	1.647E-01	9.577E-01	PCI/SA	0.871	1.0E+0	6.195E-2
U-235	7YSR		0	6/17/2006 5:49:52 PM	**-1.2919E-02**	1.292E-02	1.297E-02	6.499E-01	PCI/SA	0.871	1.0E+0	6.195E-2
U-238	7YSR		0	6/17/2006 5:49:52 PM	**0.0E+00**	0.0E+00	1.977E-01	4.375E-01	PCI/SA	0.871	1.0E+0	6.195E-2
31582	**9H4X0410**			**J6E08016412**	000439	FILTER	5/8/2006 7:30:00	4/26/2006 10:20:00 AM				
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**3.1173E+00**	1.77E+00	1.799E+00	6.578E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/9/2006 10:28:06 AM	**1.6114E+01**	2.069E+00	2.35E+00	6.722E+00	PCI/SA	1.0	1.0E+0	8.34E-2
RA-226	BXTE		0	6/18/2006 1:30:01 PM	**3.2961E-01**	1.546E-01	1.58E-01	4.848E-01	PCI/SA	1.032	8.33E-1	2.49E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**3.9332E-02**	6.219E-02	6.228E-02	2.895E-01	PCI/SA	1.014	1.0E+0	8.337E-2
TH-230	9NS1		0	6/17/2006 7:49:15 PM	**2.0414E-01**	9.279E-02	9.452E-02	2.226E-01	PCI/SA	1.014	1.0E+0	8.337E-2
TH-232	9NS1		0	6/17/2006 7:49:15 PM	**1.8558E-02**	4.15E-02	4.153E-02	2.226E-01	PCI/SA	1.014	1.0E+0	8.337E-2
U-234	7YSR		0	6/17/2006 5:51:09 PM	**-4.4232E-02**	3.128E-02	3.148E-02	6.249E-01	PCI/SA	0.959	1.0E+0	6.229E-2
U-235	7YSR		0	6/17/2006 5:51:09 PM	**1.1057E-01**	1.106E-01	1.109E-01	2.997E-01	PCI/SA	0.959	1.0E+0	6.229E-2
U-238	7YSR		0	6/17/2006 5:51:09 PM	**0.0E+00**	0.0E+00	1.354E-01	2.997E-01	PCI/SA	0.959	1.0E+0	6.229E-2
31582	**9H4X0810**			**J6E08016413**	000440	FILTER	5/8/2006 7:30:00	4/26/2006 10:40:00 AM				
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**-1.6709E+00**	1.141E+00	1.155E+00	7.853E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8		0	6/9/2006 10:28:06 AM	**1.6257E+01**	1.977E+00	2.275E+00	6.178E+00	PCI/SA	1.0	1.0E+0	8.264E-2
RA-226	BXTE		0	6/18/2006 2:06:00 PM	**1.91E-01**	1.279E-01	1.293E-01	4.271E-01	PCI/SA	0.88	8.33E-1	2.481E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**0.0E+00**	0.0E+00	6.578E-02	1.455E-01	PCI/SA	0.824	1.0E+0	8.269E-2
TH-230	9NS1		0	6/17/2006 7:49:15 PM	**2.0273E-01**	1.014E-01	1.031E-01	1.374E-01	PCI/SA	0.824	1.0E+0	8.269E-2
TH-232	9NS1		0	6/17/2006 7:49:15 PM	**-2.5341E-02**	2.534E-02	2.545E-02	3.04E-01	PCI/SA	0.824	1.0E+0	8.269E-2
U-234	7YSR		0	6/18/2006 7:59:14 AM	**3.3286E-01**	1.922E-01	1.941E-01	3.007E-01	PCI/SA	0.901	1.0E+0	6.2E-2
U-235	7YSR		0	6/18/2006 7:59:14 AM	**0.0E+00**	0.0E+00	1.359E-01	3.007E-01	PCI/SA	0.901	1.0E+0	6.2E-2
U-238	7YSR		0	6/18/2006 7:59:14 AM	**1.1095E-01**	1.11E-01	1.113E-01	3.007E-01	PCI/SA	0.901	1.0E+0	6.2E-2
31582	**9H4X0R10**			**J6E0801649**	000436	FILTER	5/8/2006 7:30:00	4/26/2006 9:30:00 AM				
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**5.2494E-01**	1.264E+00	1.265E+00	6.305E+00	PCI/SA	1.0	1.0E+0	2.081E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.1356E+01**	1.842E+00	2.08E+00	6.348E+00	PCI/SA	1.0	1.0E+0	8.268E-2
RA-226	BXTE		0	6/18/2006 1:31:00 PM	**1.2764E-01**	1.515E-01	1.521E-01	5.632E-01	PCI/SA	0.914	8.33E-1	2.487E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**7.2465E-02**	7.246E-02	7.276E-02	2.898E-01	PCI/SA	0.939	1.0E+0	8.303E-2
TH-230	9NS1		0	6/17/2006 7:49:15 PM	**2.9632E-01**	1.227E-01	1.256E-01	2.734E-01	PCI/SA	0.939	1.0E+0	8.303E-2
TH-232	9NS1		0	6/17/2006 7:49:15 PM	**1.1397E-01**	8.218E-02	8.283E-02	2.734E-01	PCI/SA	0.939	1.0E+0	8.303E-2
U-234	7YSR		0	6/17/2006 5:50:57 PM	**-4.2203E-02**	1.887E-02	1.918E-02	5.96E-01	PCI/SA	0.991	1.0E+0	6.194E-2
U-235	7YSR		0	6/17/2006 5:50:57 PM	**-1.6881E-02**	1.194E-02	1.201E-02	4.82E-01	PCI/SA	0.991	1.0E+0	6.194E-2
U-238	7YSR		0	6/17/2006 5:50:57 PM	**7.1686E-02**	1.068E-01	1.069E-01	5.632E-01	PCI/SA	0.991	1.0E+0	6.194E-2
31582	**9H4X0W10**			**J6E08016410**	000437	FILTER	5/8/2006 7:30:00	4/26/2006 9:50:00 AM				
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**3.7255E+00**	1.738E+00	1.78E+00	5.596E+00	PCI/SA	1.0	1.0E+0	2.075E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.585E+01**	2.028E+00	2.3E+00	6.57E+00	PCI/SA	1.0	1.0E+0	8.241E-2
RA-226	BXTE		0	6/18/2006 1:30:03 PM	**-1.513E-01**	8.946E-02	9.079E-02	4.577E-01	PCI/SA	1.017	8.33E-1	2.476E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**2.8546E-02**	6.383E-02	6.388E-02	3.424E-01	PCI/SA	0.815	1.0E+0	8.276E-2
TH-230	9NS1		0	6/17/2006 7:49:15 PM	**1.6162E-01**	9.331E-02	9.45E-02	1.46E-01	PCI/SA	0.815	1.0E+0	8.276E-2
TH-232	9NS1		0	6/17/2006 7:49:15 PM	**2.6937E-02**	6.023E-02	6.028E-02	3.231E-01	PCI/SA	0.815	1.0E+0	8.276E-2
U-234	7YSR		0	6/17/2006 5:50:02 PM	**-2.7021E-02**	1.56E-02	1.576E-02	5.616E-01	PCI/SA	0.928	1.0E+0	6.188E-2
U-235	7YSR		0	6/17/2006 5:50:02 PM	**-1.8014E-02**	1.274E-02	1.282E-02	5.145E-01	PCI/SA	0.928	1.0E+0	6.188E-2
U-238	7YSR		0	6/17/2006 5:50:02 PM	**0.0E+00**	0.0E+00	1.379E-01	3.051E-01	PCI/SA	0.928	1.0E+0	6.188E-2
31582	**9H4X1A10**			**J6E08016414**	000441	FILTER	5/8/2006 7:30:00	4/26/2006 10:55:00 AM				
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**5.271E+00**	2.028E+00	2.099E+00	6.331E+00	PCI/SA	1.0	1.0E+0	2.064E-2

6129247, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 49 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H401D1AA=> , mat:FILTER | Air *wo:H401D1AA=> , mat:FILTER | Air *wo:H401D1AA=> , 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	
BETA	BDS8	0		6/9/2006 10:28:06 AM	**1.6832E+01**	1.988E+00	2.499E+00	6.159E+00	PCI/SA		1.0	1.0E+0	8.257E-2
RA-226	BXTE	0		6/18/2006 2:06:01 PM	**2.5131E-01**	1.865E-01	1.886E-01	6.484E-01	PCI/SA		0.914	8.33E-1	2.505E-1
TH-228	9NS1	0		6/17/2006 7:49:15 PM	**1.1544E-01**	6.665E-02	6.742E-02	1.043E-01	PCI/SA		0.954	1.0E+0	8.307E-2
TH-230	9NS1	0		6/17/2006 7:49:15 PM	**7.2626E-02**	5.135E-02	5.175E-02	9.841E-02	PCI/SA		0.954	1.0E+0	8.307E-2
TH-232	9NS1	0		6/17/2006 7:49:15 PM	**3.6313E-02**	3.631E-02	3.645E-02	9.841E-02	PCI/SA		0.954	1.0E+0	8.307E-2
U-234	7YSR	0		6/18/2006 7:59:21 AM	**3.4741E-01**	2.074E-01	2.093E-01	6.451E-01	PCI/SA		0.911	1.0E+0	6.195E-2
U-235	7YSR	0		6/18/2006 7:59:21 AM	**0.0E+00**	0.0E+00	1.252E-01	2.769E-01	PCI/SA		0.911	1.0E+0	6.195E-2
U-238	7YSR	0		6/18/2006 7:59:21 AM	**0.0E+00**	0.0E+00	1.252E-01	2.769E-01	PCI/SA		0.911	1.0E+0	6.195E-2
31582	**9H4X1F10**			**J6E08016415**	000442	FILTER	5/8/2006 7:30:00	4/26/2006 10:10:00 AM					
ALPHA	BAS7	0		6/9/2006 2:50:45 PM	**3.4081E-01**	1.06E+00	1.06E+00	5.631E+00	PCI/SA		1.0	1.0E+0	2.054E-2
BETA	BDS8	0		6/9/2006 10:28:06 AM	**-2.298E-01**	1.578E+00	1.578E+00	7.083E+00	PCI/SA		1.0	1.0E+0	8.213E-2
RA-226	BXTE	0		6/18/2006 2:06:01 PM	**9.4646E-02**	1.457E-01	1.46E-01	5.494E-01	PCI/SA		0.939	8.33E-1	2.462E-1
TH-228	9NS1	0		6/18/2006 10:09:36	**-1.1448E-01**	6.61E-02	6.702E-02	6.415E-01	PCI/SA		0.526	1.0E+0	8.195E-2
TH-230	9NS1	0		6/18/2006 10:09:36	**2.1594E-01**	1.247E-01	1.264E-01	1.951E-01	PCI/SA		0.526	1.0E+0	8.195E-2
TH-232	9NS1	0		6/18/2006 10:09:36	**1.0797E-01**	1.08E-01	1.085E-01	4.317E-01	PCI/SA		0.526	1.0E+0	8.195E-2
U-234	7YSR	0		6/18/2006 7:59:25 AM	**-2.4641E-02**	2.464E-02	2.472E-02	5.9E-01	PCI/SA		0.812	1.0E+0	6.142E-2
U-235	7YSR	0		6/18/2006 7:59:25 AM	**0.0E+00**	0.0E+00	1.508E-01	3.338E-01	PCI/SA		0.812	1.0E+0	6.142E-2
U-238	7YSR	0		6/18/2006 7:59:25 AM	**0.0E+00**	0.0E+00	1.508E-01	3.338E-01	PCI/SA		0.812	1.0E+0	6.142E-2
31582	**9H4XR810**			**J6E0801641**	P-0606	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM					
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**4.0136E+00**	1.95E+00	1.994E+00	6.879E+00	PCI/SA		1.0	1.0E+0	2.097E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.1591E+01**	1.922E+00	2.101E+00	6.805E+00	PCI/SA		1.0	1.0E+0	8.428E-2
RA-226	BXTE	0		6/18/2006 12:53:00 PM	**1.8735E-01**	1.444E-01	1.458E-01	5.055E-01	PCI/SA		1.006	8.33E-1	2.5E-1
TH-228	9NS1	0		6/17/2006 7:45:56 PM	**-5.2307E-02**	6.754E-02	6.769E-02	3.979E-01	PCI/SA		1.007	1.0E+0	8.326E-2
TH-230	9NS1	0		6/17/2006 7:45:56 PM	**4.6075E-01**	1.231E-01	1.295E-01	8.919E-02	PCI/SA		1.007	1.0E+0	8.326E-2
TH-232	9NS1	0		6/17/2006 7:45:56 PM	**0.0E+00**	0.0E+00	4.031E-02	8.919E-02	PCI/SA		1.007	1.0E+0	8.326E-2
U-234	7YSR	0		6/17/2006 5:48:06 PM	**0.0E+00**	0.0E+00	1.314E-01	2.907E-01	PCI/SA		0.924	1.0E+0	6.252E-2
U-235	7YSR	0		6/17/2006 5:48:06 PM	**0.0E+00**	0.0E+00	1.314E-01	2.907E-01	PCI/SA		0.924	1.0E+0	6.252E-2
U-238	7YSR	0		6/17/2006 5:48:06 PM	**0.0E+00**	0.0E+00	1.314E-01	2.907E-01	PCI/SA		0.924	1.0E+0	6.252E-2
31582	**9H4XTE10**			**J6E0801642**	P-0607	FILTER	5/8/2006 7:30:00	4/26/2006 9:45:00 AM					
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**-6.4094E-01**	1.047E+00	1.049E+00	6.537E+00	PCI/SA		1.0	1.0E+0	2.097E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.0717E+01**	1.842E+00	1.991E+00	6.443E+00	PCI/SA		1.0	1.0E+0	8.341E-2
RA-226	BXTE	0		6/18/2006 12:52:00 PM	**3.9262E-01**	2.483E-01	2.521E-01	8.471E-01	PCI/SA		0.929	8.33E-1	2.482E-1
TH-228	9NS1	0		6/17/2006 7:46:08 PM	**9.9074E-02**	9.267E-02	9.311E-02	3.646E-01	PCI/SA		0.908	1.0E+0	8.314E-2
TH-230	9NS1	0		6/17/2006 7:46:08 PM	**9.3488E-02**	6.611E-02	6.665E-02	1.267E-01	PCI/SA		0.908	1.0E+0	8.314E-2
TH-232	9NS1	0		6/17/2006 7:46:08 PM	**0.0E+00**	0.0E+00	5.725E-02	1.267E-01	PCI/SA		0.908	1.0E+0	8.314E-2
U-234	7YSR	0		6/17/2006 5:48:20 PM	**2.3506E-01**	1.73E-01	1.741E-01	6.184E-01	PCI/SA		0.947	1.0E+0	6.212E-2
U-235	7YSR	0		6/17/2006 5:48:20 PM	**0.0E+00**	0.0E+00	1.2E-01	2.655E-01	PCI/SA		0.947	1.0E+0	6.212E-2
U-238	7YSR	0		6/17/2006 5:48:20 PM	**9.7957E-02**	9.796E-02	9.827E-02	2.655E-01	PCI/SA		0.947	1.0E+0	6.212E-2
31582	**9H4XTH10**			**J6E0801643**	P-0608	FILTER	5/8/2006 7:30:00	4/26/2006 10:00:00 AM					
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**-1.673E+00**	1.143E+00	1.156E+00	7.863E+00	PCI/SA		1.0	1.0E+0	2.086E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.2171E+01**	1.882E+00	2.062E+00	6.313E+00	PCI/SA		1.0	1.0E+0	8.379E-2
RA-226	BXTE	0		6/18/2006 12:50:00 PM	**-5.018E-02**	1.85E-01	1.851E-01	7.414E-01	PCI/SA		0.899	8.33E-1	2.503E-1
TH-228	9NS1	0		6/17/2006 7:46:25 PM	**2.7058E-02**	3.449E-02	3.457E-02	1.62E-01	PCI/SA		0.995	1.0E+0	8.439E-2
TH-230	9NS1	0		6/17/2006 7:46:25 PM	**5.1067E-02**	4.603E-02	4.625E-02	1.804E-01	PCI/SA		0.995	1.0E+0	8.439E-2
TH-232	9NS1	0		6/17/2006 7:46:25 PM	**2.5533E-02**	3.255E-02	3.263E-02	1.529E-01	PCI/SA		0.995	1.0E+0	8.439E-2
U-234	7YSR	0		6/17/2006 5:48:32 PM	**9.262E-02**	1.181E-01	1.183E-01	5.546E-01	PCI/SA		0.847	1.0E+0	6.262E-2
U-235	7YSR	0		6/17/2006 5:48:32 PM	**0.0E+00**	0.0E+00	1.418E-01	3.138E-01	PCI/SA		0.847	1.0E+0	6.262E-2
U-238	7YSR	0		6/17/2006 5:48:32 PM	**1.1579E-01**	1.158E-01	1.162E-01	3.138E-01	PCI/SA		0.847	1.0E+0	6.262E-2
31582	**9H4XTL10**			**J6E0801644**	P-0609	FILTER	5/8/2006 7:30:00	4/26/2006 10:15:00 AM					
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**3.6769E+00**	1.804E+00	1.843E+00	6.308E+00	PCI/SA		1.0	1.0E+0	2.072E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.0827E+01**	1.823E+00	1.966E+00	6.291E+00	PCI/SA		1.0	1.0E+0	8.401E-2
RA-226	BXTE	0		6/18/2006 12:51:00 PM	**-4.4107E-02**	1.836E-01	1.837E-01	7.681E-01	PCI/SA		1.03	8.33E-1	2.492E-1
TH-228	9NS1	0		6/17/2006 7:46:36 PM	**6.9273E-02**	5.598E-02	5.63E-02	2.163E-01	PCI/SA		1.008	1.0E+0	8.326E-2
TH-230	9NS1	0		6/17/2006 7:46:36 PM	**1.0103E-01**	6.032E-02	6.095E-02	1.876E-01	PCI/SA		1.008	1.0E+0	8.326E-2

6129247, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 49 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H401D1AA=> , mat:FILTER | Air *wo:H401D1AA=> , mat:FILTER | Air *wo:H401D1AA=> , 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		6/17/2006 7:46:36 PM	**2.9716E-02**	2.972E-02	2.983E-02	8.053E-02	PCI/SA	1.008	1.0E+0	8.326E-2
U-234	7YSR	0		6/17/2006 5:48:40 PM	**6.699E-02**	1.161E-01	1.162E-01	6.311E-01	PCI/SA	0.88	1.0E+0	6.205E-2
U-235	7YSR	0		6/17/2006 5:48:40 PM	**8.9333E-02**	1.139E-01	1.141E-01	5.349E-01	PCI/SA	0.88	1.0E+0	6.205E-2
U-238	7YSR	0		6/17/2006 5:48:40 PM	**-4.4685E-02**	3.16E-02	3.181E-02	6.311E-01	PCI/SA	0.88	1.0E+0	6.205E-2
31582	**9H4XTM10**			**J6E0801645**	P-0610	FILTER	5/8/2006 7:30:00	4/26/2006 10:35:00 AM				
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**2.0225E+00**	1.43E+00	1.445E+00	5.57E+00	PCI/SA	1.0	1.0E+0	2.076E-2
BETA	BDS8	0		6/9/2006 10:27:53 AM	**8.5243E+00**	1.72E+00	1.819E+00	6.193E+00	PCI/SA	1.0	1.0E+0	8.364E-2
RA-226	BXTE	0		6/18/2006 12:50:00 PM	**1.2687E-01**	1.953E-01	1.958E-01	7.364E-01	PCI/SA	0.93	8.33E-1	2.507E-1
TH-228	9NS1	0		6/17/2006 7:46:47 PM	**3.7522E-01**	1.913E-01	1.947E-01	5.523E-01	PCI/SA	0.605	1.0E+0	8.357E-2
TH-230	9NS1	0		6/17/2006 7:46:47 PM	**1.4163E-01**	1.001E-01	1.011E-01	1.919E-01	PCI/SA	0.605	1.0E+0	8.357E-2
TH-232	9NS1	0		6/17/2006 7:46:47 PM	**7.0817E-02**	7.082E-02	7.115E-02	1.919E-01	PCI/SA	0.605	1.0E+0	8.357E-2
U-234	7YSR	0		6/17/2006 5:48:57 PM	**5.6989E-02**	9.874E-02	9.885E-02	5.37E-01	PCI/SA	0.926	1.0E+0	6.252E-2
U-235	7YSR	0		6/17/2006 5:48:57 PM	**-1.9011E-02**	1.901E-02	1.907E-02	4.551E-01	PCI/SA	0.926	1.0E+0	6.252E-2
U-238	7YSR	0		6/17/2006 5:48:57 PM	**7.6E-02**	9.689E-02	9.709E-02	4.551E-01	PCI/SA	0.926	1.0E+0	6.252E-2
31582	**9H4XTN10**			**J6E0801646**	P-0611	FILTER	5/8/2006 7:30:00	4/26/2006 10:50:00 AM				
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**2.3808E+00**	1.704E+00	1.722E+00	6.863E+00	PCI/SA	1.0	1.0E+0	2.105E-2
BETA	BDS8	0		6/9/2006 10:27:53 AM	**1.444E+01**	1.97E+00	2.293E+00	6.516E+00	PCI/SA	1.0	1.0E+0	8.402E-2
RA-226	BXTE	0		6/18/2006 1:32:00 PM	**3.6385E-02**	1.6E-01	1.6E-01	6.336E-01	PCI/SA	0.867	8.33E-1	2.489E-1
TH-228	9NS1	0		6/17/2006 7:46:58 PM	**4.765E-06**	5.837E-02	5.837E-02	3.508E-01	PCI/SA	1.024	1.0E+0	8.32E-2
TH-230	9NS1	0		6/17/2006 7:46:58 PM	**1.3492E-01**	7.79E-02	7.884E-02	1.219E-01	PCI/SA	1.024	1.0E+0	8.32E-2
TH-232	9NS1	0		6/17/2006 7:46:58 PM	**0.0E+00**	0.0E+00	5.508E-02	1.219E-01	PCI/SA	1.024	1.0E+0	8.32E-2
U-234	7YSR	0		6/17/2006 5:49:08 PM	**-2.0647E-02**	2.065E-02	2.071E-02	4.944E-01	PCI/SA	0.951	1.0E+0	6.249E-2
U-235	7YSR	0		6/17/2006 5:49:08 PM	**-2.0647E-02**	2.065E-02	2.071E-02	4.944E-01	PCI/SA	0.951	1.0E+0	6.249E-2
U-238	7YSR	0		6/17/2006 5:49:08 PM	**0.0E+00**	0.0E+00	1.264E-01	2.797E-01	PCI/SA	0.951	1.0E+0	6.249E-2
31582	**9H4XTP10**			**J6E0801647**	P-0612	FILTER	5/8/2006 7:30:00	4/26/2006 9:25:00 AM				
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**-1.2088E+00**	9.259E-01	9.344E-01	6.725E+00	PCI/SA	1.0	1.0E+0	2.041E-2
BETA	BDS8	0		6/9/2006 10:27:53 AM	**8.8756E+00**	1.84E+00	1.983E+00	6.701E+00	PCI/SA	1.0	1.0E+0	8.176E-2
RA-226	BXTE	0		6/18/2006 1:30:00 PM	**4.6622E-02**	1.287E-01	1.288E-01	5.146E-01	PCI/SA	0.926	8.33E-1	2.45E-1
TH-228	9NS1	0		6/17/2006 7:49:15 PM	**-2.0743E-02**	5.488E-02	5.491E-02	3.487E-01	PCI/SA	0.958	1.0E+0	8.264E-2
TH-230	9NS1	0		6/17/2006 7:49:15 PM	**3.5235E-01**	1.174E-01	1.215E-01	1.061E-01	PCI/SA	0.958	1.0E+0	8.264E-2
TH-232	9NS1	0		6/17/2006 7:49:15 PM	**5.8725E-02**	5.872E-02	5.896E-02	2.348E-01	PCI/SA	0.958	1.0E+0	8.264E-2
U-234	7YSR	0		6/17/2006 5:49:09 PM	**-3.1381E-02**	1.569E-02	1.589E-02	5.234E-01	PCI/SA	1.021	1.0E+0	6.139E-2
U-235	7YSR	0		6/17/2006 5:49:09 PM	**-3.1381E-02**	1.569E-02	1.589E-02	5.234E-01	PCI/SA	1.021	1.0E+0	6.139E-2
U-238	7YSR	0		6/17/2006 5:49:09 PM	**1.4891E-01**	1.399E-01	1.404E-01	5.814E-01	PCI/SA	1.021	1.0E+0	6.139E-2
31582	**9H4XTR10**			**J6E0801648**	P-0613	FILTER	5/8/2006 7:30:00	4/26/2006 9:35:00 AM				
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**0.0E+00**	0.0E+00	1.498E+00	7.871E+00	PCI/SA	1.0	1.0E+0	2.076E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**3.0783E+00**	1.566E+00	1.582E+00	6.447E+00	PCI/SA	1.0	1.0E+0	8.303E-2
RA-226	BXTE	0		6/18/2006 1:32:00 PM	**4.2074E-02**	1.85E-01	1.85E-01	7.327E-01	PCI/SA	0.947	8.33E-1	2.488E-1
TH-228	9NS1	0		6/17/2006 7:49:15 PM	**1.4133E-06**	7.336E-02	7.336E-02	3.933E-01	PCI/SA	0.902	1.0E+0	8.358E-2
TH-230	9NS1	0		6/17/2006 7:49:15 PM	**3.3972E-01**	1.216E-01	1.253E-01	2.397E-01	PCI/SA	0.902	1.0E+0	8.358E-2
TH-232	9NS1	0		6/17/2006 7:49:15 PM	**0.0E+00**	0.0E+00	4.895E-02	1.083E-01	PCI/SA	0.902	1.0E+0	8.358E-2
U-234	7YSR	0		6/17/2006 5:49:40 PM	**7.5523E-02**	1.003E-01	1.005E-01	4.957E-01	PCI/SA	0.993	1.0E+0	6.242E-2
U-235	7YSR	0		6/17/2006 5:49:40 PM	**-2.3857E-02**	1.377E-02	1.391E-02	4.957E-01	PCI/SA	0.993	1.0E+0	6.242E-2
U-238	7YSR	0		6/17/2006 5:49:40 PM	**-3.1809E-02**	1.59E-02	1.611E-02	5.308E-01	PCI/SA	0.993	1.0E+0	6.242E-2
31582	**H401D1AB**			**J6E090000247**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM				
TH-228	9NS1	0	B	6/18/2006 10:09:36	**1.2871E-07**	6.681E-03	6.681E-03	3.582E-02	PCI/SA	0.828	1.0E+0	1.0E+0
TH-230	9NS1	0	B	6/18/2006 10:09:36	**4.911E-02**	1.373E-02	1.438E-02	2.182E-02	PCI/SA	0.828	1.0E+0	1.0E+0
TH-232	9NS1	0	B	6/18/2006 10:09:36	**3.6378E-03**	3.638E-03	3.652E-03	9.858E-03	PCI/SA	0.828	1.0E+0	1.0E+0
31582	**H401D1CS**			**J6E090000247**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM				
TH-230	9NS1	0	S	6/18/2006 10:09:36	**2.0265E+00**	9.35E-02	2.023E-01	2.583E-02	PCI/SA	1.8365E+00 0.825	1.0E+0	1.0E+0

6129247, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 49 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H401D1AA=> , mat:FILTER | Air *wo:H401D1AA=> , mat:FILTER | Air *wo:H401D1AA=> , mat:FILTER | Air.

6/19/2006 1:13:00 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/19/2005, 6/24/2006, Batch: '6129247', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129247						
AC		**CalcC**	**HansenM**	6/5/2006 3:55:10 PM		
SC			antonsonl	IsBatched	5/9/2006 1:22:59 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/5/2006 3:55:10 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/5/2006 3:56:49 PM	RICH-RC-5016 REVISION 5
SC			AndersonE	Sep1C	6/14/2006 8:52:44 AM	RICH-RC-5087 REV 0
SC			FABREM	Sep2C	6/17/2006 2:39:12 PM	RICH-RC-5039 REV 6
SC			DAWKINSO	InCnt1	6/17/2006 3:12:24 PM	RICH-RD-0008 REVISION 4
SC			BlackCL	CalcC	6/19/2006 6:43:26 AM	RICH-RD-0008 REVISION 4
AC			**HansenM**	6/5/2006 3:56:49 PM		
AC			**AndersonE**	6/14/2006 8:52:44		
AC			**FABREM**	6/17/2006 2:39:12 PM		
AC			**DAWKINSO**	6/17/2006 3:12:24 PM		
AC			**BlackCL**	6/19/2006 6:43:26		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 6

ICOCFractions v4.8.18

STL RICHLAND

6/5/2006 11:12:42 AM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 06/05/2006

Sample Preparation/Analysis

9N Thiso PrpRc5016, SepRC~~5064~~(5003) 5087 J.C 6/6/06
S1 Thorium-228,230,232 by Alpha Spec
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech: 6-17-06 mf

Prep Tech: HansenM

Batch: 6129247 **FILTER** **pCi/sampl** **PM, Quote: SA , 63174**

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:
114 **1 H4XR8-1-AA** J6E080164-1-SAMP 04/26/2006 09:20	0.833sa,g	500.44sa,g	50.02g,in	0.0833g	THTF0544 06/02/06,pd 05/23/05,r	500				
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
116 **2 H4XTE-1-AA** J6E080164-2-SAMP 04/26/2006 09:45	0.833sa,g	503.64sa,g	50.27g,in	0.0831g	THTF0545 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
117 **3 H4XTH-1-AA** J6E080164-3-SAMP 04/26/2006 10:00	0.833sa,g	500.34sa,g	50.69g,in	0.0844g	THTF0546 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
118 **4 H4XTL-1-AA** J6E080164-4-SAMP 04/26/2006 10:15	0.833sa,g	503.42sa,g	50.32g,in	0.0833g	THTF0547 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
119 **5 H4XTM-1-AA** J6E080164-5-SAMP 04/26/2006 10:35	0.833sa,g	501.47sa,g	50.31g,in	0.0836g	THTF0548 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
120 **6 H4XTN-1-AA** J6E080164-6-SAMP 04/26/2006 10:50	0.833sa,g	502.28sa,g	50.17g,in	0.0832g	THTF0549 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
121 **7 H4XTP-1-AA** J6E080164-7-SAMP 04/26/2006 09:25	0.833sa,g	510.06sa,g	50.60g,in	0.0826g	THTF0550 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:

STL Richland Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

ISV - Insufficient Volume for Analysis

WO Cnt: 7

Prep_SamplePrep v4.8.24

STL RICHLAND

6/5/2006 11:12:43 AM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 06/05/2006

9N Thiso 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

Batch: 6129247 **FILTER** **pCi/sampl** **PM, Quote: SA , 63174**
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:
172 **8 H4XTR-1-AA** J6E080164-8-SAMP 04/26/2006 09:35	0.833sa,g	502.44sa,g	50.41g,in	0.0836g	THTF0551 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
173 **9 H4X0R-1-AA** J6E080164-9-SAMP 04/26/2006 09:30	0.833sa,g	505.26sa,g	50.36g,in	0.083g	THTF0552 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
174 **10 H4X0W-1-AA** J6E080164-10-SAMP 04/26/2006 09:50	0.833sa,g	505.49sa,g	50.22g,in	0.0828g	THTF0553 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
175 **11 H4X00-1-AA** J6E080164-11-SAMP 04/26/2006 10:05	0.833sa,g	504.65sa,g	50.78g,in	0.0838g	THTF0554 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
176 **12 H4X04-1-AA** J6E080164-12-SAMP 04/26/2006 10:20	0.833sa,g	501.99sa,g	50.24g,in	0.0834g	THTF0555 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
177 **13 H4X08-1-AA** J6E080164-13-SAMP 04/26/2006 10:40	0.833sa,g	504.10sa,g	50.04g,in	0.0827g	THTF0556 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
178 **14 H4X1A-1-AA** J6E080164-14-SAMP 04/26/2006 10:55	0.833sa,g	504.60sa,g	50.32g,in	0.0831g	THTF0557 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2 ISV - Insufficient Volume for Analysis WO Cnt: 14
Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.24

STL RICHLAND

6/5/2006 11:12:43 AM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 06/05/2006

Sample Preparation/Analysis

9N Thiso 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

Batch: 6129247 **FILTER** **pCi/sampl** **PM, Quote: SA , 63174**
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:
15H4X1F-1-AA J6E080164-15-SAMP 04/26/2006 10:10	0.833sa,g	509.03sa,g	50.08g,in	0.082g	THTF0558 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
16H401D-1-AA-B J6E090000-247-BLK 04/26/2006 09:20			1.00sa,in	1.00sa	THTF0559 06/02/06,pd 05/23/05,r					
		AmtRec:		#Containers: 1				Scr:	Alpha:	Beta:
17H401D-1-AC-C J6E090000-247-LCS 04/26/2006 09:20			1.00sa,in	1.00sa	THSO0072 06/02/06,pd 01/28/04,r					
		AmtRec:		#Containers: 1				Scr:	Alpha:	Beta:

Comments:

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

H4XR81AA-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

H401D1AA-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

H401D1AC-LCS:

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

H4XR81AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H401D1AA-BLK:

71

Batch Nbr: 6129247

Alpha Spec, ThIso by ALP , Results Summary Report

6/19/2006 6:41:13 AM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
ThIso by ALP				Richland Standard AlpIso Wo Blk Subt.										
Calc	S1	FILTER	H4XR81AA	TH-228	-5.23E-02	(6.77E-02)	U4	PCI/SA	R	1.52E-01	3.98E-01		101%	
Calc	S1	FILTER	H4XR81AA	TH-230	4.61E-01	(1.30E-01)		PCI/SA	R		8.92E-02		101%	
Calc	S1	FILTER	H4XR81AA	TH-232	0.00E+00	(4.03E-02)	U4	PCI/SA	R		8.92E-02		101%	
Calc	S1	FILTER	H4XTE1AA	TH-228	9.91E-02	(9.31E-02)	U4	PCI/SA	R	1.15E-01	3.65E-01		91%	
Calc	S1	FILTER	H4XTE1AA	TH-230	9.35E-02	(6.66E-02)	U4	PCI/SA	R		1.27E-01		91%	
Calc	S1	FILTER	H4XTE1AA	TH-232	0.00E+00	(5.72E-02)	U4	PCI/SA	R		1.27E-01		91%	
Calc	S1	FILTER	H4XTH1AA	TH-228	2.71E-02	(3.46E-02)	U4	PCI/SA	R	3.52E-02	1.62E-01		100%	
Calc	S1	FILTER	H4XTH1AA	TH-230	5.11E-02	(4.62E-02)	U4	PCI/SA	R	4.70E-02	1.80E-01		100%	
Calc	S1	FILTER	H4XTH1AA	TH-232	2.55E-02	(3.26E-02)	U4	PCI/SA	R	3.32E-02	1.53E-01		100%	
Calc	S1	FILTER	H4XTL1AA	TH-228	6.93E-02	(5.63E-02)	U4	PCI/SA	R	6.55E-02	2.16E-01		101%	
Calc	S1	FILTER	H4XTL1AA	TH-230	1.01E-01	(6.09E-02)		PCI/SA	R	5.36E-02	1.88E-01		101%	
Calc	S1	FILTER	H4XTL1AA	TH-232	2.97E-02	(2.98E-02)	U4	PCI/SA	R		8.05E-02		101%	
Calc	S1	FILTER	H4XTM1AA	TH-228	3.75E-01	(1.95E-01)		PCI/SA	R	1.75E-01	5.52E-01		61%	
Calc	S1	FILTER	H4XTM1AA	TH-230	1.42E-01	(1.01E-01)	U4	PCI/SA	R		1.92E-01		61%	
Calc	S1	FILTER	H4XTM1AA	TH-232	7.08E-02	(7.11E-02)	U4	PCI/SA	R		1.92E-01		61%	
Calc	S1	FILTER	H4XTN1AA	TH-228	4.77E-06	(5.84E-02)	U4	PCI/SA	R	1.11E-01	3.51E-01		102%	
Calc	S1	FILTER	H4XTN1AA	TH-230	1.35E-01	(7.88E-02)		PCI/SA	R		1.22E-01		102%	
Calc	S1	FILTER	H4XTN1AA	TH-232	0.00E+00	(5.51E-02)	U4	PCI/SA	R		1.22E-01		102%	
Calc	S1	FILTER	H4XTP1AA	TH-228	-2.07E-02	(5.49E-02)	U4	PCI/SA	R	1.18E-01	3.49E-01		96%	
Calc	S1	FILTER	H4XTP1AA	TH-230	3.52E-01	(1.22E-01)		PCI/SA	R		1.06E-01		96%	
Calc	S1	FILTER	H4XTP1AA	TH-232	5.87E-02	(5.90E-02)	U4	PCI/SA	R	6.44E-02	2.35E-01		96%	
Calc	S1	FILTER	H4XTR1AA	TH-228	1.41E-06	(7.34E-02)	U4	PCI/SA	R	1.39E-01	3.93E-01		90%	
Calc	S1	FILTER	H4XTR1AA	TH-230	3.40E-01	(1.25E-01)		PCI/SA	R	6.57E-02	2.40E-01		90%	
Calc	S1	FILTER	H4XTR1AA	TH-232	0.00E+00	(4.89E-02)	U4	PCI/SA	R		1.08E-01		90%	
Calc	S1	FILTER	H4X0R1AA	TH-228	7.25E-02	(7.28E-02)	U4	PCI/SA	R	7.95E-02	2.90E-01		94%	
Calc	S1	FILTER	H4X0R1AA	TH-230	2.96E-01	(1.26E-01)		PCI/SA	R	7.50E-02	2.73E-01		94%	
Calc	S1	FILTER	H4X0R1AA	TH-232	1.14E-01	(8.28E-02)	U4	PCI/SA	R	7.50E-02	2.73E-01		94%	
Calc	S1	FILTER	H4X0W1AA	TH-228	2.85E-02	(6.39E-02)	U4	PCI/SA	R	9.39E-02	3.42E-01		82%	
Calc	S1	FILTER	H4X0W1AA	TH-230	1.62E-01	(9.45E-02)		PCI/SA	R		1.46E-01		82%	
Calc	S1	FILTER	H4X0W1AA	TH-232	2.69E-02	(6.03E-02)	U4	PCI/SA	R	8.86E-02	3.23E-01		82%	
Calc	S1	FILTER	H4X001AA	TH-228	3.94E-02	(6.23E-02)	U4	PCI/SA	R	9.16E-02	2.90E-01		99%	
Calc	S1	FILTER	H4X001AA	TH-230	7.43E-02	(6.98E-02)	U4	PCI/SA	R	8.64E-02	2.73E-01		99%	
Calc	S1	FILTER	H4X001AA	TH-232	0.00E+00	(4.55E-02)	U4	PCI/SA	R		1.01E-01		99%	
Calc	S1	FILTER	H4X041AA	TH-228	3.93E-02	(6.23E-02)	U4	PCI/SA	R	9.15E-02	2.89E-01		101%	
Calc	S1	FILTER	H4X041AA	TH-230	2.04E-01	(9.45E-02)		PCI/SA	R	6.11E-02	2.23E-01		101%	
Calc	S1	FILTER	H4X041AA	TH-232	1.86E-02	(4.15E-02)	U4	PCI/SA	R	6.11E-02	2.23E-01		101%	
Calc	S1	FILTER	H4X081AA	TH-228	0.00E+00	(6.58E-02)	U4	PCI/SA	R		1.46E-01		82%	

() - (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: 6129247

Alpha Spec, Thlso by ALP , Results

6/19/2006 6:41:13 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	S1	FILTER	**H4X081AA**	TH-230	**2.03E-01**	**(1.03E-01)**		PCI/SA	R		1.37E-01		82%	
Calc	S1	FILTER	**H4X081AA**	TH-232	**-2.53E-02**	**(2.54E-02)**	**U4**	PCI/SA	R	8.34E-02	3.04E-01		82%	
Calc	S1	FILTER	**H4X1A1AA**	TH-228	**1.15E-01**	**(6.74E-02)**		PCI/SA	R		1.04E-01		95%	
Calc	S1	FILTER	**H4X1A1AA**	TH-230	**7.26E-02**	**(5.18E-02)**	**U4**	PCI/SA	R		9.84E-02		95%	
Calc	S1	FILTER	**H4X1A1AA**	TH-232	**3.63E-02**	**(3.65E-02)**	**U4**	PCI/SA	R		9.84E-02		95%	
Calc	S1	FILTER	**H4X1F1AA**	TH-228	**-1.14E-01**	**(6.70E-02)**	**U4**	PCI/SA	R	2.17E-01	6.41E-01		53%	
Calc	S1	FILTER	**H4X1F1AA**	TH-230	**2.16E-01**	**(1.26E-01)**		PCI/SA	R		1.95E-01		53%	
Calc	S1	FILTER	**H4X1F1AA**	TH-232	**1.08E-01**	**(1.08E-01)**	**U4**	PCI/SA	R	1.18E-01	4.32E-01		53%	
Calc	S1	FILTER	**H401D1AA**	TH-228	**1.29E-07**	**(6.68E-03)**	**U4**	PCI/SA	R	1.27E-02	3.58E-02	**B**	83%	
Calc	S1	FILTER	**H401D1AA**	TH-230	**4.91E-02**	**(1.44E-02)**		PCI/SA	R	5.98E-03	2.18E-02	**B**	83%	
Calc	S1	FILTER	**H401D1AA**	TH-232	**3.64E-03**	**(3.65E-03)**	**U4**	PCI/SA	R		9.86E-03	**B**	83%	
Calc	S1	FILTER	**H401D1AC**	TH-230	**2.03E+00**	**(2.02E-01)**		PCI/SA	R	7.09E-03	2.58E-02	**S**	83%	110%

QL
SE
6/19/06

() - (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:66
RADCALC v4.8.18
STL Richland

Batch Nbr: 6129247

Alpha Spec, ThIso by ALP , Calculated Results

6/19/2006 6:41:14 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	**H4XR81AA**	**PCI/SA**		04/26/06 09:20	06/17/06 19:45			1	1.00 SA	
536403,P-0606					,J6E080164-1 v4.8.18		FILTER					THTF0544 Alq		0.08326 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	06/17/06 15:35	TH-228	2	7	ALP114	ED	N	N	3.2873E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0534E+00	
			500.0666666	1000.2			Y		(9.862E-03)			6%			(0.000E+00)	12.010562		
1	06/17/06 15:35	TH-229	666	0	ALP114	ED	Y	N	3.2873E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0666666	1000.2			Y		(9.862E-03)						(0.000E+00)	12.010562		
2	06/17/06 15:35	TH-230	14	0	ALP114	ED	N	N	3.2873E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0666666	1000.2			Y		(9.862E-03)			6%			(0.000E+00)	12.010562		
3	06/17/06 15:35	TH-232	0	0	ALP114	ED	N	N	3.2873E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0666666	1000.2			Y		(9.862E-03)			6%			(0.000E+00)	12.010562		

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
	06/19/06	TH-228	R	**-0.052307**	U4	-2.99913E-03	-0.009178	-0.009178	1.00 SA	101%		0.397911		
				(0.06769)		(3.8723E-03)	(0.011866)	(0.011866)	(0.028284)			0.151788		
	06/19/06	TH-229	R	**21.918733**		1.33182E+00	4.051404	4.051404	1.00 SA	101%				
				(1.655046)		(5.1607E-02)	(0.19854)	(0.19854)	(0.028284)					
	06/19/06	TH-230	R	**0.460754**		2.79963E-02	0.085165	0.085165	1.00 SA	101%		0.089189		
				(0.12952)		(7.4823E-03)	(0.023435)	(0.023435)	(0.028284)					
	06/19/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	101%		0.089189		
				(0.040308)		(0.0000E+00)	(0.00745)	(0.00745)	(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	S1	FILTER	*STLE	AlpIsoWoBS	**H4XTE1AA**	**PCI/SA**		04/26/06 09:45	06/17/06 19:46			1	1.00 SA	
536403,P-0607					,J6E080164-2 v4.8.18		FILTER					THTF0545 Alq		0.083145 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	06/17/06 15:36	TH-228	3	2	ALP116	ED	N	N	2.5523E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0534E+00	
			500.0166666	1000.1166			Y		(7.657E-03)			6%			(0.000E+00)	12.02725		
1	06/17/06 15:36	TH-229	469	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)	12.02725		
2	06/17/06 15:36	TH-230	2	0	ALP116	ED	N	N	2.5523E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.1166			Y		(7.657E-03)			6%			(0.000E+00)	12.02725		
3	06/17/06 15:36	TH-232	0	0	ALP116	ED	N	N	2.5523E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.1166			Y		(7.657E-03)			6%			(0.000E+00)	12.02725		

() - (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: 6129247 — Alpha Spec, ThIso by ALP , Calculated Results — 6/19/2006 6:41:14 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
	06/19/06	TH-228	R	**0.099074**	U4	4.00003E-03	0.017361	0.017361	1.00 SA	91%		0.364568		
				(0.093105)		(3.7415E-03)	(0.016285)	(0.016285)	(0.028284)			0.115232		
	06/19/06	TH-229	R	**19.867298**		9.35969E-01	3.667126	3.667126	1.00 SA	91%				
				(1.582365)		(4.3334E-02)	(0.202311)	(0.202311)	(0.028284)					
	06/19/06	TH-230	R	**0.093488**	U4	3.99987E-03	0.017256	0.017256	1.00 SA	91%		0.126676		
				(0.066648)		(2.8283E-03)	(0.012262)	(0.012262)	(0.028284)					
	06/19/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	91%		0.126676		
				(0.057249)		(0.0000E+00)	(0.010567)	(0.010567)	(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	**H4XTH1AA**	**PCI/SA**		04/26/06 10:00	06/17/06 19:46			1	1.00 Sa	
536403,P-0608					,J6E080164-3 v4.8.18		FILTER					THTF0546 Alq		0.084392 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	06/17/06 15:36	TH-228	1	1	ALP117	ED	N	N	3.3591E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0533E+00	
			500.15	2500.1			Y		(1.008E-02)			6%			(0.000E+00)	11.849443		
1	06/17/06 15:36	TH-229	676	2	ALP117	ED	Y	N	3.3591E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.15	2500.1			Y		(1.008E-02)						(0.000E+00)	11.849443		
2	06/17/06 15:36	TH-230	2	2	ALP117	ED	N	N	3.3591E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.15	2500.1			Y		(1.008E-02)			6%			(0.000E+00)	11.849443		
3	06/17/06 15:36	TH-232	1	1	ALP117	ED	N	N	3.3591E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.15	2500.1			Y		(1.008E-02)			6%			(0.000E+00)	11.849443		

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
	06/19/06	TH-228	R	**0.027058**	U4	1.59942E-03	0.004813	0.004813	1.00 Sa	100%		0.162012		
				(0.034575)		(2.0390E-03)	(0.006143)	(0.006143)	(0.028284)			0.035195		
	06/19/06	TH-229	R	**21.464099**		1.35079E+00	4.021315	4.021315	1.00 Sa	100%				
				(1.617832)		(5.1987E-02)	(0.196231)	(0.196231)	(0.028284)					
	06/19/06	TH-230	R	**0.051067**	U4	3.19883E-03	0.009567	0.009567	1.00 Sa	100%		0.180383		
				(0.046248)		(2.8836E-03)	(0.008647)	(0.008647)	(0.028284)			0.046969		
	06/19/06	TH-232	R	**0.025533**	U4	1.59942E-03	0.004784	0.004784	1.00 Sa	100%		0.152885		
				(0.032627)		(2.0390E-03)	(0.006107)	(0.006107)	(0.028284)			0.033212		

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	**H4XTL1AA**	**PCI/SA**		04/26/06 10:15	06/17/06 19:46			1	1.00 SA	
536403,P-0609					,J6E080164-4 v4.8.18		FILTER					THTF0547 Alq		0.083264 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	06/17/06 15:36	TH-228	3	4	ALP118	ED	N	N	3.6403E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0533E+00	
			500.1	2500.0166			Y		(1.092E-02)			6%			(0.000E+00)	12.01005		

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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

RecCnt:4 — RADCALC v4.8.18 — STL Richland

Batch Nbr: 6129247 — Alpha Spec, ThIso by ALP , Calculated Results — 6/19/2006 6:41:14 AM

1	06/17/06 15:36	TH-229	737	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)	12.01005	
2	06/17/06 15:36	TH-230	4	3	ALP118	ED	N	N	3.6403E-01	N	101%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.1	2500.0166			Y		(1.092E-02)		6%		(0.000E+00)	12.01005	
3	06/17/06 15:36	TH-232	1	0	ALP118	ED	N	N	3.6403E-01	N	101%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.1	2500.0166			Y		(1.092E-02)		6%		(0.000E+00)	12.01005	

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
	06/19/06	TH-228	R	**0.069273**	U4	4.39881E-03	0.012156	0.012156	1.00 SA	101%		0.21632		
				(0.056297)		(3.5546E-03)	(0.009855)	(0.009855)	(0.028284)			0.06553		
	06/19/06	TH-229	R	**21.847338**		1.47011E+00	4.038379	4.038379	1.00 SA	101%				
				(1.629667)		(5.4298E-02)	(0.192159)	(0.192159)	(0.028284)					
	06/19/06	TH-230	R	**0.101032**		6.79841E-03	0.018675	0.018675	1.00 SA	101%		0.187575		
				(0.060945)		(4.0588E-03)	(0.011214)	(0.011214)	(0.028284)			0.053554		
	06/19/06	TH-232	R	**0.029716**	U4	1.99960E-03	0.005493	0.005493	1.00 SA	101%		0.080531		
				(0.029827)		(1.9996E-03)	(0.005504)	(0.005504)	(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	**H4XTM1AA**	**PCI/SA**		04/26/06 10:35	06/17/06 19:46			1	1.00 SA	
536403,P-0610					,J6E080164-5 v4.8.18		FILTER					THTF0548 Alq		0.083571 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	06/17/06 15:36	TH-228	6	2	ALP119	ED	N	N	2.5157E-01		N	61%	N		1.0000E+00	4.5045E-01	1.0533E+00	
			500.0666666	1000.2			Y		(7.547E-03)			4%			(0.000E+00)	11.965907		
1	06/17/06 15:36	TH-229	308	0	ALP119	ED	Y	N	2.5157E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0666666	1000.2			Y		(7.547E-03)						(0.000E+00)	11.965907		
2	06/17/06 15:36	TH-230	2	0	ALP119	ED	N	N	2.5157E-01		N	61%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0666666	1000.2			Y		(7.547E-03)			4%			(0.000E+00)	11.965907		
3	06/17/06 15:36	TH-232	1	0	ALP119	ED	N	N	2.5157E-01		N	61%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0666666	1000.2			Y		(7.547E-03)			4%			(0.000E+00)	11.965907		

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
	06/19/06	TH-228	R	**0.375219**		9.99880E-03	0.06609	0.06609	1.00 SA	61%		0.552303		
				(0.194726)		(5.0983E-03)	(0.034088)	(0.034088)	(0.028284)			0.174572		
	06/19/06	TH-229	R	**13.1963**		6.15918E-01	2.448274	2.448274	1.00 SA	61%				
				(1.138769)		(3.5095E-02)	(0.157657)	(0.157657)	(0.028284)					
	06/19/06	TH-230	R	**0.141633**	U4	3.99947E-03	0.026277	0.026277	1.00 SA	61%		0.191913		
				(0.101081)		(2.8281E-03)	(0.018692)	(0.018692)	(0.028284)					
	06/19/06	TH-232	R	**0.070817**	U4	1.99973E-03	0.013138	0.013138	1.00 SA	61%		0.191913		
				(0.071147)		(1.9997E-03)	(0.013178)	(0.013178)	(0.028284)					

() - (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:6 RADCALC v4.8.18 STL Richland

Batch Nbr: 6129247

Alpha Spec, Thiso by ALP , Calculated Results

6/19/2006 6:41:14 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	**H4XTN1AA**	**PCI/SA**		04/26/06 10:50	06/17/06 19:46			1	1.00 SA	
536403,P-0611					,J6E080164-6 v4.8.18		FILTER					THTF0549 Alq		0.083204 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	06/17/06 15:36	TH-228	1	2	ALP120	ED	N	N	2.4073E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0533E+00	
			500.0333333	1000.1666			Y		(7.222E-03)			6%			(0.000E+00)	12.01868		
1	06/17/06 15:36	TH-229	496	0	ALP120	ED	Y	N	2.4073E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0333333	1000.1666			Y		(7.222E-03)						(0.000E+00)	12.01868		
2	06/17/06 15:36	TH-230	3	0	ALP120	ED	N	N	2.4073E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0333333	1000.1666			Y		(7.222E-03)			6%			(0.000E+00)	12.01868		
3	06/17/06 15:36	TH-232	0	0	ALP120	ED	N	N	2.4073E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0333333	1000.1666			Y		(7.222E-03)			6%			(0.000E+00)	12.01868		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/LcC	BlkLcC/MDC	StdDvMdC/LcC
	06/19/06	TH-228	R	**4.765E-06**	U4	1.99953E-07	8.3562E-07	8.3562E-07	1.00 SA	102%		0.350755		
				(0.058367)		(2.4492E-03)	(0.010236)	(0.010236)	(0.028284)			0.110866		
	06/19/06	TH-229	R	**22.307587**		9.91934E-01	4.120493	4.120493	1.00 SA	102%				
				(1.758784)		(4.4539E-02)	(0.222512)	(0.222512)	(0.028284)					
	06/19/06	TH-230	R	**0.134925**		5.99960E-03	0.024922	0.024922	1.00 SA	102%		0.121882		
				(0.07884)		(3.4639E-03)	(0.014492)	(0.014492)	(0.028284)					
	06/19/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	102%		0.121882		
				(0.055083)		(0.0000E+00)	(0.010175)	(0.010175)	(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	S1	FILTER	*STLE	AlpIsoWoBS	**H4XTP1AA**	**PCI/SA**		04/26/06 09:25	06/17/06 19:49			1	1.00 SA	
536403,P-0612					,J6E080164-7 v4.8.18		FILTER					THTF0550 Alq		0.082637 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	06/17/06 15:39	TH-228	1	3	ALP171	ED	N	N	2.9087E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0534E+00	
			499.4666666	998.95			Y		(8.726E-03)			6%			(0.000E+00)	12.101125		
1	06/17/06 15:39	TH-229	562	2	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)	12.101125		
2	06/17/06 15:39	TH-230	9	0	ALP171	ED	N	N	2.9087E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)			6%			(0.000E+00)	12.101125		
3	06/17/06 15:39	TH-232	2	1	ALP171	ED	N	N	2.9087E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)			6%			(0.000E+00)	12.101125		

() - (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: 6129247 — Alpha Spec, ThIso by ALP , Calculated Results — 6/19/2006 6:41:14 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
	06/19/06	TH-228	R	**-0.020743**	U4	-1.00102E-03	-0.003613	-0.003613	1.00 SA	96%		0.348707		
				(0.054914)		(2.6486E-03)	(0.009562)	(0.009562)	(0.028284)			0.118208		
	06/19/06	TH-229	R	**21.049151**		1.12320E+00	3.861555	3.861555	1.00 SA	96%				
				(1.628733)		(4.7485E-02)	(0.20018)	(0.20018)	(0.028284)					
	06/19/06	TH-230	R	**0.352347**		1.80192E-02	0.064639	0.064639	1.00 SA	96%		0.106096		
				(0.121541)		(6.0064E-03)	(0.021986)	(0.021986)	(0.028284)					
	06/19/06	TH-232	R	**0.058725**	U4	3.00322E-03	0.010773	0.010773	1.00 SA	96%		0.23482		
				(0.058955)		(3.0032E-03)	(0.010798)	(0.010798)	(0.028284)			0.064401		

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	**H4XTR1AA**	**PCI/SA**		04/26/06 09:35	06/17/06 19:49			1	1.00 SA	
536403,P-0613					,J6E080164-8 v4.8.18		FILTER					THTF0551 Alq		0.083575 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	06/17/06 15:39	TH-228	2	4	ALP172	ED	N	N	2.9949E-01		N	90%	N		1.0000E+00	4.5045E-01	1.0534E+00	
			499.4666666	998.95			Y		(8.985E-03)			6%			(0.000E+00)	11.96527		
1	06/17/06 15:39	TH-229	548	4	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)	11.96527		
2	06/17/06 15:39	TH-230	9	1	ALP172	ED	N	N	2.9949E-01		N	90%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			6%			(0.000E+00)	11.96527		
3	06/17/06 15:39	TH-232	0	0	ALP172	ED	N	N	2.9949E-01		N	90%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			6%			(0.000E+00)	11.96527		

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
	06/19/06	TH-228	R	**1.4133E-06**	U4	6.68080E-08	2.4893E-07	2.4893E-07	1.00 SA	90%		0.393302		
				(0.073359)		(3.4678E-03)	(0.012921)	(0.012921)	(0.028284)			0.139344		
	06/19/06	TH-229	R	**19.673049**		1.09317E+00	3.650082	3.650082	1.00 SA	90%				
				(1.529137)		(4.6912E-02)	(0.191118)	(0.191118)	(0.028284)					
	06/19/06	TH-230	R	**0.339722**		1.70182E-02	0.063031	0.063031	1.00 SA	90%		0.239725		
				(0.125264)		(6.0893E-03)	(0.022957)	(0.022957)	(0.028284)			0.065746		
	06/19/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	90%		0.108311		
				(0.04895)		(0.0000E+00)	(0.009082)	(0.009082)	(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	**H4X0R1AA**	**PCI/SA**		04/26/06 09:30	06/17/06 19:49			1	1.00 SA	
536403,000436					,J6E080164-9 v4.8.18		FILTER					THTF0552 Alq		0.083026 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	06/17/06 15:39	TH-228	2	1	ALP173	ED	N	N	2.5374E-01		N	94%	N		1.0000E+00	4.5045E-01	1.0534E+00	
			499.4666666	998.95			Y		(7.612E-03)			6%			(0.000E+00)	12.044373		

() - (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: 6129247 Alpha Spec, ThIso by ALP , Calculated Results 6/19/2006 6:41:15 AM

1	06/17/06 15:39	TH-229	479	0	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)	12.044373	
2	06/17/06 15:39	TH-230	7	1	ALP173	ED	N	N	2.5374E-01	N	94%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(7.612E-03)		6%		(0.000E+00)	12.044373	
3	06/17/06 15:39	TH-232	3	1	ALP173	ED	N	N	2.5374E-01	N	94%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(7.612E-03)		6%		(0.000E+00)	12.044373	

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
	06/19/06	TH-228	R	**0.072465**	U4	3.00322E-03	0.01268	0.01268	1.00 SA	94%		0.289764		
				(0.07276)		(3.0032E-03)	(0.012711)	(0.012711)	(0.028284)			0.079469		
	06/19/06	TH-229	R	**20.505305**		9.59023E-01	3.779509	3.779509	1.00 SA	94%				
				(1.625966)		(4.3819E-02)	(0.206587)	(0.206587)	(0.028284)					
	06/19/06	TH-230	R	**0.296317**		1.30139E-02	0.054617	0.054617	1.00 SA	94%		0.273433		
				(0.125638)		(5.3909E-03)	(0.022944)	(0.022944)	(0.028284)			0.07499		
	06/19/06	TH-232	R	**0.113968**	U4	5.00536E-03	0.021007	0.021007	1.00 SA	94%		0.273433		
				(0.082827)		(3.6094E-03)	(0.015219)	(0.015219)	(0.028284)			0.07499		

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	**H4X0W1AA**	**PCI/SA**		04/26/06 09:50	06/17/06 19:49			1	1.00 SA	
536403,000437					,J6E080164-10 v4.8.18		FILTER					THTF0553 Alq		0.082758 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	06/17/06 15:39	TH-228	1	1	ALP174	ED	N	N	2.4814E-01		N	82%	N		1.0000E+00	4.5045E-01	1.0534E+00	
			499.4666666	998.95			Y		(7.444E-03)			5%			(0.000E+00)	12.083447		
1	06/17/06 15:39	TH-229	410	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)	12.083447		
2	06/17/06 15:39	TH-230	3	0	ALP174	ED	N	N	2.4814E-01		N	82%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.444E-03)			5%			(0.000E+00)	12.083447		
3	06/17/06 15:39	TH-232	1	1	ALP174	ED	N	N	2.4814E-01		N	82%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.444E-03)			5%			(0.000E+00)	12.083447		

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
	06/19/06	TH-228	R	**0.028546**	U4	1.00108E-03	0.004979	0.004979	1.00 SA	82%		0.342432		
				(0.063884)		(2.2384E-03)	(0.011139)	(0.011139)	(0.028284)			0.093914		
	06/19/06	TH-229	R	**17.984149**		8.19875E-01	3.304094	3.304094	1.00 SA	82%				
				(1.466174)		(4.0553E-02)	(0.191138)	(0.191138)	(0.028284)					
	06/19/06	TH-230	R	**0.161622**		6.00641E-03	0.029694	0.029694	1.00 SA	82%		0.145999		
				(0.0945)		(3.4678E-03)	(0.017278)	(0.017278)	(0.028284)					
	06/19/06	TH-232	R	**0.026937**	U4	1.00108E-03	0.004949	0.004949	1.00 SA	82%		0.323137		
				(0.060284)		(2.2384E-03)	(0.011072)	(0.011072)	(0.028284)			0.088622		

() - (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: 6129247 — Alpha Spec, Thlso by ALP , Calculated Results — 6/19/2006 6:41:15 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	**H4X001AA**	**PCI/SA**		04/26/06 10:05	06/17/06 19:49			1	1.00 SA	
536403,000438					,J6E080164-11 v4.8.18		FILTER					THTF0554 Alq		0.08382 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	06/17/06 15:39	TH-228	2	2	ALP175	ED	N	N	2.9360E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0533E+00	
			499.4666666	998.95			Y		(8.808E-03)			6%			(0.000E+00)	11.930333		
1	06/17/06 15:39	TH-229	582	0	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)	11.930333		
2	06/17/06 15:39	TH-230	3	2	ALP175	ED	N	N	2.9360E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)			6%			(0.000E+00)	11.930333		
3	06/17/06 15:39	TH-232	0	0	ALP175	ED	N	N	2.9360E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)			6%			(0.000E+00)	11.930333		

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
	06/19/06	TH-228	R	**0.039362**	**U4**	2.00217E-03	0.006954	0.006954	1.00 SA	99%		0.289699		
				(0.062333)		(3.1656E-03)	(0.011004)	(0.011004)	(0.028284)			0.091569		
	06/19/06	TH-229	R	**21.328499**		1.16524E+00	3.968817	3.968817	1.00 SA	99%				
				(1.6408)		(4.8301E-02)	(0.203078)	(0.203078)	(0.028284)					
	06/19/06	TH-230	R	**0.074289**	**U4**	4.00430E-03	0.013824	0.013824	1.00 SA	99%		0.273378		
				(0.069799)		(3.7456E-03)	(0.012964)	(0.012964)	(0.028284)			0.08641		
	06/19/06	TH-232	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	99%		0.10066		
				(0.045492)		(0.0000E+00)	(0.008465)	(0.008465)	(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	**H4X041AA**	**PCI/SA**		04/26/06 10:20	06/17/06 19:49			1	1.00 SA	
536403,000439					,J6E080164-12 v4.8.18		FILTER					THTF0555 Alq		0.083368 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	06/17/06 15:39	TH-228	2	2	ALP176	ED	N	N	2.9146E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0533E+00	
			499.4666666	998.95			Y		(8.744E-03)			6%			(0.000E+00)	11.995005		
1	06/17/06 15:39	TH-229	596	4	ALP176	ED	Y	N	2.9146E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.744E-03)						(0.000E+00)	11.995005		
2	06/17/06 15:39	TH-230	6	1	ALP176	ED	N	N	2.9146E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.744E-03)			6%			(0.000E+00)	11.995005		
3	06/17/06 15:39	TH-232	1	1	ALP176	ED	N	N	2.9146E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.744E-03)			6%			(0.000E+00)	11.995005		

() - (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 v4.8.18
STL Richland

Batch Nbr: 6129247 — Alpha Spec, ThIso by ALP , Calculated Results — 6/19/2006 6:41:15 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/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/19/06	TH-228	R	**0.039332**	U4	2.00217E-03	0.006911	0.006911	1.00 SA	101%		0.289478		
				(0.062285)		(3.1656E-03)	(0.010937)	(0.010937)	(0.028284)			0.091499		
	06/19/06	TH-229	R	**22.046909**		1.18927E+00	4.080381	4.080381	1.00 SA	101%				
				(1.692307)		(4.8919E-02)	(0.207739)	(0.207739)	(0.028284)					
	06/19/06	TH-230	R	**0.204138**		1.10118E-02	0.037781	0.037781	1.00 SA	101%		0.222623		
				(0.094521)		(5.0053E-03)	(0.017359)	(0.017359)	(0.028284)			0.061055		
	06/19/06	TH-232	R	**0.018558**	U4	1.00108E-03	0.003435	0.003435	1.00 SA	101%		0.222623		
				(0.041529)		(2.2384E-03)	(0.007684)	(0.007684)	(0.028284)			0.061055		

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	**H4X081AA**	**PCI/SA**		04/26/06 10:40	06/17/06 19:49			1	1.00 SA	
536403,000440					,J6E080164-13 v4.8.18		FILTER					THTF0556 Alq		0.082689 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	06/17/06 15:39	TH-228	0	0	ALP177	ED	N	N	2.6130E-01		N	82%	N		1.0000E+00	4.5045E-01	1.0533E+00	
			499.4666666	998.95			Y		(7.839E-03)			5%			(0.000E+00)	12.093566		
1	06/17/06 15:39	TH-229	434	0	ALP177	ED	Y	N	2.6130E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.839E-03)						(0.000E+00)	12.093566		
2	06/17/06 15:39	TH-230	4	0	ALP177	ED	N	N	2.6130E-01		N	82%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.839E-03)			5%			(0.000E+00)	12.093566		
3	06/17/06 15:39	TH-232	0	1	ALP177	ED	N	N	2.6130E-01		N	82%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.839E-03)			5%			(0.000E+00)	12.093566		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/19/06	TH-228	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	82%		0.145549		
				(0.065779)		(0.0000E+00)	(0.011464)	(0.011464)	(0.028284)					
	06/19/06	TH-229	R	**18.115181**		8.68927E-01	3.325383	3.325383	1.00 SA	82%				
				(1.460958)		(4.1710E-02)	(0.188234)	(0.188234)	(0.028284)					
	06/19/06	TH-230	R	**0.202735**		8.00854E-03	0.037216	0.037216	1.00 SA	82%		0.137353		
				(0.103055)		(4.0043E-03)	(0.018797)	(0.018797)	(0.028284)					
	06/19/06	TH-232	R	**-0.025341**	U4	-1.00105E-03	-0.004652	-0.004652	1.00 SA	82%		0.304002		
				(0.025448)		(1.0011E-03)	(0.004664)	(0.004664)	(0.028284)			0.083374		

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	**H4X1A1AA**	**PCI/SA**		04/26/06 10:55	06/17/06 19:49			1	1.00 SA	
536403,000441					,J6E080164-14 v4.8.18		FILTER					THTF0557 Alq		0.083069 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	06/17/06 15:39	TH-228	3	0	ALP178	ED	N	N	3.1338E-01		N	95%	N		1.0000E+00	4.5045E-01	1.0533E+00	
			499.4666666	998.95			Y		(9.401E-03)			6%			(0.000E+00)	12.038202		

() - (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: 6129247

Alpha Spec, ThIso by ALP , Calculated Results

6/19/2006 6:41:15 AM

1	06/17/06 15:39	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)	12.038202	
2	06/17/06 15:39	TH-230	2	0	ALP178	ED	N	N	3.1338E-01	N	95%	N		1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(9.401E-03)		6%			(0.000E+00)	12.038202	
3	06/17/06 15:39	TH-232	1	0	ALP178	ED	N	N	3.1338E-01	N	95%	N		1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(9.401E-03)		6%			(0.000E+00)	12.038202	

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
	06/19/06	TH-228	R	**0.115439**		6.00641E-03	0.020211	0.020211	1.00 SA	95%		0.10428		
				(0.067419)		(3.4678E-03)	(0.011747)	(0.011747)	(0.028284)					
	06/19/06	TH-229	R	**20.85571**		1.20529E+00	3.846066	3.846066	1.00 SA	95%				
				(1.596672)		(4.9124E-02)	(0.19464)	(0.19464)	(0.028284)					
	06/19/06	TH-230	R	**0.072626**	U4	4.00427E-03	0.013393	0.013393	1.00 SA	95%		0.098409		
				(0.051751)		(2.8314E-03)	(0.009513)	(0.009513)	(0.028284)					
	06/19/06	TH-232	R	**0.036313**	U4	2.00214E-03	0.006697	0.006697	1.00 SA	95%		0.098409		
				(0.036454)		(2.0021E-03)	(0.006712)	(0.006712)	(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	**H4X1F1AA**	**PCI/SA**		04/26/06 10:10	06/18/06 10:09			1	1.00 SA	
536403,000442					,J6E080164-15 v4.8.18		FILTER					THTF0558 Alq		0.081953 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	06/18/06 05:59	TH-228	0	3	ALP171	ED	N	N	2.9087E-01		N	53%	N		1.0000E+00	4.5045E-01	1.0540E+00	
			499.4666666	998.95			Y		(8.726E-03)			4%			(0.000E+00)	12.202085		
1	06/18/06 05:59	TH-229	309	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)	12.202085		
2	06/18/06 05:59	TH-230	3	0	ALP171	ED	N	N	2.9087E-01		N	53%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)			4%			(0.000E+00)	12.202085		
3	06/18/06 05:59	TH-232	2	1	ALP171	ED	N	N	2.9087E-01		N	53%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)			4%			(0.000E+00)	12.202085		

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
	06/19/06	TH-228	R	**-0.114483**	U4	-3.00315E-03	-0.019762	-0.019762	1.00 SA	53%		0.641496		
				(0.067016)		(1.7339E-03)	(0.011513)	(0.011513)	(0.028284)			0.21746		
	06/19/06	TH-229	R	**11.671729**		6.17659E-01	2.123511	2.123511	1.00 SA	53%				
				(1.007384)		(3.5209E-02)	(0.136787)	(0.136787)	(0.028284)					
	06/19/06	TH-230	R	**0.215943**		6.00641E-03	0.039288	0.039288	1.00 SA	53%		0.195068		
				(0.126409)		(3.4678E-03)	(0.022887)	(0.022887)	(0.028284)					
	06/19/06	TH-232	R	**0.107972**	U4	3.00322E-03	0.019644	0.019644	1.00 SA	53%		0.431743		
				(0.108474)		(3.0032E-03)	(0.019703)	(0.019703)	(0.028284)			0.118408		

() - (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: 6129247 — Alpha Spec, Thlso by ALP , Calculated Results — 6/19/2006 6:41:15 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	**H401D1AA**	**PCI/SA**	**B**	04/26/06 09:20	06/18/06 10:09			1	1.00 SA	
0,INTRA-LAB BLANK					,J6E090000-247		FILTER					THTF0559 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	06/18/06 05:59	TH-228	2	4	ALP172	ED	N	N	2.9949E-01		N	83%	N		1.0000E+00	4.5045E-01	1.0540E+00	
			499.4666666	998.95			Y		(8.985E-03)			5%			(0.000E+00)	1.00		
1	06/18/06 05:59	TH-229	502	4	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)	1.00		
2	06/18/06 05:59	TH-230	14	1	ALP172	ED	N	N	2.9949E-01		N	83%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			5%			(0.000E+00)	1.00		
3	06/18/06 05:59	TH-232	1	0	ALP172	ED	N	N	2.9949E-01		N	83%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			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
	06/19/06	TH-228	R	**1.2871E-07**	**U4**	6.68080E-08	2.711E-07	2.711E-07	1.00 SA	83%		0.035819		
				(0.006681)		(3.4678E-03)	(0.014072)	(0.014072)	(0.017321)			0.012691		
	06/19/06	TH-229	R	**1.505659**		1.00107E+00	3.342566	3.342566	1.00 SA	83%				
				(0.113794)		(4.4903E-02)	(0.180375)	(0.180375)	(0.017321)					
	06/19/06	TH-230	R	**0.04911**		2.70288E-02	0.109024	0.109024	1.00 SA	83%		0.021819		
				(0.014384)		(7.5579E-03)	(0.031408)	(0.031408)	(0.017321)			0.005984		
	06/19/06	TH-232	R	**0.003638**	**U4**	2.00214E-03	0.008076	0.008076	1.00 SA	83%		0.009858		
				(0.003652)		(2.0021E-03)	(0.008095)	(0.008095)	(0.017321)					

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
17	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H401D1AC**	**PCI/SA**	**S**	04/26/06 09:20	06/18/06 10:09		THSO0072	1	1.00 SA	
0,INTRA-LAB CHECK					,J6E090000-247		FILTER					THSO0072 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	06/18/06 05:59	TH-229	446	0	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)	1.00		
2	06/18/06 05:59	TH-230	471	1	ALP173	ED	N	N	2.5374E-01		N	83%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)			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
	06/19/06	TH-229	R	**1.58519**		8.92952E-01	3.519126	3.519126	1.00 SA	83%				
				(0.122195)		(4.2283E-02)	(0.197264)	(0.197264)	(0.017321)					
	06/19/06	TH-230	R	**2.026546**		9.42005E-01	4.498937	4.498937	1.00 SA	83%	110%	0.025835		
				(0.202257)		(4.3463E-02)	(0.380708)	(0.380708)	(0.017321)			0.007085		

() - (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:17 RADCALC v4.8.18
STL Richland

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST

2359

C.R. Technician OD
Date Counted 6/17/06
C.R. Analyst CS
Date Analyzed 6/18/06

Counting Time
Sample 500 Minutes
Background See Alpha Analysis Report BRC 4/26/06

SOP's
Operating: RICHRD008
Review: RICHRD0016 6129247

WorkOrder #	Th-229 (4845 KeV) Tracer from Th-234 Beta Count (7) ID	Activity	ROI Cts	BKG	TOTAL COUNTS Th-228 (5423 KeV) (6)	Th-230 (4688 KeV) (8)	Th-232 (4010 KeV) (9)	Det #	Comment
H4XTP1AA		10		0	See Alpha Analysis Report for ROI Information			171	
H4XTR1AA		10		0	See Alpha Analysis Report for ROI Information			172	
H4XOR1AA		10		0	See Alpha Analysis Report for ROI Information			173	
H4XOW1AA		10		0	See Alpha Analysis Report for ROI Information			174	
H4X001AA		10		0	See Alpha Analysis Report for ROI Information			175	
H4X041AA		10		0	See Alpha Analysis Report for ROI Information			176	
H4X081AA		10		0	See Alpha Analysis Report for ROI Information			177	
H4X1A1AA		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: 6/18/06

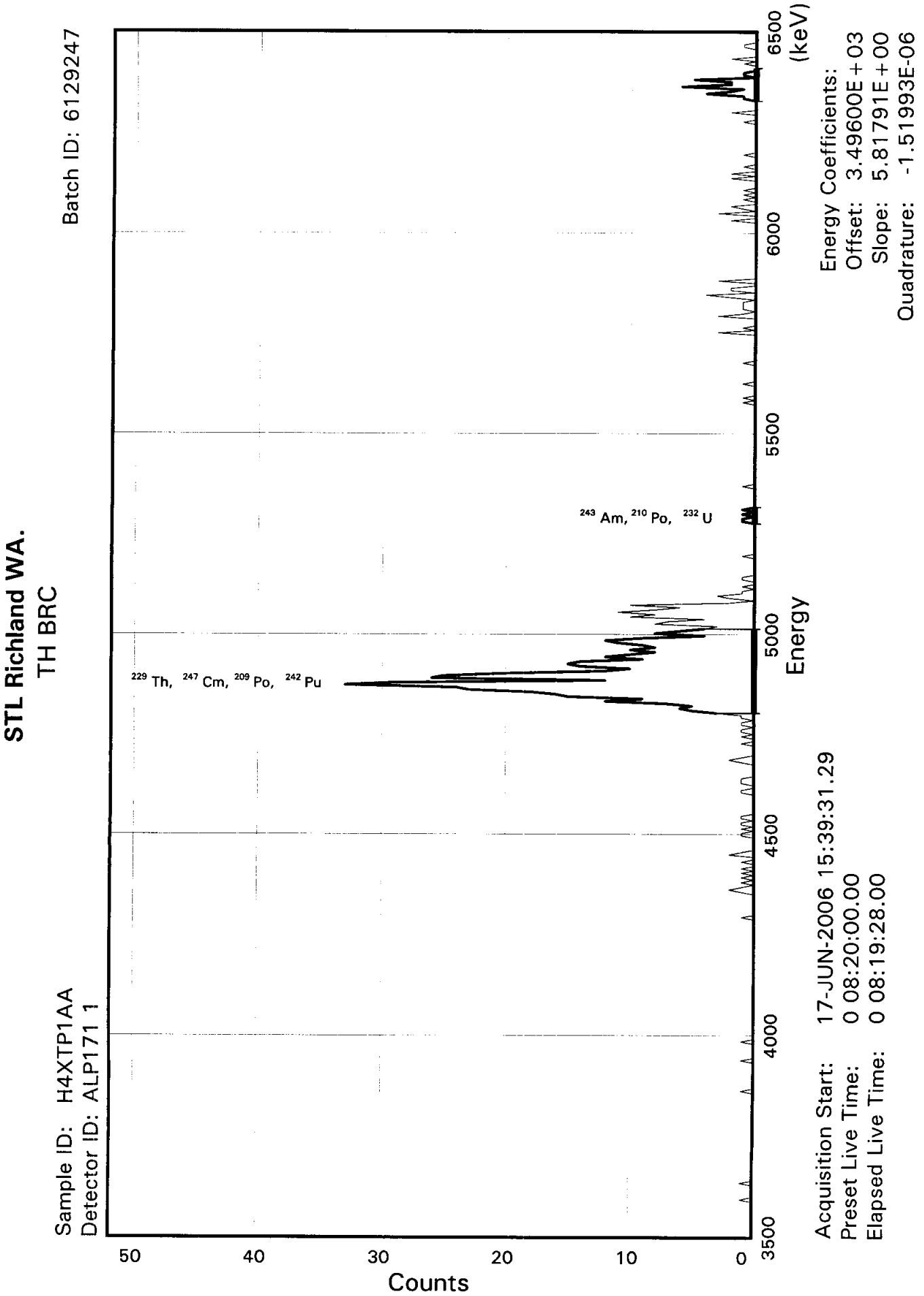
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4XTP1AA

Detector: ALP171 1
Report Date: 18-Jun-06 06:48 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	3	-0.001	5423.2	116.3	316	336
TH-229	562	2	1.123	4845.3	360.7	222	284
TH-230	9	0	0.018	4687.7	116.3	190	210
TH-232	2	1	0.003	4013.0	116.4	74	94

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129247
Sample ID: H4XTP1AA
Detector ID: ALP171 1
229 Th, 247 Cm, 209 Po, 242 Pu
243 Am, 210 Po, 232 U
Counts
50
40
30
20
10
0
3500
4000
4500
5000
5500
6000
6500
Energy
(keV)
Acquisition Start: 17-JUN-2006 15:39:31.29
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.49600E+03
Slope: 5.81791E+00
Quadrature: -1.51993E-06

```
SAMPLE IDENTITY:              H4XTP1AA


TITLE            : TH BRC

DETECTOR                    : ALP171 1
CONFIGURATION NAME          : $DISK1:[ALP171.SAMPLE]H4XTP1AA_170661539A.CN
F;1
ACQUIRE DATE of BACKGROUND: 10-JUN-2006 06:49:56

REPORT DATE : 18-Jun-06              SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:39:31   CALIB DATE : 09-JUN-2006 02:56:15

PRESET LIVE TIME:    0 08:20:00      ELAPSED LIVE TIME:    0 08:19:28

OFFSET     :  3496.00 keV           CONSTANT FWHM  :  8.50000 Channels
SLOPE      :  5.81791 keV/C         SENSITIVITY    :  3.00000 Std Dev's
QUAD COEFF : -.151993E-05 keV/C^2   SUM SENSITIVITY:  1.00000 %
```

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

Sample Identity: H4XTP1AA

Detector: ALP171 1
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	5149.6	209.4	271	307	0.00	0.00	M I
PO-209	475	1	0	0.950	4917.9	209.4	225	261	0.00	0.00	P
PO-210	4	3	0	0.005	5339.1	40.7	306	313	0.00	0.00	P
AC-227	13	2	9	0.023	6072.7	209.4	430	466	0.00	0.00	S
TH-227	13	2	9	0.023	6072.7	209.4	430	466	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5457.9	209.4	324	360	0.00	0.00	M
TH-229	475	1	0	0.950	4880.0	209.4	225	261	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4722.4	209.4	198	234	0.00	0.00	M I
TH-232	1	2	0	0.000	4047.7	209.4	82	118	0.00	0.00	S
U-232	4	3	0	0.005	5354.9	40.7	306	313	0.00	0.00	P
U-234	-9999	-9999	0	-10.010	4809.3	209.4	213	249	0.00	0.00	M I
U-235	17	1	4	0.033	4432.5	209.4	148	184	0.00	0.00	S
PU-236	14	28	22	0.000	5802.4	209.4	384	420	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4822.7	209.4	215	251	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5533.7	209.4	337	373	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4232.7	209.4	114	150	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5191.3	209.4	279	315	0.00	0.00	M I
AM-241	-9999	-9999	0	-10.010	5520.3	209.4	335	371	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5241.5	209.4	287	323	0.00	0.00	M I
CM-242	-9999	-9999	0	-10.010	6147.4	209.4	443	479	0.00	0.00	M
PU-242	475	1	0	0.950	4935.2	209.4	225	261	0.00	0.00	P
AM-243	4	3	0	0.005	5310.0	40.7	306	313	0.00	0.00	P
CM-244	11	25	22	-0.003	5839.5	209.4	390	426	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5421.2	209.4	318	354	0.00	0.00	M
CM-247	475	1	0	0.950	4905.1	209.4	225	261	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5113.3	209.4	265	301	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XTP1AA
Detector: ALP171 1
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29

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

Cnt	F	Chn
0		501
0		502
1		503
0		504
2		505
0		506
0		507
0		508
0		509
1		510
1		511
0		512

VMS Peak Search Report V1.9 Generated 18-JUN-2006 00:00:04

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4XTP1AA_170661539A.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID         : H4XTP1AA             Sample quantity  : 0.00000E+00 SAMPLE
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      :  3513.45 keV         End energy       :  6474.37 keV
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4880.01	475	0	75.63	237.90	225	36	1.59E-02	4.6	
2	0	5290.68	4	0	23.27	308.50	306	7	1.33E-04	50.0	
3	0	6364.73	25	0	40.73	493.15	487	14	8.34E-04	20.0	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 00:00:08

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4XTP1AA_170661539A.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID         : H4XTP1AA             Sample quantity  : 0.00000E+00 SAMPLE
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                     1
 Number of lines tentatively identified by NID    2       66.67%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	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	
PO-210	138.38D	1.30	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/SAMPLE	Decay Corr PCI/SAMPLE	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	
			---	---			
	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]H4XTP1AA_170661539A.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4880.00	225	261	475	473	0.09		
5290.67	306	313	4	4	0.00		
6364.73	487	501	25	26	-0.20		

End of Report

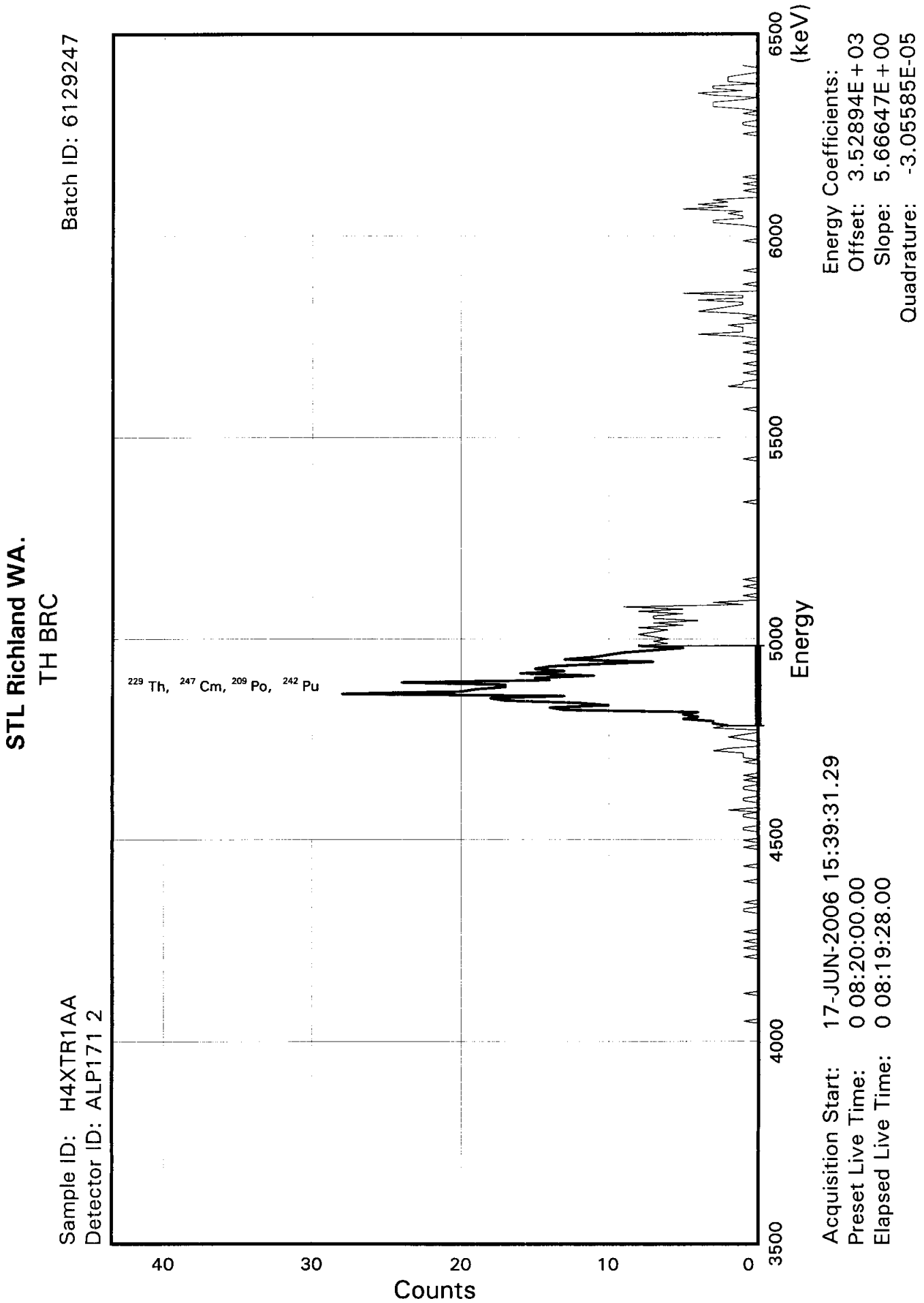
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4XTR1AA

Detector: ALP171 2
Report Date: 18-Jun-06 06:48 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	4	0.000	5423.2	112.9	320	340
TH-229	548	4	1.093	4845.3	356.0	218	281
TH-230	9	1	0.017	4687.7	113.1	190	210
TH-232	0	0	0.000	4013.0	113.2	70	90

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129247
Sample ID: H4XTR1AA
Detector ID: ALP171 2
229 Th, 247 Cm, 209 Po, 242 Pu
Counts
40
30
20
10
0
3500
4000
4500
5000
5500
6000
6500
Energy
(keV)
Acquisition Start: 17-JUN-2006 15:39:31.29
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.52894E+03
Slope: 5.66647E+00
Quadrature: -3.05585E-05

SAMPLE IDENTIITY: H4XTR1AA

TITLE : TH BRC

DETECTOR : ALP171 2
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4XTR1AA_170661539B.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:39:31 CALIB DATE : 09-JUN-2006 02:56:29

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3528.94 keV CONSTANT FWHM : 10.00000 Channels
SLOPE : 5.66647 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.305585E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XTR1AA

Detector: ALP171 2
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	5154.5	197.7	270	305	0.00	0.00	M
PO-209	425	2	0	0.849	4922.8	197.8	222	257	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5344.0	197.6	303	338	0.00	0.00	M
AC-227	21	4	23	0.038	6077.6	197.4	433	468	0.00	0.00	S
TH-227	21	4	23	0.038	6077.6	197.4	433	468	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5462.8	197.6	324	359	0.00	0.00	M
TH-229	425	2	0	0.849	4884.9	197.8	222	257	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4727.3	197.9	194	229	0.00	0.00	M I
TH-232	2	3	0	0.001	4052.6	198.1	75	110	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5359.8	197.6	306	341	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4814.2	197.8	209	244	0.00	0.00	M I
U-235	7	2	0	0.012	4437.4	198.0	143	178	0.00	0.00	
PU-236	20	24	35	0.015	5807.3	197.5	385	420	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4827.6	197.8	212	247	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5538.6	197.6	338	373	0.00	0.00	M
U-238	6	0	0	0.012	4237.6	198.1	108	143	0.00	0.00	S
PU-239	-9999	-9999	0	-10.010	5196.2	197.7	277	312	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5525.2	197.6	335	370	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5246.4	197.7	286	321	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6152.3	203.0	446	482	0.00	0.00	M
PU-242	425	2	0	0.849	4940.1	197.8	222	257	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5314.9	197.7	298	333	0.00	0.00	M
CM-244	19	20	35	0.017	5844.4	197.5	392	427	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5426.1	197.6	318	353	0.00	0.00	M
CM-247	425	2	0	0.849	4910.0	197.8	222	257	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5118.2	197.7	263	298	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XTR1AA
Detector: ALP171 2
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 00:00:13

Configuration : $DISK1:[ALP171.SAMPLE]H4XTR1AA_170661539B.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID : H4XTR1AA Sample quantity : 0.00000E+00 SAMPLE
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 : 3545.94 keV End energy : 6422.16 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4884.92	425	0119.00		239.61	222	35	1.42E-02	4.9	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 00:00:16

Configuration : $DISK1:[ALP171.SAMPLE]H4XTR1AA_170661539B.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title : TH BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID : H4XTR1AA Sample quantity : 0.00000E+00 SAMPLE
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/SAMPLE	Decay Corr PCI/SAMPLE	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/SAMPLE	Decay Corr PCI/SAMPLE	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]H4XTR1AA_170661539B.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4884.91	222	257	425	427	-0.10		

End of Report

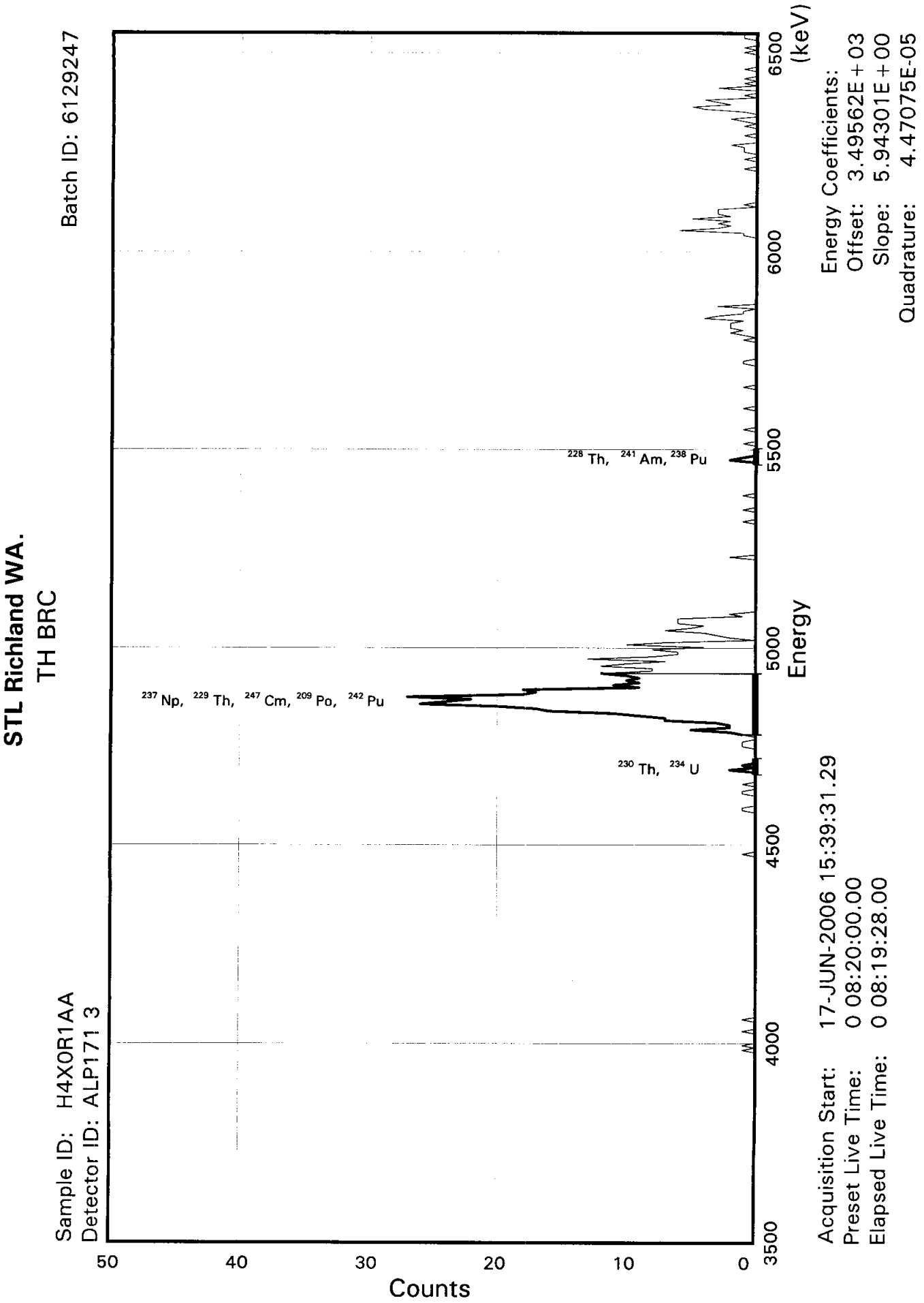
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4X0R1AA

Detector: ALP171 3
Report Date: 18-Jun-06 06:48 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	1	0.003	5423.2	119.4	309	329
TH-229	479	0	0.959	4845.3	340.0	212	269
TH-230	7	1	0.013	4687.7	119.2	185	205
TH-232	3	1	0.005	4013.0	119.0	72	92

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129247
Sample ID: H4X0R1AA
Detector ID: ALP171 3
228 Th, 241 Am, 238 Pu
237 Np, 229 Th, 247 Cm, 209 Po, 242 Pu
230 Th, 234 U
Counts
50
40
30
20
10
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 17-JUN-2006 15:39:31.29
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.49562E+03
Slope: 5.94301E+00
Quadrature: 4.47075E-05

SAMPLE IDENTIITY: H4X0R1AA

TITLE : TH BRC

DETECTOR : ALP171 3
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4X0R1AA_170661539C.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:39:31 CALIB DATE : 09-JUN-2006 02:56:42

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3495.62 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 5.94301 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 4.470750E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X0R1AA

Detector: ALP171 3
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	5135.5	155.2	261	287	0.00	0.00	M
PO-209	295	0	0	0.591	4903.8	155.1	216	242	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5325.0	155.2	293	319	0.00	0.00	M
AC-227	18	1	34	0.036	6058.6	155.5	416	442	0.00	0.00	S
TH-227	18	1	34	0.036	6058.6	155.5	416	442	0.00	0.00	S
TH-228	4	0	0	0.008	5443.8	41.8	330	337	0.00	0.00	P
TH-229	295	0	0	0.591	4865.9	155.1	216	242	0.00	0.00	P
TH-230	4	0	0	0.008	4708.3	41.7	199	206	0.00	0.00	P
TH-232	4	1	0	0.007	4033.6	154.7	76	102	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5340.8	155.2	296	322	0.00	0.00	M
U-234	4	0	0	0.008	4795.2	41.7	199	206	0.00	0.00	P
U-235	1	0	0	0.002	4418.4	154.9	141	167	0.00	0.00	
PU-236	13	17	21	0.009	5788.3	149.4	371	396	0.00	0.00	S
NP-237	295	0	0	0.591	4808.6	155.1	216	242	0.00	0.00	P
PU-238	4	0	0	0.008	5519.7	41.8	330	337	0.00	0.00	P
U-238	0	0	0	0.000	4218.6	154.8	107	133	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5177.2	155.2	268	294	0.00	0.00	M
AM-241	4	0	0	0.008	5506.2	41.8	330	337	0.00	0.00	P
AM-242M	-9999	-9999	0	-10.010	5227.4	155.2	277	303	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6133.4	155.5	428	454	0.00	0.00	M
PU-242	295	0	0	0.591	4921.1	155.1	216	242	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5295.9	155.2	288	314	0.00	0.00	M
CM-244	14	22	21	0.006	5825.5	155.4	377	403	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5407.1	155.3	307	333	0.00	0.00	M I
CM-247	295	0	0	0.591	4891.0	155.1	216	242	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5099.2	155.1	255	281	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X0R1AA
Detector: ALP171 3
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 00:00:19

Configuration	: $DISK1:[ALP171.SAMPLE]H4X0R1AA_170661539C.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 26-APR-2006 12:00:00	Acquisition date	: 17-JUN-2006 15:39:31
Sample ID	: H4X0R1AA	Sample quantity	: 0.00000E+00 SAMPLE
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	: 3513.45 keV	End energy	: 6550.16 keV
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4694.95	4	0	23.77	201.50	199	7	1.33E-04	50.0	
2	0	4865.94	295	0	65.37	230.18	216	26	9.84E-03	5.8	
3	0	5476.61	4	0	23.77	332.50	330	7	1.33E-04	50.0	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 00:00:22

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4X0R1AA_170661539C.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID         : H4X0R1AA             Sample quantity  : 0.00000E+00 SAMPLE
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/SAMPLE	Decay Corr PCI/SAMPLE	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-228	1.91Y	1.05	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/SAMPLE	Decay Corr PCI/SAMPLE	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-238	87.74Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-241	432.20Y	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]H4X0R1AA_170661539C.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4694.94	199	206	4	3	0.50		
4865.93	216	242	295	324	-1.69		
5476.61	330	337	4	3	0.50		

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

End of Report

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

Sample Identity: H4X0W1AA

Detector: ALP171 4
Report Date: 18-Jun-06 06:49 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	1	0.001	5423.2	111.3	307	327
TH-229	410	1	0.820	4845.3	366.6	203	269
TH-230	3	0	0.006	4687.7	110.9	175	195
TH-232	1	1	0.001	4013.0	110.6	53	73

End of Alpha Region Report
(Produced by ANAL Report)

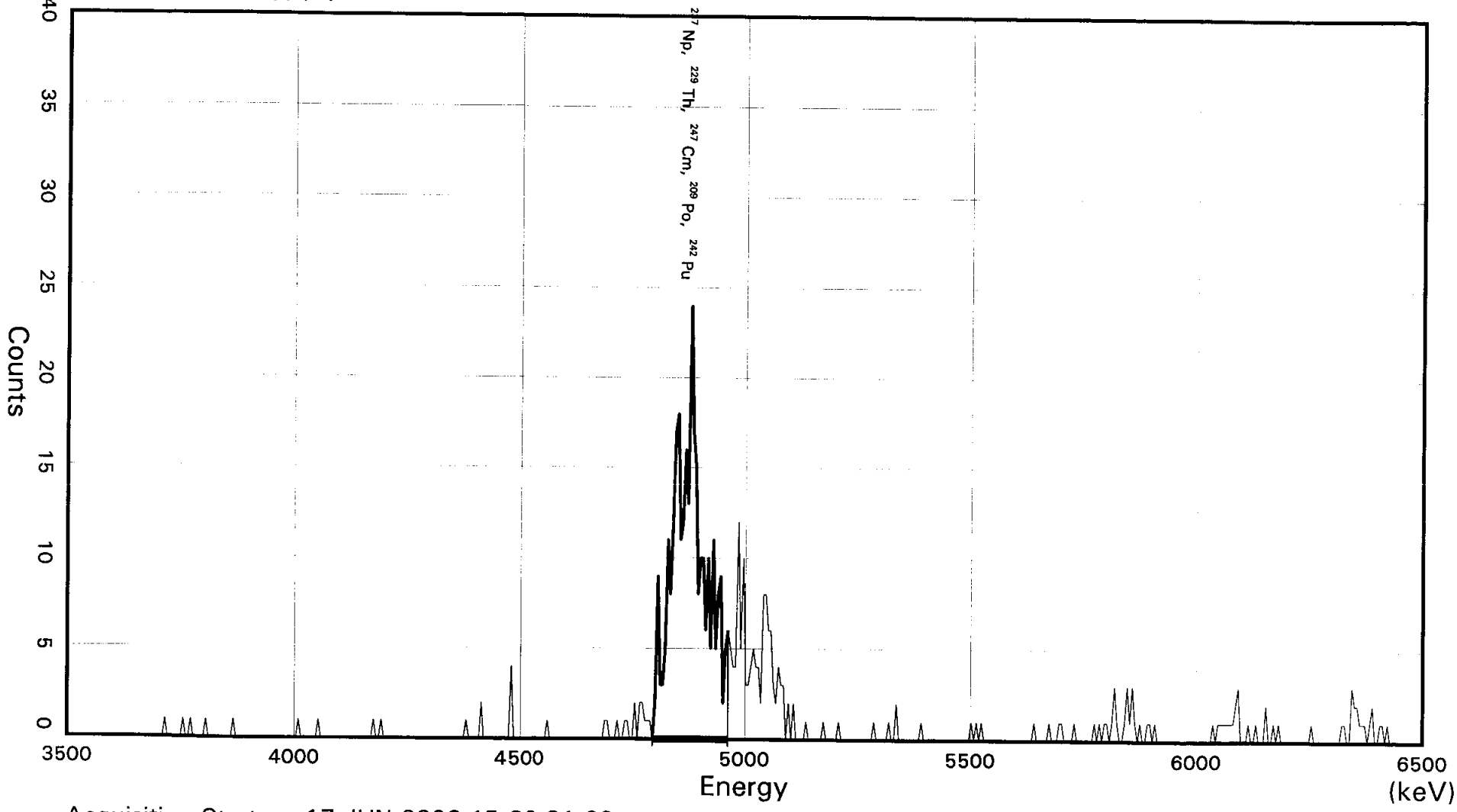
STL Richland WA.

TH BRC

Sample ID: H4X0W1AA

Detector ID: ALP171 4

Batch ID: 6129247



Acquisition Start: 17-JUN-2006 15:39:31.29

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.63871E+03

Slope: 5.52245E+00

Quadrature: 6.68173E-05

SAMPLE IDENTITY: H4X0W1AA

TITLE : TH BRC

DETECTOR : ALP171 4
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4X0W1AA_170661539D.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:39:31 CALIB DATE : 09-JUN-2006 02:56:58

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3638.71 keV CONSTANT FWHM : 11.00000 Channels
SLOPE : 5.52245 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 6.681730E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X0W1AA

Detector: ALP171 4
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	5136.1	166.8	258	288	0.00	0.00	M
PO-209	289	0	0	0.579	4904.4	166.6	209	239	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5325.6	166.9	292	322	0.00	0.00	M
AC-227	11	4	13	0.017	6059.2	167.4	423	453	0.00	0.00	S
TH-227	11	4	13	0.017	6059.2	167.4	423	453	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5444.4	167.0	313	343	0.00	0.00	M
TH-229	289	0	0	0.579	4866.5	166.6	209	239	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4708.9	166.5	181	211	0.00	0.00	S I
TH-232	2	1	0	0.003	4034.2	166.0	59	89	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5341.4	166.9	294	324	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4795.8	166.5	196	226	0.00	0.00	S I
U-235	7	2	0	0.012	4419.0	166.2	128	158	0.00	0.00	
PU-236	11	21	19	0.000	5788.8	167.2	375	405	0.00	0.00	S
NP-237	289	0	0	0.579	4809.2	166.6	209	239	0.00	0.00	P
PU-238	-9999	-9999	0	-10.010	5520.2	167.0	327	357	0.00	0.00	M
U-238	2	0	0	0.004	4219.2	166.1	92	122	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5177.8	166.8	265	295	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5506.8	167.0	324	354	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5228.0	166.8	274	304	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6133.9	167.5	437	467	0.00	0.00	M
PU-242	289	0	0	0.579	4921.7	166.6	209	239	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5296.5	166.9	286	316	0.00	0.00	M
CM-244	13	22	19	0.003	5826.0	161.7	382	411	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5407.7	167.0	306	336	0.00	0.00	M
CM-247	289	0	0	0.579	4891.6	166.6	209	239	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5099.8	166.7	251	281	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X0W1AA
Detector: ALP171 4
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29

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

Cnt	F	Chn
1		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 18-JUN-2006 00:00:25

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4X0W1AA_170661539D.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID         : H4X0W1AA             Sample quantity  : 0.00000E+00 SAMPLE
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      :  3655.27 keV         End energy       :  6483.72 keV
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4866.48	289	0	66.27	221.73	209	30	9.64E-03	5.9	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 00:00:26

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4X0W1AA_170661539D.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID         : H4X0W1AA             Sample quantity  : 0.00000E+00 SAMPLE
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/SAMPLE	Decay Corr PCI/SAMPLE	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/SAMPLE	Decay Corr PCI/SAMPLE	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: $DISK1:[ALP171.SAMPLE]H4X0W1AA_170661539D.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4866.48	209	239	289	291	-0.12		

End of Report

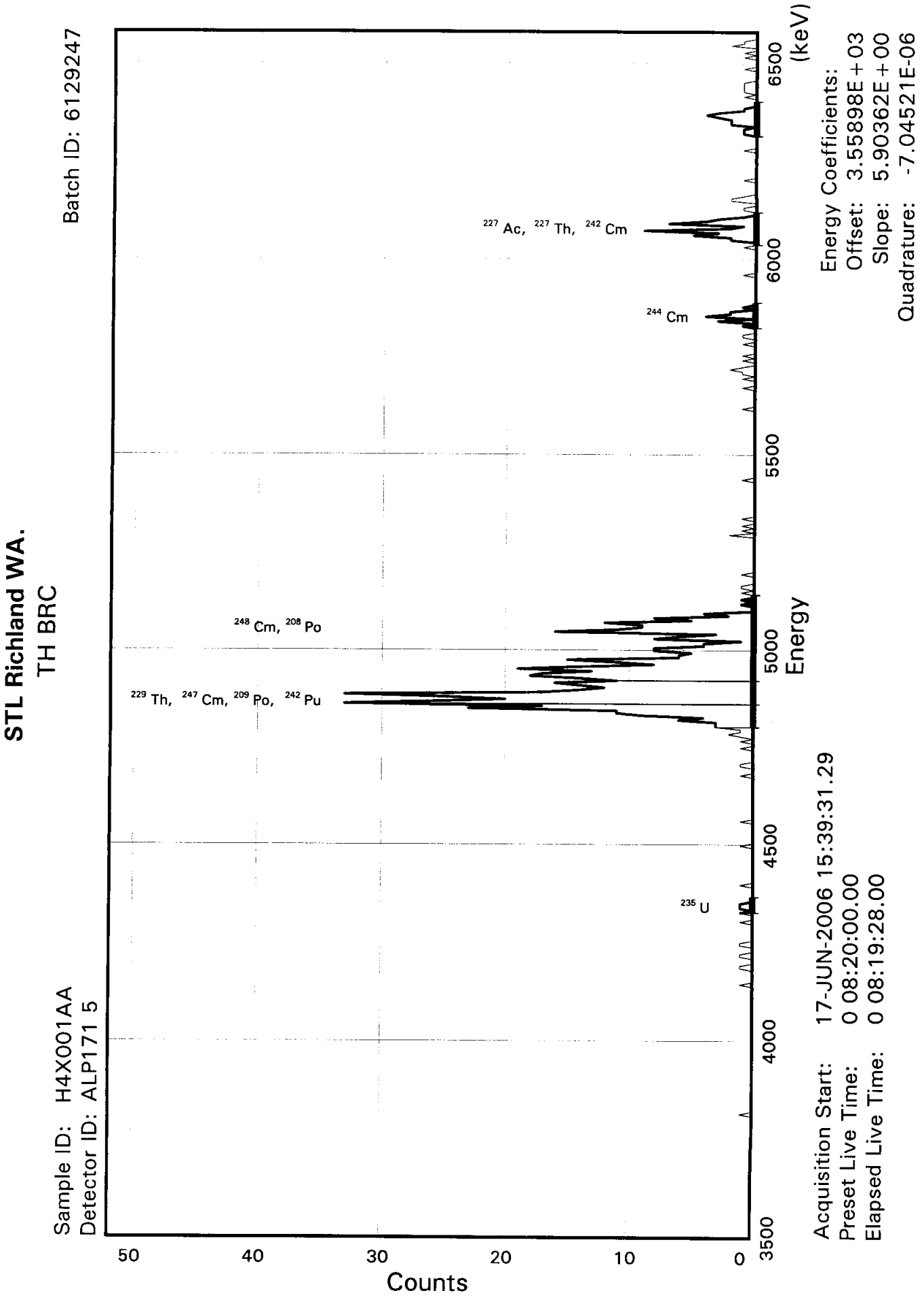
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4X001AA

Detector: ALP171 5
Report Date: 18-Jun-06 06:49 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	118.0	301	321
TH-229	582	0	1.165	4845.3	365.8	203	265
TH-230	3	2	0.004	4687.7	118.0	176	196
TH-232	0	0	0.000	4013.0	118.1	62	82

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129247
Sample ID: H4X001AA
Detector ID: ALP171 5
227 Ac, 227 Th, 242 Cm
244 Cm
248 Cm, 208 Po
229 Th, 247 Cm, 209 Po, 242 Pu
235 U
Counts
50
40
30
20
10
0
3500
4000
4500
5000
5500
6000
6500
Energy
(keV)
Energy Coefficients:
Offset: 3.55898E+03
Slope: 5.90362E+00
Quadrature: -7.04521E-06
Acquisition Start: 17-JUN-2006 15:39:31.29
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00

SAMPLE IDENTIITY: H4X001AA

TITLE : TH BRC

DETECTOR : ALP171 5
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4X001AA_170661539E.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:39:31 CALIB DATE : 09-JUN-2006 02:57:11

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3558.98 keV CONSTANT FWHM : 7.66667 Channels
SLOPE : 5.90362 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.704521E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X001AA

Detector: ALP171 5
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	172	0	0	0.344	5139.2	277.3	221	268	0.00	0.00	P
PO-209	407	0	0	0.815	4907.5	118.0	211	231	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5328.7	118.0	289	309	0.00	0.00	M
AC-227	-9999	-9999	0	-10.010	6062.3	118.0	413	433	0.00	0.00	I
TH-227	-9999	-9999	0	-10.010	6062.3	118.0	413	433	0.00	0.00	I
TH-228	-9999	-9999	0	-10.010	5447.5	118.0	309	329	0.00	0.00	M
TH-229	407	0	0	0.815	4869.6	118.0	211	231	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4712.0	118.0	184	204	0.00	0.00	M
TH-232	0	0	0	0.000	4037.3	118.0	70	90	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5344.5	118.0	291	311	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4798.9	118.0	199	219	0.00	0.00	M I
U-235	4	0	0	0.008	4422.1	41.3	130	137	0.00	0.00	P
PU-236	-9999	-9999	0	-10.010	5791.9	118.0	367	387	0.00	0.00	I
NP-237	-9999	-9999	0	-10.010	4812.3	118.0	201	221	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5523.3	118.0	322	342	0.00	0.00	M
U-238	6	1	0	0.011	4222.3	118.0	101	121	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5180.9	118.0	264	284	0.00	0.00	S I
AM-241	-9999	-9999	0	-10.010	5509.9	118.0	320	340	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5231.1	118.0	272	292	0.00	0.00	M
CM-242	38	0	0	0.076	6137.0	82.6	420	434	0.00	0.00	P
PU-242	407	0	0	0.815	4924.8	118.0	211	231	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5299.6	118.0	284	304	0.00	0.00	M
CM-244	14	23	0	0.005	5829.1	64.9	384	395	0.00	0.00	P
CM-246	-9999	-9999	0	-10.010	5410.8	118.0	303	323	0.00	0.00	M
CM-247	407	0	0	0.815	4894.7	118.0	211	231	0.00	0.00	P
CM-248	172	0	0	0.344	5102.9	277.3	221	268	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X001AA
Detector: ALP171 5
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 00:00:29

Configuration : $DISK1:[ALP171.SAMPLE]H4X001AA_170661539E.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID : H4X001AA Sample quantity : 0.00000E+00 SAMPLE
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 : 3576.69 keV End energy : 6579.78 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4341.09	4	0	23.61	132.50	130	7	1.33E-04	50.0	
2	0	4869.58	407	0	53.13	222.06	211	20	1.36E-02	5.0	
3	0	5055.57	172	0	47.23	253.58	221	47	5.74E-03	7.6	
4	0	5854.42	14	0	29.52	389.00	384	11	4.67E-04	26.7	
5	0	6077.23	38	0	59.04	426.78	420	14	1.27E-03	16.2	
6	0	6364.56	22	0	35.42	475.50	467	15	7.34E-04	21.3	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 00:00:32

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4X001AA_170661539E.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID         : H4X001AA             Sample quantity  : 0.00000E+00 SAMPLE
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	6	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	5	83.33%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	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	
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/SAMPLE	Decay Corr PCI/SAMPLE	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	
CM-242	162.80D	1.25	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	1.01	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]H4X001AA_170661539E.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4341.08	130	137	4	4	0.00		
4869.58	211	231	407	311	4.76		
5055.57	221	268	172	487	-24.02	221	0.08
5854.42	384	395	14	13	0.27		
6077.22	420	434	38	39	-0.16		
6364.55	467	482	22	21	0.21		

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

End of Report

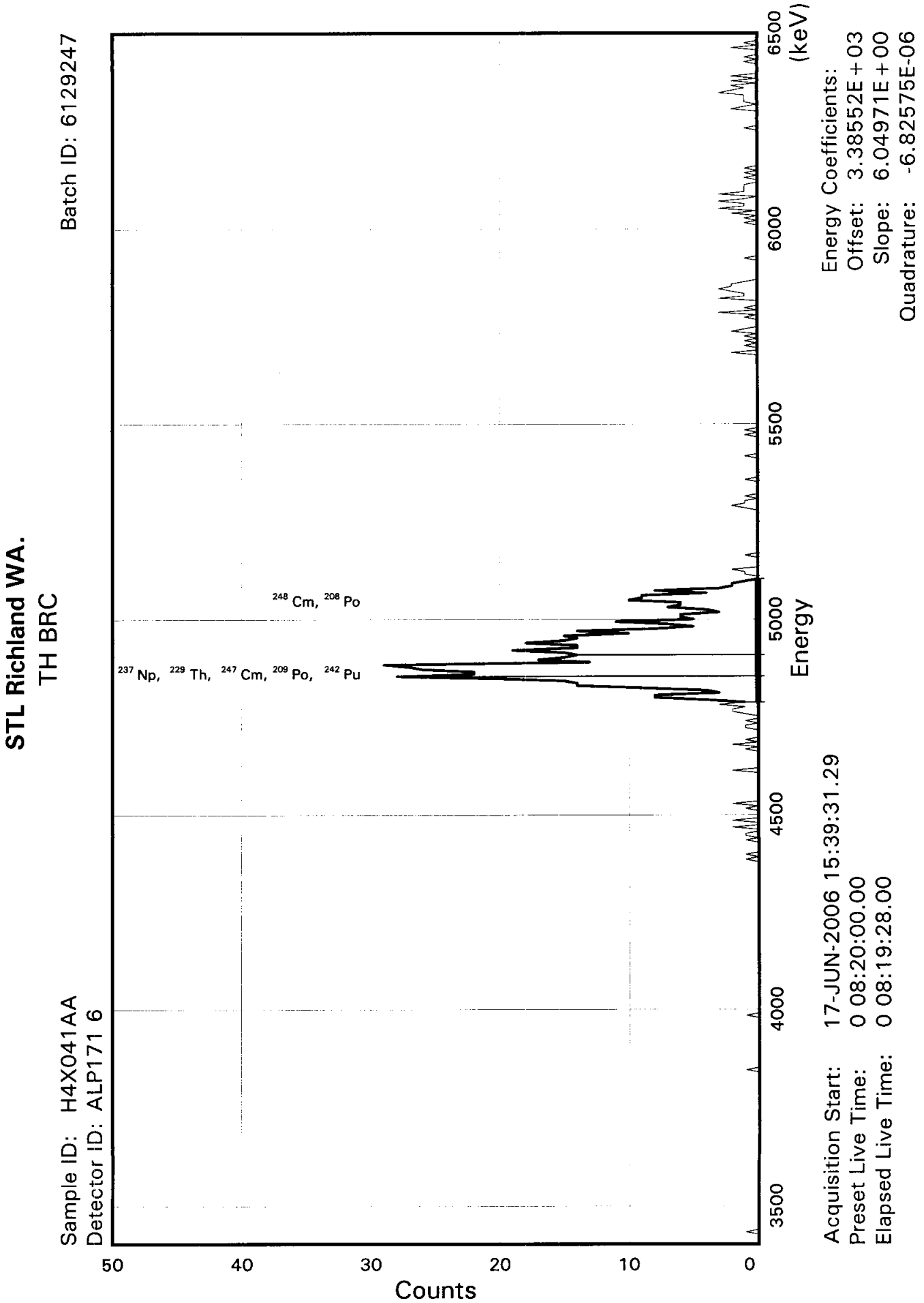
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4X041AA

Detector: ALP171 6
Report Date: 18-Jun-06 06:49 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	120.9	322	342
TH-229	596	4	1.189	4845.3	380.9	226	289
TH-230	6	1	0.011	4687.7	120.9	200	220
TH-232	1	1	0.001	4013.0	121.0	89	109

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129247
Sample ID: H4X041AA
Detector ID: ALP171 6
^{248}Cm, ^{208}Po
^{237}Np, ^{229}Th, ^{247}Cm, ^{209}Po, ^{242}Pu
Counts
50
40
30
20
10
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 17-JUN-2006 15:39:31.29
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.38552E+03
Slope: 6.04971E+00
Quadrature: -6.82575E-06

SAMPLE IDENTIITY: H4X041AA

TITLE : TH BRC

DETECTOR : ALP171 6
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4X041AA_170661539F.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:39:31 CALIB DATE : 09-JUN-2006 02:57:29

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3385.52 keV CONSTANT FWHM : 7.83333 Channels
SLOPE : 6.04971 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.682575E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X041AA

Detector: ALP171 6
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	130	2	0	0.258	5131.8	247.9	243	284	0.00	0.00	P
PO-209	458	1	0	0.916	4900.1	120.9	232	252	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5321.3	120.9	308	328	0.00	0.00	M
AC-227	13	1	11	0.024	6054.9	120.9	429	449	0.00	0.00	S
TH-227	13	1	11	0.024	6054.9	120.9	429	449	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5440.1	120.9	328	348	0.00	0.00	M
TH-229	458	1	0	0.916	4862.2	120.9	232	252	0.00	0.00	P
TH-230	6	2	3	0.010	4704.6	120.9	206	226	0.00	0.00	S
TH-232	1	2	0	0.000	4029.9	121.0	94	114	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5337.1	120.9	311	331	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4791.5	120.9	220	240	0.00	0.00	S I
U-235	5	1	0	0.009	4414.7	120.9	158	178	0.00	0.00	
PU-236	10	10	10	0.010	5784.5	120.9	385	405	0.00	0.00	S
NP-237	458	1	0	0.916	4804.9	120.9	232	252	0.00	0.00	P
PU-238	-9999	-9999	0	-10.010	5515.9	120.9	340	360	0.00	0.00	M
U-238	0	0	0	0.000	4214.9	121.0	125	145	0.00	0.00	
PU-239	6	3	1	0.009	5173.5	120.9	283	303	0.00	0.00	S
AM-241	-9999	-9999	0	-10.010	5502.5	120.9	338	358	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5223.7	120.9	292	312	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6129.6	120.9	442	462	0.00	0.00	M
PU-242	458	1	0	0.916	4917.4	120.9	232	252	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5292.2	120.9	303	323	0.00	0.00	M
CM-244	15	21	10	0.009	5821.7	120.9	391	411	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5403.4	120.9	322	342	0.00	0.00	M
CM-247	458	1	0	0.916	4887.3	120.9	232	252	0.00	0.00	P
CM-248	130	2	0	0.258	5095.5	247.9	243	284	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X041AA
Detector: ALP171 6
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 00:00:35

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4X041AA_170661539F.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID         : H4X041AA             Sample quantity  : 0.00000E+00 SAMPLE
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      :  3403.67 keV         End energy       :  6481.19 keV
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4862.18	458	0	66.55	244.15	232	20	1.53E-02	4.7	
2	0	5047.25	130	0	60.50	274.76	243	41	4.34E-03	8.8	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 00:00:37

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4X041AA_170661539F.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID         : H4X041AA             Sample quantity  : 0.00000E+00 SAMPLE
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/SAMPLE	Decay Corr PCI/SAMPLE	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/SAMPLE	Decay Corr PCI/SAMPLE	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]H4X041AA_170661539F.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4862.18	232	252	458	313	6.78		
5047.25	243	284	130	483	-30.96	213	0.21

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

End of Report

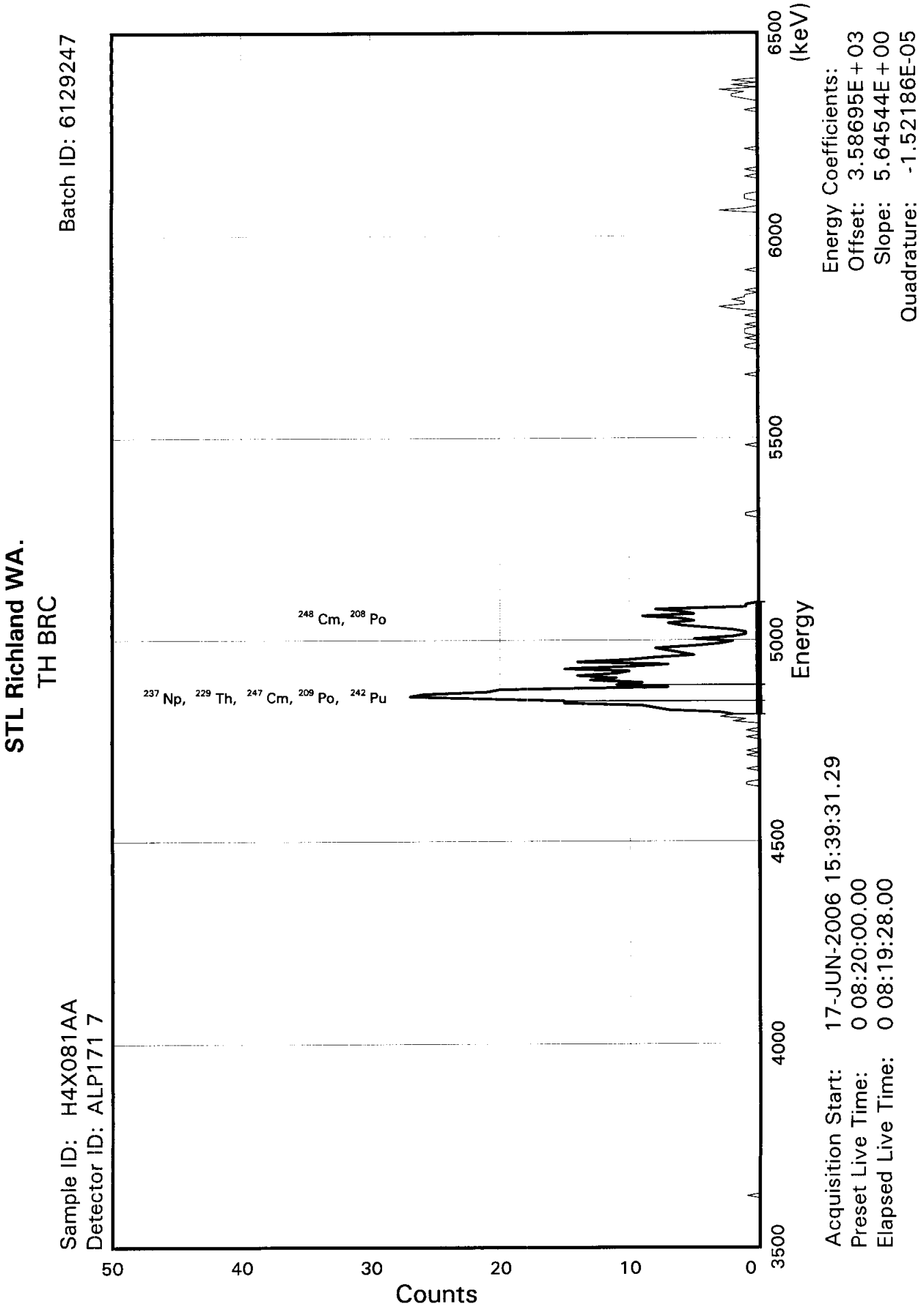
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4X081AA

Detector: ALP171 7
Report Date: 18-Jun-06 06:49 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	0	0.000	5423.2	112.7	311	331
TH-229	434	0	0.869	4845.3	293.2	213	265
TH-230	4	0	0.008	4687.7	112.8	180	200
TH-232	0	1	-0.001	4013.0	112.9	60	80

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129247
Sample ID: H4X081AA
Detector ID: ALP171 7
248 Cm, 208 Po
237 Np, 229 Th, 247 Cm, 209 Po, 242 Pu
Counts
50
40
30
20
10
0
3500
4000
4500
5000
5500
6000
6500
Energy
(keV)
Energy Coefficients:
Offset: 3.58695E+03
Slope: 5.64544E+00
Quadrature: -1.52186E-05
Acquisition Start: 17-JUN-2006 15:39:31.29
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00

SAMPLE IDENTIITY: H4X081AA

TITLE : TH BRC

DETECTOR : ALP171 7
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4X081AA_170661539G.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:39:31 CALIB DATE : 09-JUN-2006 02:57:47

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3586.95 keV CONSTANT FWHM : 6.33333 Channels
SLOPE : 5.64544 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.152186E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X081AA

Detector: ALP171 7
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	0	0	0.318	5130.3	242.4	224	267	0.00	0.00	P
PO-209	270	0	0	0.541	4898.6	73.3	218	231	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5319.7	73.3	299	312	0.00	0.00	M
AC-227	4	0	0	0.008	6053.4	73.2	430	443	0.00	0.00	
TH-227	4	0	0	0.008	6053.4	73.2	430	443	0.00	0.00	
TH-228	-9999	-9999	0	-10.010	5438.6	73.3	321	334	0.00	0.00	M
TH-229	270	0	0	0.541	4860.7	73.3	218	231	0.00	0.00	P
TH-230	3	0	0	0.006	4703.1	73.3	190	203	0.00	0.00	
TH-232	0	1	0	-0.001	4028.4	73.4	70	83	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5335.5	73.3	302	315	0.00	0.00	M
U-234	10	0	0	0.020	4790.0	73.3	205	218	0.00	0.00	
U-235	0	1	0	-0.001	4413.2	73.3	139	152	0.00	0.00	
PU-236	5	5	2	0.006	5783.0	73.2	382	395	0.00	0.00	S
NP-237	270	0	0	0.541	4803.4	73.3	218	231	0.00	0.00	P
PU-238	1	0	1	0.001	5514.4	73.3	334	347	0.00	0.00	S
U-238	0	0	0	0.000	4213.4	73.3	103	116	0.00	0.00	
PU-239	0	2	0	-0.002	5172.0	73.3	273	286	0.00	0.00	S
AM-241	-9999	-9999	0	-10.010	5501.0	73.3	332	345	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5222.2	73.3	282	295	0.00	0.00	M
CM-242	4	6	0	0.002	6128.1	73.2	443	456	0.00	0.00	
PU-242	270	0	0	0.541	4915.9	73.3	218	231	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5290.7	73.3	294	307	0.00	0.00	M
CM-244	11	14	2	0.009	5820.2	73.2	388	401	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5401.9	73.3	314	327	0.00	0.00	M
CM-247	270	0	0	0.541	4885.8	73.3	218	231	0.00	0.00	P
CM-248	159	0	0	0.318	5094.0	242.4	224	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: H4X081AA
Detector: ALP171 7
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29

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	1	-	401	0	+	451	0		501
		2	0		52	0		102	0	+	152	1	+	202	2	@	252	0	@	302	0		352	1		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	1	@	254	0	@	304	0		354	1		404	1	+	454	0		504
0		5	0		55	0	+	105	0		155	0	+	205	2	@	255	1	@	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
1		7	0		57	0	+	107	0		157	0	+	207	6	@	257	0	@	307	0		357	0		407	1		457	0		507
0		8	0		58	0	+	108	0		158	1	+	208	7	@	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	0	+	210	6	@	260	0	@	310	0		360	0		410	0		460	0		510
0		11	0		61	0	+	111	0		161	1	+	211	9	@	261	0	@	311	0		361	0		411	0		461	0		511
0		12	0		62	0	+	112	0		162	0	+	212	5	@	262	0	@	312	0		362	0		412	0		462	0		512
0		13	0		63	0	+	113	0		163	0	+	213	6	@	263	0	-	313	0		363	1		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	2	+	215	1	@	265	0	@	315	0		365	0		415	0		465			
0		16	0		66	0	+	116	0		166	1	+	216	1	@	266	0	-	316	0		366	0		416	1		466			
0		17	0		67	0		117	0		167	3	+	217	0		267	0	-	317	1		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	3	@	219	0		269	0	-	319	0		369	0		419	0		469			
0		20	0	+	70	0		120	0		170	7	@	220	0		270	0	-	320	0		370	0		420	0		470			
0		21	0	+	71	0		121	0		171	8	@	221	0		271	0	@	321	0		371	0		421	0		471			
0		22	0	+	72	0		122	0		172	9	@	222	0		272	0	@	322	0		372	0		422	0		472			
0		23	0	+	73	0		123	0		173	15	@	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	0		374	0		424	0		474			
0		25	0	+	75	0		125	0		175	21	@	225	0	+	275	0	@	325	0		375	0		425	0		475			
0		26	0	+	76	0		126	0		176	27	@	226	0	+	276	0	@	326	0		376	0		426	0		476			
0		27	0	+	77	0		127	0		177	26	@	227	0	+	277	0	@	327	0		377	0		427	0		477			
0		28	0	+	78	0		128	0		178	21	@	228	0	+	278	0	+	328	0		378	0		428	0		478			
0		29	0	+	79	0		129	0		179	20	@	229	0	+	279	0	+	329	1		379	0		429	0		479			
0		30	0	+	80	0		130	0		180	7	@	230	0	+	280	0	+	330	1		380	0	@	430	0		480			
0		31	0	+	81	0		131	0		181	11	@	231	0	+	281	0	+	331	0		381	0	@	431	0		481			
0		32	0	+	82	0		132	0		182	9	@	232	0	@	282	0	@	332	0	+	382	0	@	432	0		482			
0		33	0	+	83	0		133	0		183	13	@	233	0	@	283	0	@	333	1	+	383	0	@	433	1		483			
0		34	0		84	0		134	0		184	11	@	234	0	@	284	0	@	334	0	+	384	0	@	434	0		484			
0		35	0		85	0		135	0		185	14	@	235	0	@	285	0	@	335	1	+	385	0	@	435	0		485			
0		36	0		86	0		136	0		186	11	@	236	0	@	286	1	@	336	1	+	386	0	@	436	0		486			
0		37	0		87	0		137	1		187	10	@	237	0	-	287	0	@	337	1	+	387	0	@	437	0		487			
0		38	0		88	0		138	1		188	15	@	238	0	-	288	0	@	338	0	@	388	0	@	438	1		488			
0		39	0		89	0	+	139	0		189	10	@	239	0	-	289	0	@	339	1	@	389	3	@	439	2		489			
0		40	0		90	0	+	140	0	+	190	7	@	240	0	-	290	0	@	340	0	@	390	1	@	440	2		490			
0		41	0		91	0	+	141	0	+	191	14	@	241	0	-	291	0	@	341	0	@	391	0	@	441	1		491			
0		42	0		92	0	+	142	0	+	192	10	@	242	0	-	292	0	@	342	0	@	392	0	@	442	3		492			
0		43	0		93	0	+	143	0	+	193	8	@	243	0	-	293	0	@	343	1	@	393	0	-	443	0		493			
0		44	0		94	0	+	144	1	+	194	5	@	244	0	@	294	0	@	344	0	@	394	1	+	444	2		494			
0		45	0		95	0	+	145	0	+	195	6	@	245	0	@	295	0	@	345	0	@	395	1	+	445	0		495			
0		46	0		96	0	+	146	0	+	196	7	@	246	0	-	296	0	+	346	2	-	396	1	+	446	2		496			
0		47	0		97	0	+	147	0	+	197	8	@	247	0	-	297	0	+	347	3	-	397	0	+	447	0		497			
0		48	0		98	0	+	148	0	+	198	5	@	248	0	-	298	0		348	1	-	398	0	+	448	0		498			
0		49	0		99	0	+	149	0	+	199	3	@	249	0	@	299	0		349	1	-	399	0	+	449	0		499			
0		50	0		100	0	+	150	1	+	200	2	@	250	0	@	300	0		350	2	-	400	0	+	450	0		500			

VMS Peak Search Report V1.9 Generated 18-JUN-2006 00:00:40

Configuration	: $DISK1:[ALP171.SAMPLE]H4X081AA_170661539G.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 26-APR-2006 12:00:00	Acquisition date	: 17-JUN-2006 15:39:31
Sample ID	: H4X081AA	Sample quantity	: 0.00000E+00 SAMPLE
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	: 3603.88 keV	End energy	: 6473.42 keV
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4860.67	270	0	33.87	225.76	218	13	9.01E-03	6.1	
2	0	5054.96	159	0	50.81	260.22	224	43	5.31E-03	7.9	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 00:00:42

Configuration : $DISK1:[ALP171.SAMPLE]H4X081AA_170661539G.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title : TH BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID : H4X081AA Sample quantity : 0.00000E+00 SAMPLE
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/SAMPLE	Decay Corr PCI/SAMPLE	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/SAMPLE	Decay Corr PCI/SAMPLE	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]H4X081AA_170661539G.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4860.66	218	231	270	192	4.75		
5054.96	224	267	159	385	-17.92	148	0.00

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

End of Report

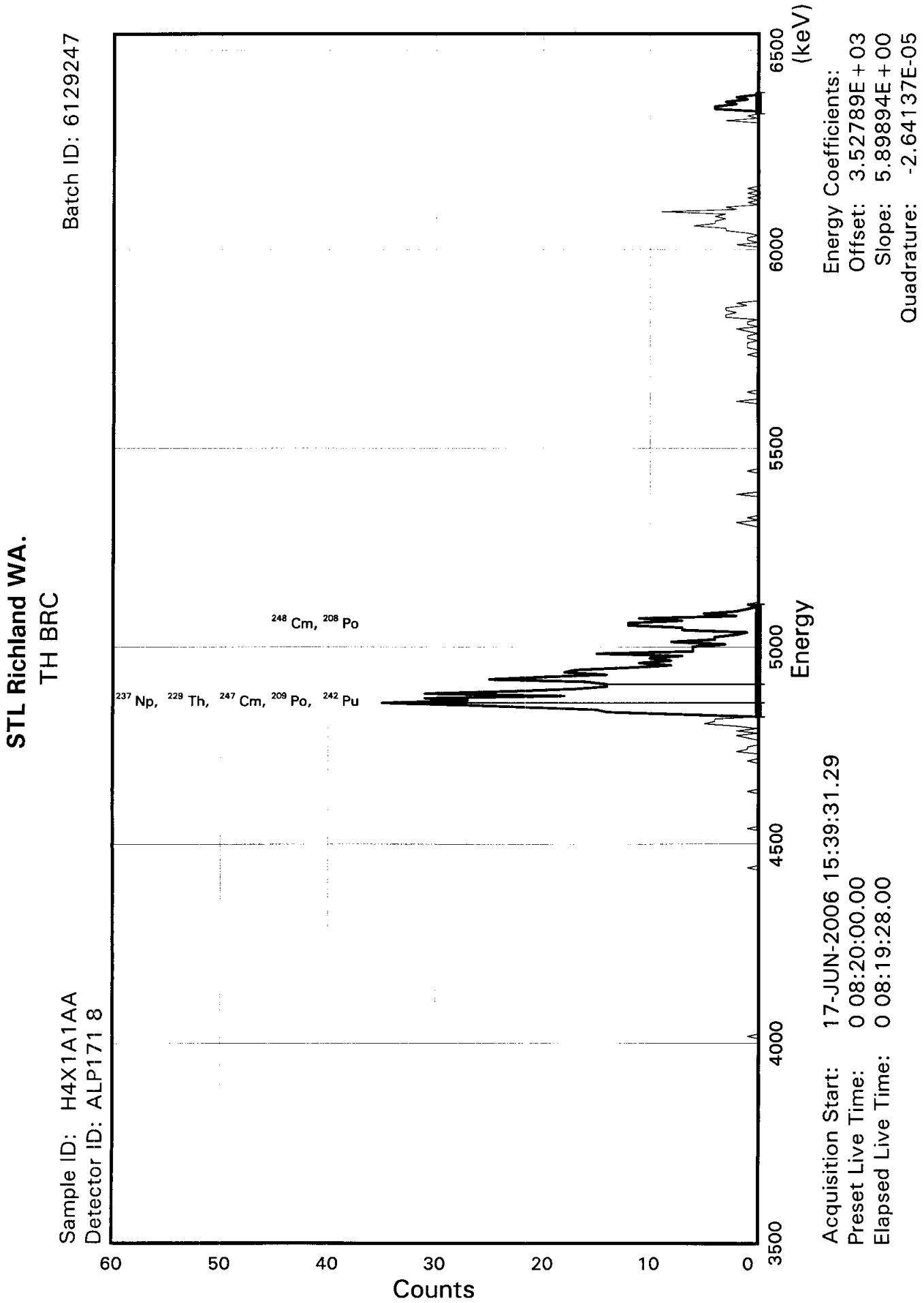
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4X1A1AA

Detector: ALP171 8
Report Date: 18-Jun-06 06:50 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	117.6	307	327
TH-229	602	0	1.205	4845.3	353.2	209	269
TH-230	2	0	0.004	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
Batch ID: 6129247
Sample ID: H4X1A1AA
Detector ID: ALP171 8
^{237}Np, ^{229}Th, ^{247}Cm, ^{209}Po, ^{242}Pu
^{248}Cm, ^{208}Po
Counts
60
50
40
30
20
10
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 17-JUN-2006 15:39:31.29
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.52789E+03
Slope: 5.89894E+00
Quadrature: -2.64137E-05

SAMPLE IDENTITY: H4X1A1AA

TITLE : TH BRC

DETECTOR : ALP171 8
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4X1A1AA_170661539H.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:39:31 CALIB DATE : 09-JUN-2006 02:58:05

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3527.89 keV CONSTANT FWHM : 7.33333 Channels
SLOPE : 5.89894 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.264137E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X1A1AA

Detector: ALP171 8
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29
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	147	0	0	0.294	5134.8	247.2	226	268	0.00	0.00	P
PO-209	439	0	0	0.879	4903.1	82.4	220	234	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5324.2	82.4	298	312	0.00	0.00	M
AC-227	37	1	14	0.074	6057.9	82.3	423	437	0.00	0.00	S H
TH-227	37	1	14	0.074	6057.9	82.3	423	437	0.00	0.00	S H
TH-228	-9999	-9999	0	-10.010	5443.1	82.3	318	332	0.00	0.00	M
TH-229	439	0	0	0.879	4865.2	82.4	220	234	0.00	0.00	P
TH-230	5	0	0	0.010	4707.6	82.4	193	207	0.00	0.00	
TH-232	1	0	0	0.002	4032.9	82.5	79	93	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5340.0	82.4	301	315	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4794.5	82.4	208	222	0.00	0.00	I
U-235	1	0	0	0.002	4417.7	82.5	144	158	0.00	0.00	
PU-236	9	8	9	0.009	5787.5	82.3	377	391	0.00	0.00	S
NP-237	439	0	0	0.879	4807.9	82.4	220	234	0.00	0.00	P
PU-238	-9999	-9999	0	-10.010	5518.9	82.3	331	345	0.00	0.00	M
U-238	0	0	0	0.000	4217.9	82.5	110	124	0.00	0.00	
PU-239	0	2	0	-0.002	5176.5	82.4	273	287	0.00	0.00	S
AM-241	-9999	-9999	0	-10.010	5505.5	82.3	329	343	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5226.7	82.4	281	295	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6132.6	88.1	435	450	0.00	0.00	M
PU-242	439	0	0	0.879	4920.4	82.4	220	234	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5295.2	82.4	293	307	0.00	0.00	M
CM-244	19	21	9	0.016	5824.7	82.3	383	397	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5406.4	82.3	312	326	0.00	0.00	M
CM-247	439	0	0	0.879	4890.3	82.4	220	234	0.00	0.00	P
CM-248	147	0	0	0.294	5098.5	247.2	226	268	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X1A1AA
Detector: ALP171 8
Report Date: 18-Jun-06 12:00 AM
Acquire Date: 17-JUN-2006 15:39:31.29

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 00:00:45

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4X1A1AA_170661539H.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID         : H4X1A1AA             Sample quantity  : 0.00000E+00 SAMPLE
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      :  3545.58 keV         End energy       :  6541.22 keV
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4865.16	439	0	53.09	226.93	220	14	1.46E-02	4.8	
2	0	5059.33	147	0	29.49	259.91	226	42	4.91E-03	8.2	
3	0	6362.10	15	0	35.39	481.50	478	9	5.01E-04	25.8	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 00:00:47

Configuration : $DISK1:[ALP171.SAMPLE]H4X1A1AA_170661539H.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title : TH BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:39:31
Sample ID : H4X1A1AA Sample quantity : 0.00000E+00 SAMPLE
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	1	
Number of lines tentatively identified by NID	2	66.67%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	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/SAMPLE	Decay Corr PCI/SAMPLE	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]H4X1A1AA_170661539H.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4865.16	220	234	439	294	6.92		
5059.32	226	268	147	498	-28.95	210	0.17
6362.10	478	487	15	16	-0.26		

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

End of Report

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST

2359

C.R. Technician: OP
Date Counted: 6/17/06
C.R. Analyst: OP
Date Analyzed: 6/18/06

Counting Time
Sample: 500 Minutes

Background: See Alpha Analysis Report
BRC 4/26/06

SOP's
Operating: RICHRD008
Review: RICHRD0016
6129247

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)		
H4XR81AA		10		0	See Alpha Analysis Report for ROI Information			114	
H4XTE1AA		10		0	See Alpha Analysis Report for ROI Information			116	
H4XTH1AA		10		0	See Alpha Analysis Report for ROI Information			117	
H4XTL1AA		10		0	See Alpha Analysis Report for ROI Information			118	
H4XTM1AA		10		0	See Alpha Analysis Report for ROI Information			119	
H4XTN1AA		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				
		10		0	See Alpha Analysis Report for ROI Information				

Comments:

Form No: RC-012, 10/02, Rev 9

Approved by: S

Date: 6/18/06

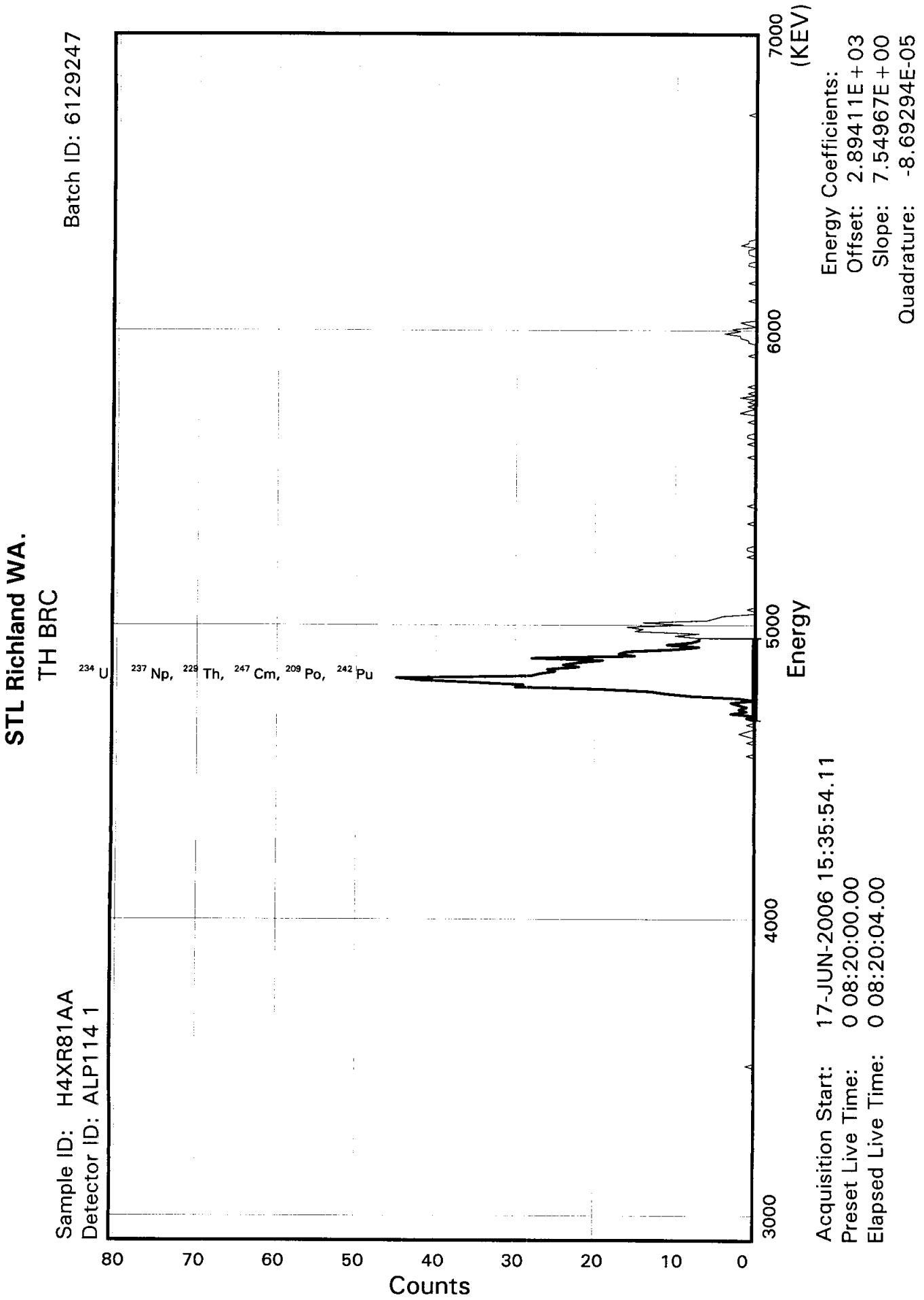
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4XR81AA

Detector: ALP114 1
Report Date: 18-Jun-06 06:50 AM
Acquire Date: 17-JUN-2006 15:35:54.11
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	7	-0.003	5423.2	149.8	321	341
TH-229	666	0	1.332	4845.3	367.7	239	288
TH-230	14	0	0.028	4687.7	150.2	223	243
TH-232	0	0	0.000	4013.0	150.5	133	153

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129247
Sample ID: H4XR81AA
Detector ID: ALP114 1
234 U
237 Np, 229 Th, 247 Cm, 209 Po, 242 Pu
Counts
80
70
60
50
40
30
20
10
0
3000
4000
5000
6000
7000
(KEV)
Energy
Energy Coefficients:
Offset: 2.89411E+03
Slope: 7.54967E+00
Quadrature: -8.69294E-05
Acquisition Start: 17-JUN-2006 15:35:54.11
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:04.00

SAMPLE IDENTIITY: H4XR81AA

TITLE : TH BRC

DETECTOR : ALP114 1
CONFIGURATION NAME : RDND06$DKA100:[ALP114.SAMPLE]H4XR81AA_170661
535.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:40:49

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:35:54 CALIB DATE : 15-MAY-2006 02:21:17

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:04

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 Regions Report
(Version: 8-Oct-91)

Sample Identity: H4XR81AA

Detector: ALP114 1
Report Date: 17-Jun-06 11:56 PM
Acquire Date: 17-JUN-2006 15:35:54.11
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	-9.998	5102.0	277.5	273	310	0.00	0.00	M
PO-209	568	0	0	1.136	4870.3	277.7	237	274	0.00	0.00	P
PO-210	-9999	-9999	0	-9.998	5291.5	277.3	298	335	0.00	0.00	M
AC-227	-9999	-9999	0	-9.998	6025.1	276.7	396	433	0.00	0.00	M
TH-227	-9999	-9999	0	-9.998	6025.1	276.7	396	433	0.00	0.00	M
TH-228	-9999	-9999	0	-9.998	5410.3	277.2	314	351	0.00	0.00	M
TH-229	568	0	0	1.136	4832.4	277.7	237	274	0.00	0.00	P
TH-230	-9999	-9999	0	-9.998	4674.8	277.8	216	253	0.00	0.00	I
TH-232	0	0	0	0.000	4000.1	278.4	126	163	0.00	0.00	S
U-232	-9999	-9999	0	-9.998	5307.3	277.3	300	337	0.00	0.00	M
U-234	568	0	0	1.136	4761.7	277.7	237	274	0.00	0.00	P
U-235	0	0	0	0.000	4384.9	278.1	177	214	0.00	0.00	S
PU-236	-9999	-9999	0	-9.998	5754.8	276.9	360	397	0.00	0.00	M
NP-237	568	0	0	1.136	4775.1	277.7	237	274	0.00	0.00	P
PU-238	-9999	-9999	0	-9.998	5486.1	277.1	324	361	0.00	0.00	M
U-238	-9999	-9999	0	-9.998	4185.1	278.2	151	188	0.00	0.00	M
PU-239	-9999	-9999	0	-9.998	5143.7	284.9	278	316	0.00	0.00	M
AM-241	-9999	-9999	0	-9.998	5472.7	277.1	322	359	0.00	0.00	M
AM-242M	-9999	-9999	0	-9.998	5193.9	277.4	285	322	0.00	0.00	M
CM-242	-9999	-9999	0	-9.998	6099.8	276.6	406	443	0.00	0.00	M
PU-242	568	0	0	1.136	4887.6	277.7	237	274	0.00	0.00	P
AM-243	-9999	-9999	0	-9.998	5262.4	277.3	294	331	0.00	0.00	M
CM-244	-9999	-9999	0	-9.998	5791.9	276.9	365	402	0.00	0.00	M
CM-246	-9999	-9999	0	-9.998	5373.6	277.2	309	346	0.00	0.00	M
CM-247	568	0	0	1.136	4857.5	277.7	237	274	0.00	0.00	P
CM-248	-9999	-9999	0	-9.998	5065.7	277.5	268	305	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: H4XR81AA
Detector: ALP114 1
Report Date: 17-Jun-06 11:56 PM
Acquire Date: 17-JUN-2006 15:35:54.11

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

VMS Peak Search Report V1.9 Generated 17-JUN-2006 23:56:01

```
Configuration     : RDND06$DKA100:[ALP114.SAMPLE]H4XR81AA_170661535.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:35:54
Sample ID         : H4XR81AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP114               Detector geometry:
Elapsed live time: 0 08:20:04.00         Elapsed real time: 0 08:20:04.00   0.0%
Start energy      :  2916.76 KEV         End energy       :  6736.75 KEV
Sensitivity       :     6.00             Sum Sensitivity  :     0.10
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4832.41	568	0113.25		257.50	237	37	1.89E-02	4.2	

VMS Nuclide Identification Report V3.1 Generated 17-JUN-2006 23:56:02

```
Configuration     : RDND06$DKA100:[ALP114.SAMPLE]H4XR81AA_170661535.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:35:54
Sample ID         : H4XR81AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP114               Detector geometry:
Elapsed live time: 0 08:20:04.00         Elapsed real time: 0 08:20:04.00   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/SAMPLE	Decay Corr PCI/SAMPLE	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-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/SAMPLE	Decay Corr PCI/SAMPLE	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:[ALP114.SAMPLE]H4XR81AA_170661535.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4832.41	237	274	568	566	0.08		

End of Report

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

Sample Identity: H4XTE1AA

Detector: ALP116 1
Report Date: 18-Jun-06 06:50 AM
Acquire Date: 17-JUN-2006 15:36:07.39
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	150.4	327	347
TH-229	469	2	0.936	4845.3	361.8	250	298
TH-230	2	0	0.004	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)

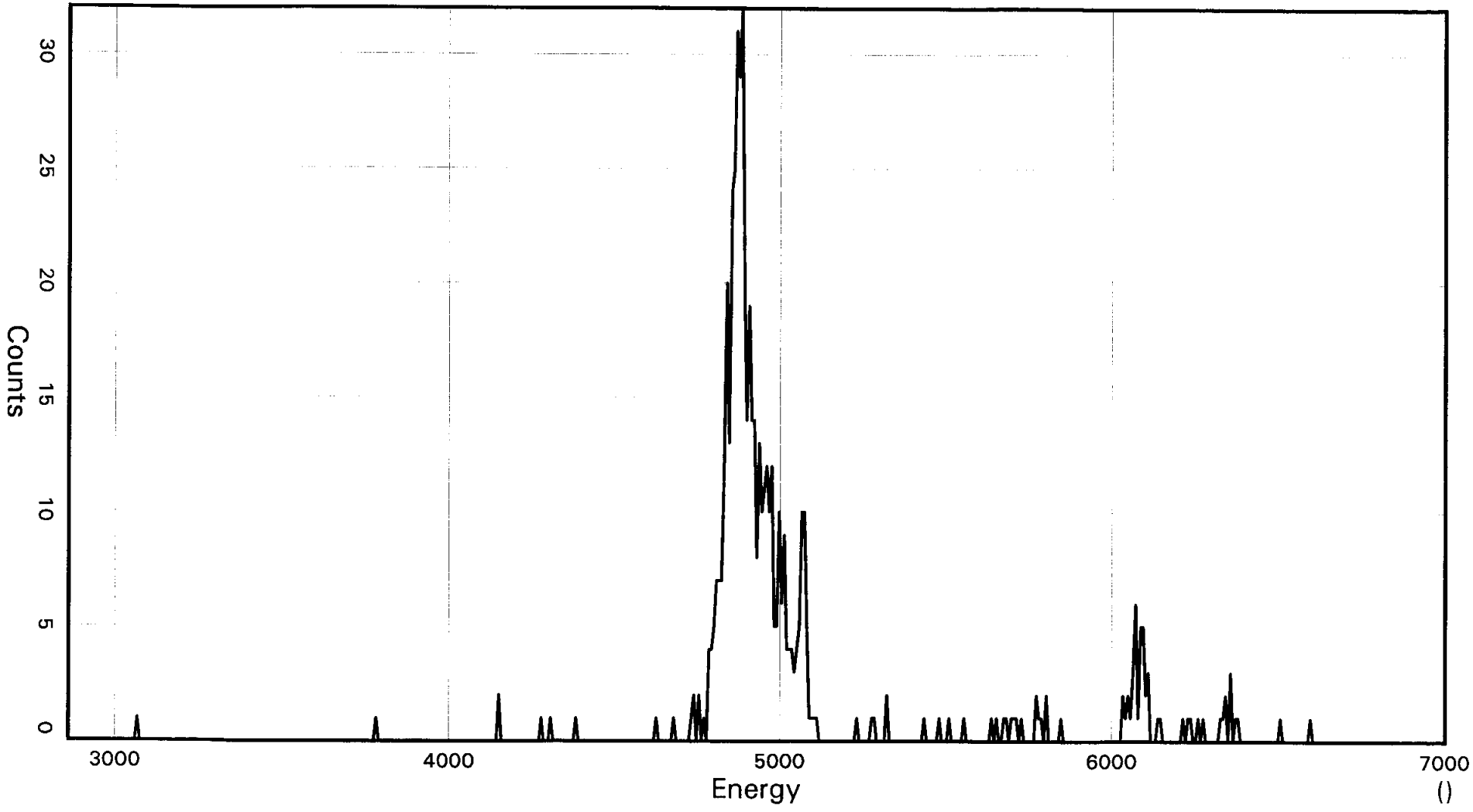
STL Richland WA.

TH BRC

Sample ID: H4XTE1AA

Detector ID: ALP116 1

Batch ID: 6129247



Acquisition Start: 17-JUN-2006 15:36:07.39

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: H4XTE1AA

TITLE : TH BRC

DETECTOR : ALP116 1
CONFIGURATION NAME : RDND06$DKA100:[ALP116.SAMPLE]H4XTE1AA_170661
536.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:40:55

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:36:07 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: H4XTE1AA
Detector: ALP116 1
Report Date: 17-Jun-06 11:56 PM
Acquire Date: 17-JUN-2006 15:36:07.39

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	0		252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	2		253	0		303	1		353	0		403	1		453	0		503
0		4	0		54	0		104	0		154	1		204	0		254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	1		255	0		305	0		355	0		405	1		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	4		257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0		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	1		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0		210	7		260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	7		261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	7		262	0		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0		213	12		263	0		313	0		363	0		413	1		463			
0		14	0		64	0		114	0		164	0		214	20		264	0		314	0		364	0		414	2		464			
0		15	0		65	0		115	0		165	0		215	13		265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	24		266	1		316	0		366	0		416	3		466			
0		17	0		67	0		117	0		167	0		217	25		267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	31		268	0		318	0		368	0		418	1		468			
0		19	0		69	0		119	0		169	0		219	29		269	0		319	0		369	0		419	1		469			
0		20	0		70	0		120	0		170	0		220	32		270	0		320	1		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	20		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	14		272	1		322	1		372	0		422	0		472			
0		23	0		73	0		123	2		173	0		223	19		273	1		323	0		373	2		423	0		473			
0		24	0		74	1		124	0		174	0		224	14		274	0		324	0		374	1		424	0		474			
0		25	0		75	0		125	0		175	0		225	14		275	0		325	1		375	2		425	0		475			
0		26	0		76	0		126	0		176	0		226	8		276	0		326	1		376	1		426	0		476			
0		27	0		77	0		127	0		177	0		227	13		277	0		327	0		377	3		427	0		477			
0		28	0		78	0		128	0		178	0		228	10		278	2		328	1		378	6		428	0		478			
0		29	0		79	0		129	0		179	0		229	11		279	0		329	1		379	1		429	0		479			
1		30	0		80	0		130	0		180	0		230	12		280	0		330	1		380	5		430	0		480			
0		31	0		81	0		131	0		181	0		231	10		281	0		331	0		381	5		431	0		481			
0		32	0		82	0		132	0		182	0		232	12		282	0		332	1		382	2		432	0		482			
0		33	0		83	0		133	0		183	0		233	5		283	0		333	0		383	3		433	0		483			
0		34	0		84	0		134	0		184	0		234	5		284	0		334	0		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	1		236	6		286	0		336	0		386	0		436	1		486			
0		37	0		87	0		137	0		187	0		237	9		287	0		337	0		387	1		437	0		487			
0		38	0		88	0		138	0		188	0		238	4		288	0		338	2		388	1		438	0		488			
0		39	0		89	0		139	0		189	0		239	4		289	0		339	1		389	0		439	0		489			
0		40	0		90	0		140	1		190	0		240	4		290	0		340	1		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	3		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	1		243	5		293	1		343	0		393	0		443	0		493			
0		44	0		94	0		144	1		194	0		244	10		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	10		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	0		97	0		147	0		197	0		247	1		297	0		347	0		397	1		447	0		497			
0		48	0		98	0		148	0		198	0		248	1		298	0		348	1		398	0		448	1		498			
0		49	0		99	0		149	0		199	0		249	1		299	1		349	0		399	1		449	0		499			

0 50 0 100 0 150 0 200 1 250 1 300 0 350 0 400 1 450 0 500

```
VMS Peak Search Report V1.9 Generated 17-JUN-2006 23:56:12

Configuration     : RDND06$DKA100:[ALP116.SAMPLE]H4XTE1AA_170661536.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:36:07
Sample ID         : H4XTE1AA             Sample quantity  : 0.00000E+00 SAMPLE
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 17-JUN-2006 23:56:13

```
Configuration     : RDND06$DKA100:[ALP116.SAMPLE]H4XTE1AA_170661536.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:36:07
Sample ID         : H4XTE1AA             Sample quantity  : 0.00000E+00 SAMPLE
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: 17-Jun-06  11:56 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: H4XTH1AA

Detector: ALP117 1
Report Date: 18-Jun-06 06:50 AM
Acquire Date: 17-JUN-2006 15:36:20.12
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	1	1	0.002	5423.2	149.3	338	358
TH-229	676	2	1.351	4845.3	387.8	260	312
TH-230	2	2	0.003	4687.7	149.1	239	259
TH-232	1	1	0.002	4013.0	148.9	148	168

End of Alpha Region Report
(Produced by ANAL Report)

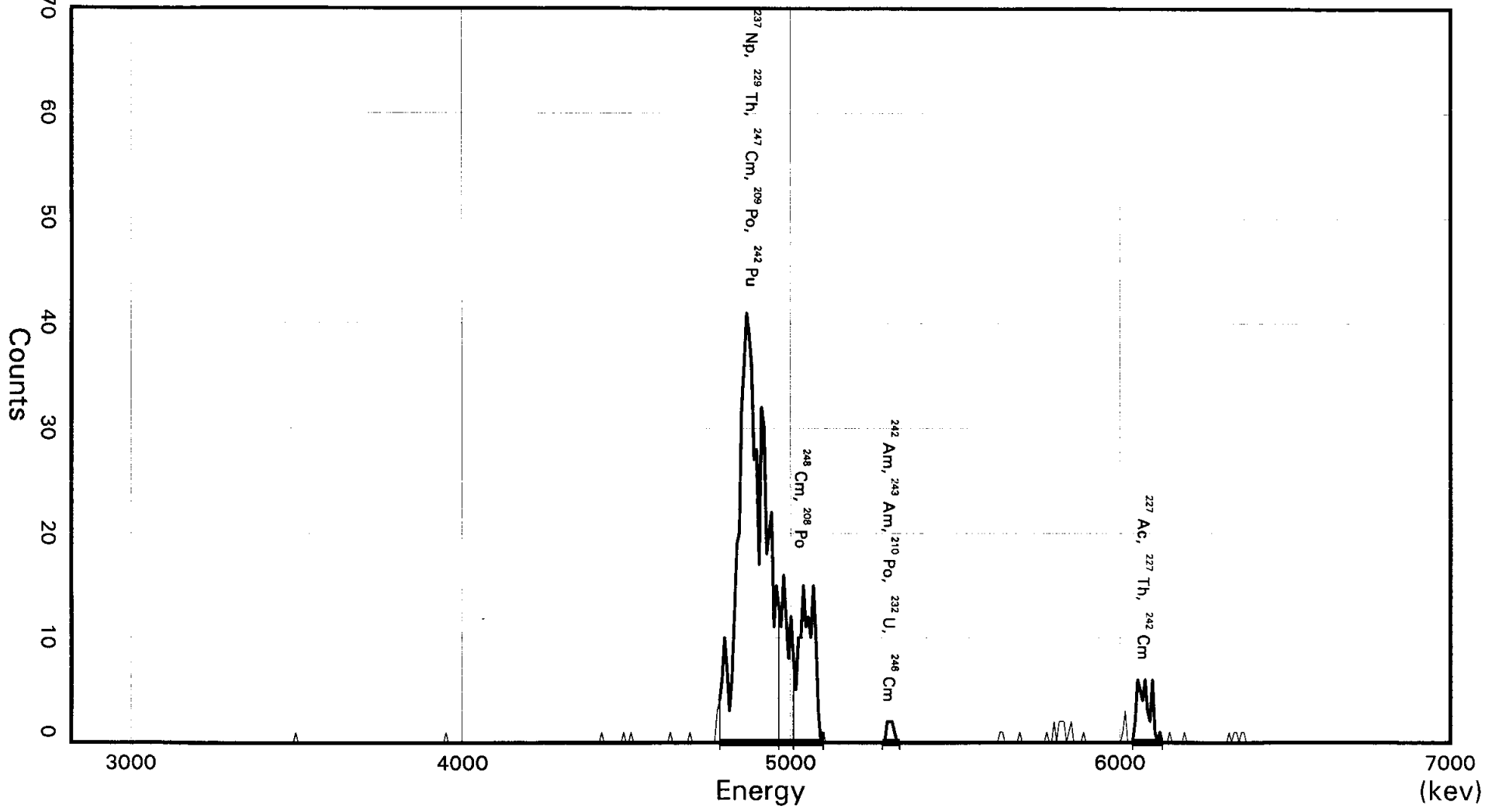
STL Richland WA.

TH BRC

Sample ID: H4XTH1AA

Detector ID: ALP117 1

Batch ID: 6129247



Acquisition Start: 17-JUN-2006 15:36:20.12

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:09.00

Energy Coefficients:

Offset: 2.79766E+03

Slope: 7.43061E+00

Quadrature: 4.65511E-05

SAMPLE IDENTIITY: H4XTH1AA

TITLE : TH BRC

DETECTOR : ALP117 1
CONFIGURATION NAME : RDND06$DKA100:[ALP117.SAMPLE]H4XTH1AA_170661
536.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:40:57

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:36:20 CALIB DATE : 15-MAY-2006 02:21:42

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:09

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: H4XTH1AA

Detector: ALP117 1
Report Date: 17-Jun-06 11:56 PM
Acquire Date: 17-JUN-2006 15:36:20.12
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	5152.9	134.3	291	309	0.00	0.00	P
PO-209	534	1	0	1.067	4921.2	223.7	267	297	0.00	0.00	P
PO-210	7	1	0	0.014	5342.4	52.2	333	340	0.00	0.00	P
AC-227	-9999	-9999	0	-15.993	6076.0	224.2	427	457	0.00	0.00	I
TH-227	-9999	-9999	0	-15.993	6076.0	224.2	427	457	0.00	0.00	I
TH-228	-9999	-9999	0	-15.993	5461.2	223.9	344	374	0.00	0.00	M
TH-229	534	1	0	1.067	4883.3	223.7	267	297	0.00	0.00	P
TH-230	-9999	-9999	0	-15.993	4725.7	223.6	246	276	0.00	0.00	S I
TH-232	1	4	0	0.001	4051.0	223.4	155	185	0.00	0.00	S
U-232	7	1	0	0.014	5358.2	52.2	333	340	0.00	0.00	P
U-234	-9999	-9999	0	-15.993	4812.6	223.7	258	288	0.00	0.00	S I
U-235	3	0	0	0.006	4435.8	223.5	207	237	0.00	0.00	S
PU-236	7	17	13	0.006	5805.7	224.1	391	421	0.00	0.00	S
NP-237	534	1	0	1.067	4826.0	223.7	267	297	0.00	0.00	P
PU-238	-9999	-9999	0	-15.993	5537.0	224.0	355	385	0.00	0.00	M
U-238	-9999	-9999	0	-15.993	4236.0	223.5	180	210	0.00	0.00	M
PU-239	-9999	-9999	0	-15.993	5194.6	223.8	309	339	0.00	0.00	I
AM-241	-9999	-9999	0	-15.993	5523.6	223.9	353	383	0.00	0.00	M
AM-242M	7	1	0	0.014	5244.8	52.2	333	340	0.00	0.00	P
CM-242	36	1	0	0.072	6150.7	89.7	435	447	0.00	0.00	P
PU-242	534	1	0	1.067	4938.5	223.7	267	297	0.00	0.00	P
AM-243	7	1	0	0.014	5313.3	52.2	333	340	0.00	0.00	P
CM-244	7	16	13	0.007	5842.8	224.1	396	426	0.00	0.00	S
CM-246	7	1	0	0.014	5424.5	52.2	333	340	0.00	0.00	P
CM-247	534	1	0	1.067	4908.4	223.7	267	297	0.00	0.00	P
CM-248	137	1	0	0.274	5116.6	134.3	291	309	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XTH1AA
Detector: ALP117 1
Report Date: 17-Jun-06 11:56 PM
Acquire Date: 17-JUN-2006 15:36:20.12

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	15	@	301	0	+	351	0	@	401	0	@	451
		2	0		52	0		102	0		152	0	-	202	0	+	252	11	@	302	0	+	352	0	@	402	0	@	452
0		3	0		53	0		103	0		153	0	-	203	0	+	253	12	@	303	0	@	353	2	@	403	0	@	453
0		4	0		54	0		104	0		154	0	-	204	0	+	254	10	@	304	0	@	354	0	@	404	0	@	454
0		5	0		55	0		105	1	+	155	0	-	205	1	+	255	15	@	305	0	@	355	2	@	405	0	@	455
0		6	0		56	0		106	0	+	156	0	-	206	0	+	256	10	@	306	0	@	356	2	@	406	1	@	456
0		7	0		57	0		107	0	+	157	0	@	207	0	+	257	3	@	307	0	@	357	2	@	407	0	@	457
0		8	0		58	0		108	0	+	158	0	@	208	0	@	258	0	@	308	0	@	358	0	@	408	0		458
0		9	0		59	0		109	0	+	159	0	@	209	0	@	259	1	+	309	0	@	359	1	@	409	0		459
0		10	0		60	0		110	0	+	160	0	@	210	0	@	260	0	+	310	0	@	360	2	@	410	0		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	0	+	162	0	+	212	0	@	262	0	+	312	0	@	362	0	@	412	0		462
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	1	@	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	0	+	217	4	-	267	0	+	317	0	@	367	0	@	417	0		467
0		18	0		68	0		118	0	+	168	0	+	218	6	@	268	0	+	318	0	@	368	0	@	418	0		468
0		19	0		69	0		119	0	+	169	1	+	219	10	@	269	0	+	319	0	@	369	0	@	419	0		469
0		20	0		70	0		120	0	+	170	0	+	220	7	@	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	6	@	272	0	+	322	0	@	372	0	-	422	0		472
0		23	0		73	0		123	0	+	173	0	+	223	12	@	273	0	+	323	0	@	373	0	-	423	0		473
0		24	0		74	0		124	0	+	174	0	+	224	19	@	274	0	+	324	0	@	374	0	-	424	1		474
0		25	0		75	0		125	0	+	175	0	+	225	20	@	275	0	+	325	0	@	375	0	-	425	0		475
0		26	0		76	0		126	0	+	176	0	+	226	32	@	276	0	+	326	0	@	376	0	-	426	1		476
0		27	0		77	0		127	0	+	177	0	+	227	36	@	277	0	+	327	0	@	377	0	@	427	1		477
0		28	0		78	0		128	0	+	178	1	+	228	41	@	278	0	+	328	0	@	378	0	@	428	0		478
0		29	0		79	0		129	0	+	179	0	+	229	39	@	279	0	+	329	0	@	379	0	@	429	1		479
0		30	0		80	0		130	0	@	180	0	+	230	36	@	280	0	+	330	0	@	380	0	@	430	1		480
0		31	0		81	0		131	0	@	181	1	+	231	27	@	281	0	+	331	1	@	381	1	@	431	0		481
0		32	0		82	0		132	0	@	182	0	+	232	28	@	282	0	+	332	1	@	382	3	@	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	32	@	284	0	@	334	0	+	384	0	@	434	0		484
0		35	0		85	0		135	0	@	185	0	+	235	30	@	285	2	@	335	0	+	385	0	-	435	0		485
0		36	0		86	0		136	0	-	186	0	+	236	18	@	286	2	@	336	0		386	2	@	436	0		486
0		37	0		87	0		137	0	-	187	0	+	237	20	@	287	2	@	337	0		387	6	@	437	0		487
0		38	0		88	0		138	0	-	188	0		238	22	@	288	1	@	338	0		388	5	@	438	0		488
0		39	0		89	0		139	0	-	189	0		239	11	@	289	0	@	339	1		389	4	@	439	0		489
0		40	0		90	0		140	0	-	190	0		240	15	@	290	0		340	0		390	6	@	440	0		490
0		41	0		91	0		141	0	-	191	0		241	13	-	291	0		341	0	+	391	3	@	441	0		491
0		42	0		92	0		142	0	-	192	0		242	11	@	292	0		342	0	+	392	2	@	442	0		492
0		43	0		93	0		143	0	-	193	0		243	16	@	293	0		343	0	+	393	6	@	443	0		493
0		44	1		94	0		144	0	-	194	0		244	12	@	294	0	+	344	0	+	394	1	@	444	0		494
0		45	0		95	0		145	0	-	195	0		245	8	@	295	0	+	345	0	+	395	0	@	445	0		495
0		46	0		96	0		146	0	-	196	0	+	246	12	@	296	0	+	346	0	@	396	1	@	446	0		496
0		47	0		97	0		147	0	-	197	1	+	247	8	@	297	0	+	347	0	@	397	0	@	447	0		497
0		48	0		98	0		148	0	-	198	0	+	248	5	@	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	10	@	300	0	+	350	1	@	400	1	@	450	0		500

VMS Peak Search Report V1.9 Generated 17-JUN-2006 23:56:30

Configuration : RDND06$DKA100:[ALP117.SAMPLE]H4XTH1AA_170661536.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:36:20
Sample ID : H4XTH1AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP117 Detector geometry:
Elapsed live time: 0 08:20:09.00 Elapsed real time: 0 08:20:09.00 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	4883.31	534	0	89.17	280.19	267	30	1.78E-02	4.3	
2	0	5032.03	137	0	74.31	300.13	291	18	4.57E-03	8.5	
3	0	5298.35	7	0	29.72	335.83	333	7	2.33E-04	37.8	
4	0	6071.94	36	0	59.44	439.44	435	12	1.20E-03	16.7	

VMS Nuclide Identification Report V3.1 Generated 17-JUN-2006 23:56:32

```
Configuration     : RDND06$DKA100:[ALP117.SAMPLE]H4XTH1AA_170661536.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:36:20
Sample ID         : H4XTH1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP117               Detector geometry:
Elapsed live time: 0 08:20:09.00         Elapsed real time: 0 08:20:09.00   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	0	
Number of lines tentatively identified by NID	4	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	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	1.30	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/SAMPLE	Decay Corr PCI/SAMPLE	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	
NP-237	2.14E+06Y	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	
CM-242	162.80D	1.25	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: RDND06$DKA100:[ALP117.SAMPLE]H4XTH1AA_170661536.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4883.31	267	297	534	571	-1.60		
5032.02	291	309	137	182	-3.84	80	-0.08
5298.35	333	340	7	7	0.00		
6071.93	435	447	36	36	0.00		

End of Report

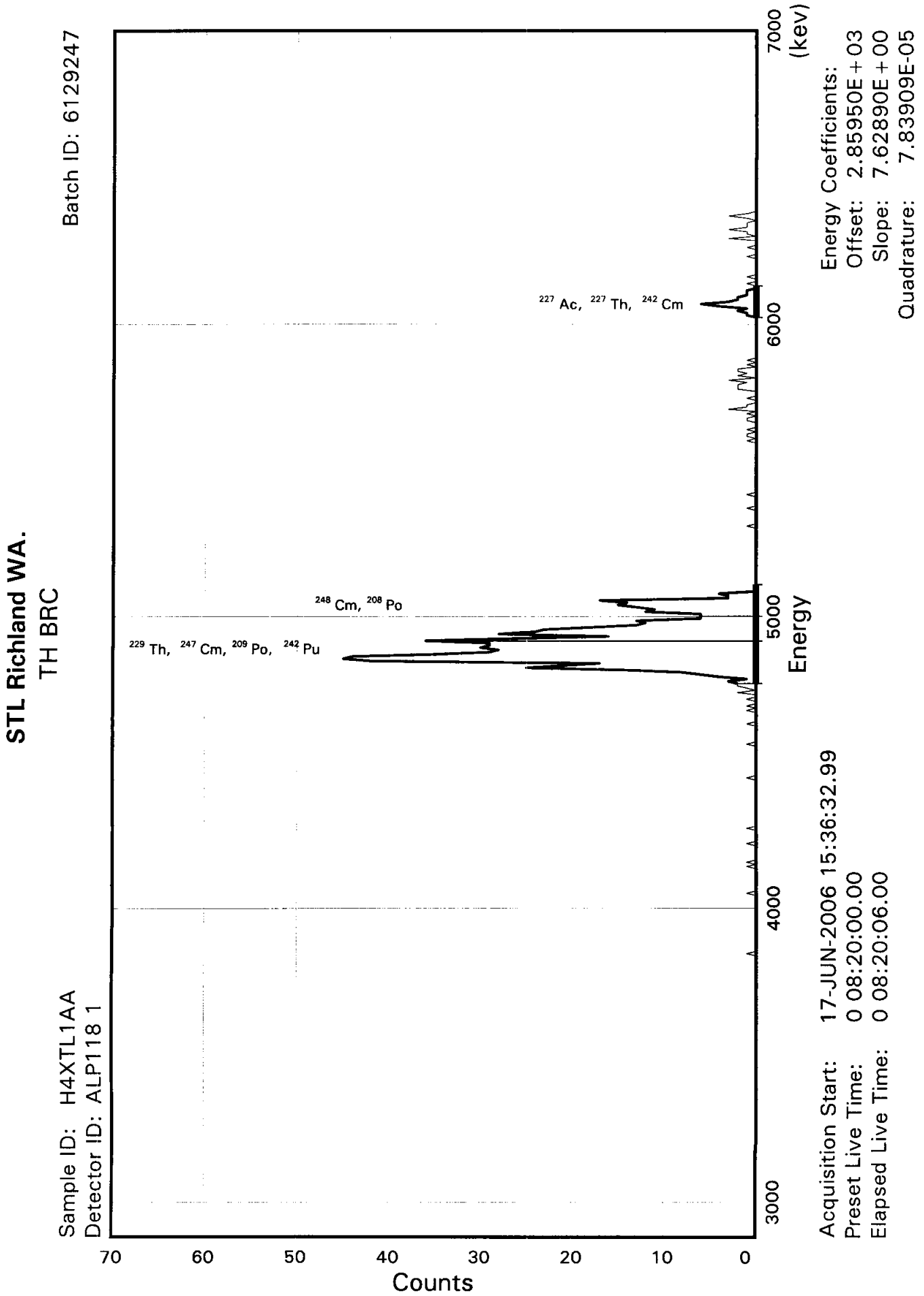
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4XTL1AA

Detector: ALP118 1
Report Date: 18-Jun-06 06:51 AM
Acquire Date: 17-JUN-2006 15:36:32.99
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	3	4	0.004	5423.2	153.6	320	340
TH-229	737	9	1.470	4845.3	360.5	245	292
TH-230	4	3	0.007	4687.7	153.3	224	244
TH-232	1	0	0.002	4013.0	153.0	136	156

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129247
Sample ID: H4XTL1AA
Detector ID: ALP118 1
227 Ac, 227 Th, 242 Cm
248 Cm, 208 Po
229 Th, 247 Cm, 209 Po, 242 Pu
Energy
(kev)
3000
4000
5000
6000
7000
Counts
70
60
50
40
30
20
10
0
Energy Coefficients:
Offset: 2.85950E+03
Slope: 7.62890E+00
Quadrature: 7.83909E-05
Acquisition Start: 17-JUN-2006 15:36:32.99
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:06.00

SAMPLE IDENTIITY: H4XTL1AA

TITLE : TH BRC

DETECTOR : ALP118 1
CONFIGURATION NAME : RDND06$DKA100:[ALP118.SAMPLE]H4XTL1AA_170661
536.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:41:02

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:36:32 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 CONSTANT FWHM : 7.50000 Channels
SLOPE : 7.62890 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 7.839090E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XTL1AA

Detector: ALP118 1
Report Date: 17-Jun-06 11:56 PM
Acquire Date: 17-JUN-2006 15:36:32.99
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	113	5	0	0.224	5159.5	191.8	269	294	0.00	0.00	P
PO-209	618	7	0	1.233	4927.8	230.1	250	280	0.00	0.00	P
PO-210	-9999	-9999	0	-15.994	5349.0	230.4	310	340	0.00	0.00	M
AC-227	-9999	-9999	0	-15.994	6082.6	230.8	405	435	0.00	0.00	I
TH-227	-9999	-9999	0	-15.994	6082.6	230.8	405	435	0.00	0.00	I
TH-228	-9999	-9999	0	-15.994	5467.8	230.5	325	355	0.00	0.00	M
TH-229	618	7	0	1.233	4889.9	230.1	250	280	0.00	0.00	P
TH-230	-9999	-9999	0	-15.994	4732.3	230.0	229	259	0.00	0.00	M I
TH-232	2	1	2	0.004	4057.6	229.6	141	171	0.00	0.00	S
U-232	-9999	-9999	0	-15.994	5364.8	230.4	312	342	0.00	0.00	M
U-234	-9999	-9999	0	-15.994	4819.2	230.1	241	271	0.00	0.00	M I
U-235	1	1	0	0.002	4442.4	229.8	192	222	0.00	0.00	S
PU-236	16	31	20	0.020	5812.3	230.7	370	400	0.00	0.00	S
NP-237	-9999	-9999	0	-15.994	4832.6	230.1	243	273	0.00	0.00	M I
PU-238	-9999	-9999	0	-15.994	5543.7	230.5	335	365	0.00	0.00	M
U-238	-9999	-9999	0	-15.994	4242.6	229.7	166	196	0.00	0.00	M
PU-239	-9999	-9999	0	-15.994	5201.2	230.3	291	321	0.00	0.00	M I
AM-241	-9999	-9999	0	-15.994	5530.2	230.5	333	363	0.00	0.00	M
AM-242M	-9999	-9999	0	-15.994	5251.4	230.3	297	327	0.00	0.00	M
CM-242	24	0	0	0.048	6157.4	107.7	413	427	0.00	0.00	P
PU-242	618	7	0	1.233	4945.1	230.1	250	280	0.00	0.00	P
AM-243	-9999	-9999	0	-15.994	5319.9	230.4	306	336	0.00	0.00	M
CM-244	10	28	20	0.009	5849.4	230.7	375	405	0.00	0.00	S
CM-246	-9999	-9999	0	-15.994	5431.1	222.8	321	350	0.00	0.00	M
CM-247	618	7	0	1.233	4915.0	230.1	250	280	0.00	0.00	P
CM-248	113	5	0	0.224	5123.2	191.8	269	294	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XTL1AA
Detector: ALP118 1
Report Date: 17-Jun-06 11:56 PM
Acquire Date: 17-JUN-2006 15:36:32.99

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

VMS Peak Search Report V1.9 Generated 17-JUN-2006 23:56:41

Configuration : RDND06$DKA100:[ALP118.SAMPLE]H4XTL1AA_170661536.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:36:32
Sample ID : H4XTL1AA Sample quantity : 0.00000E+00 SAMPLE
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	4889.93	618	0	129.69	265.43	250	30	2.06E-02	4.0	
2	0	5039.56	113	0	53.40	284.93	269	25	3.77E-03	9.4	
3	0	6069.78	24	0	38.14	419.00	413	14	8.00E-04	20.4	

VMS Nuclide Identification Report V3.1 Generated 17-JUN-2006 23:56:42

```
Configuration     : RDND06$DKA100:[ALP118.SAMPLE]H4XTL1AA_170661536.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:36:32
Sample ID         : H4XTL1AA             Sample quantity  : 0.00000E+00 SAMPLE
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	3	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	3	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	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/SAMPLE	Decay Corr PCI/SAMPLE	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	
CM-242	162.80D	1.25	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: RDND06$DKA100:[ALP118.SAMPLE]H4XTL1AA_170661536.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4889.92	250	280	618	634	-0.64		
5039.56	269	294	113	320	-19.47	222	-0.04
6069.77	413	427	24	25	-0.20		

End of Report

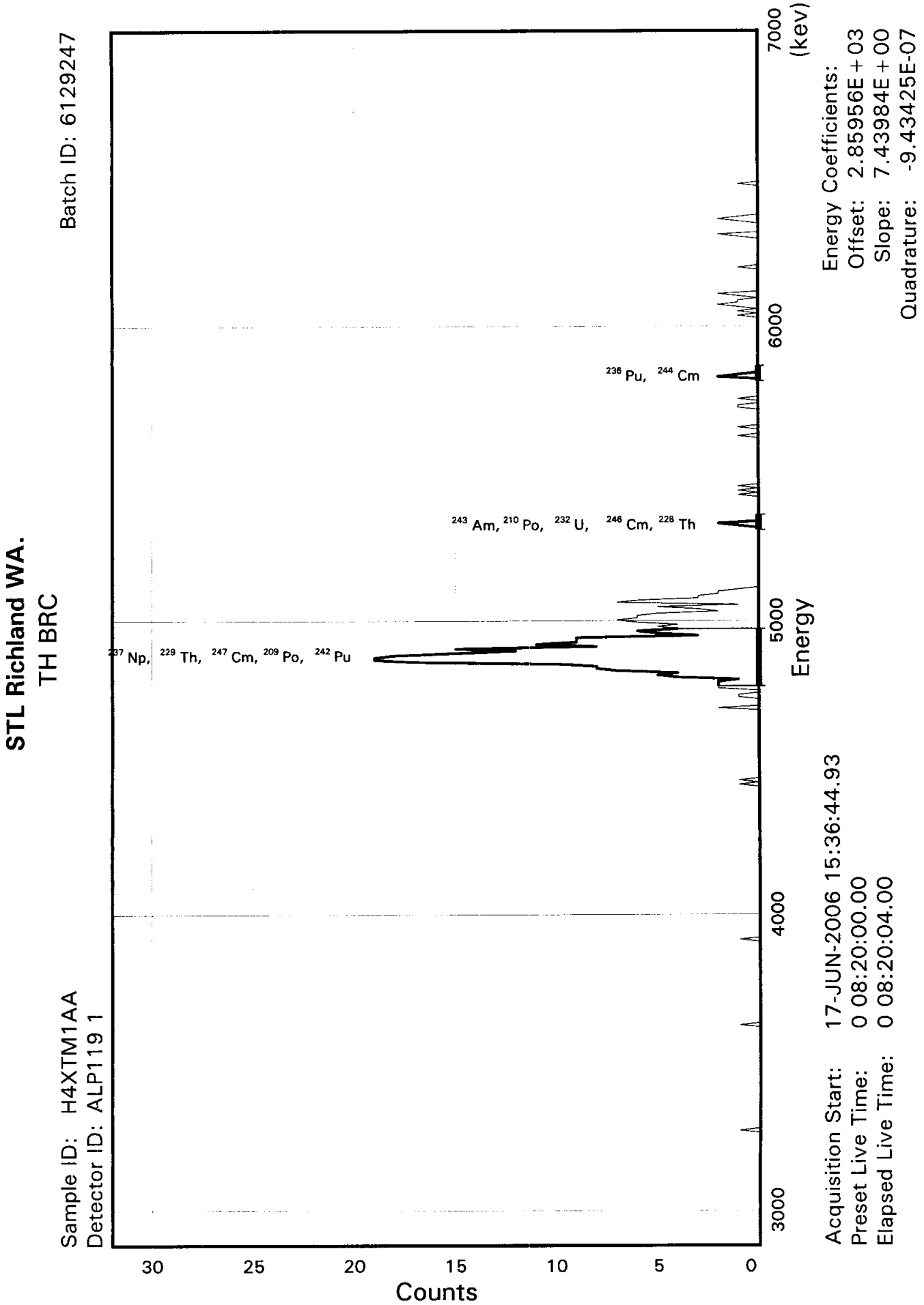
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4XTM1AA

Detector: ALP119 1
Report Date: 18-Jun-06 06:51 AM
Acquire Date: 17-JUN-2006 15:36:44.93
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	6	2	0.010	5423.2	148.8	330	350
TH-229	308	0	0.616	4845.3	349.6	257	304
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
Batch ID: 6129247
Sample ID: H4XTM1AA
Detector ID: ALP119 1
237 Np, 229 Th, 247 Cm, 209 Po, 242 Pu
243 Am, 210 Po, 232 U, 246 Cm, 228 Th
236 Pu, 244 Cm
Counts
30
25
20
15
10
5
0
Energy
3000
4000
5000
6000
7000
(kev)
Acquisition Start: 17-JUN-2006 15:36:44.93
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:04.00
Energy Coefficients:
Offset: 2.85956E+03
Slope: 7.43984E+00
Quadrature: -9.43425E-07

SAMPLE IDENTIITY: H4XTM1AA

TITLE : TH BRC

DETECTOR : ALP119 1
CONFIGURATION NAME : RDND06$DKA100:[ALP119.SAMPLE]H4XTM1AA_170661
536.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:41:04

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:36:44 CALIB DATE : 15-MAY-2006 02:21:53

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:04

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: H4XTM1AA

Detector: ALP119 1
Report Date: 17-Jun-06 11:56 PM
Acquire Date: 17-JUN-2006 15:36:44.93
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	-9.998	5151.4	193.4	294	320	0.00	0.00	M
PO-209	234	0	0	0.468	4919.7	193.4	258	284	0.00	0.00	P
PO-210	4	0	0	0.008	5340.9	52.1	329	336	0.00	0.00	P
AC-227	6	0	9	0.011	6074.5	193.4	418	444	0.00	0.00	S
TH-227	6	0	9	0.011	6074.5	193.4	418	444	0.00	0.00	S
TH-228	4	0	0	0.008	5459.7	52.1	329	336	0.00	0.00	P
TH-229	234	0	0	0.468	4881.8	193.4	258	284	0.00	0.00	P
TH-230	-9999	-9999	0	-9.998	4724.2	193.4	237	263	0.00	0.00	S I
TH-232	0	0	0	0.000	4049.5	193.4	146	172	0.00	0.00	S
U-232	4	0	0	0.008	5356.7	52.1	329	336	0.00	0.00	P
U-234	-9999	-9999	0	-9.998	4811.1	193.4	248	274	0.00	0.00	S I
U-235	2	0	0	0.004	4434.3	193.4	198	224	0.00	0.00	
PU-236	4	0	0	0.008	5804.2	52.1	397	404	0.00	0.00	P
NP-237	234	0	0	0.468	4824.5	193.4	258	284	0.00	0.00	P
PU-238	2	2	2	0.002	5535.6	193.4	346	372	0.00	0.00	S
U-238	0	2	0	-0.002	4234.5	193.4	171	197	0.00	0.00	S
PU-239	-9999	-9999	0	-9.998	5193.1	193.4	300	326	0.00	0.00	M
AM-241	2	3	2	0.001	5522.1	193.4	344	370	0.00	0.00	S
AM-242M	-9999	-9999	0	-9.998	5243.3	193.4	307	333	0.00	0.00	M I
CM-242	-9999	-9999	0	-9.998	6149.3	193.4	428	454	0.00	0.00	M
PU-242	234	0	0	0.468	4937.0	193.4	258	284	0.00	0.00	P
AM-243	4	0	0	0.008	5311.8	52.1	329	336	0.00	0.00	P
CM-244	4	0	0	0.008	5841.4	52.1	397	404	0.00	0.00	P
CM-246	4	0	0	0.008	5423.0	52.1	329	336	0.00	0.00	P
CM-247	234	0	0	0.468	4906.9	193.4	258	284	0.00	0.00	P
CM-248	-9999	-9999	0	-9.998	5115.1	193.4	289	315	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XTM1AA
Detector: ALP119 1
Report Date: 17-Jun-06 11:56 PM
Acquire Date: 17-JUN-2006 15:36:44.93

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	2	@	301	0	@	351	0	@	401	0	-	451
		2	0		52	0		102	0	+	152	0	+	202	0	@	252	1	@	302	0	@	352	0	@	402	0	-	452
0		3	0		53	1		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	1	@	254	0	@	304	0	@	354	0		404	0	-	454
0		5	1		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	2	@	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	2	@	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	1	@	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	0		462
0		13	0		63	0		113	0	+	163	1	+	213	5	@	263	0	@	313	0	@	363	0		413	1		463
0		14	0		64	0		114	0	+	164	0	+	214	4	@	264	0	@	314	0	@	364	0		414	2		464
0		15	0		65	0		115	0	+	165	1	+	215	7	@	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	8	@	267	0	@	317	0	@	367	0		417	0		467
0		18	0		68	0		118	0	+	168	0	+	218	10	@	268	0	@	318	0	@	368	0	@	418	0		468
0		19	0		69	0		119	0	+	169	0	+	219	17	@	269	0	@	319	0	@	369	0	@	419	0		469
0		20	0		70	0		120	0	+	170	0	+	220	19	@	270	0	@	320	0	@	370	0	@	420	1		470
0		21	0		71	0		121	0	@	171	0	+	221	19	@	271	0	@	321	0	+	371	0	@	421	2		471
0		22	0		72	0		122	0	@	172	0	+	222	18	@	272	0	@	322	1	+	372	0	@	422	1		472
0		23	0		73	0		123	0	-	173	0	+	223	15	@	273	0	@	323	0		373	0	@	423	0		473
0		24	0		74	0		124	0	-	174	0	+	224	12	@	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	8	@	276	0	@	326	1		376	0	@	426	0		476
0		27	0		77	0		127	0	-	177	0		227	11	@	277	0	-	327	0		377	1	@	427	0		477
0		28	0		78	0		128	0	-	178	0		228	9	@	278	0	-	328	0		378	0	-	428	0		478
0		29	0		79	0		129	0	-	179	0		229	9	@	279	0	@	329	0		379	1	@	429	0		479
0		30	0		80	0		130	0	-	180	0		230	9	@	280	0	@	330	0		380	0	@	430	0		480
0		31	0		81	0		131	0	-	181	0		231	3	@	281	1	@	331	0		381	1	@	431	0		481
0		32	0		82	0		132	0	-	182	0		232	5	@	282	2	@	332	0		382	2	@	432	0		482
0		33	0		83	0		133	0	-	183	0		233	6	@	283	0	@	333	0		383	1	@	433	0		483
0		34	0		84	0		134	0	-	184	0		234	4		284	0	@	334	0		384	1	@	434	0		484
0		35	0		85	0		135	0	-	185	0		235	5		285	0	@	335	1		385	0	@	435	0		485
0		36	0		86	0		136	0	-	186	0		236	4		286	0		336	1		386	1	@	436	0		486
0		37	0		87	0		137	0	-	187	0	+	237	6		287	0		337	0		387	2	@	437	1		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	6	+	289	0		339	1		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	5	+	291	0		341	0		391	0	@	441	0		491
0		42	0		92	1		142	0	-	192	0	+	242	2	+	292	0		342	0		392	0	@	442	0		492
0		43	0		93	0		143	0	-	193	0	+	243	3	+	293	0		343	0		393	0	@	443	0		493
0		44	0		94	0		144	0	-	194	0	+	244	5	@	294	0	+	344	0		394	0	@	444	0		494
0		45	0		95	0		145	0	-	195	0	+	245	1	@	295	1	+	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	0	+	247	6	@	297	1	@	347	0	@	397	0	-	447	0		497
0		48	0		98	0	+	148	0	+	198	2	@	248	3	@	298	0	@	348	0	@	398	0	-	448	0		498
0		49	0		99	0	+	149	0	+	199	0	@	249	3	@	299	1	@	349	2	@	399	1	-	449	0		499
0		50	0		100	0	+	150	0	+	200	0	@	250	2	@	300	0	@	350	1	@	400	0	-	450	0		500

VMS Peak Search Report V1.9 Generated 17-JUN-2006 23:56:52

```
Configuration     : RDND06$DKA100:[ALP119.SAMPLE]H4XTM1AA_170661536.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:36:44
Sample ID         : H4XTM1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP119               Detector geometry:
Elapsed live time: 0 08:20:04.00         Elapsed real time: 0 08:20:04.00   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	4881.83	234	0	81.84	271.83	258	26	7.80E-03	6.5	
2	0	5325.77	4	0	29.76	331.50	329	7	1.33E-04	50.0	
3	0	5831.63	4	0	29.76	399.50	397	7	1.33E-04	50.0	

VMS Nuclide Identification Report V3.1 Generated 17-JUN-2006 23:56:54

```
Configuration     : RDND06$DKA100:[ALP119.SAMPLE]H4XTM1AA_170661536.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:36:44
Sample ID         : H4XTM1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP119               Detector geometry:
Elapsed live time: 0 08:20:04.00         Elapsed real time: 0 08:20:04.00   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                 3
 Number of unidentified lines                      0
 Number of lines tentatively identified by NID     3      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	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	
PO-210	138.38D	1.30	0.000E+00	0.000E+00	0.000E+00	0.00	
TH-228	1.91Y	1.05	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/SAMPLE	Decay Corr PCI/SAMPLE	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	1.04	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	
AM-243	7370.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.01	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:[ALP119.SAMPLE]H4XTM1AA_170661536.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4881.83	258	284	234	232	0.13		
5325.76	329	336	4	3	0.50		
5831.62	397	404	4	3	0.50		

End of Report

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

Sample Identity: H4XTN1AA

Detector: ALP120 1
Report Date: 18-Jun-06 06:51 AM
Acquire Date: 17-JUN-2006 15:36:57.08
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	1	2	0.000	5423.2	147.7	333	353
TH-229	496	0	0.992	4845.3	376.7	254	305
TH-230	3	0	0.006	4687.7	147.7	233	253
TH-232	0	0	0.000	4013.0	147.8	142	162

End of Alpha Region Report
(Produced by ANAL Report)

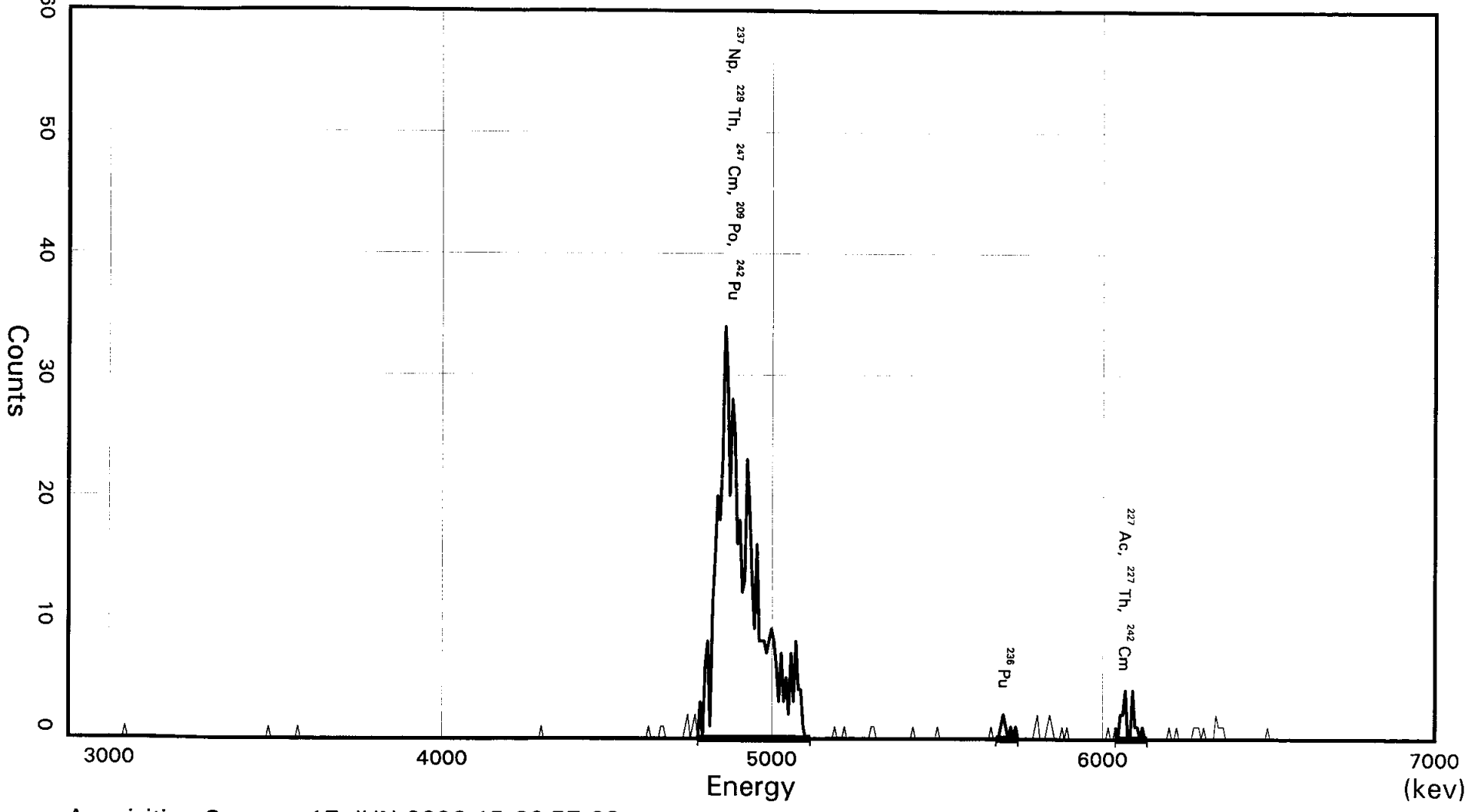
STL Richland WA.

TH BRC

Sample ID: H4XTN1AA

Detector ID: ALP120 1

Batch ID: 6129247



Acquisition Start: 17-JUN-2006 15:36:57.08

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:02.00

Energy Coefficients:

Offset: 2.85545E+03

Slope: 7.39004E+00

Quadrature: -7.31039E-06

SAMPLE IDENTIITY: H4XTN1AA

TITLE : TH BRC

DETECTOR : ALP120 1
CONFIGURATION NAME : RDND06$DKA100:[ALP120.SAMPLE]H4XTN1AA_170661
536.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:41:06

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 15:36:57 CALIB DATE : 15-MAY-2006 02:22:03

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:02

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: H4XTN1AA

Detector: ALP120 1
Report Date: 17-Jun-06 11:57 PM
Acquire Date: 17-JUN-2006 15:36:57.08
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	5151.9	339.7	297	343	0.00	0.00	M I
PO-209	491	0	0	0.982	4920.2	339.8	260	306	0.00	0.00	P
PO-210	-9999	-9999	0	-9.999	5341.4	339.7	322	368	0.00	0.00	M
AC-227	-9999	-9999	0	-9.999	6075.0	339.6	422	468	0.00	0.00	S I
TH-227	-9999	-9999	0	-9.999	6075.0	339.6	422	468	0.00	0.00	S I
TH-228	-9999	-9999	0	-9.999	5460.2	339.7	338	384	0.00	0.00	M I
TH-229	491	0	0	0.982	4882.3	339.8	260	306	0.00	0.00	P
TH-230	-9999	-9999	0	-9.999	4724.7	339.8	239	285	0.00	0.00	M I
TH-232	0	0	0	0.000	4050.0	339.8	147	193	0.00	0.00	S
U-232	-9999	-9999	0	-9.999	5357.2	339.7	324	370	0.00	0.00	M
U-234	-9999	-9999	0	-9.999	4811.6	339.8	250	296	0.00	0.00	M I
U-235	-9999	-9999	0	-9.999	4434.8	339.8	199	245	0.00	0.00	M
PU-236	6	5	0	0.007	5804.7	66.5	382	391	0.00	0.00	P
NP-237	491	0	0	0.982	4825.0	339.8	260	306	0.00	0.00	P
PU-238	-9999	-9999	0	-9.999	5536.0	339.7	349	395	0.00	0.00	M I
U-238	-9999	-9999	0	-9.999	4235.0	339.8	172	218	0.00	0.00	M
PU-239	-9999	-9999	0	-9.999	5193.6	339.7	302	348	0.00	0.00	M I
AM-241	-9999	-9999	0	-9.999	5522.6	339.7	347	393	0.00	0.00	M I
AM-242M	-9999	-9999	0	-9.999	5243.8	339.7	309	355	0.00	0.00	M
CM-242	15	0	0	0.030	6149.7	96.0	431	444	0.00	0.00	P
PU-242	491	0	0	0.982	4937.5	339.8	260	306	0.00	0.00	P
AM-243	-9999	-9999	0	-9.999	5312.3	339.7	318	364	0.00	0.00	M
CM-244	-9999	-9999	0	-9.999	5841.8	339.7	390	436	0.00	0.00	M I
CM-246	-9999	-9999	0	-9.999	5423.5	339.7	333	379	0.00	0.00	M
CM-247	491	0	0	0.982	4907.4	339.8	260	306	0.00	0.00	P
CM-248	-9999	-9999	0	-9.999	5115.6	339.7	292	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: H4XTN1AA
Detector: ALP120 1
Report Date: 17-Jun-06 11:57 PM
Acquire Date: 17-JUN-2006 15:36:57.08

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	0	@	251	4	@	301	0	@	351	0	-	401	0	@	451	0		501
		2	0		52	0		102	0	+	152	0	@	202	0	@	252	4	@	302	0	@	352	0	-	402	0	@	452	0		502
0		3	0		53	0		103	0	+	153	0	@	203	0	@	253	1	@	303	0	@	353	1	-	403	1	@	453	0		503
0		4	0		54	0		104	0	+	154	0	@	204	0	@	254	0	@	304	0	@	354	2	-	404	0	@	454	0		504
0		5	0		55	0		105	0	+	155	0	@	205	1	@	255	0	@	305	0	@	355	1	-	405	0	@	455	0		505
0		6	0		56	0		106	0	+	156	0	@	206	2	@	256	0	@	306	0	@	356	0	-	406	1	@	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	1	@	358	0	-	408	0	@	458	0		508
0		9	0		59	0		109	0	+	159	0	@	209	2	@	259	0	@	309	0	@	359	1	-	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	3	@	261	0	@	311	0	@	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	6	@	263	0	@	313	0	@	363	0	-	413	1	@	463			
0		14	0		64	0		114	0	+	164	0	@	214	8	@	264	0	@	314	0	@	364	0	-	414	1	@	464			
0		15	0		65	0		115	0	+	165	0	@	215	1	@	265	0	@	315	0	@	365	0	-	415	1	@	465			
0		16	0		66	0		116	0	+	166	0	@	216	11	@	266	1	@	316	0	@	366	0	-	416	0	@	466			
0		17	0		67	0		117	0	+	167	0	@	217	15	@	267	0	@	317	0	@	367	0	-	417	1	@	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	18	@	269	0	@	319	0	@	369	0	-	419	0		469			
0		20	0		70	0		120	0	+	170	0	+	220	23	@	270	1	@	320	0	@	370	0	-	420	0		470			
0		21	0		71	0		121	0	+	171	0	+	221	34	@	271	0	@	321	0	@	371	0	-	421	0		471			
0		22	0		72	0		122	0	@	172	0	+	222	30	@	272	0	@	322	0	@	372	0	@	422	2		472			
0		23	0		73	0		123	0	@	173	0	+	223	20	@	273	0	@	323	0	@	373	0	@	423	1		473			
0		24	0		74	0		124	0	@	174	0	+	224	28	@	274	0	@	324	0	@	374	0	@	424	1		474			
0		25	0		75	0		125	0	@	175	0	+	225	25	@	275	0	@	325	0	@	375	0	@	425	1		475			
1		26	0		76	0		126	0	@	176	0	+	226	16	@	276	0	@	326	0	@	376	0	@	426	0		476			
0		27	0		77	0		127	0	@	177	0	+	227	18	@	277	0	@	327	0	@	377	0	@	427	0		477			
0		28	0		78	0		128	0	@	178	0	+	228	12	@	278	0	@	328	0	@	378	1	@	428	0		478			
0		29	0		79	0		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	23	@	280	0	@	330	1	@	380	0	@	430	0		480			
0		31	0		81	0		131	0	@	181	0	+	231	19	@	281	1	@	331	0	@	381	1	@	431	0		481			
0		32	0		82	0		132	0	@	182	0	+	232	13	@	282	1	@	332	0	@	382	0	@	432	0		482			
0		33	0		83	0		133	0	@	183	0	+	233	9	@	283	0	@	333	0	@	383	2	@	433	0		483			
0		34	1		84	0		134	0	@	184	0	+	234	16	@	284	0	@	334	1	@	384	2	@	434	0		484			
0		35	0		85	0		135	0	@	185	0	+	235	8	@	285	0	@	335	2	@	385	4	@	435	0		485			
0		36	0		86	0		136	0	@	186	0	+	236	8	@	286	0	@	336	1	@	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	7	@	288	0	@	338	1	@	388	4	@	438	0		488			
0		39	0		89	0		139	0	@	189	0	@	239	8	@	289	0	@	339	0	@	389	1	@	439	0		489			
0		40	0		90	0		140	0	@	190	1	@	240	9	@	290	0	@	340	1	-	390	1	@	440	0		490			
0		41	0		91	0		141	0	@	191	0	@	241	8	@	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	1	@	442	0		492			
0		43	0		93	0		143	0	@	193	0	@	243	3	@	293	0	@	343	0	@	393	0	@	443	1		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	1	@	245	3	@	295	0	@	345	0	@	395	0	@	445	0		495			
0		46	1		96	0		146	1	-	196	1	+	246	5	@	296	0	@	346	0	-	396	0	@	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	7	@	298	1	@	348	1	-	398	0	@	448	0		498			
0		49	0		99	0	+	149	0	@	199	0	+	249	3	@	299	0	@	349	2	-	399	0	@	449	0		499			
0		50	0		100	0	+	150	0	@	200	0	@	250	8	@	300	0	@	350	0	-	400	0	@	450	0		500			

VMS Peak Search Report V1.9 Generated 17-JUN-2006 23:57:01

Configuration : RDND06$DKA100:[ALP120.SAMPLE]H4XTN1AA_170661536.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:36:57
Sample ID : H4XTN1AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP120 Detector geometry:
Elapsed live time: 0 08:20:02.00 Elapsed real time: 0 08:20:02.00 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	4882.31	491	0	110.85	274.34	260	46	1.64E-02	4.5	
2	0	5703.23	6	0	44.34	385.50	382	9	2.00E-04	40.8	
3	0	6066.73	15	0	44.34	434.73	431	13	5.00E-04	25.8	

VMS Nuclide Identification Report V3.1 Generated 17-JUN-2006 23:57:02

```
Configuration     : RDND06$DKA100:[ALP120.SAMPLE]H4XTN1AA_170661536.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 15:36:57
Sample ID         : H4XTN1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP120               Detector geometry:
Elapsed live time: 0 08:20:02.00         Elapsed real time: 0 08:20:02.00   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                3
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    3      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	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/SAMPLE	Decay Corr PCI/SAMPLE	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	1.04	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	
CM-242	162.80D	1.25	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]H4XTN1AA_170661536.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4882.31	260	306	491	490	0.05		
5703.22	382	391	6	6	0.00		
6066.72	431	444	15	16	-0.26		

End of Report

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST

1419

C.R. Technician: CP
Date Counted: 6/18
C.R. Analyst: CP
Date Analyzed: 6/19/06

Counting Time
Sample: 500 Minutes

Background: See Alpha Analysis Report
BRC 4/26/06

SOP's
Operating: RICHRD008
Review: RICHRD0016
6129247

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)		
H4X1E1AA		10		0	See Alpha Analysis Report for ROI Information			171	
H401D1AA		10		0	See Alpha Analysis Report for ROI Information			172	
H401D1AC		10		0	See Alpha Analysis Report for ROI Information			173	
		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: CP

Date: 6/19/06

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

Sample Identity: H4X1F1AA

Detector: ALP171 1
Report Date: 19-Jun-06 06:02 AM
Acquire Date: 18-JUN-2006 05:59:52.35
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	3	-0.003	5423.2	116.3	316	336
TH-229	309	1	0.618	4845.3	360.7	217	279
TH-230	3	0	0.006	4687.7	116.3	190	210
TH-232	2	1	0.003	4013.0	116.4	74	94

End of Alpha Region Report
(Produced by ANAL Report)

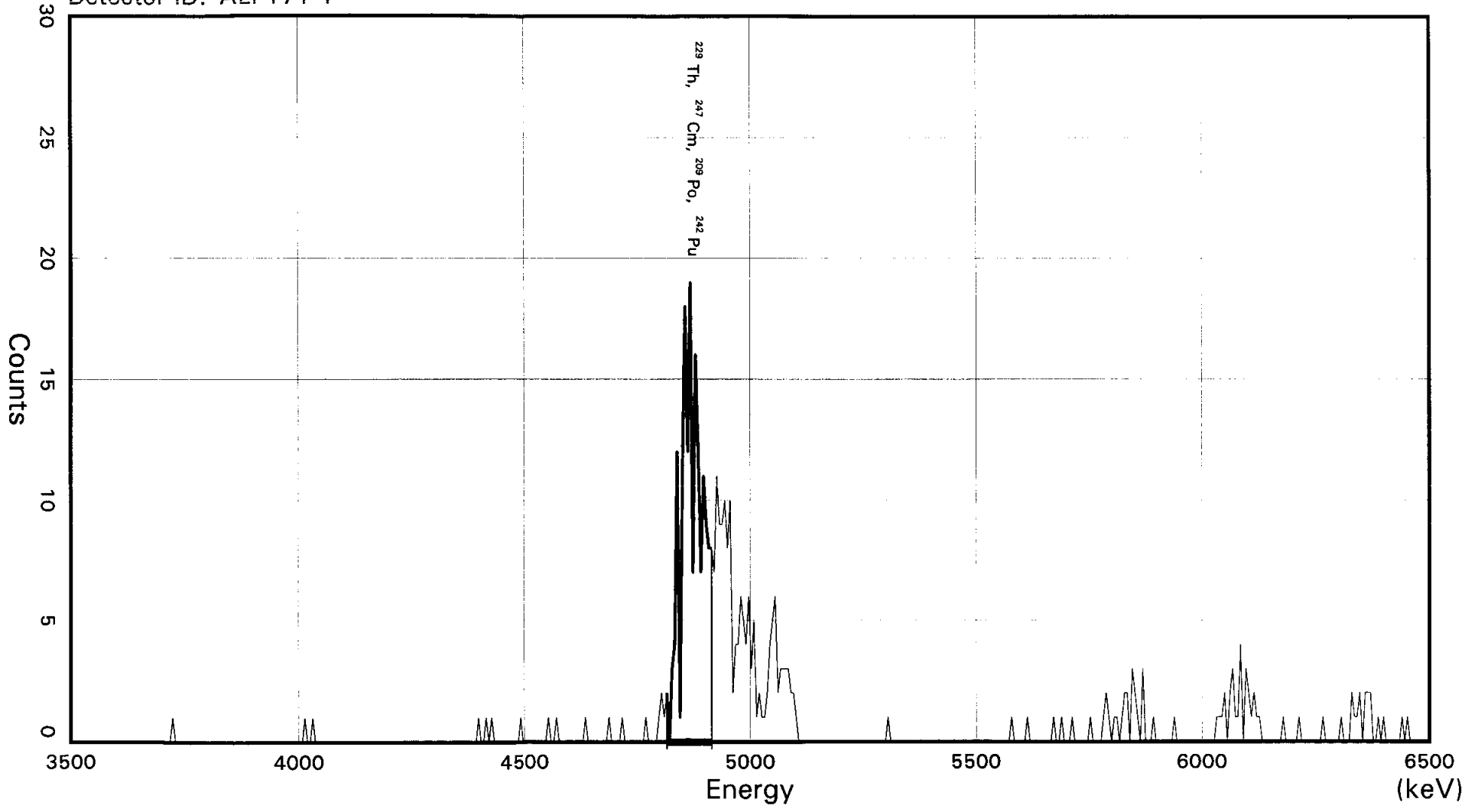
STL Richland WA.

TH BRC

Sample ID: H4X1F1AA

Detector ID: ALP171 1

Batch ID: 6129247



Acquisition Start: 18-JUN-2006 05:59:52.35

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.49600E+03

Slope: 5.81791E+00

Quadrature: -1.51993E-06

SAMPLE IDENTIITY: H4X1F1AA

TITLE : TH BRC

DETECTOR : ALP171 1
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4X1F1AA_180660559A.CN
F;1
ACQUIRE DATE of BACKGROUND: 10-JUN-2006 06:49:56

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:52 CALIB DATE : 09-JUN-2006 02:56:15

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3496.00 keV CONSTANT FWHM : 8.50000 Channels
SLOPE : 5.81791 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.151993E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X1F1AA

Detector: ALP171 1
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:52.35
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	5147.5	98.9	273	290	0.00	0.00	M
PO-209	163	1	0	0.325	4915.8	98.9	227	244	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5337.0	98.9	306	323	0.00	0.00	M
AC-227	17	0	10	0.034	6070.6	98.9	432	449	0.00	0.00	S
TH-227	17	0	10	0.034	6070.6	98.9	432	449	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5455.8	98.9	326	343	0.00	0.00	M
TH-229	163	1	0	0.325	4877.9	98.9	227	244	0.00	0.00	P
TH-230	2	0	0	0.004	4720.3	98.9	200	217	0.00	0.00	S
TH-232	2	1	0	0.003	4045.6	98.9	84	101	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5352.8	98.9	309	326	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4807.2	98.9	215	232	0.00	0.00	M I
U-235	3	1	0	0.005	4430.4	98.9	150	167	0.00	0.00	
PU-236	7	19	11	-0.006	5800.3	98.9	386	403	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4820.6	98.9	217	234	0.00	0.00	S I
PU-238	-9999	-9999	0	-10.010	5531.6	98.9	339	356	0.00	0.00	M
U-238	0	0	0	0.000	4230.6	98.9	116	133	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5189.2	98.9	281	298	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5518.2	98.9	337	354	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5239.4	98.9	289	306	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6145.3	98.9	445	462	0.00	0.00	M
PU-242	163	1	0	0.325	4933.1	98.9	227	244	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5307.9	98.9	301	318	0.00	0.00	M
CM-244	15	29	11	0.000	5837.4	98.9	392	409	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5419.1	98.9	320	337	0.00	0.00	M
CM-247	163	1	0	0.325	4903.0	98.9	227	244	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5111.2	98.9	267	284	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X1F1AA
Detector: ALP171 1
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:52.35

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:20:26

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4X1F1AA_180660559A.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:52
Sample ID         : H4X1F1AA             Sample quantity  : 0.00000E+00 SAMPLE
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      :  3513.45 keV         End energy       :  6474.37 keV
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4877.90	163	0	75.63	237.54	227	17	5.44E-03	7.8	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 14:20:29

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4X1F1AA_180660559A.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:52
Sample ID         : H4X1F1AA             Sample quantity  : 0.00000E+00 SAMPLE
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/SAMPLE	Decay Corr PCI/SAMPLE	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/SAMPLE	Decay Corr PCI/SAMPLE	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]H4X1F1AA_180660559A.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4877.90	227	244	163	160	0.23		

End of Report

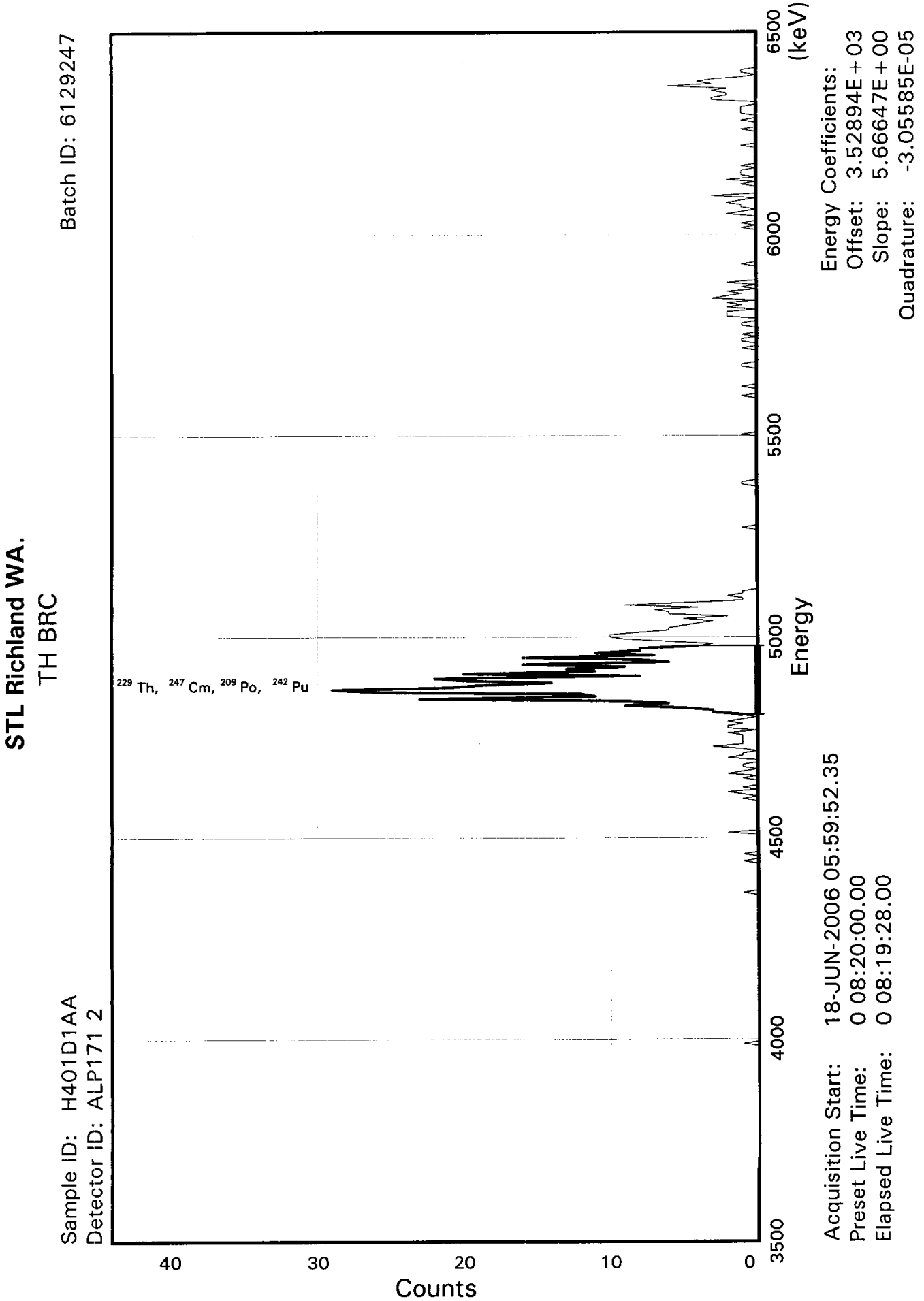
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H401D1AA

Detector: ALP171 2
Report Date: 19-Jun-06 06:02 AM
Acquire Date: 18-JUN-2006 05:59:52.35
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	4	0.000	5423.2	112.9	320	340
TH-229	502	4	1.001	4845.3	339.1	222	282
TH-230	14	1	0.027	4687.7	113.1	190	210
TH-232	1	0	0.002	4013.0	113.2	70	90

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129247
Sample ID: H401D1AA
Detector ID: ALP171 2
229 Th, 247 Cm, 209 Po, 242 Pu
Counts
40
30
20
10
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 18-JUN-2006 05:59:52.35
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.52894E+03
Slope: 5.66647E+00
Quadrature: -3.05585E-05

SAMPLE IDENTIITY: H401D1AA

TITLE : TH BRC

DETECTOR : ALP171 2
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H401D1AA_180660559B.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:52 CALIB DATE : 09-JUN-2006 02:56:29

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3528.94 keV CONSTANT FWHM : 10.00000 Channels
SLOPE : 5.66647 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.305585E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H401D1AA

Detector: ALP171 2
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:52.35
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	5150.1	169.5	274	304	0.00	0.00	M
PO-209	374	2	0	0.747	4918.4	169.6	226	256	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5339.5	169.4	307	337	0.00	0.00	M
AC-227	13	4	14	0.023	6073.2	169.2	437	467	0.00	0.00	S
TH-227	13	4	14	0.023	6073.2	169.2	437	467	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5458.4	169.4	328	358	0.00	0.00	M
TH-229	374	2	0	0.747	4880.5	169.6	226	256	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4722.9	169.6	198	228	0.00	0.00	M I
TH-232	1	3	0	-0.001	4048.2	169.8	79	109	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5355.3	169.4	310	340	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4809.8	169.6	213	243	0.00	0.00	M I
U-235	5	2	0	0.008	4433.0	169.7	147	177	0.00	0.00	
PU-236	15	23	24	0.008	5802.8	169.3	389	419	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4823.2	169.6	216	246	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5534.2	169.3	342	372	0.00	0.00	M
U-238	0	0	0	0.000	4233.2	169.8	112	142	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5191.7	169.5	281	311	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5520.8	169.3	339	369	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5242.0	169.4	290	320	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6147.9	174.8	450	481	0.00	0.00	M
PU-242	374	2	0	0.747	4935.7	169.6	226	256	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5310.5	169.4	302	332	0.00	0.00	M
CM-244	13	19	24	0.008	5840.0	169.2	396	426	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5421.7	169.4	322	352	0.00	0.00	M
CM-247	374	2	0	0.747	4905.6	169.6	226	256	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5113.8	169.5	267	297	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H401D1AA
Detector: ALP171 2
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:52.35

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:20:32

Configuration	: $DISK1:[ALP171.SAMPLE]H401D1AA_180660559B.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 26-APR-2006 12:00:00	Acquisition date	: 18-JUN-2006 05:59:52
Sample ID	: H401D1AA	Sample quantity	: 0.00000E+00 SAMPLE
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	: 3545.94 keV	End energy	: 6422.16 keV
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4880.45	374	0	85.00	238.82	226	30	1.25E-02	5.2	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 14:20:36

Configuration	: $DISK1:[ALP171.SAMPLE]H401D1AA_180660559B.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: TH BRC		
Sample date	: 26-APR-2006 12:00:00	Acquisition date	: 18-JUN-2006 05:59:52
Sample ID	: H401D1AA	Sample quantity	: 0.00000E+00 SAMPLE
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/SAMPLE	Decay Corr PCI/SAMPLE	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/SAMPLE	Decay Corr PCI/SAMPLE	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]H401D1AA_180660559B.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4880.45	226	256	374	378	-0.21		

End of Report

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

Sample Identity: H401D1AC

Detector: ALP171 3
Report Date: 19-Jun-06 06:03 AM
Acquire Date: 18-JUN-2006 05:59:52.35
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	1	0.001	5423.2	119.4	309	329
TH-229	446	0	0.893	4845.3	322.1	216	270
TH-230	471	1	0.942	4687.7	202.7	178	212
TH-232	0	1	-0.001	4013.0	119.0	72	92

End of Alpha Region Report
(Produced by ANAL Report)

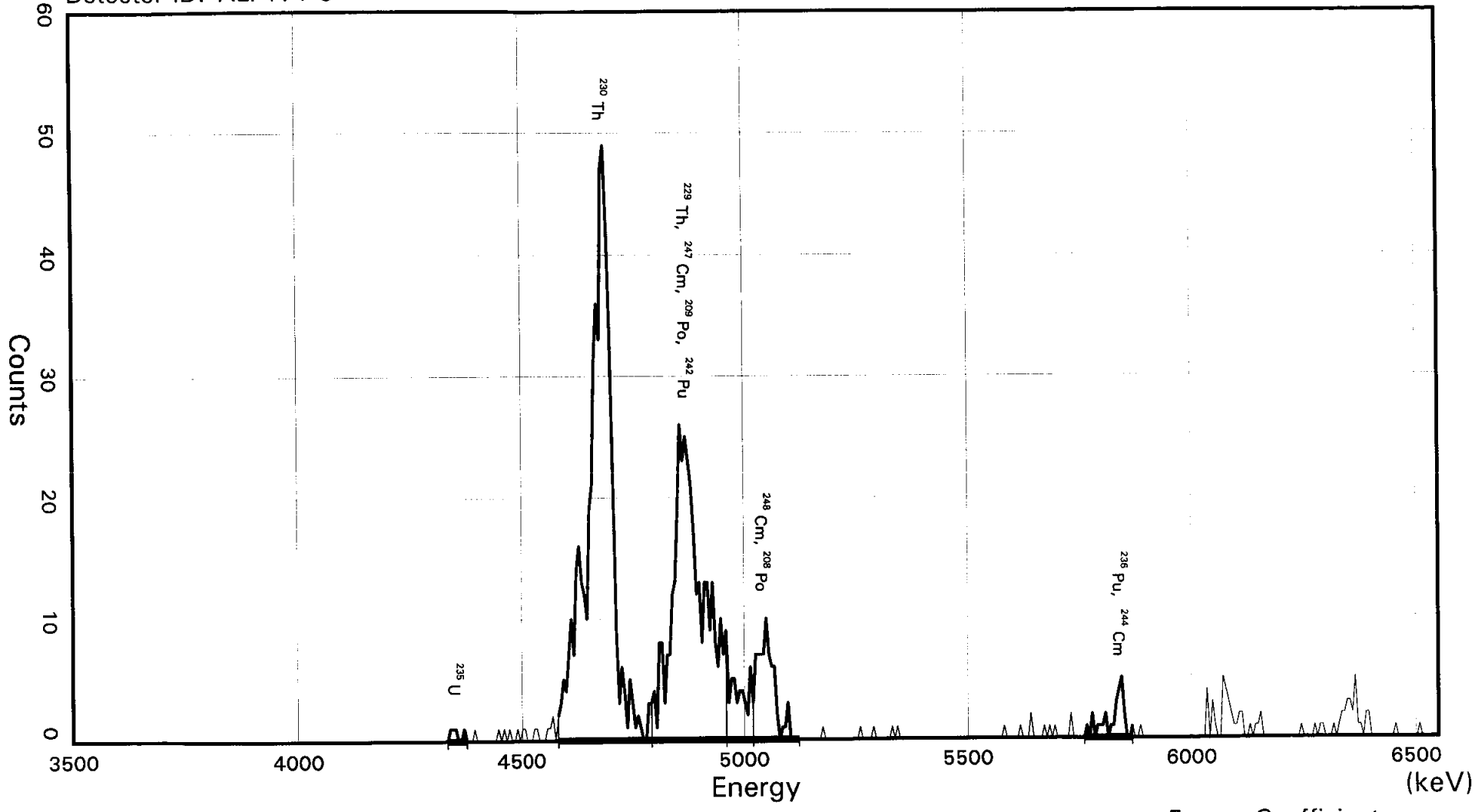
STL Richland WA.

TH BRC

Sample ID: H401D1AC

Detector ID: ALP171 3

Batch ID: 6129247



Acquisition Start: 18-JUN-2006 05:59:52.35

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.49562E+03

Slope: 5.94301E+00

Quadrature: 4.47075E-05

SAMPLE IDENTIITY: H401D1AC

TITLE : TH BRC

DETECTOR : ALP171 3
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H401D1AC_180660559C.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:52 CALIB DATE : 09-JUN-2006 02:56:42

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3495.62 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 5.94301 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 4.470750E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H401D1AC

Detector: ALP171 3
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:52.35
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	77	0	0	0.154	5139.9	161.1	246	273	0.00	0.00	P
PO-209	367	0	0	0.735	4908.2	226.6	218	256	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5329.4	226.9	295	333	0.00	0.00	M
AC-227	21	2	25	0.039	6063.0	227.3	418	456	0.00	0.00	S
TH-227	21	2	25	0.039	6063.0	227.3	418	456	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5448.2	227.0	315	353	0.00	0.00	M
TH-229	367	0	0	0.735	4870.3	226.6	218	256	0.00	0.00	P
TH-230	467	1	0	0.934	4712.7	208.6	183	218	0.00	0.00	P
TH-232	0	0	0	0.000	4038.0	226.2	78	116	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5345.2	226.9	298	336	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4799.6	226.6	206	244	0.00	0.00	S I
U-235	4	0	0	0.008	4422.8	41.7	141	148	0.00	0.00	P
PU-236	25	31	0	0.019	5792.7	107.6	380	398	0.00	0.00	P
NP-237	-9999	-9999	0	-10.010	4813.0	226.6	208	246	0.00	0.00	S I
PU-238	-9999	-9999	0	-10.010	5524.1	221.0	328	365	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4223.0	226.3	109	147	0.00	0.00	S I
PU-239	-9999	-9999	0	-10.010	5181.6	226.8	270	308	0.00	0.00	M I
AM-241	-9999	-9999	0	-10.010	5510.6	227.0	325	363	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5231.8	226.8	279	317	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6137.8	227.4	430	468	0.00	0.00	M
PU-242	367	0	0	0.735	4925.5	226.6	218	256	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5300.3	226.9	290	328	0.00	0.00	M
CM-244	25	31	0	0.019	5829.9	107.6	380	398	0.00	0.00	P
CM-246	-9999	-9999	0	-10.010	5411.5	226.9	309	347	0.00	0.00	M
CM-247	367	0	0	0.735	4895.4	226.6	218	256	0.00	0.00	P
CM-248	77	0	0	0.154	5103.6	161.1	246	273	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H401D1AC
Detector: ALP171 3
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:52.35

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:20:39

Configuration : $DISK1:[ALP171.SAMPLE]H401D1AC_180660559C.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:52
Sample ID : H401D1AC Sample quantity : 0.00000E+00 SAMPLE
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 : 3513.45 keV End energy : 6550.16 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4349.36	4	0	23.77	143.50	141	7	1.33E-04	50.0	
2	0	4684.71	467	0	47.54	199.78	183	35	1.56E-02	4.6	
3	0	4870.34	367	0	53.49	230.92	218	38	1.22E-02	5.2	
4	0	5040.22	77	0	65.37	259.40	246	27	2.57E-03	11.4	
5	0	5838.98	25	0	29.72	393.14	380	18	8.34E-04	20.0	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 14:20:43

```
Configuration     : $DISK1:[ALP171.SAMPLE]H401D1AC_180660559C.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:52
Sample ID         : H401D1AC             Sample quantity  : 0.00000E+00 SAMPLE
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                 5
 Number of unidentified lines                      0
 Number of lines tentatively identified by NID     5      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.04	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	
TH-230	7.54E+04Y	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/SAMPLE	Decay Corr PCI/SAMPLE	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	1.04	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	1.01	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]H401D1AC_180660559C.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4349.35	141	148	4	4	0.00		
4684.71	183	218	467	476	-0.42		
4870.33	218	256	367	379	-0.63	0	-0.62
5040.22	246	273	77	111	-3.87	47	0.05
5838.97	380	398	25	25	0.00		

End of Report

URANIUM ISOTOPIC

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/19/2006 12:49:10 PM

Lot No., Due Date: J6E080164; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129243; RUSIO Uiso by ALP

SDG, Matrix: 31582; 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 [signature] **Date** 6/19/06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6129243

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: 6-20-06

6/19/2006 12:48:36 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	Mga	Sample Date / Units	Expected	Yield	Volumes
31582	**9H4X0010**			**J6E08016411**	000438	FILTER	5/8/2006 7:30:00		4/26/2006 10:05:00 AM			
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**4.0776E+00**	1.981E+00	2.026E+00	6.989E+00	PCI/SA	1.0	1.0E+0	2.063E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.5337E+01**	1.958E+00	2.235E+00	6.222E+00	PCI/SA	1.0	1.0E+0	8.275E-2
RA-226	BXTE		0	6/18/2006 1:27:00 PM	**2.0231E-01**	1.126E-01	1.148E-01	3.612E-01	PCI/SA	0.994	8.33E-1	2.477E-1
U-234	7YSR		0	6/17/2006 5:49:52 PM	**8.3926E-02**	1.645E-01	1.647E-01	9.577E-01	PCI/SA	0.871	1.0E+0	6.195E-2
U-235	7YSR		0	6/17/2006 5:49:52 PM	**-1.2919E-02**	1.292E-02	1.297E-02	6.499E-01	PCI/SA	0.871	1.0E+0	6.195E-2
U-238	7YSR		0	6/17/2006 5:49:52 PM	**0.0E+00**	0.0E+00	1.977E-01	4.375E-01	PCI/SA	0.871	1.0E+0	6.195E-2
31582	**9H4X0410**			**J6E08016412**	000439	FILTER	5/8/2006 7:30:00		4/26/2006 10:20:00 AM			
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**3.1173E+00**	1.77E+00	1.799E+00	6.578E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/9/2006 10:28:06 AM	**1.6114E+01**	2.069E+00	2.35E+00	6.722E+00	PCI/SA	1.0	1.0E+0	8.34E-2
RA-226	BXTE		0	6/18/2006 1:30:01 PM	**3.2961E-01**	1.546E-01	1.58E-01	4.848E-01	PCI/SA	1.032	8.33E-1	2.49E-1
U-234	7YSR		0	6/17/2006 5:51:09 PM	**-4.4232E-02**	3.128E-02	3.148E-02	6.249E-01	PCI/SA	0.959	1.0E+0	6.229E-2
U-235	7YSR		0	6/17/2006 5:51:09 PM	**1.1057E-01**	1.106E-01	1.109E-01	2.997E-01	PCI/SA	0.959	1.0E+0	6.229E-2
U-238	7YSR		0	6/17/2006 5:51:09 PM	**0.0E+00**	0.0E+00	1.354E-01	2.997E-01	PCI/SA	0.959	1.0E+0	6.229E-2
31582	**9H4X0810**			**J6E08016413**	000440	FILTER	5/8/2006 7:30:00		4/26/2006 10:40:00 AM			
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**-1.6709E+00**	1.141E+00	1.155E+00	7.853E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8		0	6/9/2006 10:28:06 AM	**1.6257E+01**	1.977E+00	2.275E+00	6.178E+00	PCI/SA	1.0	1.0E+0	8.264E-2
RA-226	BXTE		0	6/18/2006 2:06:00 PM	**1.91E-01**	1.279E-01	1.293E-01	4.271E-01	PCI/SA	0.88	8.33E-1	2.481E-1
U-234	7YSR		0	6/18/2006 7:59:14 AM	**3.3286E-01**	1.922E-01	1.941E-01	3.007E-01	PCI/SA	0.901	1.0E+0	6.2E-2
U-235	7YSR		0	6/18/2006 7:59:14 AM	**0.0E+00**	0.0E+00	1.359E-01	3.007E-01	PCI/SA	0.901	1.0E+0	6.2E-2
U-238	7YSR		0	6/18/2006 7:59:14 AM	**1.1095E-01**	1.11E-01	1.113E-01	3.007E-01	PCI/SA	0.901	1.0E+0	6.2E-2
31582	**9H4X0R10**			**J6E0801649**	000436	FILTER	5/8/2006 7:30:00		4/26/2006 9:30:00 AM			
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**5.2494E-01**	1.264E+00	1.265E+00	6.305E+00	PCI/SA	1.0	1.0E+0	2.081E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.1356E+01**	1.842E+00	2.08E+00	6.348E+00	PCI/SA	1.0	1.0E+0	8.268E-2
RA-226	BXTE		0	6/18/2006 1:31:00 PM	**1.2764E-01**	1.515E-01	1.521E-01	5.632E-01	PCI/SA	0.914	8.33E-1	2.487E-1
U-234	7YSR		0	6/17/2006 5:50:57 PM	**-4.2203E-02**	1.887E-02	1.918E-02	5.96E-01	PCI/SA	0.991	1.0E+0	6.194E-2
U-235	7YSR		0	6/17/2006 5:50:57 PM	**-1.6881E-02**	1.194E-02	1.201E-02	4.82E-01	PCI/SA	0.991	1.0E+0	6.194E-2
U-238	7YSR		0	6/17/2006 5:50:57 PM	**7.1686E-02**	1.068E-01	1.069E-01	5.632E-01	PCI/SA	0.991	1.0E+0	6.194E-2
31582	**9H4X0W10**			**J6E08016410**	000437	FILTER	5/8/2006 7:30:00		4/26/2006 9:50:00 AM			
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**3.7255E+00**	1.738E+00	1.78E+00	5.596E+00	PCI/SA	1.0	1.0E+0	2.075E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.585E+01**	2.028E+00	2.3E+00	6.57E+00	PCI/SA	1.0	1.0E+0	8.241E-2
RA-226	BXTE		0	6/18/2006 1:30:03 PM	**-1.513E-01**	8.946E-02	9.079E-02	4.577E-01	PCI/SA	1.017	8.33E-1	2.476E-1
U-234	7YSR		0	6/17/2006 5:50:02 PM	**-2.7021E-02**	1.56E-02	1.576E-02	5.616E-01	PCI/SA	0.928	1.0E+0	6.188E-2
U-235	7YSR		0	6/17/2006 5:50:02 PM	**-1.8014E-02**	1.274E-02	1.282E-02	5.145E-01	PCI/SA	0.928	1.0E+0	6.188E-2
U-238	7YSR		0	6/17/2006 5:50:02 PM	**0.0E+00**	0.0E+00	1.379E-01	3.051E-01	PCI/SA	0.928	1.0E+0	6.188E-2
31582	**9H4X1A10**			**J6E08016414**	000441	FILTER	5/8/2006 7:30:00		4/26/2006 10:55:00 AM			
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**5.271E+00**	2.028E+00	2.099E+00	6.331E+00	PCI/SA	1.0	1.0E+0	2.064E-2
BETA	BDS8		0	6/9/2006 10:28:06 AM	**1.6832E+01**	1.988E+00	2.499E+00	6.159E+00	PCI/SA	1.0	1.0E+0	8.257E-2
RA-226	BXTE		0	6/18/2006 2:06:01 PM	**2.5131E-01**	1.865E-01	1.886E-01	6.484E-01	PCI/SA	0.914	8.33E-1	2.505E-1
U-234	7YSR		0	6/18/2006 7:59:21 AM	**3.4741E-01**	2.074E-01	2.093E-01	6.451E-01	PCI/SA	0.911	1.0E+0	6.195E-2
U-235	7YSR		0	6/18/2006 7:59:21 AM	**0.0E+00**	0.0E+00	1.252E-01	2.769E-01	PCI/SA	0.911	1.0E+0	6.195E-2
U-238	7YSR		0	6/18/2006 7:59:21 AM	**0.0E+00**	0.0E+00	1.252E-01	2.769E-01	PCI/SA	0.911	1.0E+0	6.195E-2
31582	**9H4X1F10**			**J6E08016415**	000442	FILTER	5/8/2006 7:30:00		4/26/2006 10:10:00 AM			
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**3.4081E-01**	1.06E+00	1.06E+00	5.631E+00	PCI/SA	1.0	1.0E+0	2.054E-2
BETA	BDS8		0	6/9/2006 10:28:06 AM	**-2.298E-01**	1.578E+00	1.578E+00	7.083E+00	PCI/SA	1.0	1.0E+0	8.213E-2
RA-226	BXTE		0	6/18/2006 2:06:01 PM	**9.4646E-02**	1.457E-01	1.46E-01	5.494E-01	PCI/SA	0.939	8.33E-1	2.462E-1
U-234	7YSR		0	6/18/2006 7:59:25 AM	**-2.4641E-02**	2.464E-02	2.472E-02	5.9E-01	PCI/SA	0.812	1.0E+0	6.142E-2
U-235	7YSR		0	6/18/2006 7:59:25 AM	**0.0E+00**	0.0E+00	1.508E-01	3.338E-01	PCI/SA	0.812	1.0E+0	6.142E-2
U-238	7YSR		0	6/18/2006 7:59:25 AM	**0.0E+00**	0.0E+00	1.508E-01	3.338E-01	PCI/SA	0.812	1.0E+0	6.142E-2
31582	**9H4XR810**			**J6E0801641**	P-0606	FILTER	5/8/2006 7:30:00		4/26/2006 9:20:00 AM			
ALPHA	BAS7		0	6/9/2006 11:02:42 AM	**4.0136E+00**	1.95E+00	1.994E+00	6.879E+00	PCI/SA	1.0	1.0E+0	2.097E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.1591E+01**	1.922E+00	2.101E+00	6.805E+00	PCI/SA	1.0	1.0E+0	8.428E-2

6129243, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 51 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H400D1AA=> , mat:FILTER | Air *wo:H400D1AA=> , mat:FILTER | Air *wo:H400D1AC=> , mat:FILTER | Air *wo:H400D1AC=> , 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 / Mga	Units	Expected	Yield	Volumes	
RA-226	BXTE	0		6/18/2006 12:53:00 PM	**1.8735E-01**	1.444E-01	1.458E-01	5.055E-01	PCI/SA		1.006	8.33E-1	2.5E-1
U-234	7YSR	0		6/17/2006 5:48:06 PM	**0.0E+00**	0.0E+00	1.314E-01	2.907E-01	PCI/SA		0.924	1.0E+0	6.252E-2
U-235	7YSR	0		6/17/2006 5:48:06 PM	**0.0E+00**	0.0E+00	1.314E-01	2.907E-01	PCI/SA		0.924	1.0E+0	6.252E-2
U-238	7YSR	0		6/17/2006 5:48:06 PM	**0.0E+00**	0.0E+00	1.314E-01	2.907E-01	PCI/SA		0.924	1.0E+0	6.252E-2
31582	**9H4XTE10**			**J6E0801642**	P-0607	FILTER	5/8/2006 7:30:00	4/26/2006 9:45:00 AM					
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**-6.4094E-01**	1.047E+00	1.049E+00	6.537E+00	PCI/SA		1.0	1.0E+0	2.097E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.0717E+01**	1.842E+00	1.991E+00	6.443E+00	PCI/SA		1.0	1.0E+0	8.341E-2
RA-226	BXTE	0		6/18/2006 12:52:00 PM	**3.9262E-01**	2.483E-01	2.521E-01	8.471E-01	PCI/SA		0.929	8.33E-1	2.482E-1
U-234	7YSR	0		6/17/2006 5:48:20 PM	**2.3506E-01**	1.73E-01	1.741E-01	6.184E-01	PCI/SA		0.947	1.0E+0	6.212E-2
U-235	7YSR	0		6/17/2006 5:48:20 PM	**0.0E+00**	0.0E+00	1.2E-01	2.655E-01	PCI/SA		0.947	1.0E+0	6.212E-2
U-238	7YSR	0		6/17/2006 5:48:20 PM	**9.7957E-02**	9.796E-02	9.827E-02	2.655E-01	PCI/SA		0.947	1.0E+0	6.212E-2
31582	**9H4XTH10**			**J6E0801643**	P-0608	FILTER	5/8/2006 7:30:00	4/26/2006 10:00:00 AM					
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**-1.673E+00**	1.143E+00	1.156E+00	7.863E+00	PCI/SA		1.0	1.0E+0	2.086E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.2171E+01**	1.882E+00	2.062E+00	6.313E+00	PCI/SA		1.0	1.0E+0	8.379E-2
RA-226	BXTE	0		6/18/2006 12:50:00 PM	**-5.018E-02**	1.85E-01	1.851E-01	7.414E-01	PCI/SA		0.899	8.33E-1	2.503E-1
U-234	7YSR	0		6/17/2006 5:48:32 PM	**9.262E-02**	1.181E-01	1.183E-01	5.546E-01	PCI/SA		0.847	1.0E+0	6.262E-2
U-235	7YSR	0		6/17/2006 5:48:32 PM	**0.0E+00**	0.0E+00	1.418E-01	3.138E-01	PCI/SA		0.847	1.0E+0	6.262E-2
U-238	7YSR	0		6/17/2006 5:48:32 PM	**1.1579E-01**	1.158E-01	1.162E-01	3.138E-01	PCI/SA		0.847	1.0E+0	6.262E-2
31582	**9H4XTL10**			**J6E0801644**	P-0609	FILTER	5/8/2006 7:30:00	4/26/2006 10:15:00 AM					
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**3.6769E+00**	1.804E+00	1.843E+00	6.308E+00	PCI/SA		1.0	1.0E+0	2.072E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.0827E+01**	1.823E+00	1.966E+00	6.291E+00	PCI/SA		1.0	1.0E+0	8.401E-2
RA-226	BXTE	0		6/18/2006 12:51:00 PM	**-4.4107E-02**	1.836E-01	1.837E-01	7.681E-01	PCI/SA		1.03	8.33E-1	2.492E-1
U-234	7YSR	0		6/17/2006 5:48:40 PM	**6.699E-02**	1.161E-01	1.162E-01	6.311E-01	PCI/SA		0.88	1.0E+0	6.205E-2
U-235	7YSR	0		6/17/2006 5:48:40 PM	**8.9333E-02**	1.139E-01	1.141E-01	5.349E-01	PCI/SA		0.88	1.0E+0	6.205E-2
U-238	7YSR	0		6/17/2006 5:48:40 PM	**-4.4685E-02**	3.16E-02	3.181E-02	6.311E-01	PCI/SA		0.88	1.0E+0	6.205E-2
31582	**9H4XTM10**			**J6E0801645**	P-0610	FILTER	5/8/2006 7:30:00	4/26/2006 10:35:00 AM					
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**2.0225E+00**	1.43E+00	1.445E+00	5.57E+00	PCI/SA		1.0	1.0E+0	2.076E-2
BETA	BDS8	0		6/9/2006 10:27:53 AM	**8.5243E+00**	1.72E+00	1.819E+00	6.193E+00	PCI/SA		1.0	1.0E+0	8.364E-2
RA-226	BXTE	0		6/18/2006 12:50:00 PM	**1.2687E-01**	1.953E-01	1.958E-01	7.364E-01	PCI/SA		0.93	8.33E-1	2.507E-1
U-234	7YSR	0		6/17/2006 5:48:57 PM	**5.6989E-02**	9.874E-02	9.885E-02	5.37E-01	PCI/SA		0.926	1.0E+0	6.252E-2
U-235	7YSR	0		6/17/2006 5:48:57 PM	**-1.9011E-02**	1.901E-02	1.907E-02	4.551E-01	PCI/SA		0.926	1.0E+0	6.252E-2
U-238	7YSR	0		6/17/2006 5:48:57 PM	**7.6E-02**	9.689E-02	9.709E-02	4.551E-01	PCI/SA		0.926	1.0E+0	6.252E-2
31582	**9H4XTN10**			**J6E0801646**	P-0611	FILTER	5/8/2006 7:30:00	4/26/2006 10:50:00 AM					
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**2.3808E+00**	1.704E+00	1.722E+00	6.863E+00	PCI/SA		1.0	1.0E+0	2.105E-2
BETA	BDS8	0		6/9/2006 10:27:53 AM	**1.444E+01**	1.97E+00	2.293E+00	6.516E+00	PCI/SA		1.0	1.0E+0	8.402E-2
RA-226	BXTE	0		6/18/2006 1:32:00 PM	**3.6385E-02**	1.6E-01	1.6E-01	6.336E-01	PCI/SA		0.867	8.33E-1	2.489E-1
U-234	7YSR	0		6/17/2006 5:49:08 PM	**-2.0647E-02**	2.065E-02	2.071E-02	4.944E-01	PCI/SA		0.951	1.0E+0	6.249E-2
U-235	7YSR	0		6/17/2006 5:49:08 PM	**-2.0647E-02**	2.065E-02	2.071E-02	4.944E-01	PCI/SA		0.951	1.0E+0	6.249E-2
U-238	7YSR	0		6/17/2006 5:49:08 PM	**0.0E+00**	0.0E+00	1.264E-01	2.797E-01	PCI/SA		0.951	1.0E+0	6.249E-2
31582	**9H4XTP10**			**J6E0801647**	P-0612	FILTER	5/8/2006 7:30:00	4/26/2006 9:25:00 AM					
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**-1.2088E+00**	9.259E-01	9.344E-01	6.725E+00	PCI/SA		1.0	1.0E+0	2.041E-2
BETA	BDS8	0		6/9/2006 10:27:53 AM	**8.8756E+00**	1.84E+00	1.983E+00	6.701E+00	PCI/SA		1.0	1.0E+0	8.176E-2
RA-226	BXTE	0		6/18/2006 1:30:00 PM	**4.6622E-02**	1.287E-01	1.288E-01	5.146E-01	PCI/SA		0.926	8.33E-1	2.45E-1
U-234	7YSR	0		6/17/2006 5:49:09 PM	**-3.1381E-02**	1.569E-02	1.589E-02	5.234E-01	PCI/SA		1.021	1.0E+0	6.139E-2
U-235	7YSR	0		6/17/2006 5:49:09 PM	**-3.1381E-02**	1.569E-02	1.589E-02	5.234E-01	PCI/SA		1.021	1.0E+0	6.139E-2
U-238	7YSR	0		6/17/2006 5:49:09 PM	**1.4891E-01**	1.399E-01	1.404E-01	5.814E-01	PCI/SA		1.021	1.0E+0	6.139E-2
31582	**9H4XTR10**			**J6E0801648**	P-0613	FILTER	5/8/2006 7:30:00	4/26/2006 9:35:00 AM					
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**0.0E+00**	0.0E+00	1.498E+00	7.871E+00	PCI/SA		1.0	1.0E+0	2.076E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**3.0783E+00**	1.566E+00	1.582E+00	6.447E+00	PCI/SA		1.0	1.0E+0	8.303E-2
RA-226	BXTE	0		6/18/2006 1:32:00 PM	**4.2074E-02**	1.85E-01	1.85E-01	7.327E-01	PCI/SA		0.947	8.33E-1	2.488E-1
U-234	7YSR	0		6/17/2006 5:49:40 PM	**7.5523E-02**	1.003E-01	1.005E-01	4.957E-01	PCI/SA		0.993	1.0E+0	6.242E-2
U-235	7YSR	0		6/17/2006 5:49:40 PM	**-2.3857E-02**	1.377E-02	1.391E-02	4.957E-01	PCI/SA		0.993	1.0E+0	6.242E-2
U-238	7YSR	0		6/17/2006 5:49:40 PM	**-3.1809E-02**	1.59E-02	1.611E-02	5.308E-01	PCI/SA		0.993	1.0E+0	6.242E-2
31582	**H400D1AB**			**J6E090000243**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM					

6129243, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 51 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H400D1AA=> , mat:FILTER | Air *wo:H400D1AA=> , mat:FILTER | Air *wo:H400D1AC=> , mat:FILTER | Air *wo:H400D1AC=> , 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-234	7YSR	0	B	6/18/2006 7:59:29 AM	**1.2811E-02**	1.017E-02	1.021E-02	3.409E-02	PCI/SA		0.857	1.0E+0	1.0E+0
U-235	7YSR	0	B	6/18/2006 7:59:29 AM	**0.0E+00**	0.0E+00	8.717E-03	1.929E-02	PCI/SA		0.857	1.0E+0	1.0E+0
U-238	7YSR	0	B	6/18/2006 7:59:29 AM	**-2.8461E-03**	2.013E-03	2.025E-03	4.022E-02	PCI/SA		0.857	1.0E+0	1.0E+0
31582	**H400D1CS**			**J6E090000243**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM					
U-234	7YSR	0	S	6/18/2006 7:59:35 AM	**1.0766E+00**	7.999E-02	1.151E-01	3.35E-02	PCI/SA	9.9012E-01	0.928	1.0E+0	1.0E+0
U-235	7YSR	0	S	6/18/2006 7:59:35 AM	**4.5055E-02**	1.685E-02	1.72E-02	3.35E-02	PCI/SA	4.5175E-02	0.928	1.0E+0	1.0E+0
U-238	7YSR	0	S	6/18/2006 7:59:35 AM	**9.7699E-01**	7.616E-02	1.07E-01	2.839E-02	PCI/SA	1.0369E+00	0.928	1.0E+0	1.0E+0

6129243, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 51 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H400D1AA=> , mat:FILTER | Air *wo:H400D1AA=> , mat:FILTER | Air *wo:H400D1AC=> , mat:FILTER | Air *wo:H400D1AC=> , mat:FILTER | Air.

6/19/2006 12:48:38 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/19/2005, 6/24/2006, Batch: '6129243', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129243						
AC		**CalcC**	**HansenM**	6/5/2006 3:55:03 PM		
SC			antonsonl	IsBatched	5/9/2006 1:22:59 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/5/2006 3:55:03 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/5/2006 3:56:44 PM	RICH-RC-5016 REVISION 5
SC			AndersonE	Sep1C	6/14/2006 1:23:55 PM	RICH-RC-5067 REV 6
SC			FABREM	Sep2C	6/17/2006 2:58:25 PM	RICH-RC-5039 REV 6
SC			DAWKINSO	InCnt1	6/17/2006 3:12:19 PM	RICH-RD-0008 REVISION 4
SC			BlackCL	CalcC	6/18/2006 10:04:11 AM	RICH-RD-0008 REVISION 4
AC			**HansenM**	6/5/2006 3:56:44 PM		
AC			**AndersonE**	6/14/2006 1:23:55 PM		
AC			**FABREM**	6/17/2006 2:58:25 PM		
AC			**DAWKINSO**	6/17/2006 3:12:19 PM		
AC			**BlackCL**	6/18/2006 10:04:11		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 6

ICOCFractions v4.8.18

STL RICHLAND

6/5/2006 11:12:39 AM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

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

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 06/05/2006

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech: 6-17-06 MS

Batch: 6129243 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: None All Tests: 6129243 7YSR, 6129247 9NS1, 6129253 BAS7, 6129255 BDS8, 6129266 BXTE, 6129270 BXTF,

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 **H4XR8-1-AG** J6E080164-1-SAMP 04/26/2006 09:20	0.833sa,g	500.44sa,g	37.56g,in	0.0625g	UITC15660 05/22/06,pd 01/20/04,r	200				
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
2 **H4XTE-1-AG** J6E080164-2-SAMP 04/26/2006 09:45	0.833sa,g	503.64sa,g	37.56g,in	0.0621g	UITC15661 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
3 **H4XTH-1-AG** J6E080164-3-SAMP 04/26/2006 10:00	0.833sa,g	500.34sa,g	37.61g,in	0.0626g	UITC15662 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
4 **H4XTL-1-AG** J6E080164-4-SAMP 04/26/2006 10:15	0.833sa,g	503.42sa,g	37.50g,in	0.0621g	UITC15663 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
5 **H4XTM-1-AG** J6E080164-5-SAMP 04/26/2006 10:35	0.833sa,g	501.47sa,g	37.64g,in	0.0625g	UITC15664 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
6 **H4XTN-1-AG** J6E080164-6-SAMP 04/26/2006 10:50	0.833sa,g	502.28sa,g	37.68g,in	0.0625g	UITC15665 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
7 **H4XTP-1-AG** J6E080164-7-SAMP 04/26/2006 09:25	0.833sa,g	510.06sa,g	37.59g,in	0.0614g	UITC15666 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:

236

STL RICHLAND

6/5/2006 11:12:40 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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129243 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 H4XTR-1-AG J6E080164-8-SAMP 04/26/2006 09:35	0.833sa,g	502.44sa,g	37.65g,in	0.0624g	UITC15667 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
9 H4X0R-1-AG J6E080164-9-SAMP 04/26/2006 09:30	0.833sa,g	505.26sa,g	37.57g,in	0.0619g	UITC15668 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
10 H4X0W-1-AG J6E080164-10-SAMP 04/26/2006 09:50	0.833sa,g	505.49sa,g	37.55g,in	0.0619g	UITC15669 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
11 H4X00-1-AG J6E080164-11-SAMP 04/26/2006 10:05	0.833sa,g	504.65sa,g	37.53g,in	0.0619g	UITC15670 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
12 H4X04-1-AG J6E080164-12-SAMP 04/26/2006 10:20	0.833sa,g	501.99sa,g	37.54g,in	0.0623g	UITC15671 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
13 H4X08-1-AG J6E080164-13-SAMP 04/26/2006 10:40	0.833sa,g	504.10sa,g	37.52g,in	0.062g	UITC15672 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
14 H4X1A-1-AG J6E080164-14-SAMP 04/26/2006 10:55	0.833sa,g	504.60sa,g	37.53g,in	0.062g	UITC15673 05/22/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:

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STL RICHLAND

6/5/2006 11:12:41 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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129243 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:
15H4X1F-1-AG J6E080164-15-SAMP	0.833sa,g	509.03sa,g	37.53g,in	0.0614g	UITC15674 05/22/06,pd 01/20/04,r					
04/26/2006 10:10		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
16H400D-1-AA-B J6E090000-243-BLK			1.00sa,in	1.00sa	UITC15675 05/22/06,pd 01/20/04,r					
04/26/2006 09:20		AmtRec:		#Containers: 1				Scr:	Alpha:	Beta:
17H400D-1-AC-C J6E090000-243-LCS			1.00sa,in	1.00sa	UISF0454 04/25/06,pd 01/20/04,r					
04/26/2006 09:20		AmtRec:		#Containers: 1				Scr:	Alpha:	Beta:

Comments:

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

H4XR81AG-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:

H400D1AA-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:

H400D1AC-LCS:

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

H4XR81AG-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H400D1AA-BLK:

Batch Nbr: 6129243

Alpha Spec, UIso by ALP , Results

6/18/2006 10:02:50 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	MLcC	MDC	QC	Yield	RYld
UIso by ALP				Richland Standard AlpIso Wo Blk Subt.										
Calc	SR	FILTER	H4XR81AG	U-234	0.00E+00	(1.31E-01)	U4	PCI/SA	R		2.91E-01		92%	
Calc	SR	FILTER	H4XR81AG	U-235	0.00E+00	(1.31E-01)	U4	PCI/SA	R		2.91E-01		92%	
Calc	SR	FILTER	H4XR81AG	U-238	0.00E+00	(1.31E-01)	U4	PCI/SA	R		2.91E-01		92%	
Calc	SR	FILTER	H4XTE1AG	U-234	2.35E-01	(1.74E-01)	U4	PCI/SA	R	1.77E-01	6.18E-01		95%	
Calc	SR	FILTER	H4XTE1AG	U-235	0.00E+00	(1.20E-01)	U4	PCI/SA	R		2.65E-01		95%	
Calc	SR	FILTER	H4XTE1AG	U-238	9.80E-02	(9.83E-02)	U4	PCI/SA	R		2.65E-01		95%	
Calc	SR	FILTER	H4XTH1AG	U-234	9.26E-02	(1.18E-01)	U4	PCI/SA	R	1.20E-01	5.55E-01		85%	
Calc	SR	FILTER	H4XTH1AG	U-235	0.00E+00	(1.42E-01)	U4	PCI/SA	R		3.14E-01		85%	
Calc	SR	FILTER	H4XTH1AG	U-238	1.16E-01	(1.16E-01)	U4	PCI/SA	R		3.14E-01		85%	
Calc	SR	FILTER	H4XTL1AG	U-234	6.70E-02	(1.16E-01)	U4	PCI/SA	R	1.64E-01	6.31E-01		88%	
Calc	SR	FILTER	H4XTL1AG	U-235	8.93E-02	(1.14E-01)	U4	PCI/SA	R	1.16E-01	5.35E-01		88%	
Calc	SR	FILTER	H4XTL1AG	U-238	-4.47E-02	(3.18E-02)	U4	PCI/SA	R	1.64E-01	6.31E-01		88%	
Calc	SR	FILTER	H4XTM1AG	U-234	5.70E-02	(9.88E-02)	U4	PCI/SA	R	1.40E-01	5.37E-01		93%	
Calc	SR	FILTER	H4XTM1AG	U-235	-1.90E-02	(1.91E-02)	U4	PCI/SA	R	9.89E-02	4.55E-01		93%	
Calc	SR	FILTER	H4XTM1AG	U-238	7.60E-02	(9.71E-02)	U4	PCI/SA	R	9.89E-02	4.55E-01		93%	
Calc	SR	FILTER	H4XTN1AG	U-234	-2.06E-02	(2.07E-02)	U4	PCI/SA	R	1.07E-01	4.94E-01		95%	
Calc	SR	FILTER	H4XTN1AG	U-235	-2.06E-02	(2.07E-02)	U4	PCI/SA	R	1.07E-01	4.94E-01		95%	
Calc	SR	FILTER	H4XTN1AG	U-238	0.00E+00	(1.26E-01)	U4	PCI/SA	R		2.80E-01		95%	
Calc	SR	FILTER	H4XTP1AG	U-234	-3.14E-02	(1.59E-02)	U4	PCI/SA	R	1.29E-01	5.23E-01		102%	
Calc	SR	FILTER	H4XTP1AG	U-235	-3.14E-02	(1.59E-02)	U4	PCI/SA	R	1.29E-01	5.23E-01		102%	
Calc	SR	FILTER	H4XTP1AG	U-238	1.49E-01	(1.40E-01)	U4	PCI/SA	R	1.58E-01	5.81E-01		102%	
Calc	SR	FILTER	H4XTR1AG	U-234	7.55E-02	(1.01E-01)	U4	PCI/SA	R	1.13E-01	4.96E-01		99%	
Calc	SR	FILTER	H4XTR1AG	U-235	-2.39E-02	(1.39E-02)	U4	PCI/SA	R	1.13E-01	4.96E-01		99%	
Calc	SR	FILTER	H4XTR1AG	U-238	-3.18E-02	(1.61E-02)	U4	PCI/SA	R	1.31E-01	5.31E-01		99%	
Calc	SR	FILTER	H4X0R1AG	U-234	-4.22E-02	(1.92E-02)	U4	PCI/SA	R	1.55E-01	5.96E-01		99%	
Calc	SR	FILTER	H4X0R1AG	U-235	-1.69E-02	(1.20E-02)	U4	PCI/SA	R	9.82E-02	4.82E-01		99%	
Calc	SR	FILTER	H4X0R1AG	U-238	7.17E-02	(1.07E-01)	U4	PCI/SA	R	1.39E-01	5.63E-01		99%	
Calc	SR	FILTER	H4X0W1AG	U-234	-2.70E-02	(1.58E-02)	U4	PCI/SA	R	1.28E-01	5.62E-01		93%	
Calc	SR	FILTER	H4X0W1AG	U-235	-1.80E-02	(1.28E-02)	U4	PCI/SA	R	1.05E-01	5.14E-01		93%	
Calc	SR	FILTER	H4X0W1AG	U-238	0.00E+00	(1.38E-01)	U4	PCI/SA	R		3.05E-01		93%	
Calc	SR	FILTER	H4X001AG	U-234	8.39E-02	(1.65E-01)	U4	PCI/SA	R	2.60E-01	9.58E-01		87%	
Calc	SR	FILTER	H4X001AG	U-235	-1.29E-02	(1.30E-02)	U4	PCI/SA	R	1.06E-01	6.50E-01		87%	
Calc	SR	FILTER	H4X001AG	U-238	0.00E+00	(1.98E-01)	U4	PCI/SA	R		4.38E-01		87%	
Calc	SR	FILTER	H4X041AG	U-234	-4.42E-02	(3.15E-02)	U4	PCI/SA	R	1.63E-01	6.25E-01		96%	
Calc	SR	FILTER	H4X041AG	U-235	1.11E-01	(1.11E-01)	U4	PCI/SA	R		3.00E-01		96%	
Calc	SR	FILTER	H4X041AG	U-238	0.00E+00	(1.35E-01)	U4	PCI/SA	R		3.00E-01		96%	
Calc	SR	FILTER	H4X081AG	U-234	3.33E-01	(1.94E-01)		PCI/SA	R		3.01E-01		90%	

() - (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	**H4X081AG**	U-235	**0.00E+00**	**(1.36E-01)**	**U4**	PCI/SA	R		3.01E-01		90%	
Calc	SR	FILTER	**H4X081AG**	U-238	**1.11E-01**	**(1.11E-01)**	**U4**	PCI/SA	R		3.01E-01		90%	
Calc	SR	FILTER	**H4X1A1AG**	U-234	**3.47E-01**	**(2.09E-01)**		PCI/SA	R	1.84E-01	6.45E-01		91%	
Calc	SR	FILTER	**H4X1A1AG**	U-235	**0.00E+00**	**(1.25E-01)**	**U4**	PCI/SA	R		2.77E-01		91%	
Calc	SR	FILTER	**H4X1A1AG**	U-238	**0.00E+00**	**(1.25E-01)**	**U4**	PCI/SA	R		2.77E-01		91%	
Calc	SR	FILTER	**H4X1F1AG**	U-234	**-2.46E-02**	**(2.47E-02)**	**U4**	PCI/SA	R	1.28E-01	5.90E-01		81%	
Calc	SR	FILTER	**H4X1F1AG**	U-235	**0.00E+00**	**(1.51E-01)**	**U4**	PCI/SA	R		3.34E-01		81%	
Calc	SR	FILTER	**H4X1F1AG**	U-238	**0.00E+00**	**(1.51E-01)**	**U4**	PCI/SA	R		3.34E-01		81%	
Calc	SR	FILTER	**H400D1AA**	U-234	**1.28E-02**	**(1.02E-02)**	**U4**	PCI/SA	R	7.40E-03	3.41E-02	**B**	86%	
Calc	SR	FILTER	**H400D1AA**	U-235	**0.00E+00**	**(8.72E-03)**	**U4**	PCI/SA	R		1.93E-02	**B**	86%	
Calc	SR	FILTER	**H400D1AA**	U-238	**-2.85E-03**	**(2.02E-03)**	**U4**	PCI/SA	R	1.05E-02	4.02E-02	**B**	86%	
Calc	SR	FILTER	**H400D1AC**	U-234	**1.08E+00**	**(1.15E-01)**		PCI/SA	R	8.72E-03	3.35E-02	**S**	93%	109%
Calc	SR	FILTER	**H400D1AC**	U-235	**4.51E-02**	**(1.72E-02)**		PCI/SA	R	8.72E-03	3.35E-02	**S**	93%	100%
Calc	SR	FILTER	**H400D1AC**	U-238	**9.77E-01**	**(1.07E-01)**		PCI/SA	R	6.17E-03	2.84E-02	**S**	93%	94%

ok
GT
6/19/06

() - (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:68
RADCALC v4.8.18
STL Richland

Batch Nbr: 6129243

Alpha Spec, Uiso by ALP , Calculated Results

6/18/2006 10:02:51 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	SR	FILTER	*STLE	AlpIsoWoBS	**H4XR81AG**	**PCI/SA**		04/26/06 09:20	06/17/06 17:48			1	1.00 SA	
536403,P-0606					,J6E080164-1 v4.8.18		FILTER					UITC15660 Alq		0.06252 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	06/17/06 16:08	U-232	677	2	ALP7	ED	Y	N	3.6324E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.05			Y		(1.090E-02)						(0.000E+00)	15.994896		
1	06/17/06 16:08	U-234	0	0	ALP7	ED	N	N	3.6324E-01		N	92%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.05			Y		(1.090E-02)			5%			(0.000E+00)	15.994896		
2	06/17/06 16:08	U-235	0	0	ALP7	ED	N	N	3.6324E-01		N	92%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.05			Y		(1.090E-02)			5%			(0.000E+00)	15.994896		
3	06/17/06 16:08	U-238	0	0	ALP7	ED	N	N	3.6324E-01		N	92%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.05			Y		(1.090E-02)			5%			(0.000E+00)	15.994896		

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
	06/18/06	U-232	R	**67.085339**		3.38215E+00	9.31107	9.31107	1.00 SA	92%				
				(5.055506)		(1.3007E-01)	(0.45415)	(0.45415)	(0.028284)					
	06/18/06	U-234	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	92%		0.290697		
				(0.131376)		(0.0000E+00)	(0.018234)	(0.018234)	(0.028284)					
	06/18/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	92%		0.290697		
				(0.131376)		(0.0000E+00)	(0.018234)	(0.018234)	(0.028284)					
	06/18/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	92%		0.290697		
				(0.131376)		(0.0000E+00)	(0.018234)	(0.018234)	(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	**H4XTE1AG**	**PCI/SA**		04/26/06 09:45	06/17/06 17:48			1	1.00 SA	
536403,P-0607					,J6E080164-2 v4.8.18		FILTER					UITC15661 Alq		0.062123 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	06/17/06 16:08	U-232	747	6	ALP8	ED	Y	N	3.9047E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.0166			Y		(1.171E-02)						(0.000E+00)	16.097174		
1	06/17/06 16:08	U-234	3	3	ALP8	ED	N	N	3.9047E-01		N	95%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.0166			Y		(1.171E-02)			4%			(0.000E+00)	16.097174		
2	06/17/06 16:08	U-235	0	0	ALP8	ED	N	N	3.9047E-01		N	95%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.0166			Y		(1.171E-02)			4%			(0.000E+00)	16.097174		
3	06/17/06 16:08	U-238	1	0	ALP8	ED	N	N	3.9047E-01		N	95%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.0166			Y		(1.171E-02)			4%			(0.000E+00)	16.097174		

() - (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: 6129243 Alpha Spec, UIso by ALP , Calculated Results 6/18/2006 10:02:51 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
	06/18/06	U-232	R	**69.200351**		3.72651E+00	9.543597	9.543597	1.00 SA	95%				
				(5.15226)		(1.3659E-01)	(0.452032)	(0.452032)	(0.028284)					
	06/18/06	U-234	R	**0.235058**	**U4**	1.19901E-02	0.032417	0.032417	1.00 SA	95%		0.618406		
				(0.174056)		(8.8261E-03)	(0.023932)	(0.023932)	(0.028284)			0.176576		
	06/18/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	95%		0.265463		
				(0.119972)		(0.0000E+00)	(0.016546)	(0.016546)	(0.028284)					
	06/18/06	U-238	R	**0.097957**	**U4**	4.99667E-03	0.013509	0.013509	1.00 SA	95%		0.265463		
				(0.098272)		(4.9967E-03)	(0.013531)	(0.013531)	(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	SR	FILTER	*STLE	AlpIsoWoBS	**H4XTH1AG**	**PCI/SA**		04/26/06 10:00	06/17/06 17:48			1	1.00 SA	
536403,P-0608					,J6E080164-3 v4.8.18		FILTER					UITC15662 Alq		0.062616 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	06/17/06 16:08	U-232	627	2	ALP9	ED	Y	N	3.6670E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.0333			Y		(1.100E-02)						(0.000E+00)	15.97044		
1	06/17/06 16:08	U-234	1	1	ALP9	ED	N	N	3.6670E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.0333			Y		(1.100E-02)			4%			(0.000E+00)	15.97044		
2	06/17/06 16:08	U-235	0	0	ALP9	ED	N	N	3.6670E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.0333			Y		(1.100E-02)			4%			(0.000E+00)	15.97044		
3	06/17/06 16:08	U-238	1	0	ALP9	ED	N	N	3.6670E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.0333			Y		(1.100E-02)			4%			(0.000E+00)	15.97044		

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
	06/18/06	U-232	R	**61.436715**		3.13169E+00	8.540131	8.540131	1.00 SA	85%				
				(4.677726)		(1.2516E-01)	(0.426762)	(0.426762)	(0.028284)					
	06/18/06	U-234	R	**0.09262**	**U4**	3.99795E-03	0.012875	0.012875	1.00 SA	85%		0.554608		
				(0.118324)		(5.0970E-03)	(0.016431)	(0.016431)	(0.028284)			0.120486		
	06/18/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	85%		0.31378		
				(0.141808)		(0.0000E+00)	(0.019712)	(0.019712)	(0.028284)					
	06/18/06	U-238	R	**0.115786**	**U4**	4.99792E-03	0.016095	0.016095	1.00 SA	85%		0.31378		
				(0.116173)		(4.9979E-03)	(0.016122)	(0.016122)	(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	SR	FILTER	*STLE	AlpIsoWoBS	**H4XTL1AG**	**PCI/SA**		04/26/06 10:15	06/17/06 17:48			1	1.00 SA	
536403,P-0609					,J6E080164-4 v4.8.18		FILTER					UITC15663 Alq		0.062051 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	06/17/06 16:08	U-232	658	7	ALP10	ED	Y	N	3.6914E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.25			Y		(1.107E-02)						(0.000E+00)	16.115886		

() - (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: 6129243 Alpha Spec, Uiso by ALP , Calculated Results 6/18/2006 10:02:51 AM

1	06/17/06 16:08	U-234	1	2	ALP10	ED	N	N	3.6914E-01	N	88%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1166666	1000.25			Y		(1.107E-02)		4%		(0.000E+00)	16.115886	
2	06/17/06 16:08	U-235	1	1	ALP10	ED	N	N	3.6914E-01	N	88%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1166666	1000.25			Y		(1.107E-02)		4%		(0.000E+00)	16.115886	
3	06/17/06 16:08	U-238	0	2	ALP10	ED	N	N	3.6914E-01	N	88%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1166666	1000.25			Y		(1.107E-02)		4%		(0.000E+00)	16.115886	

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
	06/18/06	U-232	R	**64.524865**		3.28108E+00	8.888456	8.888456	1.00 SA	88%				
				(4.883001)		(1.2821E-01)	(0.437877)	(0.437877)	(0.028284)					
	06/18/06	U-234	R	**0.06699**	U4	2.99758E-03	0.009228	0.009228	1.00 SA	88%		0.631124		
				(0.116188)		(5.1933E-03)	(0.015996)	(0.015996)	(0.028284)			0.164339		
	06/18/06	U-235	R	**0.089333**	U4	3.99733E-03	0.012306	0.012306	1.00 SA	88%		0.534913		
				(0.114121)		(5.0961E-03)	(0.015704)	(0.015704)	(0.028284)			0.116205		
	06/18/06	U-238	R	**-0.044685**	U4	-1.99950E-03	-0.006155	-0.006155	1.00 SA	88%		0.631124		
				(0.031806)		(1.4139E-03)	(0.004367)	(0.004367)	(0.028284)			0.164339		

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	**H4XTM1AG**	**PCI/SA**		04/26/06 10:35	06/17/06 17:48			1	1.00 SA	
536403,P-0610					,J6E080164-5 v4.8.18		FILTER					UITC15664 Alq		0.062524 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	06/17/06 16:08	U-232	769	8	ALP11	ED	Y	N	4.0933E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.2			Y		(1.228E-02)						(0.000E+00)	15.993751		
1	06/17/06 16:08	U-234	1	2	ALP11	ED	N	N	4.0933E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.2			Y		(1.228E-02)			4%			(0.000E+00)	15.993751		
2	06/17/06 16:08	U-235	0	1	ALP11	ED	N	N	4.0933E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.2			Y		(1.228E-02)			4%			(0.000E+00)	15.993751		
3	06/17/06 16:08	U-238	1	1	ALP11	ED	N	N	4.0933E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.2			Y		(1.228E-02)			4%			(0.000E+00)	15.993751		

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
	06/18/06	U-232	R	**67.487345**		3.83444E+00	9.367537	9.367537	1.00 SA	93%				
				(5.007891)		(1.3859E-01)	(0.440012)	(0.440012)	(0.028284)					
	06/18/06	U-234	R	**0.056989**	U4	2.99707E-03	0.00791	0.00791	1.00 SA	93%		0.536967		
				(0.098848)		(5.1929E-03)	(0.013713)	(0.013713)	(0.028284)			0.139826		
	06/18/06	U-235	R	**-0.019011**	U4	-9.99800E-04	-0.002639	-0.002639	1.00 SA	93%		0.455107		
				(0.019072)		(9.9980E-04)	(0.002643)	(0.002643)	(0.028284)			0.098872		
	06/18/06	U-238	R	**0.076**	U4	3.99687E-03	0.010549	0.010549	1.00 SA	93%		0.455107		
				(0.097086)		(5.0957E-03)	(0.013462)	(0.013462)	(0.028284)			0.098872		

() - (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:6 RADCALC v4.8.18 STL Richland

Batch Nbr: 6129243

Alpha Spec, UIso by ALP , Calculated Results

6/18/2006 10:02:51 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	SR	FILTER	*STLE	AlpIsoWoBS	**H4XTN1AG**	**PCI/SA**		04/26/06 10:50	06/17/06 17:49			1	1.00 SA	
536403,P-0611					,J6E080164-6 v4.8.18		FILTER					UITC15665 Alq		0.06249 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	06/17/06 16:09	U-232	707	13	ALP12	ED	Y	N	3.6724E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.1333			Y		(1.102E-02)						(0.000E+00)	16.002579		
1	06/17/06 16:09	U-234	0	1	ALP12	ED	N	N	3.6724E-01		N	95%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.1333			Y		(1.102E-02)			5%			(0.000E+00)	16.002579		
2	06/17/06 16:09	U-235	0	1	ALP12	ED	N	N	3.6724E-01		N	95%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.1333			Y		(1.102E-02)			5%			(0.000E+00)	16.002579		
3	06/17/06 16:09	U-238	0	0	ALP12	ED	N	N	3.6724E-01		N	95%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.1333			Y		(1.102E-02)			5%			(0.000E+00)	16.002579		

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
	06/18/06	U-232	R	**69.113809**		3.52112E+00	9.588005	9.588005	1.00 SA	95%				
				(5.183968)		(1.3296E-01)	(0.46241)	(0.46241)	(0.028284)					
	06/18/06	U-234	R	**-0.020647**	**U4**	-9.99867E-04	-0.002864	-0.002864	1.00 SA	95%		0.494413		
				(0.020715)		(9.9987E-04)	(0.002869)	(0.002869)	(0.028284)			0.1074		
	06/18/06	U-235	R	**-0.020647**	**U4**	-9.99867E-04	-0.002864	-0.002864	1.00 SA	95%		0.494413		
				(0.020715)		(9.9987E-04)	(0.002869)	(0.002869)	(0.028284)			0.1074		
	06/18/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	95%		0.27974		
				(0.126424)		(0.0000E+00)	(0.017539)	(0.017539)	(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	**H4XTP1AG**	**PCI/SA**		04/26/06 09:25	06/17/06 17:49			1	1.00 SA	
536403,P-0612					,J6E080164-7 v4.8.18		FILTER					UITC15666 Alq		0.06139 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	06/17/06 16:09	U-232	777	32	ALP69	ED	Y	N	3.7411E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	2500.0166			Y		(1.122E-02)						(0.000E+00)	16.289357		
1	06/17/06 16:09	U-234	0	4	ALP69	ED	N	N	3.7411E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	2500.0166			Y		(1.122E-02)			5%			(0.000E+00)	16.289357		
2	06/17/06 16:09	U-235	0	4	ALP69	ED	N	N	3.7411E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	2500.0166			Y		(1.122E-02)			5%			(0.000E+00)	16.289357		
3	06/17/06 16:09	U-238	2	6	ALP69	ED	N	N	3.7411E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	2500.0166			Y		(1.122E-02)			5%			(0.000E+00)	16.289357		

() - (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: 6129243 Alpha Spec, UIso by ALP , Calculated Results 6/18/2006 10:02:52 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
	06/18/06	U-232	R	**75.88931**		3.86929E+00	10.342608	10.342608	1.00 SA	102%				
				(5.62599)		(1.3929E-01)	(0.484656)	(0.484656)	(0.028284)					
	06/18/06	U-234	R	**-0.031381**	U4	-1.59999E-03	-0.004277	-0.004277	1.00 SA	102%		0.52342		
				(0.01589)		(7.9999E-04)	(0.002152)	(0.002152)	(0.028284)			0.129006		
	06/18/06	U-235	R	**-0.031381**	U4	-1.59999E-03	-0.004277	-0.004277	1.00 SA	102%		0.52342		
				(0.01589)		(7.9999E-04)	(0.002152)	(0.002152)	(0.028284)			0.129006		
	06/18/06	U-238	R	**0.148914**	U4	7.59252E-03	0.020295	0.020295	1.00 SA	102%		0.581372		
				(0.140415)		(7.1334E-03)	(0.019101)	(0.019101)	(0.028284)			0.158		

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	**H4XTR1AG**	**PCI/SA**		04/26/06 09:35	06/17/06 17:49			1	1.00 SA	
536403,P-0613					,J6E080164-8 v4.8.18		FILTER					UITC15667 Alq		0.06242 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	06/17/06 16:09	U-232	735	28	ALP71	ED	Y	N	3.6536E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.0333			Y		(1.096E-02)						(0.000E+00)	16.020432		
1	06/17/06 16:09	U-234	1	3	ALP71	ED	N	N	3.6536E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.0333			Y		(1.096E-02)			5%			(0.000E+00)	16.020432		
2	06/17/06 16:09	U-235	0	3	ALP71	ED	N	N	3.6536E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.0333			Y		(1.096E-02)			5%			(0.000E+00)	16.020432		
3	06/17/06 16:09	U-238	0	4	ALP71	ED	N	N	3.6536E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.0333			Y		(1.096E-02)			5%			(0.000E+00)	16.020432		

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
	06/18/06	U-232	R	**72.346662**		3.66288E+00	10.025307	10.025307	1.00 SA	99%				
				(5.399025)		(1.3554E-01)	(0.477568)	(0.477568)	(0.028284)					
	06/18/06	U-234	R	**0.075523**	U4	3.79877E-03	0.010465	0.010465	1.00 SA	99%		0.495733		
				(0.100513)		(5.0465E-03)	(0.013915)	(0.013915)	(0.028284)			0.113275		
	06/18/06	U-235	R	**-0.023857**	U4	-1.19998E-03	-0.003306	-0.003306	1.00 SA	99%		0.495733		
				(0.013907)		(6.9281E-04)	(0.001918)	(0.001918)	(0.028284)			0.113275		
	06/18/06	U-238	R	**-0.031809**	U4	-1.59998E-03	-0.004408	-0.004408	1.00 SA	99%		0.530759		
				(0.016109)		(7.9999E-04)	(0.002218)	(0.002218)	(0.028284)			0.130798		

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	**H4X0R1AG**	**PCI/SA**		04/26/06 09:30	06/17/06 17:50			1	1.00 SA	
536403,000436					,J6E080164-9 v4.8.18		FILTER					UITC15668 Alq		0.06194 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	06/17/06 16:10	U-232	697	20	ALP83	ED	Y	N	3.4771E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	2500.0333			Y		(1.043E-02)						(0.000E+00)	16.144653		

() - (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: 6129243 Alpha Spec, UIso by ALP , Calculated Results 6/18/2006 10:02:52 AM

1	06/17/06 16:10	U-234	0	5	ALP83	ED	N	N	3.4771E-01	N	99%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1166666	2500.0333			Y		(1.043E-02)		5%		(0.000E+00)	16.144653	
2	06/17/06 16:10	U-235	0	2	ALP83	ED	N	N	3.4771E-01	N	99%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1166666	2500.0333			Y		(1.043E-02)		5%		(0.000E+00)	16.144653	
3	06/17/06 16:10	U-238	1	4	ALP83	ED	N	N	3.4771E-01	N	99%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1166666	2500.0333			Y		(1.043E-02)		5%		(0.000E+00)	16.144653	

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
	06/18/06	U-232	R	**72.680022**		3.47497E+00	9.994009	9.994009	1.00 SA	99%				
				(5.459038)		(1.3194E-01)	(0.483611)	(0.483611)	(0.028284)					
	06/18/06	U-234	R	**-0.042203**	**U4**	-1.99997E-03	-0.005803	-0.005803	1.00 SA	99%		0.595968		
				(0.01918)		(8.9442E-04)	(0.002616)	(0.002616)	(0.028284)			0.155194		
	06/18/06	U-235	R	**-0.016881**	**U4**	-7.99989E-04	-0.002321	-0.002321	1.00 SA	99%		0.481954		
				(0.012015)		(5.6568E-04)	(0.001647)	(0.001647)	(0.028284)			0.098153		
	06/18/06	U-238	R	**0.071686**	**U4**	3.39711E-03	0.009857	0.009857	1.00 SA	99%		0.563219		
				(0.106948)		(5.0607E-03)	(0.014695)	(0.014695)	(0.028284)			0.138809		

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	**H4X0W1AG**	**PCI/SA**		04/26/06 09:50	06/17/06 17:50			1	1.00 SA	
536403,000437					,J6E080164-10 v4.8.18		FILTER					UITC15669 Alq		0.061879 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	06/17/06 16:10	U-232	654	17	ALP84	ED	Y	N	3.4843E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	2500.15			Y		(1.045E-02)						(0.000E+00)	16.160605		
1	06/17/06 16:10	U-234	0	3	ALP84	ED	N	N	3.4843E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	2500.15			Y		(1.045E-02)			5%			(0.000E+00)	16.160605		
2	06/17/06 16:10	U-235	0	2	ALP84	ED	N	N	3.4843E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	2500.15			Y		(1.045E-02)			5%			(0.000E+00)	16.160605		
3	06/17/06 16:10	U-238	0	0	ALP84	ED	N	N	3.4843E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	2500.15			Y		(1.045E-02)			5%			(0.000E+00)	16.160605		

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
	06/18/06	U-232	R	**68.164356**		3.26266E+00	9.363821	9.363821	1.00 SA	93%				
				(5.162381)		(1.2786E-01)	(0.46213)	(0.46213)	(0.028284)					
	06/18/06	U-234	R	**-0.027021**	**U4**	-1.19993E-03	-0.003712	-0.003712	1.00 SA	93%		0.561553		
				(0.015755)		(6.9278E-04)	(0.002154)	(0.002154)	(0.028284)			0.12831		
	06/18/06	U-235	R	**-0.018014**	**U4**	-7.99952E-04	-0.002475	-0.002475	1.00 SA	93%		0.51449		
				(0.012822)		(5.6565E-04)	(0.001756)	(0.001756)	(0.028284)			0.104765		
	06/18/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	93%		0.305085		
				(0.137879)		(0.0000E+00)	(0.018941)	(0.018941)	(0.028284)					

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

RecCnt:11 RADCALC v4.8.18

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: 6129243 — Alpha Spec, Uiso by ALP , Calculated Results — 6/18/2006 10:02:52 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	SR	FILTER	*STLE	AlpIsoWoBS	**H4X001AG**	**PCI/SA**		04/26/06 10:05	06/17/06 17:49			1	1.00 SA	
536403,000438					,J6E080164-11 v4.8.18		FILTER					UITC15670 Alq		0.061949 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	06/17/06 16:09	U-232	460	51	ALP85	ED	Y	N	2.5840E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	2500.1166			Y		(7.752E-03)						(0.000E+00)	16.142348		
1	06/17/06 16:09	U-234	1	6	ALP85	ED	N	N	2.5840E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	16.142348		
2	06/17/06 16:09	U-235	0	1	ALP85	ED	N	N	2.5840E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	16.142348		
3	06/17/06 16:09	U-238	0	0	ALP85	ED	N	N	2.5840E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	16.142348		

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
	06/18/06	U-232	R	**64.12643**		2.27883E+00	8.81909	8.81909	1.00 SA	87%				
				(5.135954)		(1.0724E-01)	(0.492179)	(0.492179)	(0.028284)					
	06/18/06	U-234	R	**0.083926**	**U4**	2.59845E-03	0.011542	0.011542	1.00 SA	87%		0.957673		
				(0.164668)		(5.0935E-03)	(0.022637)	(0.022637)	(0.028284)			0.26024		
	06/18/06	U-235	R	**-0.012919**	**U4**	-3.99981E-04	-0.001777	-0.001777	1.00 SA	87%		0.64986		
				(0.012966)		(3.9998E-04)	(0.00178)	(0.00178)	(0.028284)			0.106243		
	06/18/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	87%		0.437501		
				(0.197722)		(0.0000E+00)	(0.027192)	(0.027192)	(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	**H4X041AG**	**PCI/SA**		04/26/06 10:20	06/17/06 17:51			1	1.00 SA	
536403,000439					,J6E080164-12 v4.8.18		FILTER					UITC15671 Alq		0.062294 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	06/17/06 16:11	U-232	661	8	ALP87	ED	Y	N	3.4106E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.0166			Y		(1.023E-02)						(0.000E+00)	16.052985		
1	06/17/06 16:11	U-234	0	2	ALP87	ED	N	N	3.4106E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.0166			Y		(1.023E-02)			5%			(0.000E+00)	16.052985		
2	06/17/06 16:11	U-235	1	0	ALP87	ED	N	N	3.4106E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.0166			Y		(1.023E-02)			5%			(0.000E+00)	16.052985		
3	06/17/06 16:11	U-238	0	0	ALP87	ED	N	N	3.4106E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.0166			Y		(1.023E-02)			5%			(0.000E+00)	16.052985		

() - (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 v4.8.18 STL Richland

Batch Nbr: 6129243 Alpha Spec, UIso by ALP , Calculated Results 6/18/2006 10:02:52 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
	06/18/06	U-232	R	**69.895472**		3.29672E+00	9.665997	9.665997	1.00 SA	96%				
				(5.28668)		(1.2857E-01)	(0.475597)	(0.475597)	(0.028284)					
	06/18/06	U-234	R	**-0.044232**	U4	-1.99997E-03	-0.006117	-0.006117	1.00 SA	96%		0.624854		
				(0.031483)		(1.4142E-03)	(0.00434)	(0.00434)	(0.028284)			0.162696		
	06/18/06	U-235	R	**0.110574**	U4	4.99958E-03	0.015291	0.015291	1.00 SA	96%		0.299655		
				(0.110939)		(4.9996E-03)	(0.015317)	(0.015317)	(0.028284)					
	06/18/06	U-238	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	96%		0.299655		
				(0.135425)		(0.0000E+00)	(0.018728)	(0.018728)	(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	**H4X081AG**	**PCI/SA**		04/26/06 10:40	06/18/06 07:59			1	1.00 SA	
536403,000440					,J6E080164-13 v4.8.18		FILTER					UITC15672 Alq		0.062 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	06/18/06 06:19	U-232	660	2	ALP7	ED	Y	N	3.6324E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.05			Y		(1.090E-02)						(0.000E+00)	16.129053		
1	06/18/06 06:19	U-234	3	0	ALP7	ED	N	N	3.6324E-01		N	90%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.05			Y		(1.090E-02)			4%			(0.000E+00)	16.129053		
2	06/18/06 06:19	U-235	0	0	ALP7	ED	N	N	3.6324E-01		N	90%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.05			Y		(1.090E-02)			4%			(0.000E+00)	16.129053		
3	06/18/06 06:19	U-238	1	0	ALP7	ED	N	N	3.6324E-01		N	90%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.05			Y		(1.090E-02)			4%			(0.000E+00)	16.129053		

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
	06/18/06	U-232	R	**65.926332**		3.29608E+00	9.074098	9.074098	1.00 SA	90%				
				(4.984822)		(1.2839E-01)	(0.446126)	(0.446126)	(0.028284)					
	06/18/06	U-234	R	**0.332863**		1.49913E-02	0.045815	0.045815	1.00 SA	90%		0.300686		
				(0.194076)		(8.6552E-03)	(0.026583)	(0.026583)	(0.028284)					
	06/18/06	U-235	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	90%		0.300686		
				(0.135891)		(0.0000E+00)	(0.018704)	(0.018704)	(0.028284)					
	06/18/06	U-238	R	**0.110954**	U4	4.99709E-03	0.015272	0.015272	1.00 SA	90%		0.300686		
				(0.111321)		(4.9971E-03)	(0.015297)	(0.015297)	(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	**H4X1A1AG**	**PCI/SA**		04/26/06 10:55	06/18/06 07:59			1	1.00 SA	
536403,000441					,J6E080164-14 v4.8.18		FILTER					UITC15673 Alq		0.061955 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	06/18/06 06:19	U-232	720	6	ALP8	ED	Y	N	3.9047E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.0166			Y		(1.171E-02)						(0.000E+00)	16.140749		

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

RecCnt:14 RADCALC v4.8.18

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: 6129243 Alpha Spec, UIso by ALP , Calculated Results 6/18/2006 10:02:52 AM

1	06/18/06 06:19	U-234	4	3	ALP8	ED	N	N	3.9047E-01	N	91%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1	1000.0166			Y		(1.171E-02)		4%		(0.000E+00)	16.140749	
2	06/18/06 06:19	U-235	0	0	ALP8	ED	N	N	3.9047E-01	N	91%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1	1000.0166			Y		(1.171E-02)		4%		(0.000E+00)	16.140749	
3	06/18/06 06:19	U-238	0	0	ALP8	ED	N	N	3.9047E-01	N	91%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1	1000.0166			Y		(1.171E-02)		4%		(0.000E+00)	16.140749	

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
	06/18/06	U-232	R	**66.886809**		3.59220E+00	9.199627	9.199627	1.00 SA	91%				
				(5.002667)		(1.3412E-01)	(0.440622)	(0.440622)	(0.028284)					
	06/18/06	U-234	R	**0.347408**		1.69901E-02	0.047783	0.047783	1.00 SA	91%		0.645084		
				(0.209302)		(1.0144E-02)	(0.028656)	(0.028656)	(0.028284)			0.184187		
	06/18/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	91%		0.276928		
				(0.125154)		(0.0000E+00)	(0.017214)	(0.017214)	(0.028284)					
	06/18/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	91%		0.276928		
				(0.125154)		(0.0000E+00)	(0.017214)	(0.017214)	(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	SR	FILTER	*STLE	AlpIsoWoBS	**H4X1F1AG**	**PCI/SA**		04/26/06 10:10	06/18/06 07:59			1	1.00 SA	
536403,000442					,J6E080164-15 v4.8.18		FILTER					UITC15674 Alq		0.061416 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	06/18/06 06:19	U-232	602	2	ALP9	ED	Y	N	3.6670E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	1000.0333			Y		(1.100E-02)						(0.000E+00)	16.282452		
1	06/18/06 06:19	U-234	0	1	ALP9	ED	N	N	3.6670E-01		N	81%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	1000.0333			Y		(1.100E-02)			4%			(0.000E+00)	16.282452		
2	06/18/06 06:19	U-235	0	0	ALP9	ED	N	N	3.6670E-01		N	81%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	1000.0333			Y		(1.100E-02)			4%			(0.000E+00)	16.282452		
3	06/18/06 06:19	U-238	0	0	ALP9	ED	N	N	3.6670E-01		N	81%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	1000.0333			Y		(1.100E-02)			4%			(0.000E+00)	16.282452		

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
	06/18/06	U-232	R	**60.142925**		3.00700E+00	8.200081	8.200081	1.00 SA	81%				
				(4.605378)		(1.2265E-01)	(0.415183)	(0.415183)	(0.028284)					
	06/18/06	U-234	R	**-0.024641**	**U4**	-9.99967E-04	-0.00336	-0.00336	1.00 SA	81%		0.589952		
				(0.024724)		(9.9997E-04)	(0.003365)	(0.003365)	(0.028284)			0.128161		
	06/18/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	81%		0.333782		
				(0.150848)		(0.0000E+00)	(0.020567)	(0.020567)	(0.028284)					
	06/18/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	81%		0.333782		
				(0.150848)		(0.0000E+00)	(0.020567)	(0.020567)	(0.028284)					

() - (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: 6129243 Alpha Spec, Uiso by ALP , Calculated Results 6/18/2006 10:02:52 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	SR	FILTER	*STLE	AlpIsoWoBS	**H400D1AA**	**PCI/SA**	**B**	04/26/06 09:20	06/18/06 07:59			1	1.00 SA	
0,INTRA-LAB BLANK					,J6E090000-243		FILTER					UITC15675 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	06/18/06 06:19	U-232	638	6	ALP10	ED	Y	N	3.6914E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.25			Y		(1.107E-02)						(0.000E+00)	1.00		
1	06/18/06 06:19	U-234	2	1	ALP10	ED	N	N	3.6914E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.25			Y		(1.107E-02)			4%			(0.000E+00)	1.00		
2	06/18/06 06:19	U-235	0	0	ALP10	ED	N	N	3.6914E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.25			Y		(1.107E-02)			4%			(0.000E+00)	1.00		
3	06/18/06 06:19	U-238	0	2	ALP10	ED	N	N	3.6914E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.25			Y		(1.107E-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
	06/18/06	U-232	R	**3.885338**		3.18400E+00	8.62546	8.62546	1.00 SA	86%				
				(0.28216)		(1.2632E-01)	(0.429016)	(0.429016)	(0.017321)					
	06/18/06	U-234	R	**0.012811**	**U4**	9.00025E-03	0.028441	0.028441	1.00 SA	86%		0.034086		
				(0.010215)		(7.1414E-03)	(0.022627)	(0.022627)	(0.017321)			0.007404		
	06/18/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	86%		0.019287		
				(0.008717)		(0.0000E+00)	(0.019351)	(0.019351)	(0.017321)					
	06/18/06	U-238	R	**-0.002846**	**U4**	-1.99950E-03	-0.006318	-0.006318	1.00 SA	86%		0.040216		
				(0.002025)		(1.4139E-03)	(0.004483)	(0.004483)	(0.017321)			0.01047		

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
17	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H400D1AC**	**PCI/SA**	**S**	04/26/06 09:20	06/18/06 07:59		UISF0454	1	1.00 SA	
0,INTRA-LAB CHECK					,J6E090000-243		FILTER					UISF0454 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	06/18/06 06:19	U-232	766	9	ALP11	ED	Y	N	4.0933E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.2			Y		(1.228E-02)						(0.000E+00)	1.00		
1	06/18/06 06:19	U-234	182	2	ALP11	ED	N	N	4.0933E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.2			Y		(1.228E-02)			4%			(0.000E+00)	1.00		
2	06/18/06 06:19	U-235	8	2	ALP11	ED	N	N	4.0933E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.2			Y		(1.228E-02)			4%			(0.000E+00)	1.00		
3	06/18/06 06:19	U-238	165	1	ALP11	ED	N	N	4.0933E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.2			Y		(1.228E-02)			4%			(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:17 RADCALC v4.8.18
STL Richland

Batch Nbr: 6129243

Alpha Spec, Uiso by ALP , Calculated Results

6/18/2006 10:02:52 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
	06/18/06	U-232	R	**4.203766**		3.82004E+00	9.332369	9.332369	1.00 SA	93%				
				(0.297615)		(1.3838E-01)	(0.438945)	(0.438945)	(0.017321)					
	06/18/06	U-234	R	**1.076582**		9.07773E-01	2.390014	2.390014	1.00 SA	93%	109%	0.033501		
				(0.115116)		(6.7452E-02)	(0.222072)	(0.222072)	(0.017321)			0.008723		
	06/18/06	U-235	R	**0.045055**		3.79904E-02	0.100022	0.100022	1.00 SA	93%	100%	0.033501		
				(0.017204)		(1.4209E-02)	(0.037824)	(0.037824)	(0.017321)			0.008723		
	06/18/06	U-238	R	**0.976986**		8.23794E-01	2.168911	2.168911	1.00 SA	93%	94%	0.028394		
				(0.106975)		(6.4218E-02)	(0.207912)	(0.207912)	(0.017321)			0.006168		

() - (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:17

RADCALC v4.8.18

STL Richland

SEVERN TRENT **STL**

URANIUM ISOTOPIC COUNTING REQUEST

1933

C.R. Technician: OD

Date Counted: 6/17/06

Counting Time
Sample: 200 Minutes
Background: See Alpha Regions Report
BRC 4/26/06

SOP's
Operating: RICHRD008
Review: RICHRD0016
6129243

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H4XR81AG	See Counting Room Printout for ROI information				7	
H4XTE1AG	See Counting Room Printout for ROI information				8	
H4XTH1AG	See Counting Room Printout for ROI information				9	
H4XTL1AG	See Counting Room Printout for ROI information				10	
H4XTM1AG	See Counting Room Printout for ROI information				11	
H4XTN1AG	See Counting Room Printout for ROI information				12	
H4XTP1AG	See Counting Room Printout for ROI information				69	
H4XTR1AG	See Counting Room Printout for ROI information				71	
	See Counting Room Printout for ROI information					

Comments:

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

Approved by: S

Date: 6/18/06

STL RICHLAND

252

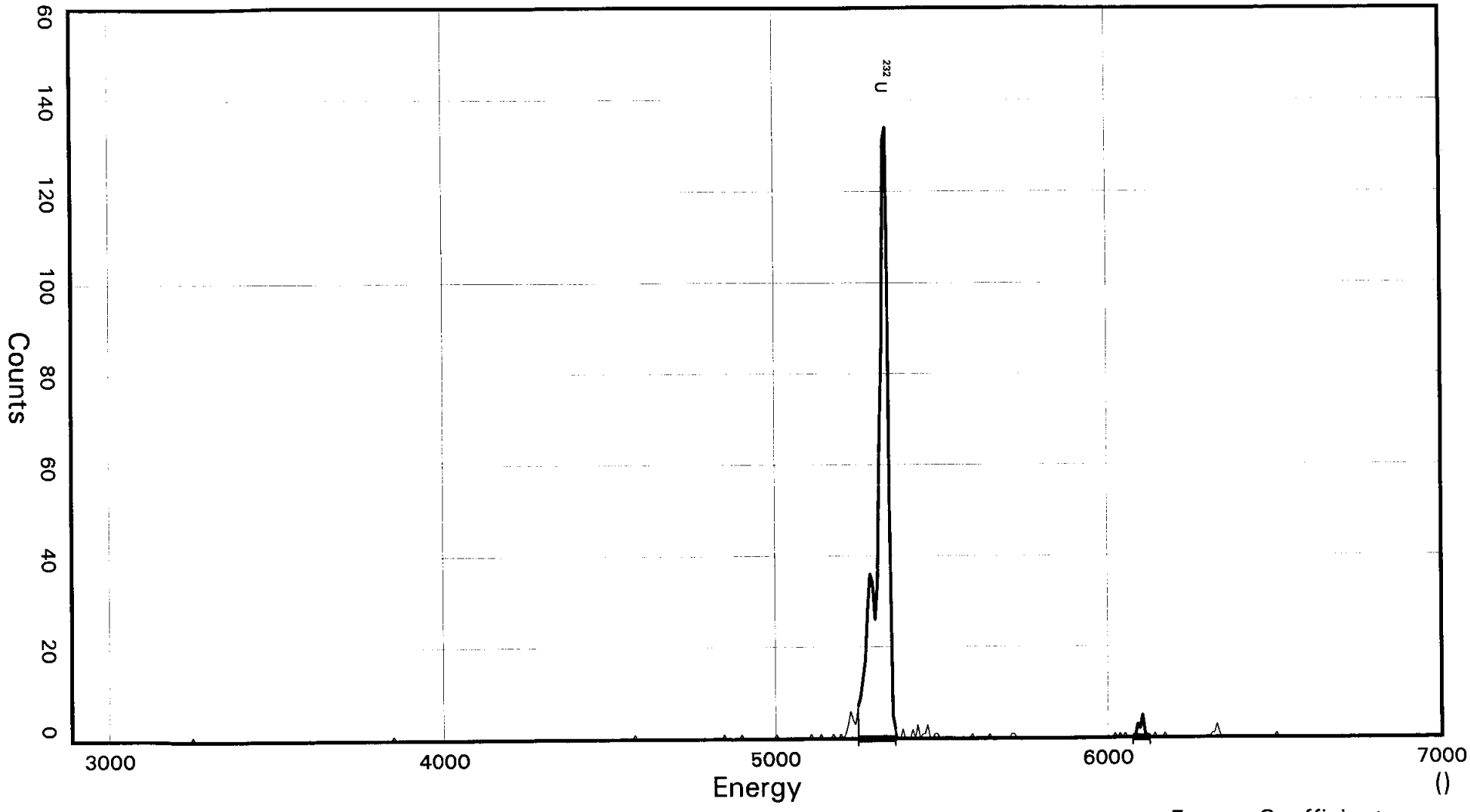
STL Richland WA.

U BRC

Sample ID: H4XR81AG

Detector ID: ALP7 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:08:04.56

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:

Offset: 2.86460E+03

Slope: 7.45676E+00

Quadrature: -2.58880E-05

SAMPLE IDENTIITY: H4XR81AG

TITLE : U BRC

DETECTOR : ALP7 1
CONFIGURATION NAME : $DISK1:[ALP7.SAMPLE]H4XR81AG_170661608.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:16

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:08:04 CALIB DATE : 01-JUN-2006 23:54:09

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

OFFSET : 2864.60 keV CONSTANT FWHM : 6.16667 Channels
SLOPE : 7.45676 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.258880E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XR81AG

Detector: ALP7 1
Report Date: 17-Jun-06 07:28 PM
Acquire Date: 17-JUN-2006 16:08:04.56
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	677	2	0	3.382	5330.5	111.6	320	335	0.00	0.00	P
U-234	0	0	0	0.000	4784.9	111.7	247	262	0.00	0.00	
U-235	0	0	0	0.000	4408.1	111.7	196	211	0.00	0.00	
U-238	0	0	0	0.000	4208.3	111.7	169	184	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XR81AG
Detector: ALP7 1
Report Date: 17-Jun-06 07:28 PM
Acquire Date: 17-JUN-2006 16:08:04.56

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	1		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	1		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	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	1		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	1		313	0		363	0		413	1		463			
0		14	0		64	0		114	0		164	0		214	0		264	0		314	0		364	0		414	1		464			
0		15	0		65	0		115	0		165	0		215	0		265	1		315	0		365	0		415	3		465			
0		16	0		66	0		116	0		166	0		216	1		266	3		316	1		366	0		416	1		466			
0		17	0		67	0		117	0		167	0		217	0		267	6		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	0		268	4		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	3		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	7	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	9	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	13	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	1		273	17	+	323	1		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	28	+	324	0		374	1		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	36	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	34	+	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	34	+	328	0		378	1		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	65	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	1		230	0		280	86	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	131	+	331	0		381	0		431	0		481			
0		32	0		82	1		132	0	+	182	0		232	0		282	134	+	332	1		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	50	+	333	1		383	3		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	5	+	334	0		384	2		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	2		335	0		385	5		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	0		336	0		386	1		436	0		486			
0		37	0		87	0		137	0		187	0		237	1		287	0		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	2		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	0		339	0		389	0		439	1		489			
0		40	0		90	0		140	0		190	0		240	0		290	0		340	0		390	1		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	2		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	3		344	0		394	1		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	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	3		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 17-JUN-2006 19:28:24

```
Configuration     : $DISK1:[ALP7.SAMPLE]H4XR81AG_170661608.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:08:04
Sample ID         : H4XR81AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP7                 Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   0.0%
Start energy      :  2886.97             End energy       :  6675.68
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5330.47	677	0	22.37	331.07	320	15	5.64E-02	3.8	
2	0	6096.79	12	0	22.37	434.11	431	7	1.00E-03	28.9	

VMS Nuclide Identification Report V3.0 Generated 17-JUN-2006 19:28:27

```
Configuration     : $DISK1:[ALP7.SAMPLE]H4XR81AG_170661608.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:08:04
Sample ID         : H4XR81AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP7                 Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   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                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: $DISK1:[ALP7.SAMPLE]H4XR81AG_170661608.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5330.47	320	335	677	677	0.00		
6096.78	431	438	12	11	0.29		

End of Report

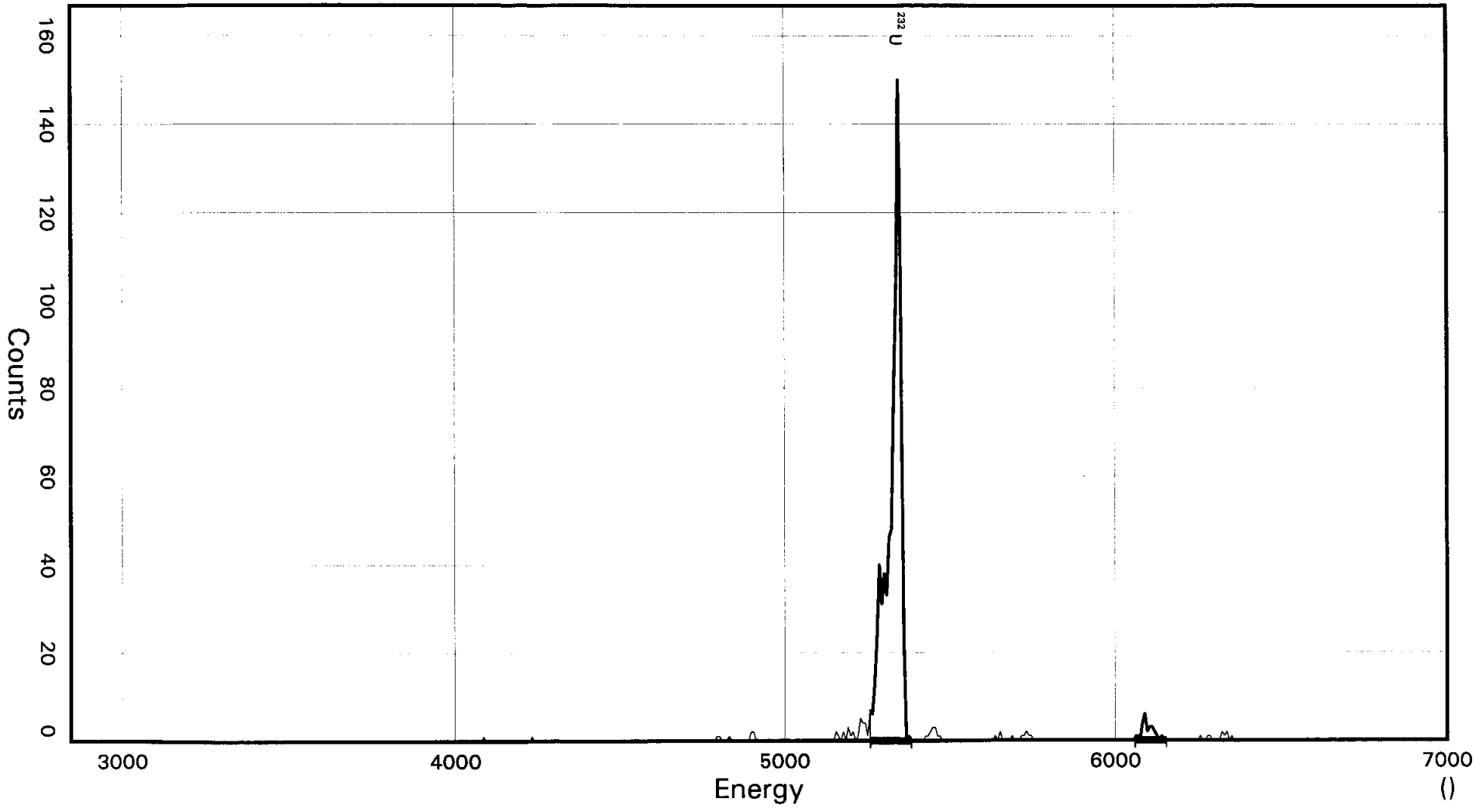
STL Richland WA.

U BRC

Sample ID: H4XTE1AG

Detector ID: ALP8 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:08:16.12

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:08.00

Energy Coefficients:

Offset: 2.82327E+03

Slope: 7.35189E+00

Quadrature: -6.84520E-05

SAMPLE IDENTIITY: H4XTE1AG

TITLE : U BRC

DETECTOR : ALP8 1
CONFIGURATION NAME : $DISK1:[ALP8.SAMPLE]H4XTE1AG_170661608.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:19

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:08:16 CALIB DATE : 01-JUN-2006 23:53:23

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

OFFSET : 2823.27 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 7.35189 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.684520E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XTE1AG

Detector: ALP8 1
Report Date: 17-Jun-06 07:28 PM
Acquire Date: 17-JUN-2006 16:08:16.12
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	747	6	0	3.727	5340.0	124.2	332	349	0.00	0.00	P
U-234	3	3	0	0.012	4794.4	124.4	257	274	0.00	0.00	
U-235	0	0	0	0.000	4417.6	124.5	206	223	0.00	0.00	
U-238	1	0	0	0.005	4217.8	124.5	179	196	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XTE1AG
Detector: ALP8 1
Report Date: 17-Jun-06 07:28 PM
Acquire Date: 17-JUN-2006 16:08:16.12

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	0		351	0		401	1		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	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	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	0	+	258	0		308	3		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	3		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	1		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	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	0	+	267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0	+	218	0	+	268	2		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0	+	219	1	+	269	1		319	0		369	0		419	1		469			
0		20	0		70	0		120	0		170	0	+	220	1	+	270	0		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	1		172	0	+	222	0	+	272	0		322	0		372	0		422	1		472			
0		23	0		73	0		123	0		173	0	+	223	0	+	273	3		323	0		373	0		423	1		473			
0		24	0		74	0		124	0		174	0		224	1	+	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	0		326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	0		277	1		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	0		278	5		328	0		378	0		428	2		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	4		329	0		379	0		429	1		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	4		330	0		380	0		430	2		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	7	+	332	0		382	0		432	1		482			
0		33	0		83	0		133	0	+	183	0		233	2		283	6	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	2		284	13	+	334	1		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	24	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	40	+	336	2		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	31	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	38	+	338	0		388	0		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	33	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	46	+	340	0		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	48	+	341	1		391	0		441	0		491			
0		42	0		92	0		142	1	+	192	0		242	0		292	77	+	342	0		392	1		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	104	+	343	0		393	1		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	150	+	344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	95	+	345	1		395	4		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	23	+	346	1		396	6		446	0		496			
0		47	0		97	0		147	0		197	0		247	0		297	0	+	347	2		397	2		447	0		497			
0		48	0		98	0		148	0		198	0		248	0		298	1	+	348	1		398	3		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	0		349	1		399	3		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 17-JUN-2006 19:28:39

```
Configuration     : $DISK1:[ALP8.SAMPLE]H4XTE1AG_170661608.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:08:16
Sample ID         : H4XTE1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP8                 Detector geometry:
Elapsed live time: 0 03:20:08.00         Elapsed real time: 0 03:20:08.00   0.0%
Start energy      :  2845.33             End energy       :  6569.50
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5339.95	747	0	44.11	343.42	332	17	6.22E-02	3.7	
2	0	6090.88	23	0	36.76	446.31	442	13	1.92E-03	20.9	

VMS Nuclide Identification Report V3.0 Generated 17-JUN-2006 19:28:41

```
Configuration     : $DISK1:[ALP8.SAMPLE]H4XTE1AG_170661608.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:08:16
Sample ID         : H4XTE1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP8                 Detector geometry:
Elapsed live time: 0 03:20:08.00         Elapsed real time: 0 03:20:08.00   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                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: $DISK1:[ALP8.SAMPLE]H4XTE1AG_170661608.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5339.95	332	349	747	736	0.40		
6090.87	442	455	23	24	-0.21		

End of Report

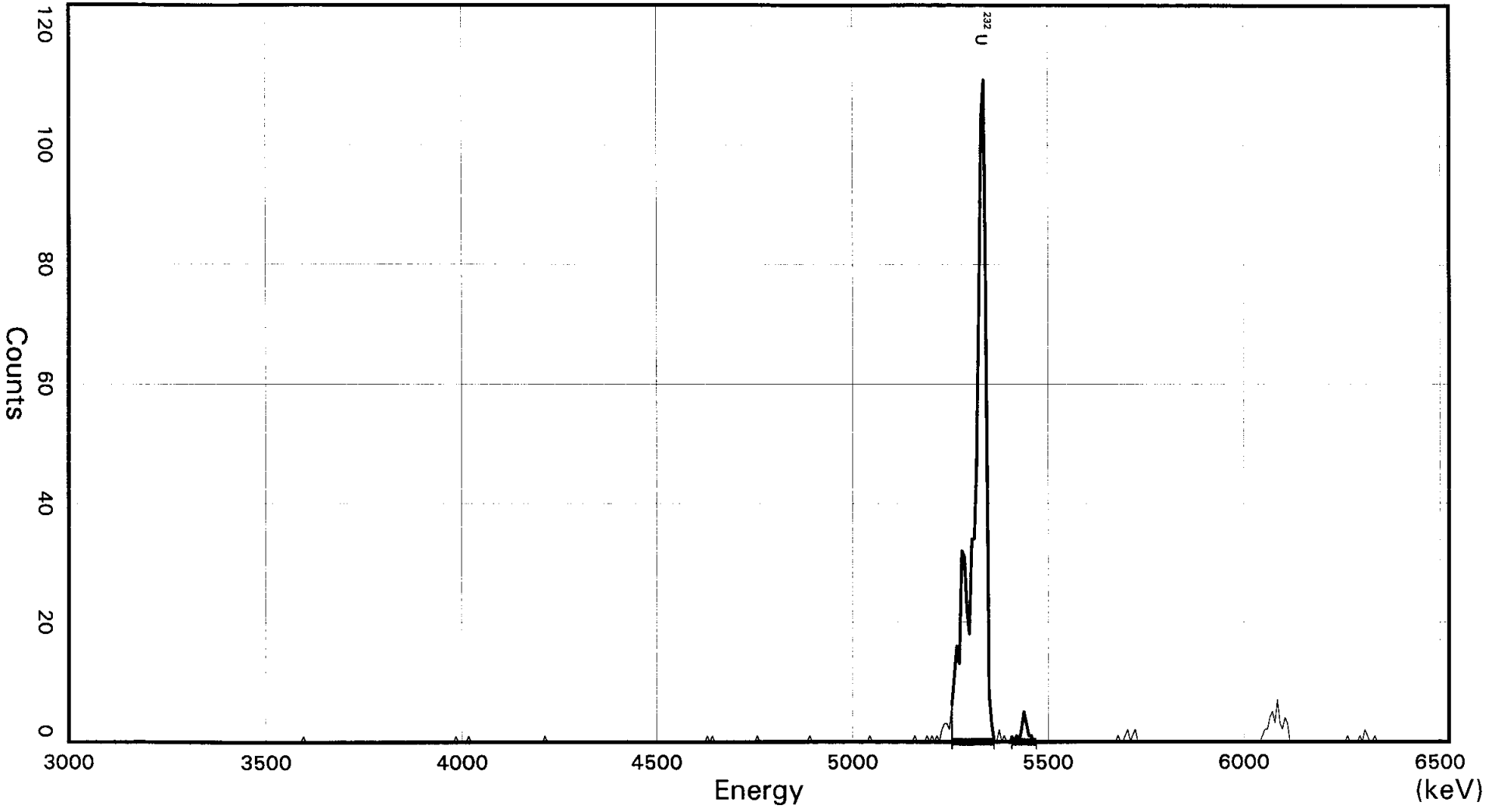
STL Richland WA.

U BRC

Sample ID: H4XTH1AG

Detector ID: ALP9 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:08:29.06

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:05.00

Energy Coefficients:

Offset: 3.26308E+03

Slope: 6.39526E+00

Quadrature: -5.61482E-05

SAMPLE IDENTIITY: H4XTH1AG

TITLE : U BRC

DETECTOR : ALP9 1
CONFIGURATION NAME : $DISK1:[ALP9.SAMPLE]H4XTH1AG_170661608.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:21

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:08:29 CALIB DATE : 01-JUN-2006 23:54:19

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

OFFSET : 3263.08 keV CONSTANT FWHM : 5.83333 Channels
SLOPE : 6.39526 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.561482E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XTH1AG

Detector: ALP9 1
Report Date: 17-Jun-06 07:28 PM
Acquire Date: 17-JUN-2006 16:08:29.06
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	627	2	0	3.132	5332.1	108.1	312	329	0.00	0.00	P
U-234	1	1	0	0.004	4786.5	108.3	226	243	0.00	0.00	
U-235	0	0	0	0.000	4409.7	108.4	167	184	0.00	0.00	
U-238	1	0	0	0.005	4209.9	108.4	136	153	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XTH1AG
Detector: ALP9 1
Report Date: 17-Jun-06 07:28 PM
Acquire Date: 17-JUN-2006 16:08:29.06

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	1		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	1		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	1		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	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0		208	0		258	2		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0		209	0		259	3		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	2		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	6	+	312	0		362	0		412	0		462	0		512
0		13	0		63	1		113	0		163	0		213	0		263	11	+	313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	1		214	0		264	16	+	314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0		265	13	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	1		216	0		266	32	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	31	+	317	0		367	0		417	0		467			
0		18	0		68	1		118	0	+	168	0		218	0		268	22	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	18	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	34	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	34	+	321	0		371	0		421	1		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	46	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	74	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	105	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	111	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0	+	226	0		276	62	+	326	0		376	0		426	1		476			
0		27	0		77	0		127	0	+	177	0	+	227	0		277	8	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0	+	228	0		278	3	+	328	0		378	0		428	2		478			
0		29	0		79	0		129	0	+	179	0	+	229	1		279	0		329	1		379	0		429	1		479			
0		30	0		80	0		130	0	+	180	0	+	230	0		280	0		330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0	+	231	0		281	2		331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0	+	232	0		282	0		332	1		382	0		432	1		482			
0		33	0		83	0		133	0	+	183	0	+	233	0		283	1		333	2		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	1	+	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	1		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0	+	236	0		286	1		336	2		386	0		436	0		486			
0		37	0		87	0	+	137	0		187	0	+	237	0		287	0		337	0		387	1		437	0		487			
0		38	0		88	0	+	138	0		188	0	+	238	0		288	1		338	0		388	2		438	0		488			
0		39	0		89	0	+	139	0		189	0	+	239	0		289	0		339	0		389	2		439	0		489			
0		40	0		90	0	+	140	0		190	0	+	240	0		290	2		340	0		390	4		440	0		490			
0		41	0		91	0	+	141	0		191	0	+	241	0		291	5		341	0		391	5		441	0		491			
0		42	0		92	0	+	142	0		192	0	+	242	0		292	3		342	0		392	3		442	0		492			
0		43	0		93	0	+	143	0		193	0	+	243	0		293	1		343	0		393	7		443	0		493			
0		44	0		94	0	+	144	0		194	0		244	0		294	1		344	0		394	3		444	0		494			
0		45	0		95	0	+	145	0		195	0		245	0		295	0		345	0		395	2		445	0		495			
0		46	0		96	0	+	146	0		196	0		246	0		296	0		346	0		396	4		446	0		496			
0		47	0		97	0	+	147	0		197	0		247	1		297	0		347	0		397	3		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	1	+	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 17-JUN-2006 19:28:51

Configuration : $DISK1:[ALP9.SAMPLE]H4XTH1AG_170661608.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:08:29
Sample ID : H4XTH1AG Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP9 Detector geometry:
Elapsed live time: 0 03:20:05.00 Elapsed real time: 0 03:20:05.00 0.0%
Start energy : 3282.26 keV End energy : 6522.74 keV
Sensitivity : 4.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5332.06	627	0	25.58	324.44	312	17	5.22E-02	4.0	
2	0	5438.04	13	0	19.19	341.11	336	10	1.08E-03	27.7	

VMS Nuclide Identification Report V3.0 Generated 17-JUN-2006 19:28:53

```
Configuration     : $DISK1:[ALP9.SAMPLE]H4XTH1AG_170661608.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:08:29
Sample ID         : H4XTH1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP9                 Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Energy tolerance :    40.00 keV          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: $DISK1:[ALP9.SAMPLE]H4XTH1AG_170661608.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5332.06	312	329	627	626	0.04		
5438.04	336	346	13	14	-0.28		

End of Report

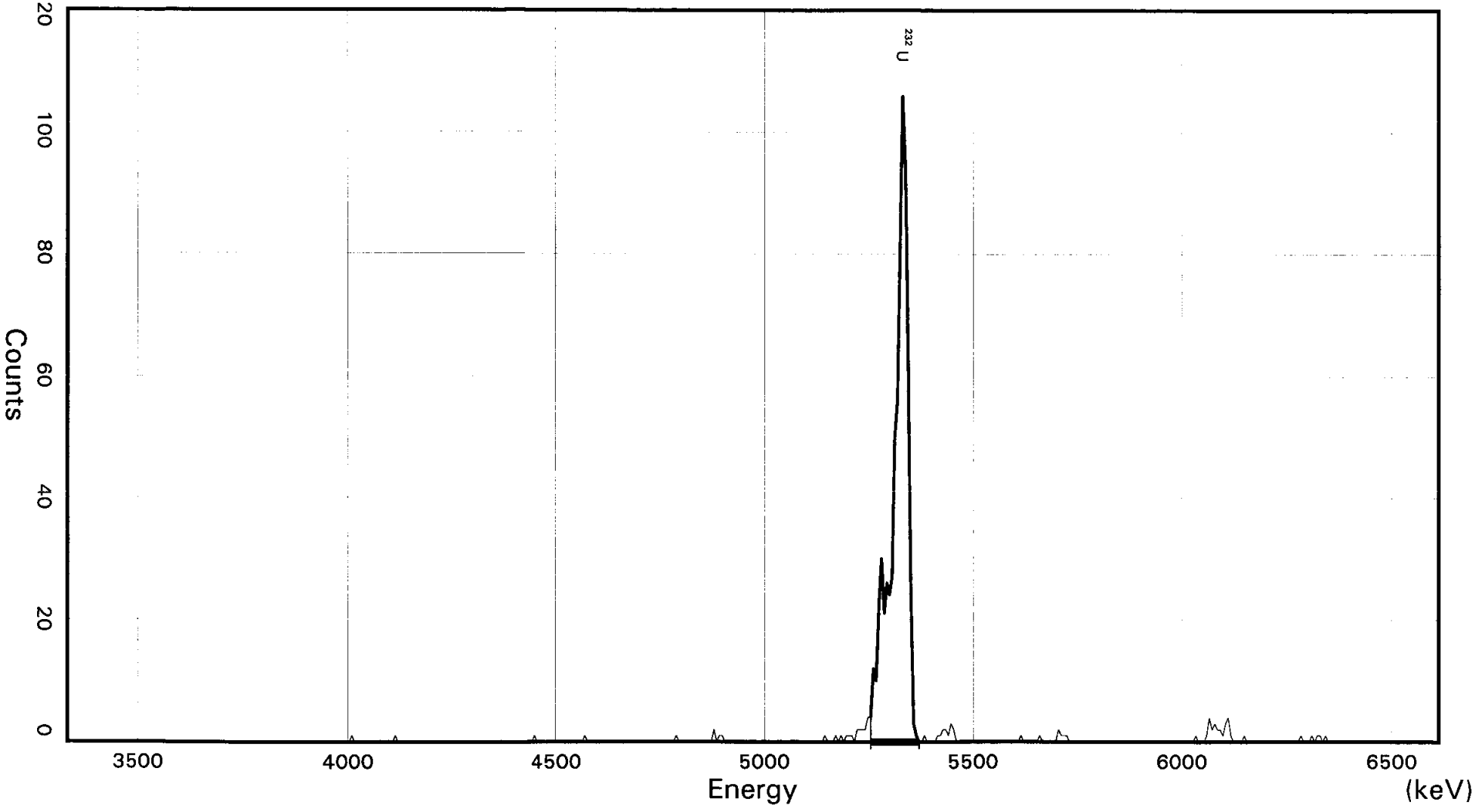
STL Richland WA.

U BRC

Sample ID: H4XTL1AG

Detector ID: ALP10 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:08:36.86

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:07.00

Energy Coefficients:

Offset: 3.31262E+03

Slope: 6.45058E+00

Quadrature: -8.95822E-06

SAMPLE IDENTITY: H4XTL1AG

TITLE : U BRC

DETECTOR : ALP10 1
CONFIGURATION NAME : $DISK1:[ALP10.SAMPLE]H4XTL1AG_170661608.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:26

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:08:36 CALIB DATE : 01-JUN-2006 23:53:52

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

OFFSET : 3312.62 keV CONSTANT FWHM : 6.83333 Channels
SLOPE : 6.45058 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.895822E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XTL1AG

Detector: ALP10 1
Report Date: 17-Jun-06 07:29 PM
Acquire Date: 17-JUN-2006 16:08:36.86
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	658	7	0	3.281	5330.8	116.0	301	319	0.00	0.00	P
U-234	1	2	0	0.003	4785.2	116.0	216	234	0.00	0.00	
U-235	1	1	0	0.004	4408.4	116.1	158	176	0.00	0.00	
U-238	0	2	0	-0.002	4208.6	116.1	127	145	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XTL1AG
Detector: ALP10 1
Report Date: 17-Jun-06 07:29 PM
Acquire Date: 17-JUN-2006 16:08:36.86

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	4	+	301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	12	+	302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	10	+	303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	22	+	304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	0		255	30	+	305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	0		256	21	+	306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	0		257	26	+	307	1		357	0		407	0		457	0		507
0		8	0		58	1		108	0	+	158	0		208	0		258	24	+	308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0	+	159	0		209	0		259	27	+	309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0	+	160	0		210	0		260	50	+	310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0	+	161	0		211	0		261	56	+	311	0		361	0		411	1		461	0		511
0		12	0		62	0		112	0	+	162	0		212	0		262	82	+	312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0	+	163	0		213	0		263	106	+	313	0		363	0		413	0		463			
0		14	0		64	0		114	0	+	164	0		214	0		264	94	+	314	1		364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0		215	0		265	62	+	315	0		365	0		415	1		465			
0		16	0		66	0		116	0	+	166	0	+	216	0		266	24	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0	+	217	0		267	3	+	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	0		320	0		370	0		420	1		470			
0		21	0		71	0		121	0	+	171	0	+	221	0		271	1		321	2		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0	+	222	0		272	0		322	1		372	1		422	0		472			
0		23	0		73	0		123	0	+	173	0	+	223	0		273	0		323	1		373	0		423	0		473			
0		24	0		74	1		124	0	+	174	0	+	224	0		274	0		324	1		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	1	+	176	0	+	226	0		276	1		326	0		376	1		426	0		476			
0		27	0		77	0	+	127	0		177	0	+	227	0		277	1		327	0		377	4		427	0		477			
0		28	0		78	0	+	128	0		178	0	+	228	0		278	2		328	0		378	2		428	0		478			
0		29	0		79	0	+	129	0		179	1	+	229	0		279	2		329	0		379	3		429	0		479			
0		30	0		80	0	+	130	0		180	0	+	230	0		280	1		330	0		380	2		430	0		480			
0		31	0		81	0	+	131	0		181	0	+	231	0		281	3		331	0		381	2		431	0		481			
0		32	0		82	0	+	132	0		182	0	+	232	0		282	2		332	0		382	1		432	0		482			
0		33	0		83	0	+	133	0		183	0	+	233	0		283	0		333	0		383	3		433	0		483			
0		34	0		84	0	+	134	0		184	0	+	234	1		284	0		334	0		384	4		434	0		484			
0		35	0		85	0	+	135	0		185	0		235	0		285	0		335	0		385	1		435	0		485			
0		36	0		86	0	+	136	0		186	0		236	0		286	0		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	1		288	0		338	0		388	0		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	1		290	0		340	0		390	1		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	1		292	0		342	0		392	0		442	0		492			
0		43	0		93	0	+	143	0		193	2		243	1		293	0		343	0		393	0		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	1		195	1		245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	1		246	2		296	0		346	0		396	0		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	2		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	2		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 17-JUN-2006 19:28:59

Configuration : $DISK1:[ALP10.SAMPLE]H4XTL1AG_170661608.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:08:36
Sample ID : H4XTL1AG Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP10 Detector geometry:
Elapsed live time: 0 03:20:07.00 Elapsed real time: 0 03:20:07.00 0.0%
Start energy : 3331.97 keV End energy : 6612.96 keV
Sensitivity : 4.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5330.75	658	0	32.25	313.00	301	18	5.48E-02	3.9	

VMS Nuclide Identification Report V3.0 Generated 17-JUN-2006 19:29:01

```
Configuration     : $DISK1:[ALP10.SAMPLE]H4XTL1AG_170661608.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:08:36
Sample ID         : H4XTL1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP10                Detector geometry:
Elapsed live time: 0 03:20:07.00         Elapsed real time: 0 03:20:07.00   0.0%
Energy tolerance :    40.00 keV          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:[ALP10.SAMPLE]H4XTL1AG_170661608.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5330.75	301	319	658	654	0.16		

End of Report

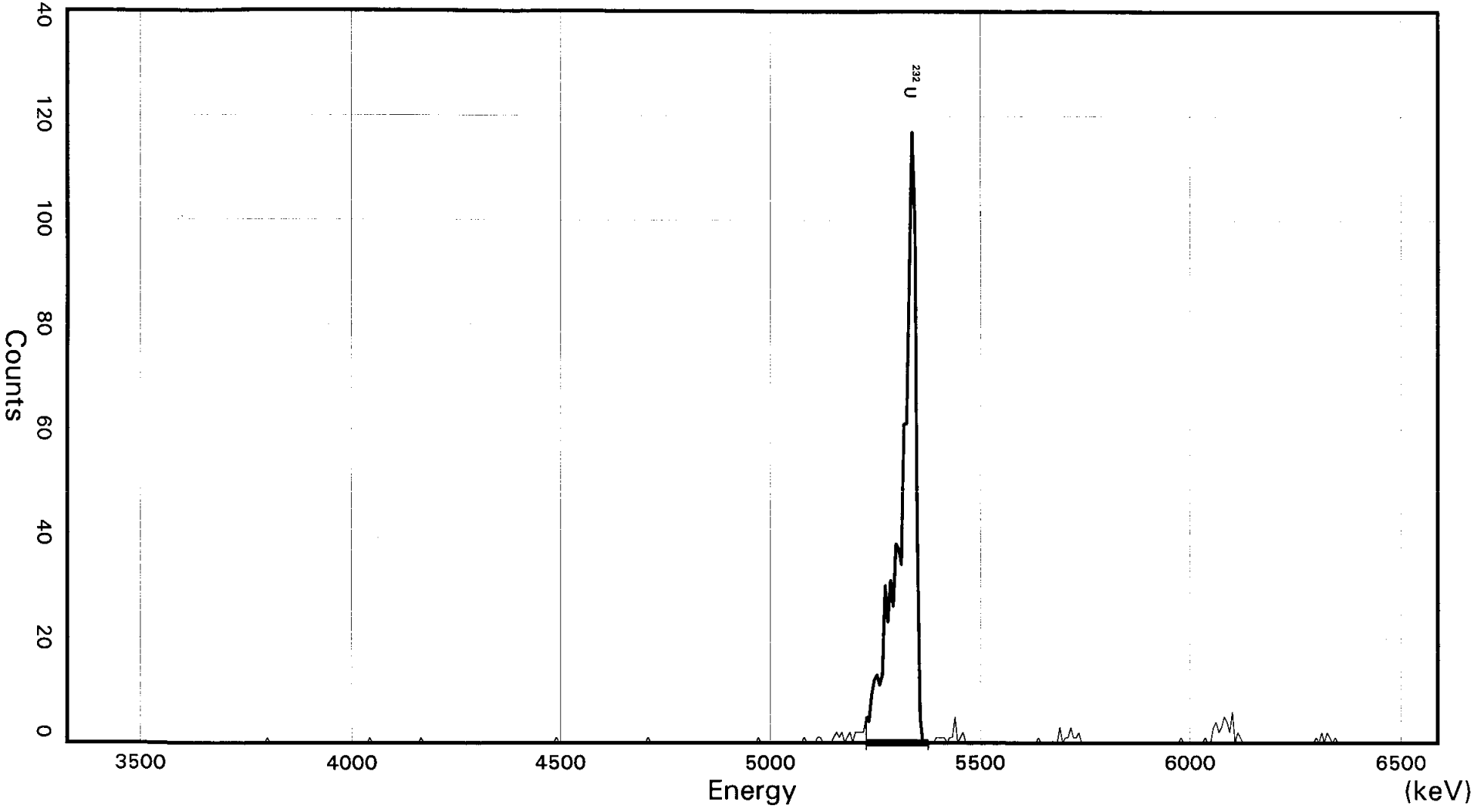
STL Richland WA.

U BRC

Sample ID: H4XTM1AG

Detector ID: ALP11 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:08:52.97

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:08.00

Energy Coefficients:

Offset: 3.30716E+03

Slope: 6.39329E+00

Quadrature: 2.85470E-05

SAMPLE IDENTITY: H4XTM1AG

TITLE : U BRC

DETECTOR : ALP11 1
CONFIGURATION NAME : $DISK1:[ALP11.SAMPLE]H4XTM1AG_170661608.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:30

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:08:52 CALIB DATE : 01-JUN-2006 23:54:30

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

OFFSET : 3307.16 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 6.39329 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : 2.854700E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XTM1AG

Detector: ALP11 1
Report Date: 17-Jun-06 07:29 PM
Acquire Date: 17-JUN-2006 16:08:52.97
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	769	8	0	3.834	5333.3	147.5	300	323	0.00	0.00	P
U-234	1	2	0	0.003	4787.7	147.3	215	238	0.00	0.00	
U-235	0	1	0	-0.001	4410.9	147.3	156	179	0.00	0.00	
U-238	1	1	0	0.004	4211.1	147.2	125	148	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XTM1AG
Detector: ALPII 1
Report Date: 17-Jun-06 07:29 PM
Acquire Date: 17-JUN-2006 16:08:52.97

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	4	+	301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	9	+	302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	12	+	303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	13	+	304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	0		255	11	+	305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0	+	156	0		206	0		256	13	+	306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0	+	157	0		207	0		257	30	+	307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0	+	158	0		208	0		258	23	+	308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0	+	159	0		209	0		259	31	+	309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0	+	160	0		210	1		260	26	+	310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0	+	161	0		211	0		261	38	+	311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0	+	162	0		212	0		262	37	+	312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0	+	163	0		213	0		263	34	+	313	0		363	0		413	0		463			
0		14	0		64	0		114	0	+	164	0		214	0		264	61	+	314	1		364	0		414	0		464			
0		15	0		65	1		115	0	+	165	0	+	215	0		265	61	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0	+	216	0		266	92	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0	+	217	0		267	117	+	317	0		367	1		417	1		467			
0		18	0		68	0		118	0	+	168	0	+	218	0		268	100	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	1	+	219	0		269	38	+	319	0		369	0		419	2		469			
0		20	0		70	0		120	0	+	170	0	+	220	0		270	5	+	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	2		471			
0		22	0		72	0		122	0	+	172	0	+	222	0		272	0	+	322	3		372	0		422	1		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	1		374	0		424	1		474			
0		25	0		75	0	+	125	0	+	175	0	+	225	0		275	0		325	1		375	0		425	0		475			
0		26	0		76	0	+	126	0	+	176	0	+	226	0		276	1		326	3		376	1		426	0		476			
0		27	1		77	0	+	127	0	+	177	0	+	227	1		277	1		327	1		377	0		427	0		477			
0		28	0		78	0	+	128	0	+	178	0	+	228	0		278	1		328	1		378	0		428	0		478			
0		29	0		79	0	+	129	0	+	179	0	+	229	0		279	1		329	2		379	3		429	0		479			
0		30	0		80	0	+	130	0		180	0	+	230	0		280	0		330	0		380	4		430	0		480			
0		31	0		81	0	+	131	0		181	0	+	231	0		281	1		331	0		381	2		431	0		481			
0		32	0		82	0	+	132	0		182	0	+	232	1		282	1		332	0		382	3		432	0		482			
0		33	0		83	0	+	133	0		183	0	+	233	1		283	5		333	0		383	5		433	0		483			
0		34	0		84	1	+	134	0		184	0	+	234	0		284	0		334	0		384	4		434	0		484			
0		35	0		85	0	+	135	1		185	0	+	235	0		285	1		335	0		385	2		435	0		485			
0		36	0		86	0	+	136	0		186	0	+	236	0		286	2		336	0		386	6		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	1		288	0		338	0		388	2		438	0		488			
0		39	0		89	0	+	139	0		189	0		239	2		289	0		339	0		389	1		439	0		489			
0		40	0		90	0	+	140	0		190	0		240	1		290	0		340	0		390	0		440	0		490			
0		41	0		91	0	+	141	0		191	0		241	2		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	0		442	0		492			
0		43	0		93	0	+	143	0		193	0		243	1		293	0		343	0		393	0		443	0		493			
0		44	0		94	0	+	144	0		194	0		244	2		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	2		296	0		346	0		396	0		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	2		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	2		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 17-JUN-2006 19:29:15

```
Configuration     : $DISK1:[ALP11.SAMPLE]H4XTM1AG_170661608.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:08:52
Sample ID         : H4XTM1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP11                Detector geometry:
Elapsed live time: 0 03:20:08.00         Elapsed real time: 0 03:20:08.00   0.0%
Start energy      :  3326.34 keV         End energy       :  6588.01 keV
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5333.30	769	0	38.36	316.47	300	23	6.40E-02	3.6	

VMS Nuclide Identification Report V3.0 Generated 17-JUN-2006 19:29:17

```
Configuration     : $DISK1:[ALP11.SAMPLE]H4XTM1AG_170661608.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:08:52
Sample ID         : H4XTM1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP11                Detector geometry:
Elapsed live time: 0 03:20:08.00         Elapsed real time: 0 03:20:08.00   0.0%
Energy tolerance :    40.00 keV          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:[ALP11.SAMPLE]H4XTM1AG_170661608.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.30	300	323	769	760	0.32		

End of Report

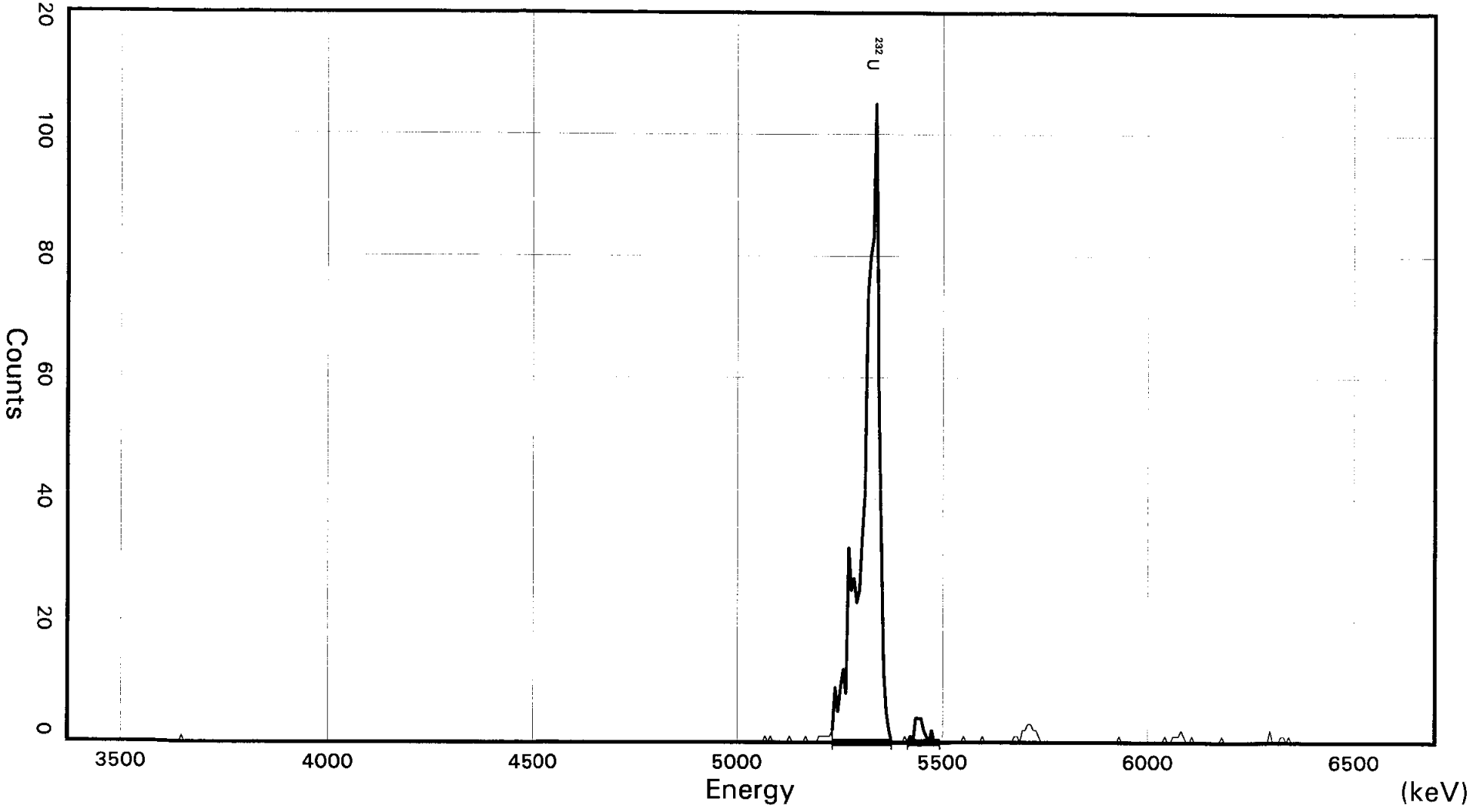
STL Richland WA.

U BRC

Sample ID: H4XTN1AG

Detector ID: ALP12 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:09:06.03

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:

Offset: 3.35111E+03

Slope: 6.52326E+00

Quadrature: 1.72407E-05

SAMPLE IDENTIITY: H4XTN1AG

TITLE : U BRC

DETECTOR : ALP12 1
CONFIGURATION NAME : $DISK1:[ALP12.SAMPLE]H4XTN1AG_170661609.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:34

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:09:06 CALIB DATE : 01-JUN-2006 23:54:41

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

OFFSET : 3351.11 keV CONSTANT FWHM : 7.83333 Channels
SLOPE : 6.52326 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : 1.724070E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XTN1AG

Detector: ALP12 1
Report Date: 17-Jun-06 07:29 PM
Acquire Date: 17-JUN-2006 16:09:06.03
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	707	13	0	3.521	5327.1	143.7	288	310	0.00	0.00	P
U-234	0	1	0	-0.001	4781.5	143.7	204	226	0.00	0.00	
U-235	0	1	0	-0.001	4404.7	143.6	147	169	0.00	0.00	
U-238	0	0	0	0.000	4204.9	143.6	116	138	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XTN1AG
Detector: ALP12 1
Report Date: 17 Jun-06 07:29 PM
Acquire Date: 17-JUN-2006 16:09:06.03

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	74	+	301	0		351	0		401	2		451	0		501
		2	0		52	0		102	0	+	152	0		202	0		252	80	+	302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0	+	153	0		203	0		253	83	+	303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0	+	154	0	+	204	0		254	105	+	304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0	+	155	0	+	205	0		255	59	+	305	0		355	0		405	1		455	0		505
0		6	0		56	0		106	0	+	156	0	+	206	0		256	34	+	306	1		356	0		406	1		456	0		506
0		7	0		57	0		107	0	+	157	0	+	207	0		257	12	+	307	1		357	0		407	0		457	0		507
0		8	0		58	0		108	0	+	158	0	+	208	0		258	5	+	308	0		358	0		408	1		458	0		508
0		9	0		59	0		109	0	+	159	0	+	209	0		259	2	+	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	3		361	0		411	0		461	0		511
0		12	0		62	0		112	0	+	162	0	+	212	0		262	0		312	3		362	1		412	0		462	0		512
0		13	0		63	0		113	0	+	163	0	+	213	1		263	0		313	2		363	0		413	0		463			
0		14	0		64	0		114	0	+	164	0	+	214	0		264	0		314	2		364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0	+	215	1		265	1		315	1		365	1		415	0		465			
0		16	0		66	0	+	116	0	+	166	0	+	216	0		266	0		316	0		366	1		416	0		466			
0		17	0		67	0	+	117	0	+	167	0	+	217	0		267	1		317	0		367	1		417	0		467			
0		18	0		68	0	+	118	0	+	168	0	+	218	0		268	0		318	0		368	2		418	0		468			
0		19	0		69	0	+	119	0	+	169	0	+	219	0		269	4		319	0		369	1		419	0		469			
0		20	0		70	0	+	120	0		170	0	+	220	0		270	4		320	0		370	0		420	0		470			
0		21	0		71	0	+	121	0		171	0	+	221	0		271	4		321	0		371	0		421	0		471			
0		22	0		72	0	+	122	0		172	0	+	222	1		272	2		322	0		372	1		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	0		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	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	1		278	0		328	0		378	0		428	0		478			
0		29	0		79	0	+	129	0		179	0		229	0		279	0		329	0		379	0		429	0		479			
0		30	0		80	0	+	130	0		180	0		230	0		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	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	1		284	0		334	0		384	0		434	0		484			
0		35	0		85	0	+	135	0		185	0		235	1		285	0		335	0		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0		236	1		286	0		336	0		386	0		436	0		486			
0		37	0		87	0	+	137	0		187	0		237	1		287	1		337	0		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	0		238	2	+	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	0		140	0		190	0		240	5	+	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	12	+	292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	8	+	293	0		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	32	+	294	1		344	0		394	0		444	0		494			
1		45	0		95	0		145	0		195	0		245	25	+	295	0		345	1		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	27	+	296	0		346	0		396	0		446	0		496			
0		47	0		97	0	+	147	0		197	0		247	23	+	297	0		347	0		397	0		447	0		497			
0		48	0		98	0	+	148	0		198	0		248	25	+	298	0		348	0		398	0		448	0		498			
0		49	0		99	0	+	149	0		199	0		249	34	+	299	0		349	0		399	0		449	0		499			
0		50	0		100	0	+	150	0		200	0		250	41	+	300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 17-JUN-2006 19:29:26

```
Configuration     : $DISK1:[ALP12.SAMPLE]H4XTN1AG_170661609.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:09:06
Sample ID         : H4XTN1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP12                Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   0.0%
Start energy      :  3370.68 keV         End energy       :  6695.54 keV
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5327.07	707	0	39.14	302.67	288	22	5.89E-02	3.8	
2	0	5438.81	19	0	26.09	319.77	316	12	1.58E-03	22.9	

VMS Nuclide Identification Report V3.0 Generated 17-JUN-2006 19:29:28

```
Configuration     : $DISK1:[ALP12.SAMPLE]H4XTN1AG_170661609.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:09:06
Sample ID         : H4XTN1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP12                Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   0.0%
Energy tolerance :    40.00 keV          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: $DISK1:[ALP12.SAMPLE]H4XTN1AG_170661609.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5327.07	288	310	707	706	0.04		
5438.80	316	328	19	18	0.23		

End of Report

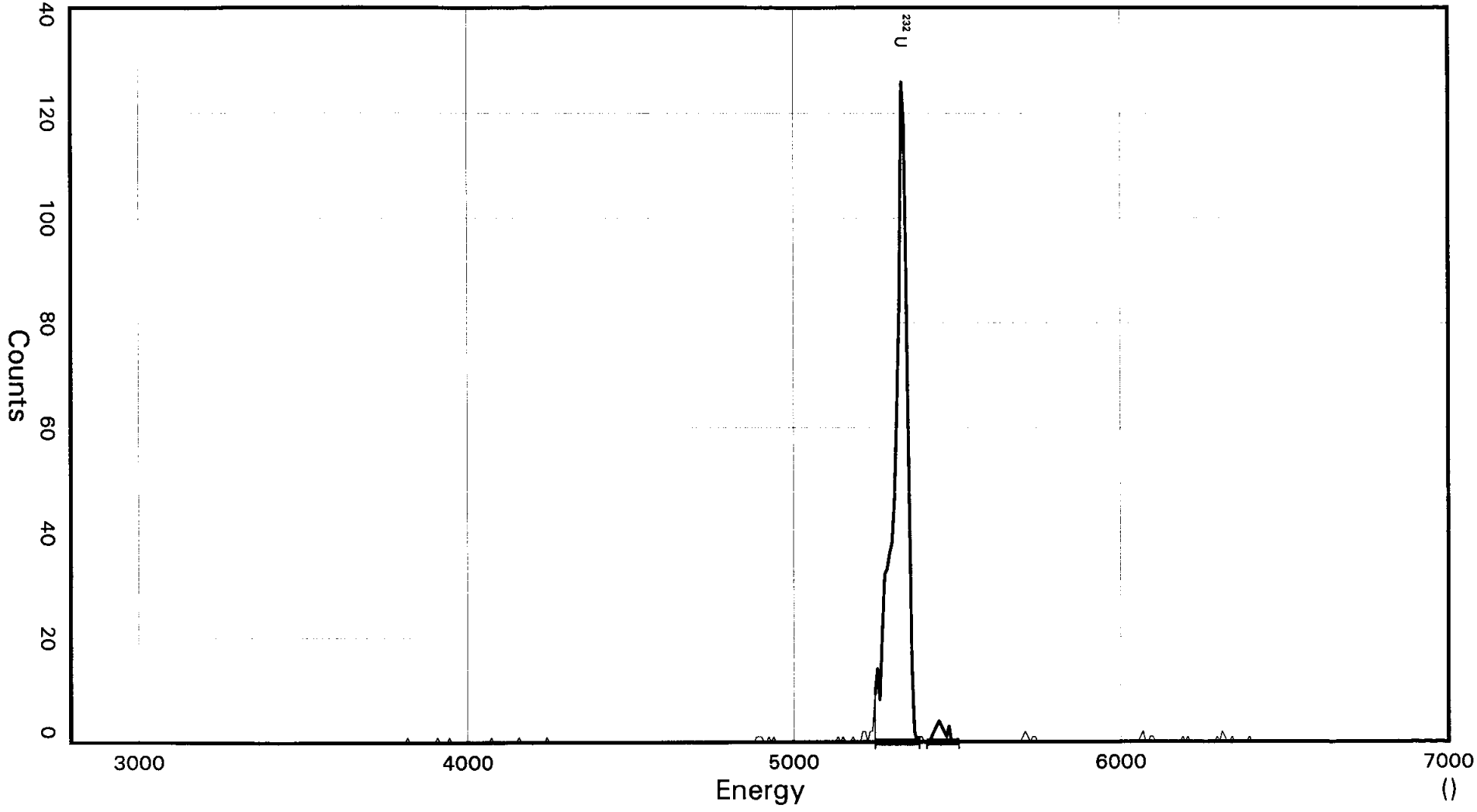
STL Richland WA.

U BRC

Sample ID: H4XTP1AG

Detector ID: ALP69 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:09:04.09

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:09.00

Energy Coefficients:

Offset: 2.77160E+03

Slope: 7.51707E+00

Quadrature: 1.81482E-05

SAMPLE IDENTIITY: H4XTP1AG

TITLE : U BRC

DETECTOR : ALP69 1
CONFIGURATION NAME : RDND06$DKA100:[ALP69.SAMPLE]H4XTP1AG_170661609.CNF;1
ACQUIRE DATE of BACKGROUND: 12-JUN-2006 08:12:59

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:09:04 CALIB DATE : 12-JUN-2006 06:25:06

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

OFFSET : 2771.60 keV CONSTANT FWHM : 7.50000 Channels
SLOPE : 7.51707 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 1.814820E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XTP1AG

Detector: ALP69 1
Report Date: 17-Jun-06 07:29 PM
Acquire Date: 17-JUN-2006 16:09:04.09
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	777	32	0	3.869	5330.5	135.5	329	347	0.00	0.00	P
U-234	0	4	0	-0.002	4784.9	135.5	257	275	0.00	0.00	
U-235	0	4	0	-0.002	4408.1	135.4	206	224	0.00	0.00	
U-238	2	6	0	0.008	4208.3	135.4	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: H4XTP1AG
Detector: ALP69 1
Report Date: 17-Jun-06 07:29 PM
Acquire Date: 17-JUN-2006 16:09:04.09

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	1		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	2		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	4		355	0		405	0		455	0		505
0		6	0		56	0		106	1		156	0	+	206	0		256	0		306	3		356	0		406	1		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	1		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	3		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	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	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	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	0		321	0		371	0		421	1		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	1		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	2		324	0		374	0		424	1		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	0		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	9	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	14	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	1		281	8	+	331	0		381	0		431	1		481			
0		32	0		82	0		132	0	+	182	0		232	1		282	21	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	1		283	32	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	1	+	184	0		234	0		284	33	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	36	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	1		286	38	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	46	+	337	0		387	1		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	1		288	62	+	338	0		388	2		438	0		488			
0		39	0		89	1		139	0	+	189	0		239	0		289	82	+	339	1		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	126	+	340	2		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	118	+	341	1		391	1		441	0		491			
0		42	0		92	0		142	0	+	192	0		242	0		292	84	+	342	0		392	1		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	48	+	343	1		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	15	+	344	1		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	1	+	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	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 17-JUN-2006 19:29:31

Configuration : RDND06$DKA100:[ALP69.SAMPLE]H4XTP1AG_170661609.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:09:04
Sample ID : H4XTP1AG Sample quantity : 0.00000E+00 sample
Sample type : disk Sample geometry :
Detector name : ALP69 Detector geometry:
Elapsed live time: 0 03:20:09.00 Elapsed real time: 0 03:20:09.00 0.0%
Start energy : 2794.15 End energy : 6625.10
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5330.50	777	0	37.59	340.13	329	18	6.47E-02	3.6	
2	0	5446.21	19	0	45.10	355.50	350	13	1.58E-03	22.9	

VMS Nuclide Identification Report V3.1 Generated 17-JUN-2006 19:29:32

```
Configuration     : RDND06$DKA100:[ALP69.SAMPLE]H4XTP1AG_170661609.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:09:04
Sample ID         : H4XTP1AG             Sample quantity  : 0.00000E+00 sample
Sample type       : disk                 Sample geometry  :
Detector name     : ALP69                Detector geometry:
Elapsed live time: 0 03:20:09.00         Elapsed real time: 0 03:20:09.00   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]H4XTP1AG_170661609.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5330.49	329	347	777	775	0.07		
5446.21	350	363	19	19	0.00		

End of Report

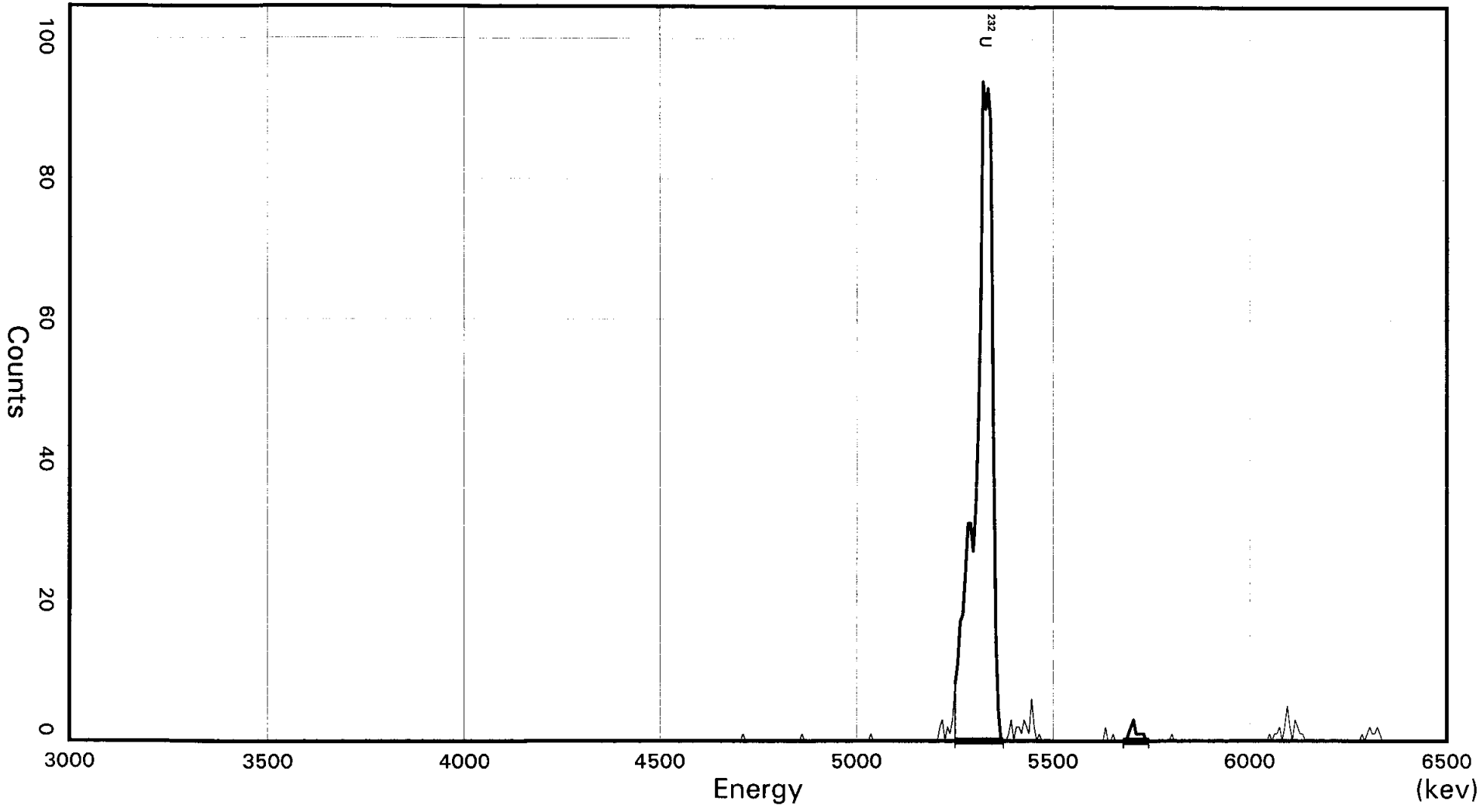
STL Richland WA.

U BRC

Sample ID: H4XTR1AG

Detector ID: ALP71 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:09:38.38

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:

Offset: 3.14844E+03

Slope: 6.47574E+00

Quadrature: 3.38252E-05

SAMPLE IDENTIITY: H4XTR1AG

TITLE : U BRC

DETECTOR : ALP71 1
CONFIGURATION NAME : RDND06$DKA100:[ALP71.SAMPLE]H4XTR1AG_170661609.CNF;1
ACQUIRE DATE of BACKGROUND: 12-JUN-2006 08:13:05

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:09:38 CALIB DATE : 12-JUN-2006 06:25:11

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

OFFSET : 3148.44 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 6.47574 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 3.382520E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XTR1AG

Detector: ALP71 1
Report Date: 17-Jun-06 07:29 PM
Acquire Date: 17-JUN-2006 16:09:38.38
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	735	28	0	3.663	5328.3	123.5	324	343	0.00	0.00	P
U-234	1	3	0	0.004	4782.7	123.4	240	259	0.00	0.00	
U-235	0	3	0	-0.001	4405.9	123.3	182	201	0.00	0.00	
U-238	0	4	0	-0.002	4206.1	123.2	151	170	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XTR1AG
Detector: ALP71 1
Report Date: 17-Jun-06 07:29 PM
Acquire Date: 17-JUN-2006 16:09:38.38

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	2		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	2		453	0		503
0		4	0		54	0		104	0	+	154	0		204	0	+	254	0		304	6		354	0		404	5		454	0		504
0		5	0		55	0		105	0	+	155	0		205	0	+	255	0		305	2		355	0		405	2		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	3		457	0		507
0		8	0		58	0		108	0	+	158	0		208	0	+	258	0		308	0		358	0		408	2		458	0		508
0		9	0		59	0		109	0	+	159	0		209	0	+	259	0		309	0		359	1		409	1		459	0		509
0		10	0		60	0		110	0	+	160	0		210	0		260	0		310	0		360	0		410	1		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			
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	2		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	3		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	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	0		472			
0		23	0		73	0		123	0		173	0		223	0		273	3		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	0		274	8	+	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	17	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	0		277	18	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	0		278	24	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0		179	0		229	0		279	31	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0		180	0		230	0		280	31	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0		181	0		231	0		281	27	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	33	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	44	+	333	2		383	0		433	1		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	61	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	94	+	335	0		385	0		435	1		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	90	+	336	1		386	0		436	2		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	93	+	337	0		387	0		437	1		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	88	+	338	0		388	0		438	1		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	43	+	339	0		389	0		439	2		489			
0		40	0		90	0		140	0	+	190	0	+	240	0		290	14	+	340	0		390	0		440	1		490			
0		41	0		91	0		141	0	+	191	1	+	241	1		291	4	+	341	0		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0	+	242	0		292	0	+	342	1		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	0	+	244	0		294	0		344	3		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0	+	245	0		295	1		345	1		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	3		346	1		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	0		347	1		397	1		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	2		348	1		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	2		349	0		399	1		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	1		350	0		400	1		450	0		500			

VMS Peak Search Report V1.9 Generated 17-JUN-2006 19:29:57

Configuration : RDND06$DKA100:[ALP71.SAMPLE]H4XTR1AG_170661609.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:09:38
Sample ID : H4XTR1AG Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP71 Detector geometry:
Elapsed live time: 0 03:20:03.00 Elapsed real time: 0 03:20:03.00 0.0%
Start energy : 3167.87 kev End energy : 6472.89 kev
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5328.29	735	0	45.33	336.03	324	19	6.12E-02	3.7	
2	0	5701.07	10	0	32.38	393.38	390	10	8.33E-04	31.6	

VMS Nuclide Identification Report V3.1 Generated 17-JUN-2006 19:29:58

```
Configuration     : RDND06$DKA100:[ALP71.SAMPLE]H4XTR1AG_170661609.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:09:38
Sample ID         : H4XTR1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP71                Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   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  :    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:[ALP71.SAMPLE]H4XTR1AG_170661609.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5328.28	324	343	735	731	0.15		
5701.06	390	400	10	10	0.00		

End of Report

SEVERN TRENT STL

URANIUM ISOTOPIC COUNTING REQUEST

1932

C.R. Technician: OD

Date Counted: 6/17/06

Counting Time
Sample: 200 Minutes
Background: See Alpha Regions Report
BRC 4/26/06

SOP's
Operating: RICHRD008
Review: RICHRD0016
6/29243

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H4X0R1AG	See Counting Room Printout for ROI information				83	
H4X0W1AG	See Counting Room Printout for ROI information				84	
H4X001AG	See Counting Room Printout for ROI information				85	
H4X041AG	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					

Comments:

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

Approved by: S

Date: 6/18/06

STL RICHLAND

311

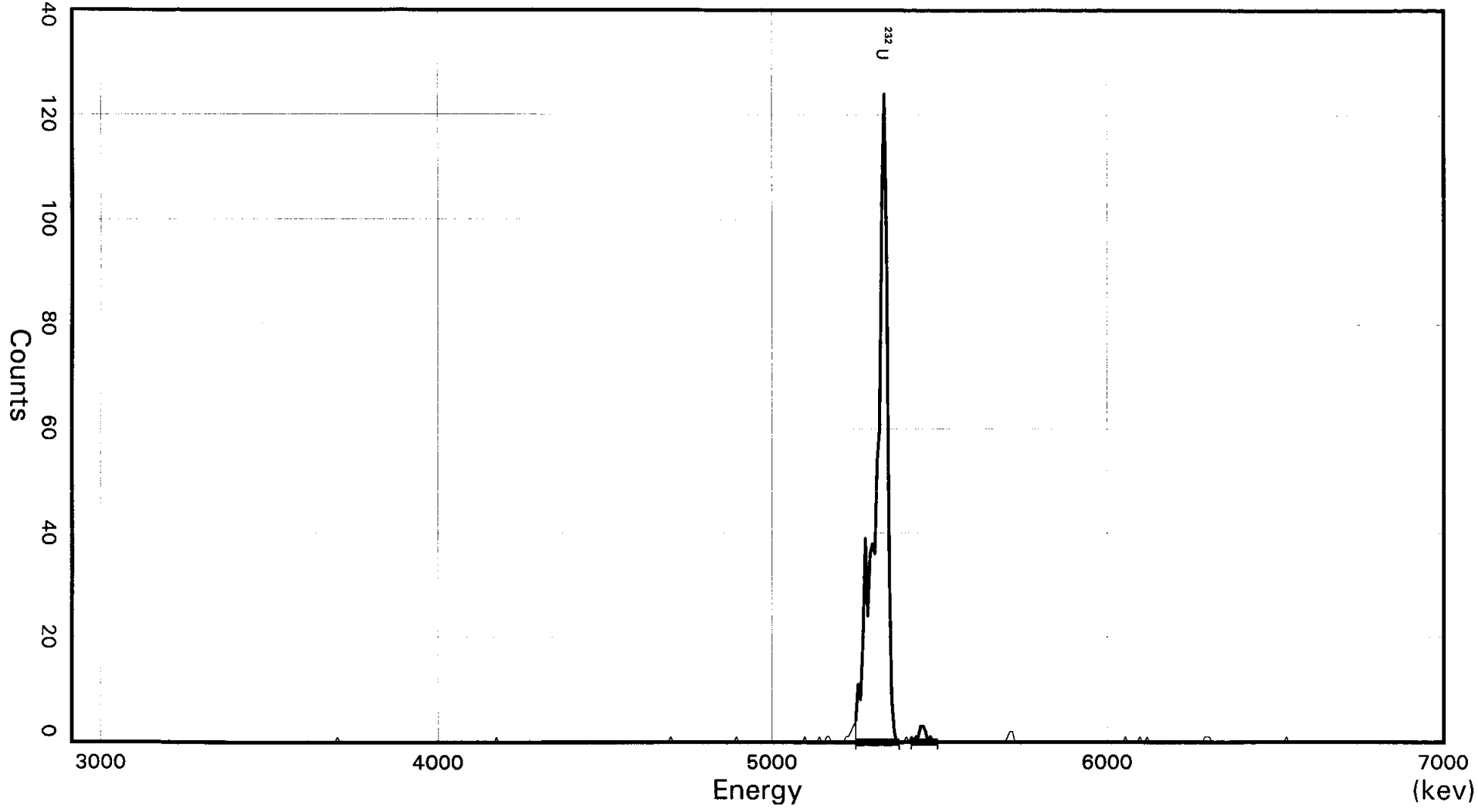
STL Richland WA.

U BRC

Sample ID: H4X0R1AG

Detector ID: ALP83 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:10:53.80

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:07.00

Energy Coefficients:

Offset: 2.89305E+03

Slope: 7.36477E+00

Quadrature: -2.22552E-04

SAMPLE IDENTIITY: H4X0R1AG

TITLE : U BRC

DETECTOR : ALP83 1
CONFIGURATION NAME : RDND06$DKA100:[ALP83.SAMPLE]H4X0R1AG_1706616
10.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:07

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:10:53 CALIB DATE : 09-JUN-2006 06:21:49

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

OFFSET : 2893.05 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 7.36477 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.222552E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X0R1AG

Detector: ALP83 1
Report Date: 17-Jun-06 07:31 PM
Acquire Date: 17-JUN-2006 16:10:53.80
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	697	20	0	3.475	5331.3	129.9	323	341	0.00	0.00	P
U-234	0	5	0	-0.002	4785.7	130.5	248	266	0.00	0.00	
U-235	0	2	0	-0.001	4408.9	130.9	196	214	0.00	0.00	
U-238	1	4	0	0.003	4209.1	131.1	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: H4X0R1AG
Detector: ALP83 1
Report Date: 17-Jun-06 07:31 PM
Acquire Date: 17-JUN-2006 16:10:53.80

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	0	+	252	1		302	2		352	0		402	0		452	1		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	1		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	0	+	258	1		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	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	1		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	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	1		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	0		272	3		322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	4	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	1		274	11	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	1	+	175	0		225	0		275	8	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	19	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	39	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	24	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	36	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	38	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	36	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	54	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	60	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	105	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	124	+	335	0		385	1		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	89	+	336	1		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	33	+	337	2		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	8	+	338	2		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	0	+	340	0		390	0		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	0		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	1		344	0		394	1		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	1		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	1		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	3		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 17-JUN-2006 19:31:04

Configuration : RDND06$DKA100:[ALP83.SAMPLE]H4X0R1AG_170661610.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:10:53
Sample ID : H4X0R1AG Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP83 Detector geometry:
Elapsed live time: 0 03:20:07.00 Elapsed real time: 0 03:20:07.00 0.0%
Start energy : 2915.14 kev End energy : 6605.47 kev
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5331.28	697	0	44.19	334.45	323	18	5.80E-02	3.8	
2	0	5442.73	12	0	44.19	349.90	346	11	9.99E-04	28.9	

VMS Nuclide Identification Report V3.1 Generated 17-JUN-2006 19:31:06

```
Configuration     : RDND06$DKA100:[ALP83.SAMPLE]H4X0R1AG_170661610.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:10:53
Sample ID         : H4X0R1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP83                Detector geometry:
Elapsed live time: 0 03:20:07.00         Elapsed real time: 0 03:20:07.00   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  :    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]H4X0R1AG_170661610.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5331.28	323	341	697	690	0.27		
5442.73	346	357	12	12	0.00		

End of Report

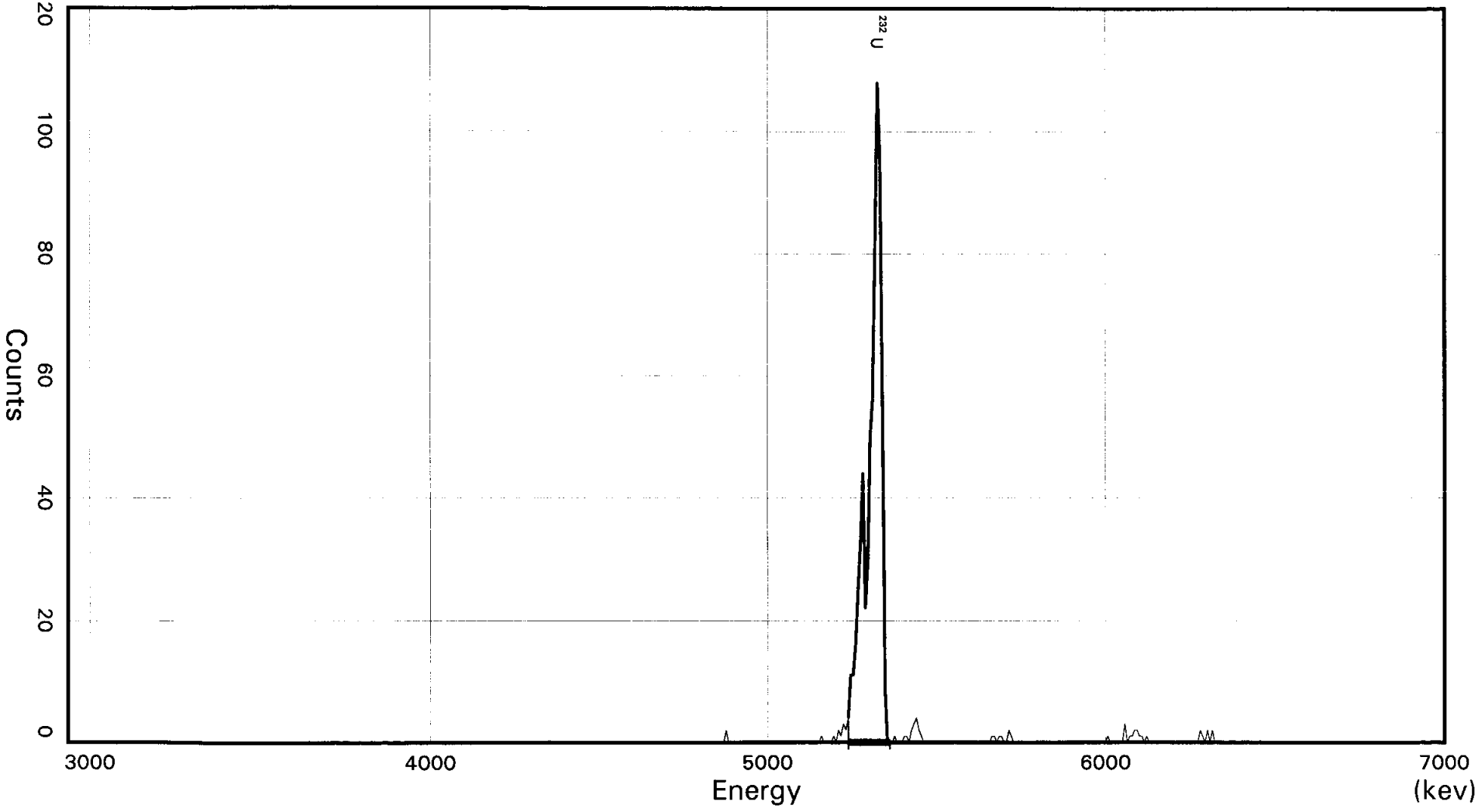
STL Richland WA.

U BRC

Sample ID: H4X0W1AG

Detector ID: ALP84 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:10:01.22

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:02.00

Energy Coefficients:

Offset: 2.91475E+03

Slope: 7.27474E+00

Quadrature: -1.17694E-04

SAMPLE IDENTIITY: H4X0W1AG

TITLE : U BRC

DETECTOR : ALP84 1
CONFIGURATION NAME : RDND06$DKA100:[ALP84.SAMPLE]H4X0W1AG_170661610.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:10

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:10:01 CALIB DATE : 09-JUN-2006 06:21:40

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

OFFSET : 2914.75 keV CONSTANT FWHM : 5.00000 Channels
SLOPE : 7.27474 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.117694E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X0W1AG

Detector: ALP84 1
Report Date: 17-Jun-06 07:33 PM
Acquire Date: 17-JUN-2006 16:10:01.22
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	654	17	0	3.263	5324.2	122.4	321	338	0.00	0.00	P
U-234	0	3	0	-0.001	4778.6	122.7	245	262	0.00	0.00	
U-235	0	2	0	-0.001	4401.8	122.9	193	210	0.00	0.00	
U-238	0	0	0	0.000	4202.0	115.7	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: H4X0W1AG
Detector: ALP84 1
Report Date: 17-Jun-06 07:33 PM
Acquire Date: 17-JUN 2006 16:10:01.22

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		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		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		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		1	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		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		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		2	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		0	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		2	320		0	370		0	420		0	470			
	0	21		0	71		0	121		0	171		0	221		2	271		4	321		0	371		0	421		2	471			
	0	22		0	72		0	122		0	172		0	222		0	272		11	322		0	372		0	422		0	472			
	0	23		0	73		0	123		0	173		0	223		0	273		11	323		0	373		0	423		0	473			
	0	24		0	74		0	124		0	174		0	224		0	274		16	324		0	374		0	424		0	474			
	0	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		33	326		0	376		0	426		0	476			
	0	27		0	77		0	127		0	177		0	227		0	277		44	327		0	377		0	427		0	477			
	0	28		0	78		0	128		0	178		0	228		0	278		22	328		0	378		1	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		50	330		1	380		0	430		0	480			
	0	31		0	81		0	131		0	181		0	231		0	281		56	331		1	381		0	431		0	481			
	0	32		0	82		0	132		0	182		0	232		0	282		81	332		0	382		0	432		0	482			
	0	33		0	83		0	133		0	183		0	233		0	283		108	333		1	383		0	433		0	483			
	0	34		0	84		0	134		0	184		0	234		0	284		96	334		1	384		0	434		0	484			
	0	35		0	85		0	135		0	185		0	235		0	285		57	335		0	385		3	435		0	485			
	0	36		0	86		0	136		0	186		0	236		0	286		9	336		0	386		0	436		0	486			
	0	37		0	87		0	137		0	187		0	237		0	287		0	337		2	387		1	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		2	439		0	489			
	0	40		0	90		0	140		0	190		0	240		0	290		1	340		0	390		2	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		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		1	344		0	394		1	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		2	347		0	397		0	447		0	497			
	0	48		0	98		0	148		0	198		0	248		0	298		3	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		2	350		0	400		0	450		0	500			

VMS Peak Search Report V1.9 Generated 17-JUN-2006 19:33:04

```
Configuration     : RDND06$DKA100:[ALP84.SAMPLE]H4X0W1AG_170661610.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:10:01
Sample ID         : H4X0W1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP84                Detector geometry:
Elapsed live time: 0 03:20:02.00         Elapsed real time: 0 03:20:02.00   0.0%
Start energy      :  2936.57 kev         End energy       :  6608.56 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5324.18	654	0	36.37	333.00	321	17	5.45E-02	3.9	

VMS Nuclide Identification Report V3.1 Generated 17-JUN-2006 19:33:05

```
Configuration     : RDND06$DKA100:[ALP84.SAMPLE]H4X0W1AG_170661610.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:10:01
Sample ID         : H4X0W1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP84                Detector geometry:
Elapsed live time: 0 03:20:02.00         Elapsed real time: 0 03:20:02.00   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:[ALP84.SAMPLE]H4X0W1AG_170661610.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5324.18	321	338	654	653	0.04		

End of Report

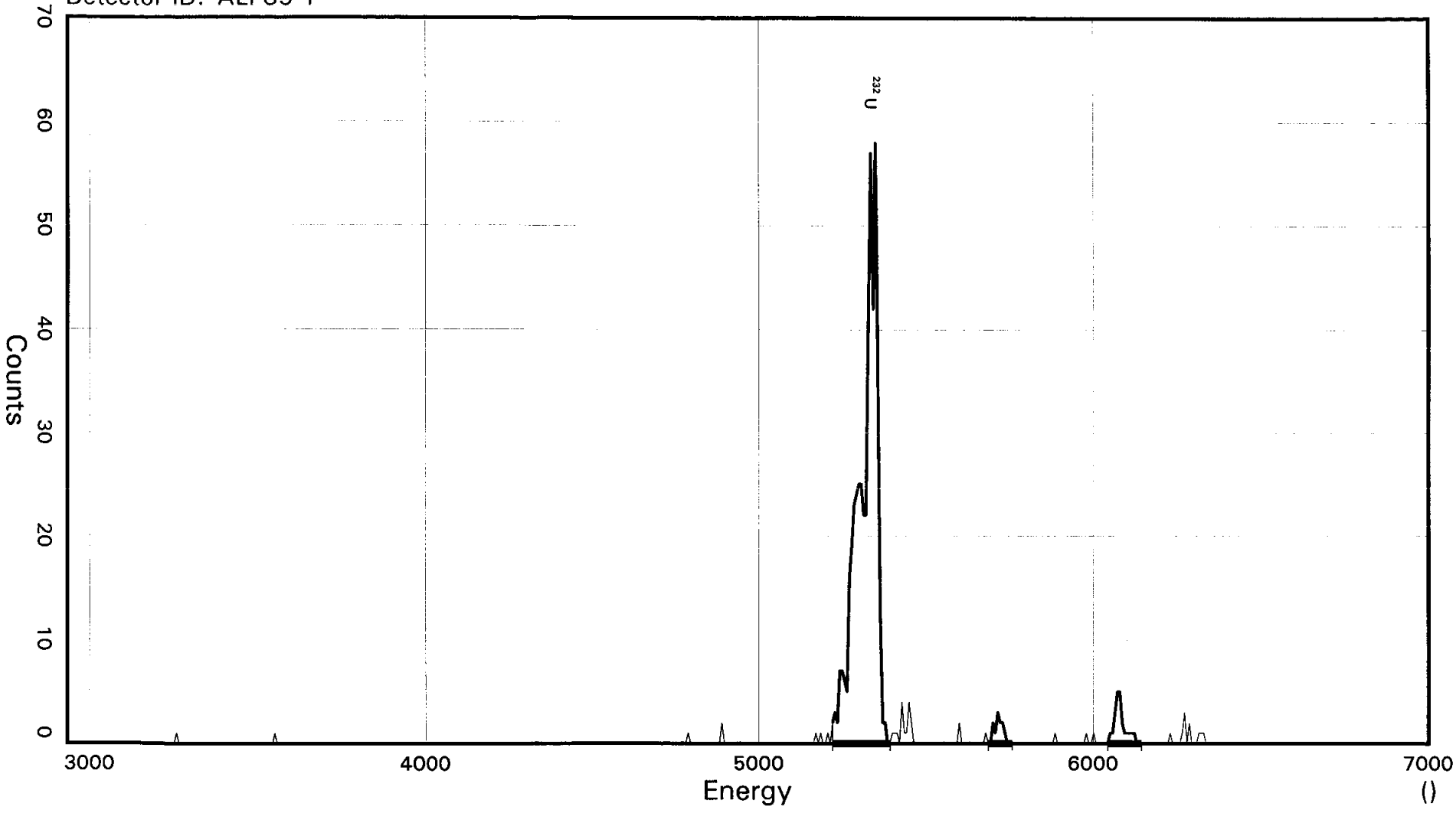
STL Richland WA.

U BRC

Sample ID: H4X001AG

Detector ID: ALP85 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:09:50.13

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:04.00

Energy Coefficients:

Offset: 2.91304E+03

Slope: 7.16241E+00

Quadrature: 6.93387E-06

SAMPLE IDENTITY: H4X001AG

TITLE : U BRC

DETECTOR : ALP85 1
CONFIGURATION NAME : RDND06$DKA100:[ALP85.SAMPLE]H4X001AG_170661609.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:12

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:09:50 CALIB DATE : 09-JUN-2006 06:21:45

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:04

OFFSET : 2913.04 keV CONSTANT FWHM : 9.83333 Channels
SLOPE : 7.16241 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 6.933870E-06 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X001AG

Detector: ALP85 1
Report Date: 17-Jun-06 07:32 PM
Acquire Date: 17-JUN-2006 16:09:50.13
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	460	51	0	2.279	5336.1	172.0	322	346	0.00	0.00	P
U-234	1	6	0	0.003	4790.5	172.0	246	270	0.00	0.00	
U-235	0	1	0	0.000	4413.7	172.0	193	217	0.00	0.00	
U-238	0	0	0	0.000	4213.9	172.0	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: H4X001AG
Detector: ALP85 1
Report Date: 17-Jun-06 07:32 PM
Acquire Date: 17-JUN-2006 16:09:50.13

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	4		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	4		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	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	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	1	+	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	1		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	1		315	0		365	1		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	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	1		468			
0		19	0		69	0		119	0	+	169	0		219	0	+	269	0		319	0		369	0		419	3		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	2		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	0	+	173	0		223	0		273	3	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	2	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	7	+	325	2		375	0		425	1		475			
0		26	0		76	0		126	0	+	176	0		226	2		276	7	+	326	0		376	0		426	1		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	6	+	327	0		377	0		427	1		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	5	+	328	0		378	1		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	16	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	19	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	23	+	331	0		381	1		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	24	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	25	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	25	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	22	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	22	+	336	1		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	57	+	338	0		388	1		438	0		488			
0		39	1		89	0		139	0	+	189	0		239	0		289	42	+	339	2		389	1		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	58	+	340	1		390	3		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	35	+	341	3		391	5		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	12	+	342	2		392	5		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	2	+	343	2		393	2		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	2	+	344	1		394	1		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	1		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	1		347	0		397	1		447	0		497			
1		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 17-JUN-2006 19:32:42

```
Configuration     : RDND06$DKA100:[ALP85.SAMPLE]H4X001AG_170661609.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:09:50
Sample ID         : H4X001AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP85                Detector geometry:
Elapsed live time: 0 03:20:04.00         Elapsed real time: 0 03:20:04.00   0.0%
Start energy      :  2934.52             End energy       :  6582.01
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5336.11	460	0	50.14	338.19	322	24	3.83E-02	4.7	
2	0	5713.88	11	0	42.97	390.90	387	10	9.16E-04	30.2	
3	0	6074.35	23	0	35.81	441.19	437	14	1.92E-03	20.9	

VMS Nuclide Identification Report V3.1 Generated 17-JUN-2006 19:32:43

```
Configuration     : RDND06$DKA100:[ALP85.SAMPLE]H4X001AG_170661609.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:09:50
Sample ID         : H4X001AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP85                Detector geometry:
Elapsed live time: 0 03:20:04.00         Elapsed real time: 0 03:20:04.00   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                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:[ALP85.SAMPLE]H4X001AG_170661609.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5336.11	322	346	460	458	0.09		
5713.88	387	397	11	11	0.00		
6074.35	437	451	23	22	0.21		

End of Report

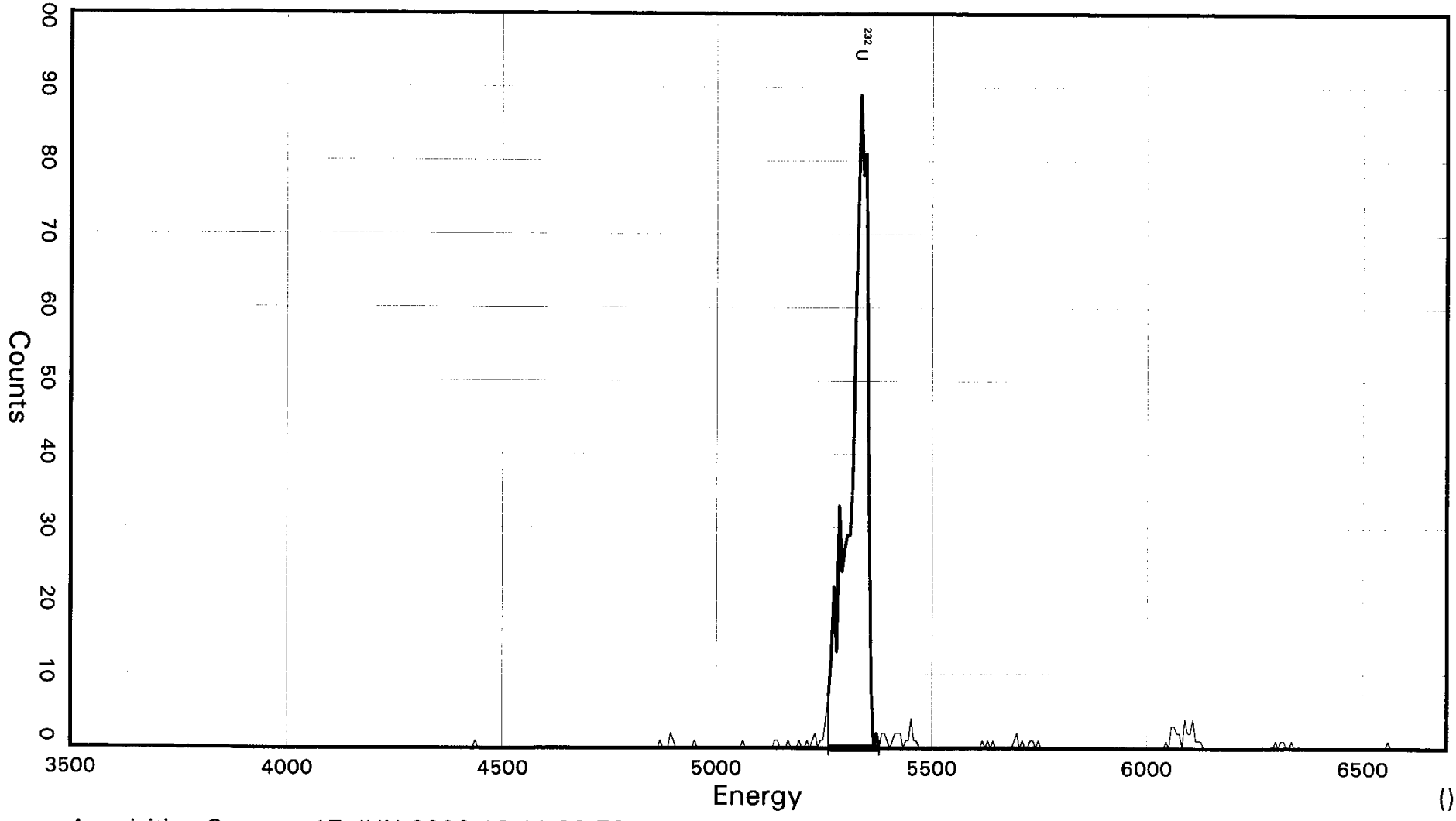
STL Richland WA.

U BRC

Sample ID: H4X041AG

Detector ID: ALP87 1

Batch ID: 6129243



Acquisition Start: 17-JUN-2006 16:11:08.78

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:01.00

Energy Coefficients:

Offset: 3.52509E+03

Slope: 6.19894E+00

Quadrature: -2.09215E-05

SAMPLE IDENTITY: H4X041AG

TITLE : U BRC

DETECTOR : ALP87 1
CONFIGURATION NAME : RDND06$DKA100:[ALP87.SAMPLE]H4X041AG_170661611.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:13

REPORT DATE : 17-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 17-JUN-2006 16:11:08 CALIB DATE : 09-JUN-2006 06:21:54

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

OFFSET : 3525.09 keV CONSTANT FWHM : 9.33333 Channels
SLOPE : 6.19894 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.209215E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X041AG

Detector: ALP87 1
Report Date: 17-Jun-06 07:35 PM
Acquire Date: 17-JUN-2006 16:11:08.78
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	661	8	0	3.297	5333.6	117.5	280	299	0.00	0.00	P
U-234	0	2	0	-0.002	4788.0	117.6	192	211	0.00	0.00	
U-235	1	0	0	0.005	4411.2	117.7	131	150	0.00	0.00	
U-238	0	0	0	0.000	4211.4	117.7	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: H4X041AG
Detector: ALP87 1
Report Date: 17-Jun-06 07:35 PM
Acquire Date: 17-JUN-2006 16:11:08.78

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		2	301		2	351		0	401		1	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		1	304		0	354		0	404		1	454		0	504
	0	5		0	55		0+	105		0	155		0+	205		0	255		2	305		0	355		0	405		0	455		0	505
	0	6		0	56		0+	106		0	156		0+	206		0	256		2	306		1	356		0	406		0	456		0	506
	0	7		0	57		0+	107		0	157		0+	207		0	257		2	307		1	357		1	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		1	359		3	409		0	459		0	509
	0	10		0	60		0+	110		0	160		0+	210		1	260		1	310		0	360		3	410		0	460		0	510
	0	11		0	61		0+	111		0	161		0+	211		1	261		4	311		0	361		2	411		0	461		0	511
	0	12		0	62		0+	112		0	162		0	212		0	262		1	312		0	362		2	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		4	414		0	464			
	0	15		0	65		0+	115		0	165		0	215		1	265		0	315		0	365		2	415		0	465			
	0	16		0	66		0+	116		0	166		0	216		0	266		0	316		0	366		2	416		0	466			
	0	17		0	67		0+	117		0	167		1	217		0	267		0	317		0	367		4	417		0	467			
	0	18		0	68		0+	118		0	168		0	218		0	268		0	318		0	368		1	418		0	468			
	0	19		0	69		0	119		0	169		0	219		1	269		0	319		0	369		1	419		0	469			
	0	20		0	70		0	120		0	170		0	220		0	270		0	320		0	370		1	420		0	470			
	0	21		0	71		0	121		0	171		2	221		0	271		0	321		0	371		0	421		0	471			
	0	22		0	72		0	122		0	172		1	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		1	274		0	324		0	374		0	424		0	474			
	0	25		0	75		0	125		0	175		0	225		2	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		1	277		0	327		0	377		0	427		0	477			
	0	28		0	78		0	128		0	178		0	228		1	278		0	328		0	378		0	428		0	478			
	0	29		0	79		0	129		0	179		0	229		4	279		0	329		0	379		0	429		0	479			
	0	30		0	80		0	130		0	180		1	230		7+	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		22+	282		0	332		0	382		0	432		0	482			
	0	33		0	83		0+	133		0	183		0	233		13+	283		0	333		0	383		0	433		0	483			
	0	34		0	84		0+	134		0	184		0	234		33+	284		0	334		0	384		0	434		0	484			
	0	35		0	85		0+	135		0	185		0	235		24+	285		0	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		29+	287		0	337		0	387		0	437		0	487			
	0	38		0	88		0+	138		0	188		0	238		29+	288		1	338		0	388		0	438		0	488			
	0	39		0	89		0+	139		0	189		0	239		36+	289		0	339		0	389		0	439		0	489			
	0	40		0	90		0+	140		0	190		0	240		58+	290		1	340		0	390		0	440		1	490			
	0	41		0	91		0+	141		0	191		0	241		72+	291		0	341		0	391		0	441		0	491			
	0	42		0	92		0+	142		0+	192		0	242		89+	292		1	342		0	392		0	442		0	492			
	0	43		0	93		0+	143		0+	193		0	243		78+	293		0	343		0	393		0	443		0	493			
	0	44		0	94		0+	144		0+	194		0	244		81+	294		0	344		0	394		0	444		0	494			
	0	45		0	95		0+	145		0+	195		0	245		36+	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		1+	147		0+	197		0	247		0+	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		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		2	300		1	350		0	400		1	450		0	500			

VMS Peak Search Report V1.9 Generated 17-JUN-2006 19:35:15

Configuration : RDND06$DKA100:[ALP87.SAMPLE]H4X041AG_170661611.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:11:08
Sample ID : H4X041AG Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP87 Detector geometry:
Elapsed live time: 0 03:20:01.00 Elapsed real time: 0 03:20:01.00 0.0%
Start energy : 3543.68 End energy : 6693.46
Sensitivity : 4.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5333.56	661	0	43.39	292.03	280	19	5.51E-02	3.9	

VMS Nuclide Identification Report V3.1 Generated 17-JUN-2006 19:35:17

```
Configuration     : RDND06$DKA100:[ALP87.SAMPLE]H4X041AG_170661611.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 17-JUN-2006 16:11:08
Sample ID         : H4X041AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP87                Detector geometry:
Elapsed live time: 0 03:20:01.00         Elapsed real time: 0 03:20:01.00   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  :    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]H4X041AG_170661611.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.56	280	299	661	656	0.19		

End of Report

SEVERN TRENT **STL**

URANIUM ISOTOPIC COUNTING REQUEST

0939

C.R. Technician: S

Date Counted: 6/18/06

Counting Time
Sample: 200 Minutes
Background: See Alpha Regions Report
BRC 4/26/06

SOP's
Operating: RICHRD008
Review: RICHRD0016
6129243

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H4X08 1AG	See Counting Room Printout for ROI information				7	
H4X 1A 1AG	See Counting Room Printout for ROI information				8	
H4X1F 1AG	See Counting Room Printout for ROI information				9	
H400D 1AA	See Counting Room Printout for ROI information				10	
H400D 1AC	See Counting Room Printout for ROI information				11	
	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: 6/18/06

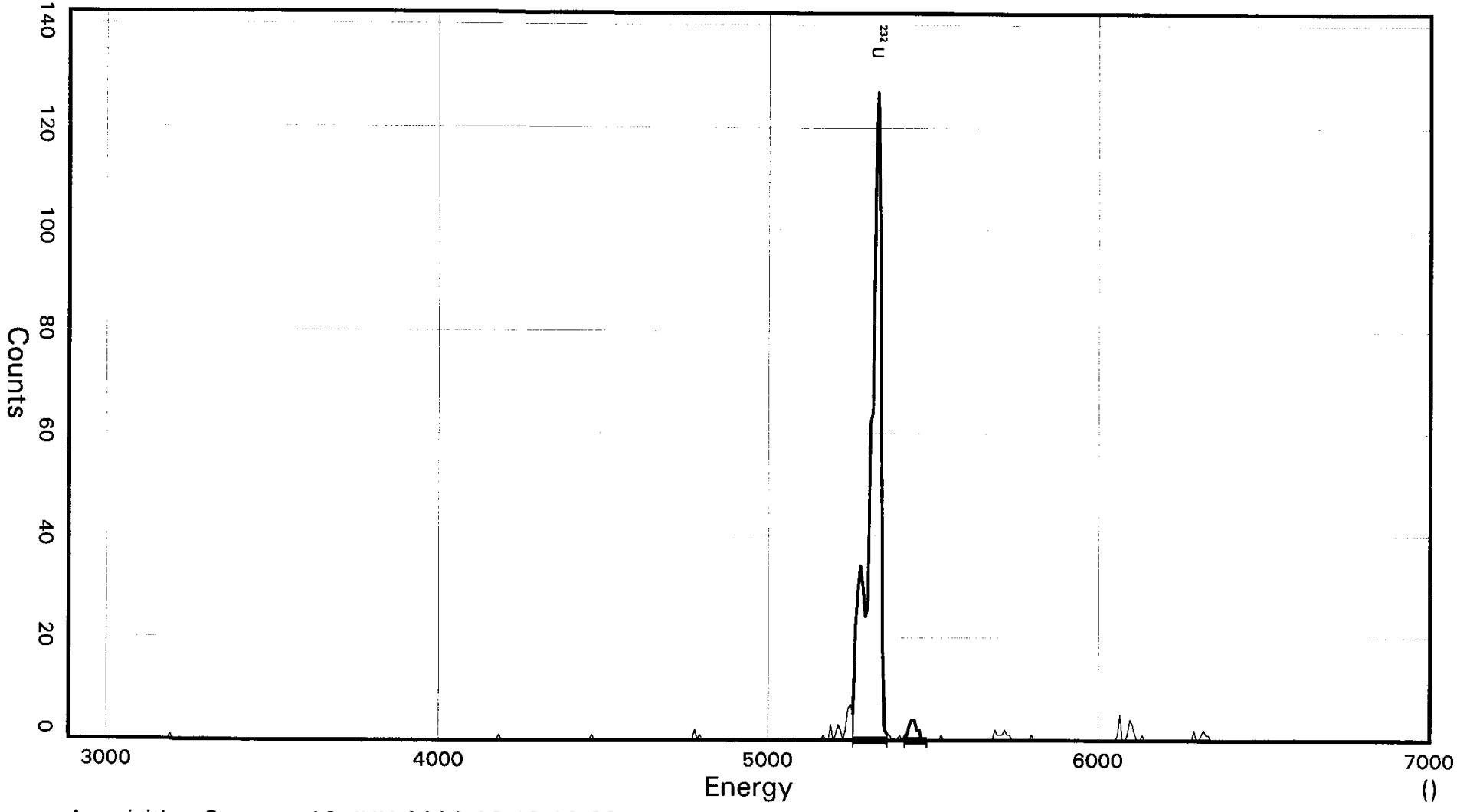
STL Richland WA.

U BRC

Sample ID: H4X081AG

Detector ID: ALP7 1

Batch ID: 6129243



Acquisition Start: 18-JUN-2006 06:19:10.98

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:07.00

Energy Coefficients:

Offset: 2.86460E+03

Slope: 7.45676E+00

Quadrature: -2.58880E-05

SAMPLE IDENTIITY: H4X081AG

TITLE : U BRC

DETECTOR : ALP7 1
CONFIGURATION NAME : $DISK1:[ALP7.SAMPLE]H4X081AG_180660619.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:16

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 06:19:10 CALIB DATE : 01-JUN-2006 23:54:09

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

OFFSET : 2864.60 keV CONSTANT FWHM : 6.16667 Channels
SLOPE : 7.45676 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.258880E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X081AG

Detector: ALP7 1
Report Date: 18-Jun-06 09:39 AM
Acquire Date: 18-JUN-2006 06:19:10.98
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	660	2	0	3.296	5326.8	104.2	321	335	0.00	0.00	P
U-234	3	0	0	0.015	4781.2	104.2	248	262	0.00	0.00	
U-235	0	0	0	0.000	4404.4	104.2	197	211	0.00	0.00	
U-238	1	0	0	0.005	4204.6	104.3	170	184	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X081AG
Detector: ALP7 1
Report Date: 18-Jun-06 09:39 AM
Acquire Date: 18-JUN-2006 06:19:10.98

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	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	0	+	206	0	+	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	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	1	+	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	2		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	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	1		463			
0		14	0		64	0		114	0		164	0		214	0		264	1		314	0		364	0		414	2		464			
0		15	0		65	0		115	0		165	1		215	0		265	3		315	0		365	0		415	1		465			
0		16	0		66	0		116	0		166	0		216	0		266	2		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	0		467			
0		18	0		68	0		118	0		168	0		218	0		268	2		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0		219	0		269	6		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	7		320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	5	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	22	+	322	0		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	34	+	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	24	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	1	+	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	62	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	64	+	329	2		379	1		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	109	+	330	1		380	5		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	127	+	331	1		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	103	+	332	1		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	18	+	333	2		383	1		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	2	+	334	1		384	4		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	1		335	1		385	3		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	1		336	0		386	1		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	0		339	0		389	1		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	1		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	1		343	0		393	0		443	0		493			
1		44	0		94	0		144	0		194	0		244	0		294	3		344	1		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	0		295	4		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	0		296	4		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0		247	0		297	2		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	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 18-JUN-2006 09:39:33

```
Configuration     : $DISK1:[ALP7.SAMPLE]H4X081AG_180660619.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 06:19:10
Sample ID         : H4X081AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP7                 Detector geometry:
Elapsed live time: 0 03:20:07.00         Elapsed real time: 0 03:20:07.00   0.0%
Start energy      :  2886.97             End energy       :  6675.68
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5326.81	660	0	29.83	330.58	321	14	5.50E-02	3.9	
2	0	5435.50	18	0	37.28	345.19	342	9	1.50E-03	23.6	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 09:39:36

```
Configuration     : $DISK1:[ALP7.SAMPLE]H4X081AG_180660619.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 06:19:10
Sample ID         : H4X081AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP7                 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                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: $DISK1:[ALP7.SAMPLE]H4X081AG_180660619.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5326.81	321	335	660	656	0.16		
5435.49	342	351	18	17	0.24		

End of Report

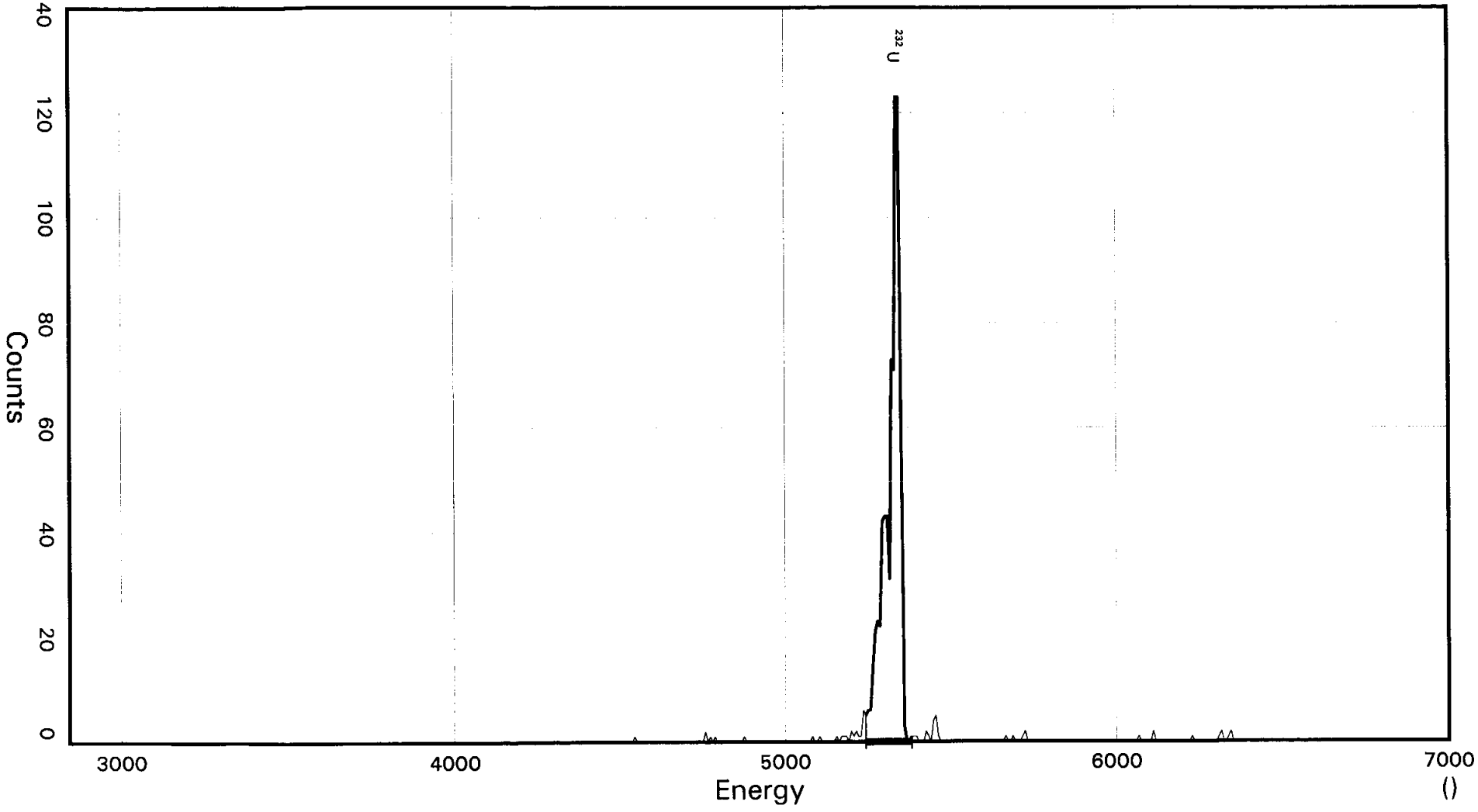
STL Richland WA.

U BRC

Sample ID: H4X1A1AG

Detector ID: ALP8 1

Batch ID: 6129243



Acquisition Start: 18-JUN-2006 06:19:18.08

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:06.00

Energy Coefficients:

Offset: 2.82327E+03

Slope: 7.35189E+00

Quadrature: -6.84520E-05

SAMPLE IDENTIITY: H4X1A1AG

TITLE : U BRC

DETECTOR : ALP8 1
CONFIGURATION NAME : $DISK1:[ALP8.SAMPLE]H4X1A1AG_180660619.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:19

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 06:19:18 CALIB DATE : 01-JUN-2006 23:53:23

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

OFFSET : 2823.27 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 7.35189 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.684520E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X1A1AG

Detector: ALP8 1
Report Date: 18-Jun-06 09:39 AM
Acquire Date: 18-JUN-2006 06:19:18.08
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	720	6	0	3.592	5334.1	138.8	330	349	0.00	0.00	P
U-234	4	3	0	0.017	4788.6	139.0	255	274	0.00	0.00	
U-235	0	0	0	0.000	4411.8	139.1	204	223	0.00	0.00	
U-238	0	0	0	0.000	4212.0	139.2	177	196	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X1A1AG
Detector: ALP8 1
Report Date: 18-Jun-06 09:39 AM
Acquire Date: 18-JUN-2006 06:19:18.08

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	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	0		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	0		306	1		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	4		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	5		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	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	2	+	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	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	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	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	0		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	0	+	274	2		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	2		326	0		376	0		426	1		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	1		327	0		377	0		427	2		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	1		328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	6		329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	1		280	5	+	330	0		380	0		430	1		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	6	+	331	0		381	0		431	2		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	6	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	14	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	21	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	1		235	0		285	23	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	22	+	336	0		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	43	+	338	1		388	0		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	43	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	31	+	340	0		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	73	+	341	1		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0		242	0		292	71	+	342	0		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	123	+	343	0		393	1		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	123	+	344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	57	+	345	1		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	3	+	346	2		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	1		349	0		399	2		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 18-JUN-2006 09:39:42

```
Configuration     : $DISK1:[ALP8.SAMPLE]H4X1A1AG_180660619.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 06:19:18
Sample ID         : H4X1A1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP8                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   0.0%
Start energy      :  2845.33             End energy       :  6569.50
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5334.12	720	0	44.11	342.62	330	19	6.00E-02	3.7	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 09:39:44

```
Configuration     : $DISK1:[ALP8.SAMPLE]H4X1A1AG_180660619.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 06:19:18
Sample ID         : H4X1A1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP8                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   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]H4X1A1AG_180660619.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5334.12	330	349	720	707	0.48		

End of Report

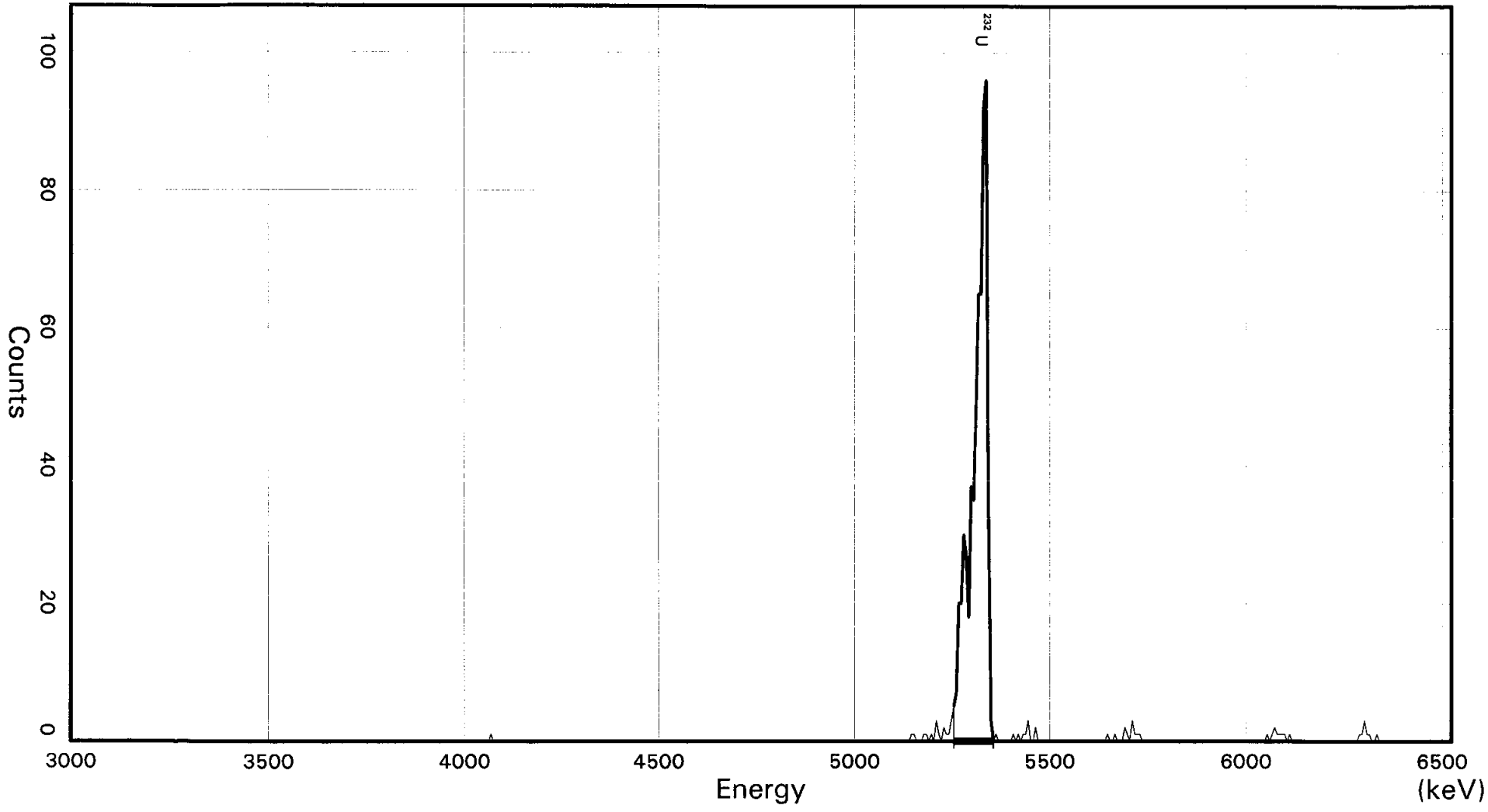
STL Richland WA.

U BRC

Sample ID: H4X1F1AG

Detector ID: ALP9 1

Batch ID: 6129243



Acquisition Start: 18-JUN-2006 06:19:22.59

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:04.00

Energy Coefficients:

Offset: 3.26308E+03

Slope: 6.39526E+00

Quadrature: -5.61482E-05

SAMPLE IDENTIITY: H4X1F1AG

TITLE : U BRC

DETECTOR : ALP9 1
CONFIGURATION NAME : $DISK1:[ALP9.SAMPLE]H4X1F1AG_180660619.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:21

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 06:19:22 CALIB DATE : 01-JUN-2006 23:54:19

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:04

OFFSET : 3263.08 keV CONSTANT FWHM : 5.83333 Channels
SLOPE : 6.39526 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.561482E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X1F1AG

Detector: ALP9 1
Report Date: 18-Jun-06 09:39 AM
Acquire Date: 18-JUN-2006 06:19:22.59
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	602	2	0	3.007	5324.7	101.7	312	328	0.00	0.00	P
U-234	0	1	0	-0.001	4779.1	101.9	226	242	0.00	0.00	
U-235	0	0	0	0.000	4402.3	102.0	167	183	0.00	0.00	
U-238	0	0	0	0.000	4202.5	102.1	136	152	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X1F1AG
Detector: ALP9 1
Report Date: 18-Jun-06 09:39 AM
Acquire Date: 18-JUN-2006 06:19:22.59

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	1		301	0		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	1		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	3		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	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0		208	0		258	2		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	1		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	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	5	+	312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	7	+	313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0		264	20	+	314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0		265	20	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	0		266	30	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	27	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	18	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	37	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	35	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	48	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	65	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	65	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	92	+	324	1		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	96	+	325	0		375	0		425	1		475			
0		26	0		76	1		126	0	+	176	0	+	226	0		276	32	+	326	0		376	0		426	1		476			
0		27	0		77	0		127	0	+	177	0	+	227	0		277	3	+	327	1		377	0		427	3		477			
0		28	0		78	0		128	0	+	178	0	+	228	0		278	0		328	0		378	0		428	1		478			
0		29	0		79	0		129	0	+	179	0	+	229	0		279	1		329	0		379	0		429	1		479			
0		30	0		80	0		130	0	+	180	0	+	230	0		280	0		330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0	+	231	0		281	0		331	2		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0	+	232	0		282	0		332	1		382	0		432	1		482			
0		33	0		83	0		133	0	+	183	0	+	233	0		283	0		333	0		383	0		433	0		483			
0		34	0		84	0		134	0		184	0	+	234	0		284	0		334	3		384	0		434	0		484			
0		35	0		85	0		135	0		185	0	+	235	0		285	0		335	1		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0	+	236	0		286	1		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	0		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	1		440	0		490			
0		41	0		91	0	+	141	0		191	0	+	241	0		291	1		341	0		391	2		441	0		491			
0		42	0		92	0	+	142	0		192	0	+	242	0		292	3		342	0		392	1		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	1		444	0		494			
0		45	0		95	0	+	145	0		195	0		245	1		295	2		345	0		395	1		445	0		495			
0		46	0		96	0	+	146	0		196	0		246	1		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	1		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	1		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 18-JUN-2006 09:39:46

```
Configuration     : $DISK1:[ALP9.SAMPLE]H4X1F1AG_180660619.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 06:19:22
Sample ID         : H4X1F1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP9                 Detector geometry:
Elapsed live time: 0 03:20:04.00         Elapsed real time: 0 03:20:04.00   0.0%
Start energy      :  3282.26 keV         End energy       :  6522.74 keV
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5324.70	602	0	31.98	323.28	312	16	5.01E-02	4.1	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 09:39:48

```
Configuration     : $DISK1:[ALP9.SAMPLE]H4X1F1AG_180660619.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 06:19:22
Sample ID         : H4X1F1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP9                 Detector geometry:
Elapsed live time: 0 03:20:04.00         Elapsed real time: 0 03:20:04.00   0.0%
Energy tolerance :    40.00 keV          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:[ALP9.SAMPLE]H4X1F1AG_180660619.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5324.69	312	328	602	600	0.08		

End of Report

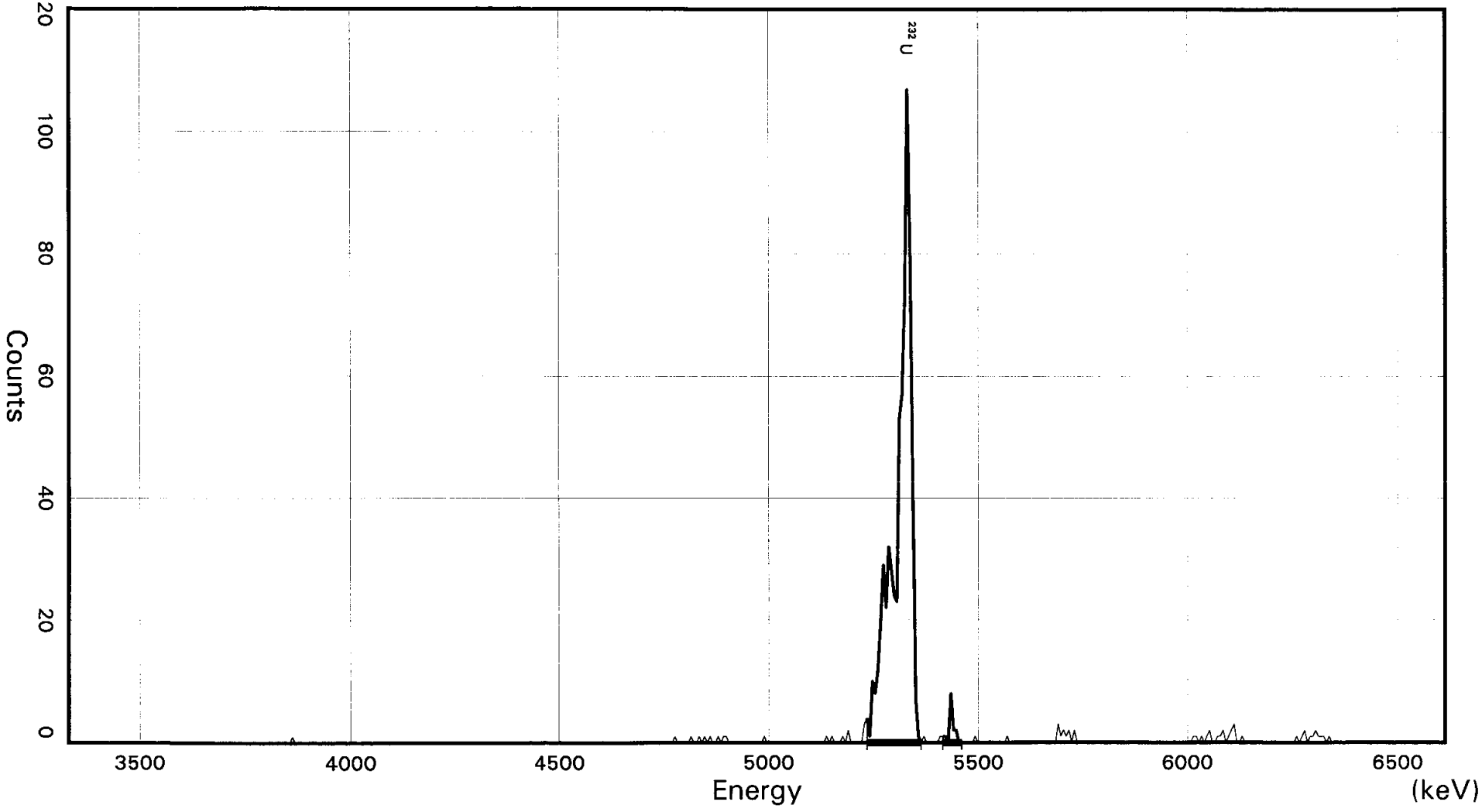
STL Richland WA.

U BRC

Sample ID: H400D1AA

Detector ID: ALP10 1

Batch ID: 6129243



Acquisition Start: 18-JUN-2006 06:19:28.63

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:00.00

Energy Coefficients:

Offset: 3.31262E+03

Slope: 6.45058E+00

Quadrature: -8.95822E-06

SAMPLE IDENTIITY: H400D1AA

TITLE : U BRC

DETECTOR : ALP10 1
CONFIGURATION NAME : $DISK1:[ALP10.SAMPLE]H400D1AA_180660619.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:26

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 06:19:28 CALIB DATE : 01-JUN-2006 23:53:52

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

OFFSET : 3312.62 keV CONSTANT FWHM : 6.83333 Channels
SLOPE : 6.45058 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.895822E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H400D1AA

Detector: ALP10 1
Report Date: 18-Jun-06 09:43 AM
Acquire Date: 18-JUN-2006 06:19:28.63
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	638	6	0	3.184	5330.1	128.9	298	318	0.00	0.00	P
U-234	2	1	0	0.009	4784.5	128.9	213	233	0.00	0.00	
U-235	0	0	0	0.000	4407.7	129.0	155	175	0.00	0.00	
U-238	0	2	0	-0.002	4207.9	129.0	124	144	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H400D1AA
Detector: ALP10 1
Report Date: 18-Jun-06 09:43 AM
Acquire Date: 18-JUN-2006 06:19:28.63

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 09:43:48

```
Configuration     : $DISK1:[ALP10.SAMPLE]H400D1AA_180660619.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 06:19:28
Sample ID         : H400D1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP10                Detector geometry:
Elapsed live time: 0 03:20:00.00         Elapsed real time: 0 03:20:00.00   0.0%
Start energy      :  3331.97 keV         End energy       :  6612.96 keV
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5330.09	638	0	32.25	312.89	298	20	5.32E-02	4.0	
2	0	5431.74	14	0	25.80	328.67	326	7	1.17E-03	26.7	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 09:43:51

```
Configuration     : $DISK1:[ALP10.SAMPLE]H400D1AA_180660619.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 26-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 06:19:28
Sample ID         : H400D1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP10                Detector geometry:
Elapsed live time: 0 03:20:00.00         Elapsed real time: 0 03:20:00.00   0.0%
Energy tolerance :    40.00 keV          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: $DISK1:[ALP10.SAMPLE]H400D1AA_180660619.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5330.08	298	318	638	634	0.16		
5431.73	326	333	14	14	0.00		

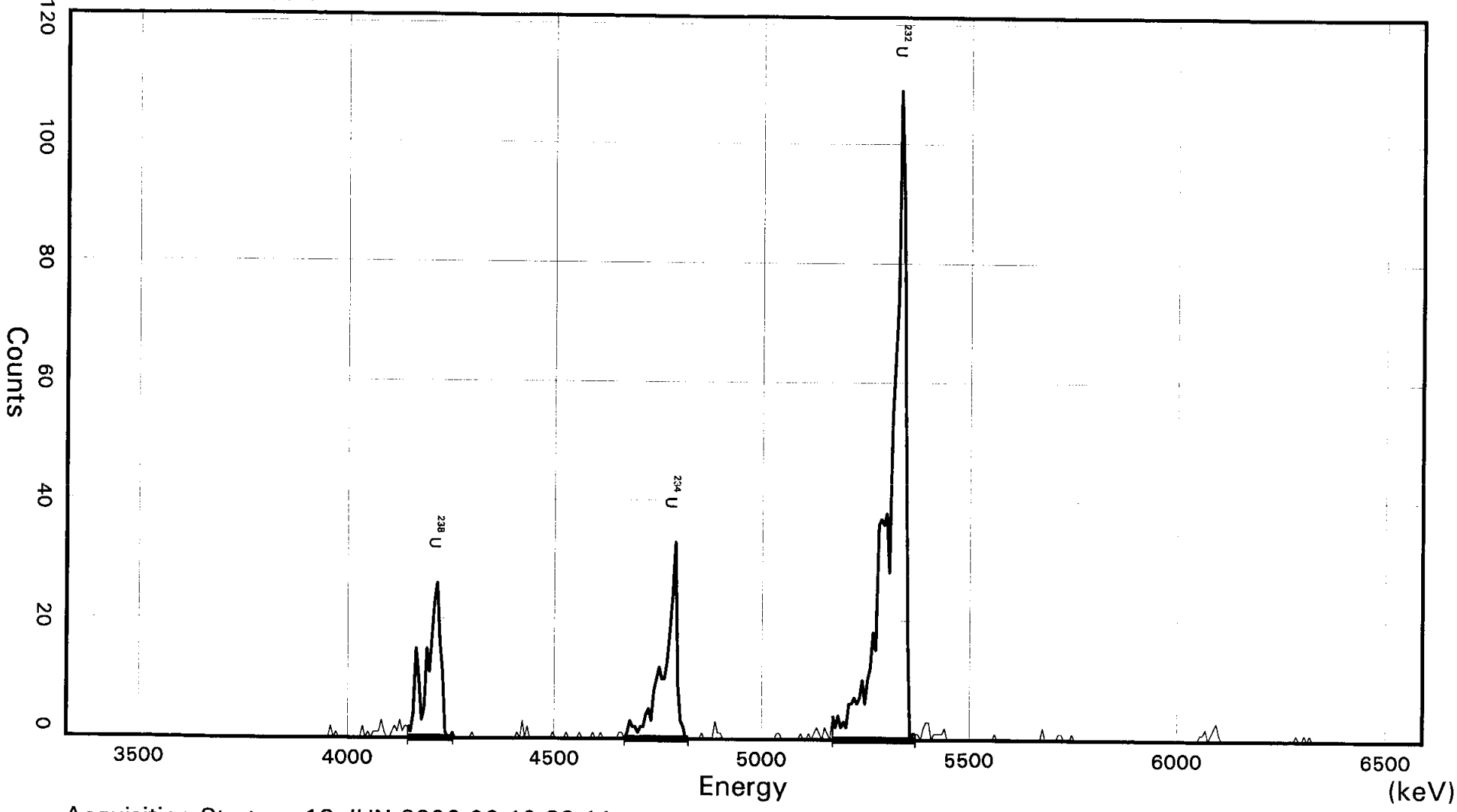
End of Report

STL Richland WA.

U BRC

Sample ID: H400D1AC
Detector ID: ALP11 1

Batch ID: 6129243



Acquisition Start: 18-JUN-2006 06:19:33.11
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:
Offset: 3.30716E+03
Slope: 6.39329E+00
Quadrature: 2.85470E-05

SAMPLE IDENTIITY: H400D1AC

TITLE : U BRC

DETECTOR : ALP11 1
CONFIGURATION NAME : $DISK1:[ALP11.SAMPLE]H400D1AC_180660619.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:30

REPORT DATE : 18-Jun-06 SAMPLE DATE: 26-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 06:19:33 CALIB DATE : 01-JUN-2006 23:54:30

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

OFFSET : 3307.16 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 6.39329 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : 2.854700E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H400D1AC

Detector: ALP11 1
Report Date: 18-Jun-06 09:44 AM
Acquire Date: 18-JUN-2006 06:19:33.11
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	766	9	0	3.820	5327.5	198.7	291	322	0.00	0.00	P
U-234	182	2	0	0.908	4781.9	153.7	213	237	0.00	0.00	P
U-235	8	2	0	0.038	4405.1	198.5	147	178	0.00	0.00	
U-238	165	1	0	0.824	4205.3	108.8	131	148	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H400D1AC
Detector: ALP11 1
Report Date: 18-Jun-06 09:44 AM
Acquire Date: 18 JUN-2006 06:19:33.11

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 09:43:58

Configuration	: $DISK1:[ALP11.SAMPLE]H400D1AC_180660619.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: U BRC		
Sample date	: 26-APR-2006 12:00:00	Acquisition date	: 18-JUN-2006 06:19:33
Sample ID	: H400D1AC	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP11	Detector geometry	:
Elapsed live time	: 0 03:20:03.00	Elapsed real time	: 0 03:20:03.00 0.0%
Start energy	: 3326.34 keV	End energy	: 6588.01 keV
Sensitivity	: 4.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4209.67	165	0	31.97	141.08	131	17	1.37E-02	7.8	
2	0	4781.02	182	0	44.75	230.30	213	24	1.52E-02	7.4	
3	0	5327.46	766	0	38.36	315.56	291	31	6.38E-02	3.6	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 09:44:00

Configuration	: $DISK1:[ALP11.SAMPLE]H400D1AC_180660619.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: U BRC		
Sample date	: 26-APR-2006 12:00:00	Acquisition date	: 18-JUN-2006 06:19:33
Sample ID	: H400D1AC	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP11	Detector geometry	:
Elapsed live time	: 0 03:20:03.00	Elapsed real time	: 0 03:20:03.00 0.0%
Energy tolerance	: 40.00 keV	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	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 "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

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

Configuration: $DISK1:[ALP11.SAMPLE]H400D1AC_180660619.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4209.66	131	148	165	161	0.31		
4781.02	213	237	182	177	0.37		
5327.46	291	322	766	761	0.18		

End of Report

ALPHA

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/13/2006 9:08:16 AM

Lot No., Due Date: J6E080164; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129253; RALPHA-A Alpha by GPC-Am

SDG, Matrix: 31582; 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** 6-13-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6129253

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 Adkins Date: 6-13-06

STL RICHLAND

6/5/2006 3:03:05 PM

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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129253 FILTER pCi/sampl PM, Quote: SA , 63174

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:
1 H4XR8-1-AE J6E080164-1-SAMP 04/26/2006 09:20	0.833sa,g	12.60g,in AmtRec: FILTER	#Containers: 1	1.5	0.2	100	10A	1153	6/9/ms	Scr: Alpha: Beta:
2 H4XTE-1-AE J6E080164-2-SAMP 04/26/2006 09:45	0.833sa,g	12.68g,in AmtRec: FILTER	#Containers: 1		0.1		10B			Scr: Alpha: Beta:
3 H4XTH-1-AE J6E080164-3-SAMP 04/26/2006 10:00	0.833sa,g	12.53g,in AmtRec: FILTER	#Containers: 1		1.0		10C			Scr: Alpha: Beta:
4 H4XTL-1-AE J6E080164-4-SAMP 04/26/2006 10:15	0.833sa,g	12.52g,in AmtRec: FILTER	#Containers: 1		0.3		10D			Scr: Alpha: Beta:
5 H4XTM-1-AE J6E080164-5-SAMP 04/26/2006 10:35	0.833sa,g	12.50g,in AmtRec: FILTER	#Containers: 1		0.1		10E			Scr: Alpha: Beta:
6 H4XTN-1-AE J6E080164-6-SAMP 04/26/2006 10:50	0.833sa,g	12.69g,in AmtRec: FILTER	#Containers: 1		0.4		10A	1347	6/9/ms	Scr: Alpha: Beta:
7 H4XTP-1-AE J6E080164-7-SAMP 04/26/2006 09:25	0.833sa,g	12.50g,in AmtRec: FILTER	#Containers: 1		0.4		10D			Scr: Alpha: Beta:

6/5/2006 3:03:06 PM

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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129253 FILTER pCi/sampl PM, Quote: SA , 63174

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:
8 H4XTR-1-AE J6E080164-8-SAMP 04/26/2006 09:35	0.833sa,g	12.52g,in AmtRec: FILTER	#Containers: 1	1.5	0.1	100	10C	1347	6/9/06	
							Scr:	Alpha:	Beta:	
9 H4X0R-1-AE J6E080164-9-SAMP 04/26/2006 09:30	0.833sa,g	12.62g,in AmtRec: FILTER	#Containers: 1	6/9/6 1.1			10D			
							Scr:	Alpha:	Beta:	
10H4X0W-1-AE J6E080164-10-SAMP 04/26/2006 09:50	0.833sa,g	12.59g,in AmtRec: FILTER	#Containers: 1		1.0		10E			
							Scr:	Alpha:	Beta:	
11H4X00-1-AE J6E080164-11-SAMP 04/26/2006 10:05	0.833sa,g	12.50g,in AmtRec: FILTER	#Containers: 1		0.1		10A	1541	6/9/06	
							Scr:	Alpha:	Beta:	
12H4X04-1-AE J6E080164-12-SAMP 04/26/2006 10:20	0.833sa,g	12.56g,in AmtRec: FILTER	#Containers: 1		0.1		10B			
							Scr:	Alpha:	Beta:	
13H4X08-1-AE J6E080164-13-SAMP 04/26/2006 10:40	0.833sa,g	12.59g,in AmtRec: FILTER	#Containers: 1		0.1		10C			
							Scr:	Alpha:	Beta:	
14H4X1A-1-AE J6E080164-14-SAMP 04/26/2006 10:55	0.833sa,g	12.50g,in AmtRec: FILTER	#Containers: 1		0.2		10D			
							Scr:	Alpha:	Beta:	

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2 ISV - Insufficient Volume for Analysis WO Cnt: 14

Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.24

STL RICHLAND

6/5/2006 3:03:07 PM

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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129253 FILTER pCi/sampl PM, Quote: SA , 63174

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:
15H4X1F-1-AE J6E080164-15-SAMP 04/26/2006 10:10	0.833sa,g	12.55g,in AmtRec: FILTER	#Containers: 1	1.5	0.1	100	10E	1541	6/9/06	Scr: Alpha: Beta:
16H401T-1-AA-B J6E090000-253-BLK 04/26/2006 09:20		1.00sa,in AmtRec:	#Containers: 1		0.2		10A	1735	6/9/06	Scr: Alpha: Beta:
17H401T-1-AC-C J6E090000-253-LCS 04/26/2006 09:20		1.00sa,in AmtRec:	ASC0388 05/16/06,pd 02/09/06,r #Containers: 1		0.3		10B			Scr: Alpha: Beta:

Comments:

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

H4XR81AE-SAMP Constituent List:
ALPHA RDL:20 pCi/sam LCL: UCL: RPD:
H401T1AA-BLK:
ALPHA RDL:20 pCi/sam LCL: UCL: RPD:
H401T1AC-LCS:

H4XR81AE-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H401T1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H401T1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

6/13/2006 8:37:57 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/13/2005, 6/18/2006, Batch: '6129253', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129253						
AC		**CalcC**	**HansenM**	6/5/2006 3:55:51 PM		
SC			antonsonl	IsBatched	5/9/2006 1:11:28 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/5/2006 3:55:51 PM	RICH-RC-5016 REVISION 5
SC			ScottM	InPrep2	6/8/2006 7:56:38 AM	RICH-RC-5014 REVISION 6
SC			ScottM	Prep2C	6/9/2006 9:53:23 AM	RICH-RC-5014 REVISION 6
SC			BlackCL	InCnt1	6/9/2006 10:00:18 AM	RICH-RD-0003 REVISION 4
SC			DAWKINSO	CalcC	6/9/2006 8:08:29 PM	RICH-RD-0003 REVISION 4
AC			**ScottM**	6/8/2006 7:56:38 AM		
AC			**ScottM**	6/9/2006 9:53:23 AM		
AC			**BlackCL**	6/9/2006 10:00:18		
AC			**DAWKINSO**	6/9/2006 8:08:29 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Page 1

Grp Rec Cnt: 5

ICOCFractions v4.8.18

6/13/2006 8:37:56 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	Mda	Sample Date / Units	Expected	Yield	Volumes
31582	**9H4X0010**			**J6E08016411**	000438	FILTER	5/8/2006 7:30:00		4/26/2006 10:05:00 AM			
ALPHA	BAS7	0		6/9/2006 2:50:45 PM	**4.0776E+00**	1.981E+00	2.026E+00	6.989E+00	PCI/SA	1.0	1.0E+0	2.063E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.5337E+01**	1.958E+00	2.235E+00	6.222E+00	PCI/SA	1.0	1.0E+0	3.275E-2
31582	**9H4X0410**			**J6E08016412**	000439	FILTER	5/8/2006 7:30:00		4/26/2006 10:20:00 AM			
ALPHA	BAS7	0		6/9/2006 2:50:45 PM	**3.1173E+00**	1.77E+00	1.799E+00	6.578E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8	0		6/9/2006 10:28:06 AM	**1.6114E+01**	2.069E+00	2.35E+00	6.722E+00	PCI/SA	1.0	1.0E+0	3.34E-2
31582	**9H4X0810**			**J6E08016413**	000440	FILTER	5/8/2006 7:30:00		4/26/2006 10:40:00 AM			
ALPHA	BAS7	0		6/9/2006 2:50:45 PM	**-1.6709E+00**	1.141E+00	1.155E+00	7.853E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8	0		6/9/2006 10:28:06 AM	**1.6257E+01**	1.977E+00	2.275E+00	6.178E+00	PCI/SA	1.0	1.0E+0	3.264E-2
31582	**9H4X0R10**			**J6E0801649**	000436	FILTER	5/8/2006 7:30:00		4/26/2006 9:30:00 AM			
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**5.2494E-01**	1.264E+00	1.265E+00	6.305E+00	PCI/SA	1.0	1.0E+0	2.081E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.1356E+01**	1.842E+00	2.08E+00	6.348E+00	PCI/SA	1.0	1.0E+0	3.268E-2
31582	**9H4X0W10**			**J6E08016410**	000437	FILTER	5/8/2006 7:30:00		4/26/2006 9:50:00 AM			
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**3.7255E+00**	1.738E+00	1.78E+00	5.596E+00	PCI/SA	1.0	1.0E+0	2.075E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.585E+01**	2.028E+00	2.3E+00	6.57E+00	PCI/SA	1.0	1.0E+0	3.241E-2
31582	**9H4X1A10**			**J6E08016414**	000441	FILTER	5/8/2006 7:30:00		4/26/2006 10:55:00 AM			
ALPHA	BAS7	0		6/9/2006 2:50:45 PM	**5.271E+00**	2.028E+00	2.099E+00	6.331E+00	PCI/SA	1.0	1.0E+0	2.064E-2
BETA	BDS8	0		6/9/2006 10:28:06 AM	**1.6832E+01**	1.988E+00	2.499E+00	6.159E+00	PCI/SA	1.0	1.0E+0	3.257E-2
31582	**9H4X1F10**			**J6E08016415**	000442	FILTER	5/8/2006 7:30:00		4/26/2006 10:10:00 AM			
ALPHA	BAS7	0		6/9/2006 2:50:45 PM	**3.4081E-01**	1.06E+00	1.06E+00	5.631E+00	PCI/SA	1.0	1.0E+0	2.054E-2
BETA	BDS8	0		6/9/2006 10:28:06 AM	**-2.298E-01**	1.578E+00	1.578E+00	7.083E+00	PCI/SA	1.0	1.0E+0	3.213E-2
31582	**9H4XR810**			**J6E0801641**	P-0606	FILTER	5/8/2006 7:30:00		4/26/2006 9:20:00 AM			
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**4.0136E+00**	1.95E+00	1.994E+00	6.879E+00	PCI/SA	1.0	1.0E+0	2.097E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.1591E+01**	1.922E+00	2.101E+00	6.805E+00	PCI/SA	1.0	1.0E+0	3.428E-2
31582	**9H4XTE10**			**J6E0801642**	P-0607	FILTER	5/8/2006 7:30:00		4/26/2006 9:45:00 AM			
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**-6.4094E-01**	1.047E+00	1.049E+00	6.537E+00	PCI/SA	1.0	1.0E+0	2.097E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.0717E+01**	1.842E+00	1.991E+00	6.443E+00	PCI/SA	1.0	1.0E+0	3.341E-2
31582	**9H4XTH10**			**J6E0801643**	P-0608	FILTER	5/8/2006 7:30:00		4/26/2006 10:00:00 AM			
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**-1.673E+00**	1.143E+00	1.156E+00	7.863E+00	PCI/SA	1.0	1.0E+0	2.086E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.2171E+01**	1.882E+00	2.062E+00	6.313E+00	PCI/SA	1.0	1.0E+0	3.379E-2
31582	**9H4XTL10**			**J6E0801644**	P-0609	FILTER	5/8/2006 7:30:00		4/26/2006 10:15:00 AM			
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**3.6769E+00**	1.804E+00	1.843E+00	6.308E+00	PCI/SA	1.0	1.0E+0	2.072E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.0827E+01**	1.823E+00	1.966E+00	6.291E+00	PCI/SA	1.0	1.0E+0	3.401E-2
31582	**9H4XTM10**			**J6E0801645**	P-0610	FILTER	5/8/2006 7:30:00		4/26/2006 10:35:00 AM			
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**2.0225E+00**	1.43E+00	1.445E+00	5.57E+00	PCI/SA	1.0	1.0E+0	2.076E-2
BETA	BDS8	0		6/9/2006 10:27:53 AM	**8.5243E+00**	1.72E+00	1.819E+00	6.193E+00	PCI/SA	1.0	1.0E+0	3.364E-2
31582	**9H4XTN10**			**J6E0801646**	P-0611	FILTER	5/8/2006 7:30:00		4/26/2006 10:50:00 AM			
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**2.3808E+00**	1.704E+00	1.722E+00	6.863E+00	PCI/SA	1.0	1.0E+0	2.105E-2
BETA	BDS8	0		6/9/2006 10:27:53 AM	**1.444E+01**	1.97E+00	2.293E+00	6.516E+00	PCI/SA	1.0	1.0E+0	3.402E-2
31582	**9H4XTP10**			**J6E0801647**	P-0612	FILTER	5/8/2006 7:30:00		4/26/2006 9:25:00 AM			
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**-1.2088E+00**	9.259E-01	9.344E-01	6.725E+00	PCI/SA	1.0	1.0E+0	2.041E-2
BETA	BDS8	0		6/9/2006 10:27:53 AM	**8.8756E+00**	1.84E+00	1.983E+00	6.701E+00	PCI/SA	1.0	1.0E+0	3.176E-2
31582	**9H4XTR10**			**J6E0801648**	P-0613	FILTER	5/8/2006 7:30:00		4/26/2006 9:35:00 AM			
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**0.0E+00**	0.0E+00	1.498E+00	7.871E+00	PCI/SA	1.0	1.0E+0	2.076E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**3.0783E+00**	1.566E+00	1.582E+00	6.447E+00	PCI/SA	1.0	1.0E+0	3.303E-2
31582	**H401T1AB**			**J6E090000253**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00		4/26/2006 9:20:00 AM			
ALPHA	BAS7	0	B	6/9/2006 4:45:00 PM	**6.1428E-02**	3.759E-02	3.811E-02	1.443E-01	PCI/SA	1.0	1.0E+0	1.0E+0
31582	**H401T1CS**			**J6E090000253**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00		4/26/2006 9:20:00 AM			
ALPHA	BAS7	0	S	6/9/2006 4:45:00 PM	**1.9037E+00**	1.482E-01	2.437E-01	1.372E-01	PCI/SA	2.3927E+00 1.0	1.0E+0	1.0E+0

6129253, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6129253

Alpha Beta, Alpha by GPC-Am , Results
Summary Report

6/9/2006 6:19:39 PM

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	**H4XR81AE**	ALPHA	**4.01E+00**	**(1.99E+00)**		PCI/SA	R	2.71E+00	6.88E+00	CRDL met	100%	
Calc	S7	FILTER	**H4XTE1AE**	ALPHA	**-6.41E-01**	**(1.05E+00)**	**U4**	PCI/SA	R	2.55E+00	6.54E+00		100%	
Calc	S7	FILTER	**H4XTH1AE**	ALPHA	**-1.67E+00**	**(1.16E+00)**	**U4**	PCI/SA	R	3.18E+00	7.86E+00		100%	
Calc	S7	FILTER	**H4XTL1AE**	ALPHA	**3.68E+00**	**(1.84E+00)**		PCI/SA	R	2.44E+00	6.31E+00		100%	
Calc	S7	FILTER	**H4XTM1AE**	ALPHA	**2.02E+00**	**(1.45E+00)**	**U4**	PCI/SA	R	2.02E+00	5.57E+00		100%	
Calc	S7	FILTER	**H4XTN1AE**	ALPHA	**2.38E+00**	**(1.72E+00)**	**U4**	PCI/SA	R	2.70E+00	6.86E+00		100%	
Calc	S7	FILTER	**H4XTP1AE**	ALPHA	**-1.21E+00**	**(9.34E-01)**	**U4**	PCI/SA	R	2.62E+00	6.72E+00		100%	
Calc	S7	FILTER	**H4XTR1AE**	ALPHA	**0.00E+00**	**(1.50E+00)**	**U4**	PCI/SA	R	3.18E+00	7.87E+00		100%	
Calc	S7	FILTER	**H4X0R1AE**	ALPHA	**5.25E-01**	**(1.27E+00)**	**U4**	PCI/SA	R	2.44E+00	6.30E+00		100%	
Calc	S7	FILTER	**H4X0W1AE**	ALPHA	**3.73E+00**	**(1.78E+00)**		PCI/SA	R	2.03E+00	5.60E+00		100%	
Calc	S7	FILTER	**H4X001AE**	ALPHA	**4.08E+00**	**(2.03E+00)**		PCI/SA	R	2.75E+00	6.99E+00		100%	
Calc	S7	FILTER	**H4X041AE**	ALPHA	**3.12E+00**	**(1.80E+00)**		PCI/SA	R	2.56E+00	6.58E+00		100%	
Calc	S7	FILTER	**H4X081AE**	ALPHA	**-1.67E+00**	**(1.15E+00)**	**U4**	PCI/SA	R	3.17E+00	7.85E+00		100%	
Calc	S7	FILTER	**H4X1A1AE**	ALPHA	**5.27E+00**	**(2.10E+00)**		PCI/SA	R	2.45E+00	6.33E+00		100%	
Calc	S7	FILTER	**H4X1F1AE**	ALPHA	**3.41E-01**	**(1.06E+00)**	**U4**	PCI/SA	R	2.05E+00	5.63E+00		100%	
Calc	S7	FILTER	**H401T1AA**	ALPHA	**6.14E-02**	**(3.81E-02)**	**U4**	PCI/SA	R	5.68E-02	1.44E-01	**B**	100%	
Calc	S7	FILTER	**H401T1AC**	ALPHA	**1.90E+00**	**(2.44E-01)**		PCI/SA	R	5.35E-02	1.37E-01	**S**	100%	80%

P Anderson
6-12-06

() - (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:17
RADCALC v4.8.24
STL Richland

Batch Nbr: 6129253

Alpha Beta, Alpha by GPC-Am , Calculated Results

Detailed Report

6/9/2006 6:19:40 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	S7	FILTER	*STLE	GabWoBS	**H4XR81AE**	**PCI/SA**		04/26/06 09:20	06/09/06 11:02			1	1.00 Sa	
536403,P-0606					,J6E080164-1 v4.8.24		FILTER			00.2				0.020973 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 11:52	ALPHA	12	23	GPC10A	1.5	N	N	3.9598E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.368E-02)	(0.000E+00)		8%			(0.000E+00)	47.680024		

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	ALPHA	R	**4.01364**		7.40000E-02	0.186877	0.186877	1.00 Sa	100%		6.879128		
				(1.994063)		(3.5944E-02)	(0.092222)	(0.092222)	(0.028284)			2.706241		

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	**H4XTE1AE**	**PCI/SA**		04/26/06 09:45	06/09/06 11:02			1	1.00 Sa	
536403,P-0607					,J6E080164-2 v4.8.24		FILTER			00.1				0.020972 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 11:52	ALPHA	3	21	GPC10B	1.5	N	N	4.0213E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.350E-02)	(0.000E+00)		8%			(0.000E+00)	47.682164		

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	ALPHA	R	**-0.640945**	**U4**	-1.20000E-02	-0.029841	-0.029841	1.00 Sa	100%		6.53746		
				(1.048781)		(1.9596E-02)	(0.048799)	(0.048799)	(0.028284)			2.546508		

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	**H4XTH1AE**	**PCI/SA**		04/26/06 10:00	06/09/06 11:02			1	1.00 Sa	
536403,P-0608					,J6E080164-3 v4.8.24		FILTER			01.0				0.020861 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 11:52	ALPHA	3	30	GPC10C	1.5	N	N	3.8722E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.289E-02)	(0.000E+00)		8%			(0.000E+00)	47.936812		

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	ALPHA	R	**-1.672955**	**U4**	-3.00000E-02	-0.077476	-0.077476	1.00 Sa	100%		7.862959		
				(1.156005)		(2.0494E-02)	(0.05335)	(0.05335)	(0.028284)			3.177748		

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	**H4XTL1AE**	**PCI/SA**		04/26/06 10:15	06/09/06 11:02			1	1.00 Sa	
536403,P-0609					,J6E080164-4 v4.8.24		FILTER			00.3				0.020717 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 11:52	ALPHA	11	20	GPC10D	1.5	N	N	4.1395E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.204E-02)	(0.000E+00)		8%			(0.000E+00)	48.270426		

() - (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: 6129253

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/9/2006 6:19:40 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
	06/09/06	ALPHA	R	**3.676855**		7.00000E-02	0.169102	0.169102	1.00 Sa	100%		6.308432		
				(1.84343)		(3.4351E-02)	(0.084223)	(0.084223)	(0.028284)			2.443933		

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	**H4XTM1AE**	**PCI/SA**		04/26/06 10:35	06/09/06 11:02			1	1.00 Sa	
536403,P-0610					,J6E080164-5 v4.8.24		FILTER			00.1				0.020764 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 11:52	ALPHA	6	12	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)	48.160384		

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	ALPHA	R	**2.022526**	**U4**	3.60000E-02	0.09323	0.09323	1.00 Sa	100%		5.56967		
				(1.445187)		(2.5456E-02)	(0.066402)	(0.066402)	(0.028284)			2.024781		

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	**H4XTN1AE**	**PCI/SA**		04/26/06 10:50	06/09/06 12:56			1	1.00 Sa	
536403,P-0611					,J6E080164-6 v4.8.24		FILTER			00.4				0.021046 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 13:46	ALPHA	9	23	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)	47.515933		

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	ALPHA	R	**2.380814**	**U4**	4.40000E-02	0.111235	0.111235	1.00 Sa	100%		6.862771		
				(1.722251)		(3.1496E-02)	(0.080212)	(0.080212)	(0.028284)			2.699806		

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	**H4XTP1AE**	**PCI/SA**		04/26/06 09:25	06/09/06 12:56			1	1.00 Sa	
536403,P-0612					,J6E080164-7 v4.8.24		FILTER			00.4				0.020414 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 13:46	ALPHA	2	21	GPC10B	1.5	N	N	4.0160E-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)	48.985354		

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	ALPHA	R	**-1.208771**	**U4**	-2.20000E-02	-0.054781	-0.054781	1.00 Sa	100%		6.724978		
				(0.934439)		(1.6852E-02)	(0.042231)	(0.042231)	(0.028284)			2.619551		

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	**H4XTR1AE**	**PCI/SA**		04/26/06 09:35	06/09/06 12:56			1	1.00 Sa	
536403,P-0613					,J6E080164-8 v4.8.24		FILTER			00.1				0.020757 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: 6129253

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/9/2006 6:19:40 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
0	06/09/06 13:46	ALPHA	6	30		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) 48.176459
	06/09/06	ALPHA	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 Sa	100%		7.871301		
				(1.497924)		(2.6833E-02)	(0.069025)	(0.069025)	(0.028284)			3.18112		

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	**H4X0R1AE**	**PCI/SA**		04/26/06 09:30	06/09/06 12:56			1	1.00 Sa	
536403,000436					,J6E080164-9 v4.8.24		FILTER			01.1				0.020806 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 13:46	ALPHA	5	20		GPC10D 1.5	N	N	4.1242E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.200E-02)	(0.000E+00)		8%			(0.000E+00)	48.062965		

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	ALPHA	R	**0.524943**	**U4**	1.00000E-02	0.024247	0.024247	1.00 Sa	100%		6.304569		
				(1.26538)		(2.4083E-02)	(0.058431)	(0.058431)	(0.028284)			2.442437		

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	**H4X0W1AE**	**PCI/SA**		04/26/06 09:50	06/09/06 12:56			1	1.00 Sa	
536403,000437					,J6E080164-10 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	06/09/06 13:46	ALPHA	9	12		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)	48.199423		

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	ALPHA	R	**3.72554**		6.60000E-02	0.171594	0.171594	1.00 Sa	100%		5.596071		
				(1.779726)		(3.0790E-02)	(0.081377)	(0.081377)	(0.028284)			2.034379		

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	**H4X001AE**	**PCI/SA**		04/26/06 10:05	06/09/06 14:50			1	1.00 Sa	
536403,000438					,J6E080164-11 v4.8.24		FILTER			00.1				0.020633 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 15:40	ALPHA	12	23		GPC10A 1.5	N	N	3.9619E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.368E-02)	(0.000E+00)		8%			(0.000E+00)	48.465786		

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	ALPHA	R	**4.07763**		7.40000E-02	0.186778	0.186778	1.00 Sa	100%		6.988804		
				(2.025854)		(3.5944E-02)	(0.092173)	(0.092173)	(0.028284)			2.749387		

() - (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: 6129253

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/9/2006 6:19:40 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
12	Calc	S7	FILTER	*STLE	GabWoBS	**H4X041AE**	**PCI/SA**		04/26/06 10:20	06/09/06 14:50			1	1.00 Sa	
536403,000439					,J6E080164-12 v4.8.24		FILTER			00.1				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	06/09/06 15:40	ALPHA	10	21	GPC10B	1.5	N	N	4.0213E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.350E-02)	(0.000E+00)		8%			(0.000E+00)	47.98002		

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	ALPHA	R	**3.117252**		5.80000E-02	0.144233	0.144233	1.00 Sa	100%		6.578297		
				(1.799015)		(3.2924E-02)	(0.082826)	(0.082826)	(0.028284)			2.562415		

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	**H4X081AE**	**PCI/SA**		04/26/06 10:40	06/09/06 14:50			1	1.00 Sa	
536403,000440					,J6E080164-13 v4.8.24		FILTER			00.1				0.020804 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 15:40	ALPHA	3	30	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)	48.066884		

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	ALPHA	R	**-1.670921**	**U4**	-3.00000E-02	-0.077173	-0.077173	1.00 Sa	100%		7.853398		
				(1.1546)		(2.0494E-02)	(0.053141)	(0.053141)	(0.028284)			3.173884		

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	**H4X1A1AE**	**PCI/SA**		04/26/06 10:55	06/09/06 14:50			1	1.00 Sa	
536403,000441					,J6E080164-14 v4.8.24		FILTER			00.2				0.020635 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 15:40	ALPHA	14	20	GPC10D	1.5	N	N	4.1414E-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)	48.460984		

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	ALPHA	R	**5.271038**		1.00000E-01	0.241467	0.241467	1.00 Sa	100%		6.330517		
				(2.098815)		(3.8471E-02)	(0.095141)	(0.095141)	(0.028284)			2.452489		

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	**H4X1F1AE**	**PCI/SA**		04/26/06 10:10	06/09/06 14:50			1	1.00 Sa	
536403,000442					,J6E080164-15 v4.8.24		FILTER			00.1				0.020537 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 15:40	ALPHA	3	12	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)	48.691668		

() - (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: 6129253

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/9/2006 6:19:40 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
	06/09/06	ALPHA	R	**0.340806**	**U4**	6.00000E-03	0.015538	0.015538	1.00 Sa	100%		5.631112		
				(1.060189)		(1.8655E-02)	(0.048329)	(0.048329)	(0.028284)			2.047117		

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	**H401T1AA**	**PCI/SA**	**B**	04/26/06 09:20	06/09/06 16:45			1	1.00 Sa	
0,INTRA-LAB BLANK					,J6E090000-253		FILTER			00.2				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 17:35	ALPHA	10	23	GPC10A	1.5	N	N	3.9598E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.368E-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	ALPHA	R	**0.061428**	**U4**	5.40000E-02	0.13637	0.13637	1.00 Sa	100%		0.144277		
				(0.038109)		(3.3045E-02)	(0.084293)	(0.084293)	(0.017321)			0.056758		

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
17	Calc	S7	FILTER	*STLE	GabWoBS	**H401T1AC**	**PCI/SA**	**S**	04/26/06 09:20	06/09/06 16:45		ASC0388	1	1.00 Sa	
0,INTRA-LAB CHECK					,J6E090000-253		FILTER			00.3		ASC0388 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	06/09/06 17:35	ALPHA	174	21	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)	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	ALPHA	R	**1.903709**		1.69800E+00	4.226238	4.226238	1.00 Sa	100%	80%	0.137225		
				(0.243727)		(1.3223E-01)	(0.492697)	(0.492697)	(0.017321)			0.053453		

() - (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:17

RADCALC v4.8.24
STL Richland

UST Number: H4XR81AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H4XR81AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4215

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00012	00000	0100	00000	1000	9-JUN-2006 11:52:42.07

Bkg File: [quad10.bkgrnd]2006-06-09_0318.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00023	0500	0.05	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XTE1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H4XTE1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4212

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00003	00000	0100	00000	1000	9-JUN-2006 11:52:42.07

Bkg File: [quad10.bkgrnd]2006-06-09_0318.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00021	0500	0.04	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XTH1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H4XTH1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4221

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00003	00000	0100	00000	1000	9-JUN-2006 11:52:42.07

Bkg File: [quad10.bkgrnd]2006-06-09_0318.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00030	0500	0.06	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XTL1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H4XTL1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4215

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00011	00000	0100	00000	1000	9-JUN-2006 11:52:42.07

Bkg File: [quad10.bkgrnd]2006-06-09_0318.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XTM1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H4XTM1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4210

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00006	00000	0100	00000	1000	9-JUN-2006 11:52:42.07

Bkg File: [quad10.bkgrnd]2006-06-09_0318.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00012	0500	0.02	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XTN1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H4XTN1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4215

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00009	00000	0100	00000	1000	9-JUN-2006 13:46:55.46

Bkg File: [quad10.bkgrnd]2006-06-09_0318.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00023	0500	0.05	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XTP1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H4XTP1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4212

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00002	00000	0100	00000	1000	9-JUN-2006 13:46:55.46

Bkg File: [quad10.bkgrnd]2006-06-09_0318.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00021	0500	0.04	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XTR1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H4XTR1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4221

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00006	00000	0100	00000	1000	9-JUN-2006 13:46:55.46

Bkg File: [quad10.bkgrnd]2006-06-09_0318.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00030	0500	0.06	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4X0R1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H4X0R1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4215

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00005	00000	0100	00000	1000	9-JUN-2006 13:46:55.46

Bkg File: [quad10.bkgrnd]2006-06-09_0318.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4X0W1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H4X0W1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4210

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00009	00000	0100	00000	1000	9-JUN-2006 13:46:55.46

Bkg File: [quad10.bkgrnd]2006-06-09_0318.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00012	0500	0.02	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4X001AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H4X001AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4215

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00012	00000	0100	00000	1000	9-JUN-2006 15:40:45.12

Bkg File: [quad10.bkgrnd]2006-06-09_0318.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00023	0500	0.05	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4X041AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H4X041AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4212

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00010	00000	0100	00000	1000	9-JUN-2006 15:40:45.12

Bkg File: [quad10.bkgrnd]2006-06-09_0318.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00021	0500	0.04	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4X081AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H4X081AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4221

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00003	00000	0100	00000	1000	9-JUN-2006 15:40:45.12

Bkg File: [quad10.bkgrnd]2006-06-09_0318.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00030	0500	0.06	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4X1A1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H4X1A1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4215

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00014	00000	0100	00000	1000	9-JUN-2006 15:40:45.12

Bkg File: [quad10.bkgrnd]2006-06-09_0318.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4X1F1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H4X1F1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4210

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00003	00000	0100	00000	1000	9-JUN-2006 15:40:45.12

Bkg File: [quad10.bkgrnd]2006-06-09_0318.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00012	0500	0.02	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H401T1AA Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H401T1AA.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4215

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00010	00000	0100	00000	1000	9-JUN-2006 17:35:00.77

Bkg File: [quad10.bkgrnd]2006-06-09_0318.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00023	0500	0.05	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H401T1AC Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H401T1AC.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4212

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00174	00000	0100	00000	1000	9-JUN-2006 17:35:00.77

Bkg File: [quad10.bkgrnd]2006-06-09_0318.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00021	0500	0.04	00000	1000	9-JUN-2006 03:18:40.76

BETA

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/13/2006 9:07:50 AM

Lot No., Due Date: J6E080164; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129255; RBETA-SR Beta by GPC-Sr/Y

SDG, Matrix: 31582; 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. 10 08177

First Level Review Pam Anderson **Date** 6-13-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 612255

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 R Adam Date: 6-13-06

6/5/2006 3:03:08 PM

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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129255 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 H4XR8-1-AF J6E080164-1-SAMP 04/26/2006 09:20	0.833sa,g	500.44sa,g	50.63g,in	0.0843g	Dish PPT 1.5 0.8	100	26A	1115	6/5/06	
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
2 H4XTE-1-AF J6E080164-2-SAMP 04/26/2006 09:45	0.833sa,g	503.64sa,g	50.43g,in	0.0834g	0.5		26B			
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
3 H4XTH-1-AF J6E080164-3-SAMP 04/26/2006 10:00	0.833sa,g	500.34sa,g	50.33g,in	0.0838g	1.2		26C			
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
4 H4XTL-1-AF J6E080164-4-SAMP 04/26/2006 10:15	0.833sa,g	503.42sa,g	50.77g,in	0.084g	0.3		26D			
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
5 H4XTM-1-AF J6E080164-5-SAMP 04/26/2006 10:35	0.833sa,g	501.47sa,g	50.35g,in	0.0836g	0.5		28B			
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
6 H4XTN-1-AF J6E080164-6-SAMP 04/26/2006 10:50	0.833sa,g	502.28sa,g	50.66g,in	0.084g	0.6		28C			
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
7 H4XTP-1-AF J6E080164-7-SAMP 04/26/2006 09:25	0.833sa,g	510.06sa,g	50.06g,in	0.0818g	0.4		28D			
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 7

Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.24

STL RICHLAND

6/5/2006 3:03:08 PM

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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129255 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 H4XTR-1-AF J6E080164-8-SAMP 04/26/2006 09:35	0.833sa,g	502.44sa,g	50.08g,in	0.083g	Dish 1.5	PPT 0.4	100	31A	1115	6/9/06
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
9 H4X0R-1-AF J6E080164-9-SAMP 04/26/2006 09:30	0.833sa,g	505.26sa,g	50.15g,in	0.0827g	0.7		31B			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
10 H4X0W-1-AF J6E080164-10-SAMP 04/26/2006 09:50	0.833sa,g	505.49sa,g	50.01g,in	0.0824g	1.2		31C			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
11 H4X00-1-AF J6E080164-11-SAMP 04/26/2006 10:05	0.833sa,g	504.65sa,g	50.13g,in	0.0827g	0.7		31D			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
12 H4X04-1-AF J6E080164-12-SAMP 04/26/2006 10:20	0.833sa,g	501.99sa,g	50.26g,in	0.0834g	0.9		30A			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
13 H4X08-1-AF J6E080164-13-SAMP 04/26/2006 10:40	0.833sa,g	504.10sa,g	50.01g,in	0.0826g	1.1		30B			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
14 H4X1A-1-AF J6E080164-14-SAMP 04/26/2006 10:55	0.833sa,g	504.60sa,g	50.02g,in	0.0826g	1.0		30C			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:

STL RICHLAND

6/5/2006 3:03:09 PM

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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129255 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:
15H4X1F-1-AF J6E080164-15-SAMP 04/26/2006 10:10	0.833sa,g	509.03sa,g	50.19g,in	0.0821g	Dish PPT 1.5 1.8	100	32D	1115	6/9/06	
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
16H4010-1-AA-B J6E090000-255-BLK 04/26/2006 09:20		1.00sa,in	1.00sa		0.1		JGR	13U8		
		AmtRec:	#Containers: 1				Scr:	Alpha:		Beta:
17H4010-1-AC-C J6E090000-255-LCS 04/26/2006 09:20		1.00sa,in	1.00sa		BESB2808 05/16/06,pd 12/28/05,r 0.3		JGB			
		AmtRec:	#Containers: 1				Scr:	Alpha:		Beta:

Comments:

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

H4XR81AF-SAMP Constituent List:

BETA	RDL:5	pCi/sam	LCL:	UCL:	RPD:						
H40101AA-BLK:											
BETA	RDL:5	pCi/sam	LCL:	UCL:	RPD:						
H40101AC-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						

H4XR81AF-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H40101AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H40101AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

6/5/2006 3:03:09 PM

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 #: _____

AnalyDueDate: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129255 **pCi/sampl**
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:

Approved By _____ **Date:** _____

Clouseau
Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: **10-08177**
NCM Initiated By: Pam Anderson
Date Opened: 06/13/2006
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Sep
Tests: Beta by GPC-Sr/Y
Lot #'s (Sample #'s): J6E080164 (1,10,11,12,13,14,15,2,3,4,5, 6,7,8,9),
QC Batches: 6129255

Nonconformance: MDA not met
Subcategory: Data accepted

Problem Description / Root Cause

Name	Date	Description
Pam Anderson	06/13/2006	All samples do not meet CRDL. The results of the samples are >MDA>CRDL except: H4XTR1AF H4X1F1AF.

Corrective Action

Name	Date	Corrective Action
Pam Anderson	06/13/2006	Note in case narrative.

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: 6/13/2006

6/13/2006 8:37:18 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/13/2005, 6/18/2006, Batch: '6129255', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129255						
AC		**CalcC**	**HansenM**	6/5/2006 3:55:57 PM		
SC			antonsonl	IsBatched	5/9/2006 1:11:28 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/5/2006 3:55:57 PM	RICH-RC-5016 REVISION 5
SC			ScottM	InPrep2	6/8/2006 7:56:43 AM	RICH-RC-5014 REVISION 6
SC			ScottM	Prep2C	6/9/2006 9:20:29 AM	RICH-RC-5014 REVISION 6
SC			DAWKINSO	CalcC	6/9/2006 3:37:08 PM	RICH-RD-0003 REVISION 4
AC			**ScottM**	6/8/2006 7:56:43 AM		
AC			**ScottM**	6/9/2006 9:20:29 AM		
AC			**DAWKINSO**	6/9/2006 3:37:08 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 4

ICOCFractions v4.8.18

6/13/2006 8:37:17 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
31582	**9H4X0010**			**J6E08016411**	000438	FILTER	5/8/2006 7:30:00	4/26/2006 10:05:00 AM				
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.5337E+01**	1.958E+00	2.235E+00	6.222E+00	PCI/SA		1.0	1.0E+0	3.275E-2
31582	**9H4X0410**			**J6E08016412**	000439	FILTER	5/8/2006 7:30:00	4/26/2006 10:20:00 AM				
BETA	BDS8	0		6/9/2006 10:28:06 AM	**1.6114E+01**	2.069E+00	2.35E+00	6.722E+00	PCI/SA		1.0	1.0E+0	3.34E-2
31582	**9H4X0810**			**J6E08016413**	000440	FILTER	5/8/2006 7:30:00	4/26/2006 10:40:00 AM				
BETA	BDS8	0		6/9/2006 10:28:06 AM	**1.6257E+01**	1.977E+00	2.275E+00	6.178E+00	PCI/SA		1.0	1.0E+0	3.264E-2
31582	**9H4X0R10**			**J6E0801649**	000436	FILTER	5/8/2006 7:30:00	4/26/2006 9:30:00 AM				
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.1356E+01**	1.842E+00	2.08E+00	6.348E+00	PCI/SA		1.0	1.0E+0	3.268E-2
31582	**9H4X0W10**			**J6E08016410**	000437	FILTER	5/8/2006 7:30:00	4/26/2006 9:50:00 AM				
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.585E+01**	2.028E+00	2.3E+00	6.57E+00	PCI/SA		1.0	1.0E+0	3.241E-2
31582	**9H4X1A10**			**J6E08016414**	000441	FILTER	5/8/2006 7:30:00	4/26/2006 10:55:00 AM				
BETA	BDS8	0		6/9/2006 10:28:06 AM	**1.6832E+01**	1.988E+00	2.499E+00	6.159E+00	PCI/SA		1.0	1.0E+0	3.257E-2
31582	**9H4X1F10**			**J6E08016415**	000442	FILTER	5/8/2006 7:30:00	4/26/2006 10:10:00 AM				
BETA	BDS8	0		6/9/2006 10:28:06 AM	**-2.298E-01**	1.578E+00	1.578E+00	7.083E+00	PCI/SA		1.0	1.0E+0	3.213E-2
31582	**9H4XR810**			**J6E0801641**	P-0606	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM				
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.1591E+01**	1.922E+00	2.101E+00	6.805E+00	PCI/SA		1.0	1.0E+0	3.428E-2
31582	**9H4XTE10**			**J6E0801642**	P-0607	FILTER	5/8/2006 7:30:00	4/26/2006 9:45:00 AM				
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.0717E+01**	1.842E+00	1.991E+00	6.443E+00	PCI/SA		1.0	1.0E+0	3.341E-2
31582	**9H4XTH10**			**J6E0801643**	P-0608	FILTER	5/8/2006 7:30:00	4/26/2006 10:00:00 AM				
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.2171E+01**	1.882E+00	2.062E+00	6.313E+00	PCI/SA		1.0	1.0E+0	3.379E-2
31582	**9H4XTL10**			**J6E0801644**	P-0609	FILTER	5/8/2006 7:30:00	4/26/2006 10:15:00 AM				
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.0827E+01**	1.823E+00	1.966E+00	6.291E+00	PCI/SA		1.0	1.0E+0	3.401E-2
31582	**9H4XTM10**			**J6E0801645**	P-0610	FILTER	5/8/2006 7:30:00	4/26/2006 10:35:00 AM				
BETA	BDS8	0		6/9/2006 10:27:53 AM	**8.5243E+00**	1.72E+00	1.819E+00	6.193E+00	PCI/SA		1.0	1.0E+0	3.364E-2
31582	**9H4XTN10**			**J6E0801646**	P-0611	FILTER	5/8/2006 7:30:00	4/26/2006 10:50:00 AM				
BETA	BDS8	0		6/9/2006 10:27:53 AM	**1.444E+01**	1.97E+00	2.293E+00	6.516E+00	PCI/SA		1.0	1.0E+0	3.402E-2
31582	**9H4XTP10**			**J6E0801647**	P-0612	FILTER	5/8/2006 7:30:00	4/26/2006 9:25:00 AM				
BETA	BDS8	0		6/9/2006 10:27:53 AM	**8.8756E+00**	1.84E+00	1.983E+00	6.701E+00	PCI/SA		1.0	1.0E+0	3.176E-2
31582	**9H4XTR10**			**J6E0801648**	P-0613	FILTER	5/8/2006 7:30:00	4/26/2006 9:35:00 AM				
BETA	BDS8	0		6/9/2006 10:27:56 AM	**3.0783E+00**	1.566E+00	1.582E+00	6.447E+00	PCI/SA		1.0	1.0E+0	3.303E-2
31582	**H40101AB**			**J6E090000255**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM				
BETA	BDS8	0	B	6/9/2006 12:14:58 PM	**3.9417E-02**	1.301E-01	1.302E-01	5.727E-01	PCI/SA		1.0	1.0E+0	1.0E+0
31582	**H40101CS**			**J6E090000255**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM				
BETA	BDS8	0	S	6/9/2006 12:14:58 PM	**4.3224E+00**	2.427E-01	3.776E-01	5.373E-01	PCI/SA	4.6772E+00	1.0	1.0E+0	1.0E+0

6129255, **Samples Inserted | Updated | NotUpdated => 17 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6129255

Alpha Beta, Beta by GPC-Sr/Y , Results Summary Report

6/9/2006 2:30:32 PM

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	H4XR81AF	BETA	1.16E+01	(2.10E+00)		PCI/SA	R	3.25E+00	6.80E+00		100%	
Calc	S8	FILTER	H4XTE1AF	BETA	1.07E+01	(1.99E+00)		PCI/SA	R	3.06E+00	6.44E+00		100%	
Calc	S8	FILTER	H4XTH1AF	BETA	1.22E+01	(2.06E+00)		PCI/SA	R	2.98E+00	6.31E+00		100%	
Calc	S8	FILTER	H4XTL1AF	BETA	1.08E+01	(1.97E+00)		PCI/SA	R	2.98E+00	6.29E+00		100%	
Calc	S8	FILTER	H4XTM1AF	BETA	8.52E+00	(1.82E+00)		PCI/SA	R	2.93E+00	6.19E+00		100%	
Calc	S8	FILTER	H4XTN1AF	BETA	1.44E+01	(2.29E+00)		PCI/SA	R	3.09E+00	6.52E+00		100%	
Calc	S8	FILTER	H4XTP1AF	BETA	8.88E+00	(1.98E+00)		PCI/SA	R	3.18E+00	6.70E+00		100%	
Calc	S8	FILTER	H4XTR1AF	BETA	3.08E+00	(1.58E+00)		PCI/SA	R	3.06E+00	6.45E+00	N2	100%	
Calc	S8	FILTER	H4X0R1AF	BETA	1.14E+01	(2.08E+00)		PCI/SA	R	3.01E+00	6.35E+00		100%	
Calc	S8	FILTER	H4X0W1AF	BETA	1.59E+01	(2.30E+00)		PCI/SA	R	3.12E+00	6.57E+00		100%	
Calc	S8	FILTER	H4X001AF	BETA	1.53E+01	(2.24E+00)		PCI/SA	R	2.94E+00	6.22E+00		100%	
Calc	S8	FILTER	H4X041AF	BETA	1.61E+01	(2.35E+00)		PCI/SA	R	3.19E+00	6.72E+00		100%	
Calc	S8	FILTER	H4X081AF	BETA	1.63E+01	(2.27E+00)		PCI/SA	R	2.92E+00	6.18E+00		100%	
Calc	S8	FILTER	H4X1A1AF	BETA	1.68E+01	(2.50E+00)		PCI/SA	R	2.91E+00	6.16E+00		100%	
Calc	S8	FILTER	H4X1F1AF	BETA	-2.30E-01	(1.58E+00)	U4	PCI/SA	R	3.37E+00	7.08E+00	N2	100%	
Calc	S8	FILTER	H40101AA	BETA	3.94E-02	(1.30E-01)	U4	PCI/SA	R	2.73E-01	5.73E-01	B	100%	
Calc	S8	FILTER	H40101AC	BETA	4.32E+00	(3.78E-01)		PCI/SA	R	2.55E-01	5.37E-01	S	100%	92%

P Anderson
6.12.06

() - (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:17
RADCALC v4.8.24
STL Richland

Batch Nbr: 6129255

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results
Detailed Report

6/9/2006 2:30:33 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	S8	FILTER	*STLE	GabWoBS	**H4XR81AF**	**PCI/SA**		04/26/06 09:20	06/09/06 10:27			1	1.00 Sa	
536403,P-0606					,J6E080164-1 v4.8.24		FILTER			00.8				0.084275 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	06/09/06 11:17	BETA	241	710	GPC26A	1.5	N	N	4.5652E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.558E-02)	(0.000E+00)		5%			(0.000E+00)	11.865856		

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	BETA	R	**11.590972**		9.90000E-01	2.168574	2.168574	1.00 Sa	100%		6.804854		
				(2.100873)		(1.6413E-01)	(0.382751)	(0.382751)	(0.028284)			3.24571		

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	**H4XTE1AF**	**PCI/SA**		04/26/06 09:45	06/09/06 10:27			1	1.00 Sa	
536403,P-0607					,J6E080164-2 v4.8.24		FILTER			00.5				0.083409 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	06/09/06 11:17	BETA	200	566	GPC26B	1.5	N	N	4.3741E-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)	11.989091		

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	BETA	R	**10.716699**		8.68000E-01	1.984395	1.984395	1.00 Sa	100%		6.442848		
				(1.991418)		(1.4921E-01)	(0.359556)	(0.359556)	(0.028284)			3.055944		

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	**H4XTH1AF**	**PCI/SA**		04/26/06 10:00	06/09/06 10:27			1	1.00 Sa	
536403,P-0608					,J6E080164-3 v4.8.24		FILTER			01.2				0.083793 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	06/09/06 11:17	BETA	194	497	GPC26C	1.5	N	N	4.1783E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.032E-02)	(0.000E+00)		5%			(0.000E+00)	11.934199		

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	BETA	R	**12.171087**		9.46000E-01	2.264068	2.264068	1.00 Sa	100%		6.313306		
				(2.062256)		(1.4625E-01)	(0.37209)	(0.37209)	(0.028284)			2.984093		

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	**H4XTL1AF**	**PCI/SA**		04/26/06 10:15	06/09/06 10:27			1	1.00 Sa	
536403,P-0609					,J6E080164-4 v4.8.24		FILTER			00.3				0.084008 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	06/09/06 11:17	BETA	190	519	GPC26D	1.5	N	N	4.2689E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(8.768E-03)	(0.000E+00)		5%			(0.000E+00)	11.903599		

() - (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: 6129255

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/9/2006 2:30:34 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
	06/09/06	BETA	R	**10.827215**		8.62000E-01	2.019258	2.019258	1.00 Sa	100%		6.290997		
				(1.966453)		(1.4518E-01)	(0.357165)	(0.357165)	(0.028284)			2.97707		

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	**H4XTM1AF**	**PCI/SA**		04/26/06 10:35	06/09/06 10:27			1	1.00 Sa	
536403,P-0610					,J6E080164-5 v4.8.24		FILTER			00.5				0.083637 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	06/09/06 11:17	BETA	173	520	GPC28B	1.5	N	N	4.3595E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.085E-02)	(0.000E+00)		5%			(0.000E+00)	11.956401		

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	BETA	R	**8.524309**		6.90000E-01	1.582749	1.582749	1.00 Sa	100%		6.193204		
				(1.818802)		(1.3921E-01)	(0.33134)	(0.33134)	(0.028284)			2.930945		

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	**H4XTN1AF**	**PCI/SA**		04/26/06 10:50	06/09/06 10:27			1	1.00 Sa	
536403,P-0611					,J6E080164-6 v4.8.24		FILTER			00.6				0.084016 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	06/09/06 11:17	BETA	238	597	GPC28C	1.5	N	N	4.4036E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.154E-02)	(0.000E+00)		5%			(0.000E+00)	11.902432		

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	BETA	R	**14.439779**		1.18600E+00	2.69326	2.69326	1.00 Sa	100%		6.516248		
				(2.292752)		(1.6183E-01)	(0.412967)	(0.412967)	(0.028284)			3.094988		

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	**H4XTP1AF**	**PCI/SA**		04/26/06 09:25	06/09/06 10:27			1	1.00 Sa	
536403,P-0612					,J6E080164-7 v4.8.24		FILTER			00.4				0.081755 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	06/09/06 11:17	BETA	180	557	GPC28D	1.5	N	N	4.2585E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.225E-02)	(0.000E+00)		5%			(0.000E+00)	12.231661		

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	BETA	R	**8.875639**		6.86000E-01	1.610896	1.610896	1.00 Sa	100%		6.700587		
				(1.982963)		(1.4223E-01)	(0.353719)	(0.353719)	(0.028284)			3.176867		

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	**H4XTR1AF**	**PCI/SA**		04/26/06 09:35	06/09/06 10:27			1	1.00 Sa	
536403,P-0613					,J6E080164-8 v4.8.24		FILTER			00.4				0.083028 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: 6129255

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/9/2006 2:30:34 PM

1	06/09/06 11:17	BETA	139	570	GPC31A	1.5	N	N	4.4060E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00
			100	500			Y		(1.296E-02)	(0.000E+00)		5%			(0.000E+00)	12.044115	

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	BETA	R	**3.078337**		2.50000E-01	0.567407	0.567407	1.00 Sa	100%		6.447074		
				(1.581513)		(1.2720E-01)	(0.290568)	(0.290568)	(0.028284)			3.058507		

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	**H4X0R1AF**	**PCI/SA**		04/26/06 09:30	06/09/06 10:27			1	1.00 Sa	
536403,000436					,J6E080164-9 v4.8.24		FILTER			00.7				0.08268 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	06/09/06 11:17	BETA	206	564	GPC31B	1.5	N	N	4.4714E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.469E-02)	(0.000E+00)		5%			(0.000E+00)	12.094808		

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	BETA	R	**11.355781**		9.32000E-01	2.084354	2.084354	1.00 Sa	100%		6.347591		
				(2.080342)		(1.5118E-01)	(0.37205)	(0.37205)	(0.028284)			3.010486		

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	**H4X0W1AF**	**PCI/SA**		04/26/06 09:50	06/09/06 10:27			1	1.00 Sa	
536403,000437					,J6E080164-10 v4.8.24		FILTER			01.2				0.082412 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	06/09/06 11:17	BETA	247	592	GPC31C	1.5	N	N	4.4347E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(9.863E-03)	(0.000E+00)		5%			(0.000E+00)	12.134188		

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	BETA	R	**15.85012**		1.28600E+00	2.899848	2.899848	1.00 Sa	100%		6.570216		
				(2.300278)		(1.6452E-01)	(0.403504)	(0.403504)	(0.028284)			3.119955		

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	**H4X001AF**	**PCI/SA**		04/26/06 10:05	06/09/06 10:27			1	1.00 Sa	
536403,000438					,J6E080164-11 v4.8.24		FILTER			00.7				0.082747 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	06/09/06 11:17	BETA	226	515	GPC31D	1.5	N	N	4.3659E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.192E-02)	(0.000E+00)		5%			(0.000E+00)	12.085026		

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	BETA	R	**15.336552**		1.23000E+00	2.817303	2.817303	1.00 Sa	100%		6.222195		
				(2.23541)		(1.5704E-01)	(0.39387)	(0.39387)	(0.028284)			2.943894		

() - (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: 6129255

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/9/2006 2:30:34 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
12	Calc	S8	FILTER	*STLE	GabWoBS	**H4X041AF**	**PCI/SA**		04/26/06 10:20	06/09/06 10:28			1	1.00 Sa	
536403,000439					,J6E080164-12 v4.8.24		FILTER			00.9				0.083401 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	06/09/06 11:18	BETA	248	598	GPC32A	1.5	N	N	4.3036E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.035E-02)	(0.000E+00)		5%			(0.000E+00)	11.990232		

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	BETA	R	**16.113992**		1.28400E+00	2.98352	2.98352	1.00 Sa	100%		6.722099		
				(2.350205)		(1.6490E-01)	(0.417393)	(0.417393)	(0.028284)			3.192895		

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	**H4X081AF**	**PCI/SA**		04/26/06 10:40	06/09/06 10:28			1	1.00 Sa	
536403,000440					,J6E080164-13 v4.8.24		FILTER			01.1				0.082639 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	06/09/06 11:18	BETA	234	514	GPC32B	1.5	N	N	4.3990E-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)	12.100821		

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	BETA	R	**16.257182**		1.31200E+00	2.982523	2.982523	1.00 Sa	100%		6.177792		
				(2.274782)		(1.5955E-01)	(0.3988)	(0.3988)	(0.028284)			2.922731		

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	**H4X1A1AF**	**PCI/SA**		04/26/06 10:55	06/09/06 10:28			1	1.00 Sa	
536403,000441					,J6E080164-14 v4.8.24		FILTER			01.0				0.082574 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	06/09/06 11:18	BETA	241	520	GPC32C	1.5	N	N	4.4400E-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)	12.110402		

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	BETA	R	**16.832214**		1.37000E+00	3.085575	3.085575	1.00 Sa	100%		6.159224		
				(2.498878)		(1.6180E-01)	(0.440057)	(0.440057)	(0.028284)			2.914864		

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	**H4X1F1AF**	**PCI/SA**		04/26/06 10:10	06/09/06 10:28			1	1.00 Sa	
536403,000442					,J6E080164-15 v4.8.24		FILTER			01.8				0.082133 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	06/09/06 11:18	BETA	127	644	GPC32D	1.5	N	N	4.2959E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.330E-02)	(0.000E+00)		5%			(0.000E+00)	12.175342		

() - (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: 6129255

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/9/2006 2:30:34 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
	06/09/06	BETA	R	**-0.229795**	**U4**	-1.80000E-02	-0.0419	-0.0419	1.00 Sa	100%		7.083176		
				(1.577966)		(1.2360E-01)	(0.287715)	(0.287715)	(0.028284)			3.370605		

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	**H40101AA**	**PCI/SA**	**B**	04/26/06 09:20	06/09/06 12:14			1	1.00 Sa	
0,INTRA-LAB BLANK					,J6E090000-255		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
1	06/09/06 13:04	BETA	146	710	GPC26A	1.5	N	N	4.5711E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.560E-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
	06/09/06	BETA	R	**0.039417**	**U4**	4.00000E-02	0.087505	0.087505	1.00 Sa	100%		0.572737		
				(0.130164)		(1.3206E-01)	(0.288949)	(0.288949)	(0.017321)			0.273178		

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
17	Calc	S8	FILTER	*STLE	GabWoBS	**H40101AC**	**PCI/SA**	**S**	04/26/06 09:20	06/09/06 12:14		BESB2808	1	1.00 Sa	
0,INTRA-LAB CHECK					,J6E090000-255		FILTER			00.3		BESB2808 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	06/09/06 13:04	BETA	533	566	GPC26B	1.5	N	N	4.3749E-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
	06/09/06	BETA	R	**4.322382**		4.19800E+00	9.595698	9.595698	1.00 SA	100%	92%	0.537301		
				(0.377633)		(2.3572E-01)	(0.769631)	(0.769631)	(0.017321)			0.25485		

() - (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:17

RADCALC v4.8.24

STL Richland

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:17:56.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XR81AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:17:56.00	241	100.00	710	500.00	26A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
7	16	3271	1500

Bkg Count Date/Time
09-JUN-2006 04:39:32.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:17:56.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XTE1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:17:56.00	200	100.00	566	500.00	26B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
5	15	3271	1500

Bkg Count Date/Time
09-JUN-2006 04:39:32.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:17:56.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XTH1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:17:56.00	194	100.00	497	500.00	26C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	15	3271	1500

Bkg Count Date/Time
09-JUN-2006 04:39:32.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:17:56.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XTL1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:17:56.00	190	100.00	519	500.00	26D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
7	22	3271	1500

Bkg Count Date/Time
09-JUN-2006 04:39:32.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:17:53.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XTM1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:17:53.00	173	100.00	520	500.00	28B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	35	445	1500

Bkg Count Date/Time
09-JUN-2006 04:39:33.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:17:53.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XTN1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:17:53.00	238	100.00	597	500.00	28C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
7	19	445	1500

Bkg Count Date/Time
09-JUN-2006 04:39:33.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:17:53.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XTP1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:17:53.00	180	100.00	557	500.00	28D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	26	445	1500

Bkg Count Date/Time
09-JUN-2006 04:39:33.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:17:56.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XTR1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:17:56.00	139	100.00	570	500.00	31A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
4	23	3322	1492

Bkg Count Date/Time
09-JUN-2006 05:57:52.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:17:56.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X0R1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:17:56.00	206	100.00	564	500.00	31B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	21	3322	1492

Bkg Count Date/Time
09-JUN-2006 05:57:52.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:17:56.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X0W1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:17:56.00	247	100.00	592	500.00	31C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
3	12	3322	1492

Bkg Count Date/Time
09-JUN-2006 05:57:52.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:17:56.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X001AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:17:56.00	226	100.00	515	500.00	31D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
6	16	3322	1492

Bkg Count Date/Time
09-JUN-2006 05:57:52.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:18:06.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X041AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:18:06.00	248	100.00	598	500.00	32A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	19	3132	1492

Bkg Count Date/Time
09-JUN-2006 05:58:23.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:18:06.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X081AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:18:06.00	234	100.00	514	500.00	32B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	16	3132	1492

Bkg Count Date/Time
09-JUN-2006 05:58:23.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:18:06.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X1A1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:18:06.00	241	100.00	520	500.00	32C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
8	10	3132	1492

Bkg Count Date/Time
09-JUN-2006 05:58:23.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 11:18:06.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X1F1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 11:18:06.00	127	100.00	644	500.00	32D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
4	11	3132	1492

Bkg Count Date/Time
09-JUN-2006 05:58:23.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:04:58.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H40101AA	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:04:58.00	146	100.00	710	500.00	26A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
5	16	3274	1500

Bkg Count Date/Time
09-JUN-2006 04:39:32.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:04:58.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H40101AC	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:04:58.00	533	100.00	566	500.00	26B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
10	15	3274	1500

Bkg Count Date/Time
09-JUN-2006 04:39:32.00

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

6/20/2006 10:32:50 AM

Lot No., Due Date: J6E080164; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129270; RRA228 Ra-228 by GPC

SDG, Matrix: 31582; 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 _____ **Date** 6/20/06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6129270

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: 6-21-06

6/20/2006 10:31:56 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
31582	**9H4X0010**			**J6E08016411**	000438	FILTER	5/8/2006 7:30:00	4/26/2006 10:05:00 AM				
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**4.0776E+00**	1.981E+00	2.026E+00	6.989E+00	PCI/SA	1.0	1.0E+0	2.063E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.5337E+01**	1.958E+00	2.235E+00	6.222E+00	PCI/SA	1.0	1.0E+0	8.275E-2
RA-226	BXTE		0	6/18/2006 1:27:00 PM	**2.0231E-01**	1.126E-01	1.148E-01	3.612E-01	PCI/SA	0.994	8.33E-1	2.477E-1
RA-228	BXTF		0	6/20/2006 6:23:22 AM	**2.0276E+00**	4.378E-01	4.578E-01	1.566E+00	PCI/SA	0.885	1.0E+0	2.477E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**3.9362E-02**	6.224E-02	6.233E-02	2.897E-01	PCI/SA	0.987	1.0E+0	8.382E-2
TH-230	9NS1		0	6/17/2006 7:49:15 PM	**7.4289E-02**	6.949E-02	6.98E-02	2.734E-01	PCI/SA	0.987	1.0E+0	8.382E-2
TH-232	9NS1		0	6/17/2006 7:49:15 PM	**0.0E+00**	0.0E+00	4.549E-02	1.007E-01	PCI/SA	0.987	1.0E+0	8.382E-2
U-234	7YSR		0	6/17/2006 5:49:52 PM	**8.3926E-02**	1.645E-01	1.647E-01	9.577E-01	PCI/SA	0.871	1.0E+0	6.195E-2
U-235	7YSR		0	6/17/2006 5:49:52 PM	**-1.2919E-02**	1.292E-02	1.297E-02	6.499E-01	PCI/SA	0.871	1.0E+0	6.195E-2
U-238	7YSR		0	6/17/2006 5:49:52 PM	**0.0E+00**	0.0E+00	1.977E-01	4.375E-01	PCI/SA	0.871	1.0E+0	6.195E-2
31582	**9H4X0410**			**J6E08016412**	000439	FILTER	5/8/2006 7:30:00	4/26/2006 10:20:00 AM				
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**3.1173E+00**	1.77E+00	1.799E+00	6.578E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/9/2006 10:28:06 AM	**1.6114E+01**	2.069E+00	2.35E+00	6.722E+00	PCI/SA	1.0	1.0E+0	8.34E-2
RA-226	BXTE		0	6/18/2006 1:30:01 PM	**3.2961E-01**	1.546E-01	1.58E-01	4.848E-01	PCI/SA	1.032	8.33E-1	2.49E-1
RA-228	BXTF		0	6/20/2006 6:23:22 AM	**2.4489E+00**	4.381E-01	4.617E-01	1.397E+00	PCI/SA	0.936	1.0E+0	2.49E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**3.9332E-02**	6.219E-02	6.228E-02	2.895E-01	PCI/SA	1.014	1.0E+0	8.337E-2
TH-230	9NS1		0	6/17/2006 7:49:15 PM	**2.0414E-01**	9.279E-02	9.452E-02	2.226E-01	PCI/SA	1.014	1.0E+0	8.337E-2
TH-232	9NS1		0	6/17/2006 7:49:15 PM	**1.8558E-02**	4.15E-02	4.153E-02	2.226E-01	PCI/SA	1.014	1.0E+0	8.337E-2
U-234	7YSR		0	6/17/2006 5:51:09 PM	**-4.4232E-02**	3.128E-02	3.148E-02	6.249E-01	PCI/SA	0.959	1.0E+0	6.229E-2
U-235	7YSR		0	6/17/2006 5:51:09 PM	**1.1057E-01**	1.106E-01	1.109E-01	2.997E-01	PCI/SA	0.959	1.0E+0	6.229E-2
U-238	7YSR		0	6/17/2006 5:51:09 PM	**0.0E+00**	0.0E+00	1.354E-01	2.997E-01	PCI/SA	0.959	1.0E+0	6.229E-2
31582	**9H4X0810**			**J6E08016413**	000440	FILTER	5/8/2006 7:30:00	4/26/2006 10:40:00 AM				
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**-1.6709E+00**	1.141E+00	1.155E+00	7.853E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8		0	6/9/2006 10:28:06 AM	**1.6257E+01**	1.977E+00	2.275E+00	6.178E+00	PCI/SA	1.0	1.0E+0	8.264E-2
RA-226	BXTE		0	6/18/2006 2:06:00 PM	**1.91E-01**	1.279E-01	1.293E-01	4.271E-01	PCI/SA	0.88	8.33E-1	2.481E-1
RA-228	BXTF		0	6/20/2006 6:23:22 AM	**2.5723E+00**	4.927E-01	5.248E-01	1.741E+00	PCI/SA	0.801	1.0E+0	2.481E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**0.0E+00**	0.0E+00	6.578E-02	1.455E-01	PCI/SA	0.824	1.0E+0	8.269E-2
TH-230	9NS1		0	6/17/2006 7:49:15 PM	**2.0273E-01**	1.014E-01	1.031E-01	1.374E-01	PCI/SA	0.824	1.0E+0	8.269E-2
TH-232	9NS1		0	6/17/2006 7:49:15 PM	**-2.5341E-02**	2.534E-02	2.545E-02	3.04E-01	PCI/SA	0.824	1.0E+0	8.269E-2
U-234	7YSR		0	6/18/2006 7:59:14 AM	**3.3286E-01**	1.922E-01	1.941E-01	3.007E-01	PCI/SA	0.901	1.0E+0	6.2E-2
U-235	7YSR		0	6/18/2006 7:59:14 AM	**0.0E+00**	0.0E+00	1.359E-01	3.007E-01	PCI/SA	0.901	1.0E+0	6.2E-2
U-238	7YSR		0	6/18/2006 7:59:14 AM	**1.1095E-01**	1.11E-01	1.113E-01	3.007E-01	PCI/SA	0.901	1.0E+0	6.2E-2
31582	**9H4X0R10**			**J6E0801649**	000436	FILTER	5/8/2006 7:30:00	4/26/2006 9:30:00 AM				
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**5.2494E-01**	1.264E+00	1.265E+00	6.305E+00	PCI/SA	1.0	1.0E+0	2.081E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.1356E+01**	1.842E+00	2.08E+00	6.348E+00	PCI/SA	1.0	1.0E+0	8.268E-2
RA-226	BXTE		0	6/18/2006 1:31:00 PM	**1.2764E-01**	1.515E-01	1.521E-01	5.632E-01	PCI/SA	0.914	8.33E-1	2.487E-1
RA-228	BXTF		0	6/20/2006 6:23:10 AM	**3.0817E+00**	5.354E-01	5.734E-01	1.773E+00	PCI/SA	0.8	1.0E+0	2.487E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**7.2465E-02**	7.246E-02	7.276E-02	2.898E-01	PCI/SA	0.939	1.0E+0	8.303E-2
TH-230	9NS1		0	6/17/2006 7:49:15 PM	**2.9632E-01**	1.227E-01	1.256E-01	2.734E-01	PCI/SA	0.939	1.0E+0	8.303E-2
TH-232	9NS1		0	6/17/2006 7:49:15 PM	**1.1397E-01**	8.218E-02	8.283E-02	2.734E-01	PCI/SA	0.939	1.0E+0	8.303E-2
U-234	7YSR		0	6/17/2006 5:50:57 PM	**-4.2203E-02**	1.887E-02	1.918E-02	5.96E-01	PCI/SA	0.991	1.0E+0	6.194E-2
U-235	7YSR		0	6/17/2006 5:50:57 PM	**-1.6881E-02**	1.194E-02	1.201E-02	4.82E-01	PCI/SA	0.991	1.0E+0	6.194E-2
U-238	7YSR		0	6/17/2006 5:50:57 PM	**7.1686E-02**	1.068E-01	1.069E-01	5.632E-01	PCI/SA	0.991	1.0E+0	6.194E-2
31582	**9H4X0W10**			**J6E08016410**	000437	FILTER	5/8/2006 7:30:00	4/26/2006 9:50:00 AM				
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**3.7255E+00**	1.738E+00	1.78E+00	5.596E+00	PCI/SA	1.0	1.0E+0	2.075E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.585E+01**	2.028E+00	2.3E+00	6.57E+00	PCI/SA	1.0	1.0E+0	8.241E-2
RA-226	BXTE		0	6/18/2006 1:30:03 PM	**-1.513E-01**	8.946E-02	9.079E-02	4.577E-01	PCI/SA	1.017	8.33E-1	2.476E-1
RA-228	BXTF		0	6/20/2006 6:23:22 AM	**2.0779E+00**	4.58E-01	4.879E-01	1.73E+00	PCI/SA	0.884	1.0E+0	2.476E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**2.8546E-02**	6.383E-02	6.388E-02	3.424E-01	PCI/SA	0.815	1.0E+0	8.276E-2
TH-230	9NS1		0	6/17/2006 7:49:15 PM	**1.6162E-01**	9.331E-02	9.45E-02	1.46E-01	PCI/SA	0.815	1.0E+0	8.276E-2
TH-232	9NS1		0	6/17/2006 7:49:15 PM	**2.6937E-02**	6.023E-02	6.028E-02	3.231E-01	PCI/SA	0.815	1.0E+0	8.276E-2

6129270, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H402N1AA=> , mat:FILTER | Air *wo:H402N1AC=> , 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-234	7YSR	0		6/17/2006 5:50:02 PM	**-2.7021E-02**	1.56E-02	1.576E-02	5.616E-01	PCI/SA	0.928	1.0E+0	6.188E-2
U-235	7YSR	0		6/17/2006 5:50:02 PM	**-1.8014E-02**	1.274E-02	1.282E-02	5.145E-01	PCI/SA	0.928	1.0E+0	6.188E-2
U-238	7YSR	0		6/17/2006 5:50:02 PM	**0.0E+00**	0.0E+00	1.379E-01	3.051E-01	PCI/SA	0.928	1.0E+0	6.188E-2
31582	**9H4X1A10**			**J6E08016414**	000441	FILTER	5/8/2006 7:30:00	4/26/2006 10:55:00 AM				
ALPHA	BAS7	0		6/9/2006 2:50:45 PM	**5.271E+00**	2.028E+00	2.099E+00	6.331E+00	PCI/SA	1.0	1.0E+0	2.064E-2
BETA	BDS8	0		6/9/2006 10:28:06 AM	**1.6832E+01**	1.988E+00	2.499E+00	6.159E+00	PCI/SA	1.0	1.0E+0	8.257E-2
RA-226	BXTE	0		6/18/2006 2:06:01 PM	**2.5131E-01**	1.865E-01	1.886E-01	6.484E-01	PCI/SA	0.914	8.33E-1	2.505E-1
RA-228	BXTF	0		6/20/2006 6:23:31 AM	**1.3684E+00**	3.892E-01	4.212E-01	1.625E+00	PCI/SA	0.815	1.0E+0	2.505E-1
TH-228	9NS1	0		6/17/2006 7:49:15 PM	**1.1544E-01**	6.665E-02	6.742E-02	1.043E-01	PCI/SA	0.954	1.0E+0	8.307E-2
TH-230	9NS1	0		6/17/2006 7:49:15 PM	**7.2626E-02**	5.135E-02	5.175E-02	9.841E-02	PCI/SA	0.954	1.0E+0	8.307E-2
TH-232	9NS1	0		6/17/2006 7:49:15 PM	**3.6313E-02**	3.631E-02	3.645E-02	9.841E-02	PCI/SA	0.954	1.0E+0	8.307E-2
U-234	7YSR	0		6/18/2006 7:59:21 AM	**3.4741E-01**	2.074E-01	2.093E-01	6.451E-01	PCI/SA	0.911	1.0E+0	6.195E-2
U-235	7YSR	0		6/18/2006 7:59:21 AM	**0.0E+00**	0.0E+00	1.252E-01	2.769E-01	PCI/SA	0.911	1.0E+0	6.195E-2
U-238	7YSR	0		6/18/2006 7:59:21 AM	**0.0E+00**	0.0E+00	1.252E-01	2.769E-01	PCI/SA	0.911	1.0E+0	6.195E-2
31582	**9H4X1F10**			**J6E08016415**	000442	FILTER	5/8/2006 7:30:00	4/26/2006 10:10:00 AM				
ALPHA	BAS7	0		6/9/2006 2:50:45 PM	**3.4081E-01**	1.06E+00	1.06E+00	5.631E+00	PCI/SA	1.0	1.0E+0	2.054E-2
BETA	BDS8	0		6/9/2006 10:28:06 AM	**-2.298E-01**	1.578E+00	1.578E+00	7.083E+00	PCI/SA	1.0	1.0E+0	8.213E-2
RA-226	BXTE	0		6/18/2006 2:06:01 PM	**9.4646E-02**	1.457E-01	1.46E-01	5.494E-01	PCI/SA	0.939	8.33E-1	2.462E-1
RA-228	BXTF	0		6/20/2006 6:23:31 AM	**9.8626E-01**	4.225E-01	4.279E-01	1.81E+00	PCI/SA	0.843	1.0E+0	2.462E-1
TH-228	9NS1	0		6/18/2006 10:09:36	**-1.1448E-01**	6.61E-02	6.702E-02	6.415E-01	PCI/SA	0.526	1.0E+0	8.195E-2
TH-230	9NS1	0		6/18/2006 10:09:36	**2.1594E-01**	1.247E-01	1.264E-01	1.951E-01	PCI/SA	0.526	1.0E+0	8.195E-2
TH-232	9NS1	0		6/18/2006 10:09:36	**1.0797E-01**	1.08E-01	1.085E-01	4.317E-01	PCI/SA	0.526	1.0E+0	8.195E-2
U-234	7YSR	0		6/18/2006 7:59:25 AM	**-2.4641E-02**	2.464E-02	2.472E-02	5.9E-01	PCI/SA	0.812	1.0E+0	6.142E-2
U-235	7YSR	0		6/18/2006 7:59:25 AM	**0.0E+00**	0.0E+00	1.508E-01	3.338E-01	PCI/SA	0.812	1.0E+0	6.142E-2
U-238	7YSR	0		6/18/2006 7:59:25 AM	**0.0E+00**	0.0E+00	1.508E-01	3.338E-01	PCI/SA	0.812	1.0E+0	6.142E-2
31582	**9H4XR810**			**J6E0801641**	P-0606	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM				
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**4.0136E+00**	1.95E+00	1.994E+00	6.879E+00	PCI/SA	1.0	1.0E+0	2.097E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.1591E+01**	1.922E+00	2.101E+00	6.805E+00	PCI/SA	1.0	1.0E+0	8.428E-2
RA-226	BXTE	0		6/18/2006 12:53:00 PM	**1.8735E-01**	1.444E-01	1.458E-01	5.055E-01	PCI/SA	1.006	8.33E-1	2.5E-1
RA-228	BXTF	0		6/20/2006 6:22:47 AM	**1.8233E+00**	5.572E-01	5.593E-01	2.247E+00	PCI/SA	0.918	1.0E+0	2.5E-1
TH-228	9NS1	0		6/17/2006 7:45:56 PM	**-5.2307E-02**	6.754E-02	6.769E-02	3.979E-01	PCI/SA	1.007	1.0E+0	8.326E-2
TH-230	9NS1	0		6/17/2006 7:45:56 PM	**4.6075E-01**	1.231E-01	1.295E-01	8.919E-02	PCI/SA	1.007	1.0E+0	8.326E-2
TH-232	9NS1	0		6/17/2006 7:45:56 PM	**0.0E+00**	0.0E+00	4.031E-02	8.919E-02	PCI/SA	1.007	1.0E+0	8.326E-2
U-234	7YSR	0		6/17/2006 5:48:06 PM	**0.0E+00**	0.0E+00	1.314E-01	2.907E-01	PCI/SA	0.924	1.0E+0	6.252E-2
U-235	7YSR	0		6/17/2006 5:48:06 PM	**0.0E+00**	0.0E+00	1.314E-01	2.907E-01	PCI/SA	0.924	1.0E+0	6.252E-2
U-238	7YSR	0		6/17/2006 5:48:06 PM	**0.0E+00**	0.0E+00	1.314E-01	2.907E-01	PCI/SA	0.924	1.0E+0	6.252E-2
31582	**9H4XTE10**			**J6E0801642**	P-0607	FILTER	5/8/2006 7:30:00	4/26/2006 9:45:00 AM				
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**-6.4094E-01**	1.047E+00	1.049E+00	6.537E+00	PCI/SA	1.0	1.0E+0	2.097E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.0717E+01**	1.842E+00	1.991E+00	6.443E+00	PCI/SA	1.0	1.0E+0	8.341E-2
RA-226	BXTE	0		6/18/2006 12:52:00 PM	**3.9262E-01**	2.483E-01	2.521E-01	8.471E-01	PCI/SA	0.929	8.33E-1	2.482E-1
RA-228	BXTF	0		6/20/2006 6:22:47 AM	**2.4645E+00**	6.033E-01	6.407E-01	2.513E+00	PCI/SA	0.835	1.0E+0	2.482E-1
TH-228	9NS1	0		6/17/2006 7:46:08 PM	**9.9074E-02**	9.267E-02	9.311E-02	3.646E-01	PCI/SA	0.908	1.0E+0	8.314E-2
TH-230	9NS1	0		6/17/2006 7:46:08 PM	**9.3488E-02**	6.611E-02	6.665E-02	1.267E-01	PCI/SA	0.908	1.0E+0	8.314E-2
TH-232	9NS1	0		6/17/2006 7:46:08 PM	**0.0E+00**	0.0E+00	5.725E-02	1.267E-01	PCI/SA	0.908	1.0E+0	8.314E-2
U-234	7YSR	0		6/17/2006 5:48:20 PM	**2.3506E-01**	1.73E-01	1.741E-01	6.184E-01	PCI/SA	0.947	1.0E+0	6.212E-2
U-235	7YSR	0		6/17/2006 5:48:20 PM	**0.0E+00**	0.0E+00	1.2E-01	2.655E-01	PCI/SA	0.947	1.0E+0	6.212E-2
U-238	7YSR	0		6/17/2006 5:48:20 PM	**9.7957E-02**	9.796E-02	9.827E-02	2.655E-01	PCI/SA	0.947	1.0E+0	6.212E-2
31582	**9H4XTH10**			**J6E0801643**	P-0608	FILTER	5/8/2006 7:30:00	4/26/2006 10:00:00 AM				
ALPHA	BAS7	0		6/9/2006 11:02:42 AM	**-1.673E+00**	1.143E+00	1.156E+00	7.863E+00	PCI/SA	1.0	1.0E+0	2.086E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**1.2171E+01**	1.882E+00	2.062E+00	6.313E+00	PCI/SA	1.0	1.0E+0	8.379E-2
RA-226	BXTE	0		6/18/2006 12:50:00 PM	**-5.018E-02**	1.85E-01	1.851E-01	7.414E-01	PCI/SA	0.899	8.33E-1	2.503E-1
RA-228	BXTF	0		6/20/2006 6:22:59 AM	**2.6356E+00**	6.422E-01	6.77E-01	2.647E+00	PCI/SA	0.813	1.0E+0	2.503E-1
TH-228	9NS1	0		6/17/2006 7:46:25 PM	**2.7058E-02**	3.449E-02	3.457E-02	1.62E-01	PCI/SA	0.995	1.0E+0	8.439E-2
TH-230	9NS1	0		6/17/2006 7:46:25 PM	**5.1067E-02**	4.603E-02	4.625E-02	1.804E-01	PCI/SA	0.995	1.0E+0	8.439E-2

6129270, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H402N1AA=> , mat:FILTER | Air *wo:H402N1AC=> , 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	6/17/2006 7:46:25 PM	**2.5533E-02**	3.255E-02	3.263E-02	1.529E-01	PCI/SA	0.995	1.0E+0	8.439E-2
U-234	7YSR		0	6/17/2006 5:48:32 PM	**9.262E-02**	1.181E-01	1.183E-01	5.546E-01	PCI/SA	0.847	1.0E+0	6.262E-2
U-235	7YSR		0	6/17/2006 5:48:32 PM	**0.0E+00**	0.0E+00	1.418E-01	3.138E-01	PCI/SA	0.847	1.0E+0	6.262E-2
U-238	7YSR		0	6/17/2006 5:48:32 PM	**1.1579E-01**	1.158E-01	1.162E-01	3.138E-01	PCI/SA	0.847	1.0E+0	6.262E-2
31582	**9H4XTL10**			**J6E0801644**	P-0609	FILTER	5/8/2006 7:30:00	4/26/2006 10:15:00 AM				
ALPHA	BAS7		0	6/9/2006 11:02:42 AM	**3.6769E+00**	1.804E+00	1.843E+00	6.308E+00	PCI/SA	1.0	1.0E+0	2.072E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.0827E+01**	1.823E+00	1.966E+00	6.291E+00	PCI/SA	1.0	1.0E+0	8.401E-2
RA-226	BXTE		0	6/18/2006 12:51:00 PM	**-4.4107E-02**	1.836E-01	1.837E-01	7.681E-01	PCI/SA	1.03	8.33E-1	2.492E-1
RA-228	BXTF		0	6/20/2006 6:22:59 AM	**2.0127E+00**	4.813E-01	5.001E-01	1.903E+00	PCI/SA	0.934	1.0E+0	2.492E-1
TH-228	9NS1		0	6/17/2006 7:46:36 PM	**6.9273E-02**	5.598E-02	5.63E-02	2.163E-01	PCI/SA	1.008	1.0E+0	8.326E-2
TH-230	9NS1		0	6/17/2006 7:46:36 PM	**1.0103E-01**	6.032E-02	6.095E-02	1.876E-01	PCI/SA	1.008	1.0E+0	8.326E-2
TH-232	9NS1		0	6/17/2006 7:46:36 PM	**2.9716E-02**	2.972E-02	2.983E-02	8.053E-02	PCI/SA	1.008	1.0E+0	8.326E-2
U-234	7YSR		0	6/17/2006 5:48:40 PM	**6.699E-02**	1.161E-01	1.162E-01	6.311E-01	PCI/SA	0.88	1.0E+0	6.205E-2
U-235	7YSR		0	6/17/2006 5:48:40 PM	**8.9333E-02**	1.139E-01	1.141E-01	5.349E-01	PCI/SA	0.88	1.0E+0	6.205E-2
U-238	7YSR		0	6/17/2006 5:48:40 PM	**-4.4685E-02**	3.16E-02	3.181E-02	6.311E-01	PCI/SA	0.88	1.0E+0	6.205E-2
31582	**9H4XTM10**			**J6E0801645**	P-0610	FILTER	5/8/2006 7:30:00	4/26/2006 10:35:00 AM				
ALPHA	BAS7		0	6/9/2006 11:02:42 AM	**2.0225E+00**	1.43E+00	1.445E+00	5.57E+00	PCI/SA	1.0	1.0E+0	2.076E-2
BETA	BDS8		0	6/9/2006 10:27:53 AM	**8.5243E+00**	1.72E+00	1.819E+00	6.193E+00	PCI/SA	1.0	1.0E+0	8.364E-2
RA-226	BXTE		0	6/18/2006 12:50:00 PM	**1.2687E-01**	1.953E-01	1.958E-01	7.364E-01	PCI/SA	0.93	8.33E-1	2.507E-1
RA-228	BXTF		0	6/20/2006 6:22:59 AM	**1.5941E+00**	4.757E-01	5.04E-01	2.034E+00	PCI/SA	0.843	1.0E+0	2.507E-1
TH-228	9NS1		0	6/17/2006 7:46:47 PM	**3.7522E-01**	1.913E-01	1.947E-01	5.523E-01	PCI/SA	0.605	1.0E+0	8.357E-2
TH-230	9NS1		0	6/17/2006 7:46:47 PM	**1.4163E-01**	1.001E-01	1.011E-01	1.919E-01	PCI/SA	0.605	1.0E+0	8.357E-2
TH-232	9NS1		0	6/17/2006 7:46:47 PM	**7.0817E-02**	7.082E-02	7.115E-02	1.919E-01	PCI/SA	0.605	1.0E+0	8.357E-2
U-234	7YSR		0	6/17/2006 5:48:57 PM	**5.6989E-02**	9.874E-02	9.885E-02	5.37E-01	PCI/SA	0.926	1.0E+0	6.252E-2
U-235	7YSR		0	6/17/2006 5:48:57 PM	**-1.9011E-02**	1.901E-02	1.907E-02	4.551E-01	PCI/SA	0.926	1.0E+0	6.252E-2
U-238	7YSR		0	6/17/2006 5:48:57 PM	**7.6E-02**	9.689E-02	9.709E-02	4.551E-01	PCI/SA	0.926	1.0E+0	6.252E-2
31582	**9H4XTN10**			**J6E0801646**	P-0611	FILTER	5/8/2006 7:30:00	4/26/2006 10:50:00 AM				
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**2.3808E+00**	1.704E+00	1.722E+00	6.863E+00	PCI/SA	1.0	1.0E+0	2.105E-2
BETA	BDS8		0	6/9/2006 10:27:53 AM	**1.444E+01**	1.97E+00	2.293E+00	6.516E+00	PCI/SA	1.0	1.0E+0	8.402E-2
RA-226	BXTE		0	6/18/2006 1:32:00 PM	**3.6385E-02**	1.6E-01	1.6E-01	6.336E-01	PCI/SA	0.867	8.33E-1	2.489E-1
RA-228	BXTF		0	6/20/2006 6:23:10 AM	**3.4968E-01**	5.045E-01	5.273E-01	2.455E+00	PCI/SA	0.806	1.0E+0	2.489E-1
TH-228	9NS1		0	6/17/2006 7:46:58 PM	**4.765E-06**	5.837E-02	5.837E-02	3.508E-01	PCI/SA	1.024	1.0E+0	8.32E-2
TH-230	9NS1		0	6/17/2006 7:46:58 PM	**1.3492E-01**	7.79E-02	7.884E-02	1.219E-01	PCI/SA	1.024	1.0E+0	8.32E-2
TH-232	9NS1		0	6/17/2006 7:46:58 PM	**0.0E+00**	0.0E+00	5.508E-02	1.219E-01	PCI/SA	1.024	1.0E+0	8.32E-2
U-234	7YSR		0	6/17/2006 5:49:08 PM	**-2.0647E-02**	2.065E-02	2.071E-02	4.944E-01	PCI/SA	0.951	1.0E+0	6.249E-2
U-235	7YSR		0	6/17/2006 5:49:08 PM	**-2.0647E-02**	2.065E-02	2.071E-02	4.944E-01	PCI/SA	0.951	1.0E+0	6.249E-2
U-238	7YSR		0	6/17/2006 5:49:08 PM	**0.0E+00**	0.0E+00	1.264E-01	2.797E-01	PCI/SA	0.951	1.0E+0	6.249E-2
31582	**9H4XTP10**			**J6E0801647**	P-0612	FILTER	5/8/2006 7:30:00	4/26/2006 9:25:00 AM				
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**-1.2088E+00**	9.259E-01	9.344E-01	6.725E+00	PCI/SA	1.0	1.0E+0	2.041E-2
BETA	BDS8		0	6/9/2006 10:27:53 AM	**8.8756E+00**	1.84E+00	1.983E+00	6.701E+00	PCI/SA	1.0	1.0E+0	8.176E-2
RA-226	BXTE		0	6/18/2006 1:30:00 PM	**4.6622E-02**	1.287E-01	1.288E-01	5.146E-01	PCI/SA	0.926	8.33E-1	2.45E-1
RA-228	BXTF		0	6/20/2006 6:23:10 AM	**1.8437E+00**	4.68E-01	4.936E-01	1.833E+00	PCI/SA	0.845	1.0E+0	2.45E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**-2.0743E-02**	5.488E-02	5.491E-02	3.487E-01	PCI/SA	0.958	1.0E+0	8.264E-2
TH-230	9NS1		0	6/17/2006 7:49:15 PM	**3.5235E-01**	1.174E-01	1.215E-01	1.061E-01	PCI/SA	0.958	1.0E+0	8.264E-2
TH-232	9NS1		0	6/17/2006 7:49:15 PM	**5.8725E-02**	5.872E-02	5.896E-02	2.348E-01	PCI/SA	0.958	1.0E+0	8.264E-2
U-234	7YSR		0	6/17/2006 5:49:09 PM	**-3.1381E-02**	1.569E-02	1.589E-02	5.234E-01	PCI/SA	1.021	1.0E+0	6.139E-2
U-235	7YSR		0	6/17/2006 5:49:09 PM	**-3.1381E-02**	1.569E-02	1.589E-02	5.234E-01	PCI/SA	1.021	1.0E+0	6.139E-2
U-238	7YSR		0	6/17/2006 5:49:09 PM	**1.4891E-01**	1.399E-01	1.404E-01	5.814E-01	PCI/SA	1.021	1.0E+0	6.139E-2
31582	**9H4XTR10**			**J6E0801648**	P-0613	FILTER	5/8/2006 7:30:00	4/26/2006 9:35:00 AM				
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**0.0E+00**	0.0E+00	1.498E+00	7.871E+00	PCI/SA	1.0	1.0E+0	2.076E-2
BETA	BDS8		0	6/9/2006 10:27:56 AM	**3.0783E+00**	1.566E+00	1.582E+00	6.447E+00	PCI/SA	1.0	1.0E+0	8.303E-2
RA-226	BXTE		0	6/18/2006 1:32:00 PM	**4.2074E-02**	1.85E-01	1.85E-01	7.327E-01	PCI/SA	0.947	8.33E-1	2.488E-1
RA-228	BXTF		0	6/20/2006 6:23:10 AM	**1.2837E+00**	4.521E-01	4.728E-01	1.943E+00	PCI/SA	0.845	1.0E+0	2.488E-1
TH-228	9NS1		0	6/17/2006 7:49:15 PM	**1.4133E-06**	7.336E-02	7.336E-02	3.933E-01	PCI/SA	0.902	1.0E+0	8.358E-2

6129270, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H402N1AA=> , mat:FILTER | Air *wo:H402N1AC=> , 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-230	9NS1	0		6/17/2006 7:49:15 PM	**3.3972E-01**	1.216E-01	1.253E-01	2.397E-01	PCI/SA		0.902	1.0E+0	8.358E-2
TH-232	9NS1	0		6/17/2006 7:49:15 PM	**0.0E+00**	0.0E+00	4.895E-02	1.083E-01	PCI/SA		0.902	1.0E+0	8.358E-2
U-234	7YSR	0		6/17/2006 5:49:40 PM	**7.5523E-02**	1.003E-01	1.005E-01	4.957E-01	PCI/SA		0.993	1.0E+0	6.242E-2
U-235	7YSR	0		6/17/2006 5:49:40 PM	**-2.3857E-02**	1.377E-02	1.391E-02	4.957E-01	PCI/SA		0.993	1.0E+0	6.242E-2
U-238	7YSR	0		6/17/2006 5:49:40 PM	**-3.1809E-02**	1.59E-02	1.611E-02	5.308E-01	PCI/SA		0.993	1.0E+0	6.242E-2
31582	**H402N1AB**			**J6E090000270**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM					
RA-228	BXTF	0	B	6/20/2006 6:23:31 AM	**4.751E-01**	1.166E-01	1.193E-01	4.265E-01	PCI/SA		0.812	1.0E+0	1.0E+0
31582	**H402N1CS**			**J6E090000270**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM					
RA-228	BXTF	0	S	6/20/2006 6:23:31 AM	**4.8998E+00**	2.55E-01	3.801E-01	3.927E-01	PCI/SA	5.1478E+00	0.874	1.0E+0	1.0E+0

6129270, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H402N1AA=> , mat:FILTER | Air *wo:H402N1AC=> , mat:FILTER | Air.

6/20/2006 10:31:59 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/20/2005, 6/25/2006, Batch: '6129270', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129270						
AC		**CalcC**	**HansenM**	6/12/2006 3:26:19 PM		
SC			antonsonl	IsBatched	5/9/2006 1:11:28 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/12/2006 3:26:19 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/12/2006 3:27:21 PM	RICH-RC-5016 REVISION 5
SC			TamosaitisM	Sep2C	6/19/2006 11:34:17 AM	RICH-RC-5005 REVISION 4
SC			DAWKINSO	InCnt1	6/19/2006 3:48:34 PM	RICH-RD-0003 REVISION 4
SC			BlackCL	CalcC	6/20/2006 7:25:33 AM	RICH-RD-0003 REVISION 4
AC			**HansenM**	6/12/2006 3:27:21 PM		
AC			**TamosaitisM**	6/19/2006 11:34:17		
AC			**DAWKINSO**	6/19/2006 3:48:34 PM		
AC			**BlackCL**	6/20/2006 7:25:33		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.18

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	H4XR81AD	RA-228	8.36E-01	(7.94E-01)	U4	PCI/SA	R	1.60E+00	3.50E+00		92%	
Calc	TF	FILTER	H4XR81AD	RA-228	1.93E+00	(9.65E-01)		PCI/SA	R	1.77E+00	3.88E+00		92%	
Calc	TF	FILTER	H4XR81AD	RA-228	2.70E+00	(1.12E+00)		PCI/SA	R	1.96E+00	4.30E+00		92%	
Calc	TF	FILTER	H4XR81AD	RA-228	1.82E+00	(5.59E-01)		PCI/SA	A	1.03E+00	2.25E+00		92%	
Calc	TF	FILTER	H4XR81AD	RA-228	1.38E-01	(3.84E+00)	U4	PCI/SA	R	8.41E+00	1.83E+01		92%	
Calc	TF	FILTER	H4XTE1AD	RA-228	3.68E+00	(1.12E+00)		PCI/SA	R	1.79E+00	3.91E+00		83%	
Calc	TF	FILTER	H4XTE1AD	RA-228	2.27E+00	(1.09E+00)		PCI/SA	R	1.98E+00	4.34E+00		83%	
Calc	TF	FILTER	H4XTE1AD	RA-228	1.44E+00	(1.12E+00)	U4	PCI/SA	R	2.20E+00	4.81E+00		83%	
Calc	TF	FILTER	H4XTE1AD	RA-228	2.46E+00	(6.41E-01)		PCI/SA	A	1.15E+00	2.51E+00		83%	
Calc	TF	FILTER	H4XTE1AD	RA-228	-1.76E+00	(3.80E+00)	U4	PCI/SA	R	8.63E+00	1.89E+01		83%	
Calc	TF	FILTER	H4XTH1AD	RA-228	3.87E+00	(1.18E+00)		PCI/SA	R	1.88E+00	4.12E+00		81%	
Calc	TF	FILTER	H4XTH1AD	RA-228	1.68E+00	(1.09E+00)	U4	PCI/SA	R	2.09E+00	4.57E+00		81%	
Calc	TF	FILTER	H4XTH1AD	RA-228	2.35E+00	(1.25E+00)		PCI/SA	R	2.32E+00	5.07E+00		81%	
Calc	TF	FILTER	H4XTH1AD	RA-228	2.64E+00	(6.77E-01)		PCI/SA	A	1.21E+00	2.65E+00		81%	
Calc	TF	FILTER	H4XTH1AD	RA-228	7.24E+00	(4.34E+00)		PCI/SA	R	8.17E+00	1.80E+01		81%	
Calc	TF	FILTER	H4XTL1AD	RA-228	1.71E+00	(7.66E-01)		PCI/SA	R	1.33E+00	2.96E+00		93%	
Calc	TF	FILTER	H4XTL1AD	RA-228	2.63E+00	(9.19E-01)		PCI/SA	R	1.48E+00	3.28E+00		93%	
Calc	TF	FILTER	H4XTL1AD	RA-228	1.70E+00	(9.05E-01)		PCI/SA	R	1.64E+00	3.64E+00		93%	
Calc	TF	FILTER	H4XTL1AD	RA-228	2.01E+00	(5.00E-01)		PCI/SA	A	8.57E-01	1.90E+00		93%	
Calc	TF	FILTER	H4XTL1AD	RA-228	6.09E-01	(2.98E+00)	U4	PCI/SA	R	6.41E+00	1.43E+01		93%	
Calc	TF	FILTER	H4XTM1AD	RA-228	2.36E+00	(8.73E-01)		PCI/SA	R	1.42E+00	3.16E+00		84%	
Calc	TF	FILTER	H4XTM1AD	RA-228	1.94E+00	(9.03E-01)		PCI/SA	R	1.57E+00	3.51E+00		84%	
Calc	TF	FILTER	H4XTM1AD	RA-228	4.90E-01	(8.42E-01)	U4	PCI/SA	R	1.74E+00	3.89E+00		84%	
Calc	TF	FILTER	H4XTM1AD	RA-228	1.59E+00	(5.04E-01)		PCI/SA	A	9.11E-01	2.03E+00		84%	
Calc	TF	FILTER	H4XTM1AD	RA-228	9.37E+00	(3.96E+00)		PCI/SA	R	6.67E+00	1.49E+01		84%	
Calc	TF	FILTER	H4XTN1AD	RA-228	4.12E-01	(8.26E-01)	U4	PCI/SA	R	1.74E+00	3.82E+00		81%	
Calc	TF	FILTER	H4XTN1AD	RA-228	5.98E-01	(9.28E-01)	U4	PCI/SA	R	1.93E+00	4.24E+00		81%	
Calc	TF	FILTER	H4XTN1AD	RA-228	3.90E-02	(9.79E-01)	U4	PCI/SA	R	2.14E+00	4.70E+00		81%	
Calc	TF	FILTER	H4XTN1AD	RA-228	3.50E-01	(5.27E-01)	U4	PCI/SA	A	1.12E+00	2.46E+00		81%	
Calc	TF	FILTER	H4XTN1AD	RA-228	4.52E+00	(3.23E+00)	U4	PCI/SA	R	5.70E+00	1.35E+01		81%	
Calc	TF	FILTER	H4XTP1AD	RA-228	2.48E+00	(8.68E-01)		PCI/SA	R	1.22E+00	2.85E+00		85%	
Calc	TF	FILTER	H4XTP1AD	RA-228	2.25E+00	(9.02E-01)		PCI/SA	R	1.35E+00	3.16E+00		85%	
Calc	TF	FILTER	H4XTP1AD	RA-228	8.00E-01	(7.91E-01)	U4	PCI/SA	R	1.50E+00	3.51E+00		85%	
Calc	TF	FILTER	H4XTP1AD	RA-228	1.84E+00	(4.94E-01)		PCI/SA	A	7.84E-01	1.83E+00		85%	
Calc	TF	FILTER	H4XTP1AD	RA-228	4.11E+00	(3.28E+00)	U4	PCI/SA	R	6.06E+00	1.40E+01		85%	
Calc	TF	FILTER	H4XTR1AD	RA-228	2.11E+00	(8.43E-01)		PCI/SA	R	1.32E+00	3.02E+00		84%	
Calc	TF	FILTER	H4XTR1AD	RA-228	7.41E-01	(7.54E-01)	U4	PCI/SA	R	1.46E+00	3.35E+00		84%	
Calc	TF	FILTER	H4XTR1AD	RA-228	9.99E-01	(8.57E-01)	U4	PCI/SA	R	1.62E+00	3.72E+00		84%	

() - (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

Alpha Beta, Ra-228 by GPC , Results

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	TF	FILTER	H4XTR1AD	RA-228	1.28E+00	(4.73E-01)		PCI/SA	A	8.46E-01	1.94E+00		84%	
Calc	TF	FILTER	H4XTR1AD	RA-228	3.63E+00	(3.23E+00)	U4	PCI/SA	R	6.09E+00	1.41E+01		84%	
Calc	TF	FILTER	H4X0R1AD	RA-228	3.41E+00	(9.67E-01)		PCI/SA	R	1.17E+00	2.76E+00		80%	
Calc	TF	FILTER	H4X0R1AD	RA-228	3.96E+00	(1.09E+00)		PCI/SA	R	1.30E+00	3.06E+00		80%	
Calc	TF	FILTER	H4X0R1AD	RA-228	1.88E+00	(9.10E-01)		PCI/SA	R	1.44E+00	3.39E+00		80%	
Calc	TF	FILTER	H4X0R1AD	RA-228	3.08E+00	(5.73E-01)		PCI/SA	A	7.50E-01	1.77E+00		80%	
Calc	TF	FILTER	H4X0R1AD	RA-228	4.90E+00	(3.36E+00)	U4	PCI/SA	R	5.94E+00	1.39E+01		80%	
Calc	TF	FILTER	H4X0W1AD	RA-228	3.02E+00	(8.94E-01)		PCI/SA	R	1.16E+00	2.69E+00		88%	
Calc	TF	FILTER	H4X0W1AD	RA-228	2.26E+00	(8.65E-01)		PCI/SA	R	1.28E+00	2.99E+00		88%	
Calc	TF	FILTER	H4X0W1AD	RA-228	9.51E-01	(7.71E-01)	U4	PCI/SA	R	1.42E+00	3.31E+00		88%	
Calc	TF	FILTER	H4X0W1AD	RA-228	2.08E+00	(4.88E-01)		PCI/SA	A	7.43E-01	1.73E+00		88%	
Calc	TF	FILTER	H4X0W1AD	RA-228	1.53E+00	(2.53E+00)	U4	PCI/SA	R	5.10E+00	1.19E+01		88%	
Calc	TF	FILTER	H4X001AD	RA-228	2.31E+00	(7.65E-01)		PCI/SA	R	1.04E+00	2.44E+00		88%	
Calc	TF	FILTER	H4X001AD	RA-228	1.10E+00	(6.71E-01)	U4	PCI/SA	R	1.15E+00	2.70E+00		88%	
Calc	TF	FILTER	H4X001AD	RA-228	2.68E+00	(9.22E-01)		PCI/SA	R	1.28E+00	3.00E+00		88%	
Calc	TF	FILTER	H4X001AD	RA-228	2.03E+00	(4.58E-01)		PCI/SA	A	6.69E-01	1.57E+00		88%	
Calc	TF	FILTER	H4X001AD	RA-228	2.35E-01	(2.30E+00)	U4	PCI/SA	R	4.97E+00	1.16E+01		88%	
Calc	TF	FILTER	H4X041AD	RA-228	1.12E+00	(5.71E-01)		PCI/SA	R	9.23E-01	2.17E+00		94%	
Calc	TF	FILTER	H4X041AD	RA-228	2.32E+00	(7.65E-01)		PCI/SA	R	1.02E+00	2.41E+00		94%	
Calc	TF	FILTER	H4X041AD	RA-228	3.91E+00	(1.00E+00)		PCI/SA	R	1.14E+00	2.68E+00		94%	
Calc	TF	FILTER	H4X041AD	RA-228	2.45E+00	(4.62E-01)		PCI/SA	A	5.94E-01	1.40E+00		94%	
Calc	TF	FILTER	H4X041AD	RA-228	5.32E+00	(2.90E+00)		PCI/SA	R	4.86E+00	1.13E+01		94%	
Calc	TF	FILTER	H4X081AD	RA-228	3.49E+00	(9.53E-01)		PCI/SA	R	1.16E+00	2.71E+00		80%	
Calc	TF	FILTER	H4X081AD	RA-228	2.43E+00	(8.91E-01)		PCI/SA	R	1.29E+00	3.01E+00		80%	
Calc	TF	FILTER	H4X081AD	RA-228	1.80E+00	(8.82E-01)		PCI/SA	R	1.43E+00	3.33E+00		80%	
Calc	TF	FILTER	H4X081AD	RA-228	2.57E+00	(5.25E-01)		PCI/SA	A	7.45E-01	1.74E+00		80%	
Calc	TF	FILTER	H4X081AD	RA-228	6.46E+00	(3.34E+00)		PCI/SA	R	5.43E+00	1.28E+01		80%	
Calc	TF	FILTER	H4X1A1AD	RA-228	2.88E+00	(8.56E-01)		PCI/SA	R	1.07E+00	2.53E+00		82%	
Calc	TF	FILTER	H4X1A1AD	RA-228	1.16E+00	(7.00E-01)		PCI/SA	R	1.19E+00	2.80E+00		82%	
Calc	TF	FILTER	H4X1A1AD	RA-228	6.53E-02	(6.11E-01)	U4	PCI/SA	R	1.32E+00	3.11E+00		82%	
Calc	TF	FILTER	H4X1A1AD	RA-228	1.37E+00	(4.21E-01)		PCI/SA	A	6.90E-01	1.62E+00		82%	
Calc	TF	FILTER	H4X1A1AD	RA-228	1.67E-01	(2.84E+00)	U4	PCI/SA	R	6.18E+00	1.42E+01		82%	
Calc	TF	FILTER	H4X1F1AD	RA-228	9.31E-01	(6.68E-01)	U4	PCI/SA	R	1.22E+00	2.82E+00		84%	
Calc	TF	FILTER	H4X1F1AD	RA-228	8.82E-01	(7.24E-01)	U4	PCI/SA	R	1.36E+00	3.12E+00		84%	
Calc	TF	FILTER	H4X1F1AD	RA-228	1.15E+00	(8.23E-01)	U4	PCI/SA	R	1.51E+00	3.46E+00		84%	
Calc	TF	FILTER	H4X1F1AD	RA-228	9.86E-01	(4.28E-01)		PCI/SA	A	7.87E-01	1.81E+00		84%	
Calc	TF	FILTER	H4X1F1AD	RA-228	2.83E+00	(2.88E+00)	U4	PCI/SA	R	5.50E+00	1.29E+01		84%	
Calc	TF	FILTER	H402N1AA	RA-228	2.75E-01	(1.65E-01)		PCI/SA	R	2.83E-01	6.64E-01	B	81%	
Calc	TF	FILTER	H402N1AA	RA-228	5.45E-01	(2.13E-01)		PCI/SA	R	3.14E-01	7.36E-01	B	81%	

() - (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: 6129270

Alpha Beta, Ra-228 by GPC , Results

6/20/2006 7:14:22 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	TF	FILTER	**H402N1AA**	RA-228	**6.05E-01**	**(2.36E-01)**		PCI/SA	R	3.48E-01	8.17E-01	**B**	81%	
Calc	TF	FILTER	**H402N1AA**	RA-228	**4.75E-01**	**(1.19E-01)**		PCI/SA	A	1.82E-01	4.27E-01	**B**	81%	
Calc	TF	FILTER	**H402N1AA**	RA-228	**2.81E-01**	**(7.07E-01)**	**U4**	PCI/SA	R	1.47E+00	3.41E+00	**B**	81%	
Calc	TF	FILTER	**H402N1AC**	RA-228	**5.24E+00**	**(6.76E-01)**		PCI/SA	R	2.61E-01	6.11E-01	**S**	87%	102%
Calc	TF	FILTER	**H402N1AC**	RA-228	**5.04E+00**	**(6.72E-01)**		PCI/SA	R	2.89E-01	6.78E-01	**S**	87%	98%
Calc	TF	FILTER	**H402N1AC**	RA-228	**4.42E+00**	**(6.26E-01)**		PCI/SA	R	3.21E-01	7.52E-01	**S**	87%	86%
Calc	TF	FILTER	**H402N1AC**	RA-228	**4.90E+00**	**(3.80E-01)**		PCI/SA	A	1.68E-01	3.93E-01	**S**	87%	95%
Calc	TF	FILTER	**H402N1AC**	RA-228	**6.04E+00**	**(1.32E+00)**		PCI/SA	R	1.37E+00	3.19E+00	**S**	87%	117%

OR
SB
6/20/06

() - (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:85
RADCALC v4.8.24
STL Richland

5/9/2006 1:11:00 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Balance Id:
Pipet #:
Sep1 DT/Tm Tech: 6-14-06 M 11:45
Sep2 DT/Tm Tech: 6-19-6 M 12:30
Prep Tech:

AnalyDueDate: 06/05/2006

Batch: 6129270 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6129266, 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 H4XR8-1-AD J6E080164-1-SAMP	0.25			RATA 22491 6-05-06 1.0058	In	314	3x50	7A	1812 6/19/06	
								7C	06/19 6/20/06	
04/26/2006 09:20	AmtRec: FILTER	#Containers: 1					Scr:	Alpha:		Beta:
2 H4XTE-1-AD J6E080164-2-SAMP	0.2482			22492 0.9291		30.9		7B	1812 6/19/06	
								7B	06/19 6/20/06	
04/26/2006 09:45	AmtRec: FILTER	#Containers: 1					Scr:	Alpha:		Beta:
3 H4XTH-1-AD J6E080164-3-SAMP	0.2503			22493 0.8994		31.1		7C	1812 6/19/06	
								1A	06/19 6/20/06	
04/26/2006 10:00	AmtRec: FILTER	#Containers: 1					Scr:	Alpha:		Beta:
4 H4XTL-1-AD J6E080164-4-SAMP	0.2492			22494 1.0300		31.2		1A	1802 6/19/06	
								1C	06/19 6/20/06	
04/26/2006 10:15	AmtRec: FILTER	#Containers: 1					Scr:	Alpha:		Beta:

5/9/2006 1:11:00 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

AnalyDueDate: 06/05/2006

Batch: 6129270 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6129266, BXTE

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

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
5 H4XTM-1-AD J6E080164-5-SAMP		0.2507		RATA 22495 6-05-06		In	31.2	3x50	1C 1802 6/19/06	
				0.9298					1D 0618 6/20/06	
04/26/2006 10:35		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
6 H4XTN-1-AD J6E080164-6-SAMP		0.2489		22496		32.0			1D 1802 6/19/06	
				0.8666					2A 0618 6/20/06	
04/26/2006 10:50		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
7 H4XTP-1-AD J6E080164-7-SAMP		0.2450		22497		31.4			2A 1813 6/19/06	
				0.9260					2B 0618 6/20/06	
04/26/2006 09:25		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
8 H4XTR-1-AD J6E080164-8-SAMP		0.2488		22498		30.7			2B 1813 6/19/06	
				0.9468					2C 0618 6/20/06	
04/26/2006 09:35		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2 ISV - Insufficient Volume for Analysis WO Cnt: 8
Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added ICOC v4.8.24

STL RICHLAND

5/9/2006 1:11:00 PM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 06/05/2006

Batch: 6129270 FILTER pCi/sampl

SEQ Batch, Test: 6129266, BXTE

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

PM, Quote: SA , 63174

Balance Id:

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
9 H4X0R-1-AD J6E080164-9-SAMP			0.2487	RATA22499 6-5-06 0.9142		lin	30.1	3x50	2C 1813 6/19/06	2D 0628 6/20/06
04/26/2006 09:30		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
10 H4X0W-1-AD J6E080164-10-SAMP			0.2476	22500 1.0171			29.9		2D 1813 6/19/06	3A 0618 6/20/06
04/26/2006 09:50		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
11 H4X00-1-AD J6E080164-11-SAMP			0.2477	22501 0.9944			30.6		3A 1805 6/19/06	3B 0618 6/20/06
04/26/2006 10:05		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:
12 H4X04-1-AD J6E080164-12-SAMP			0.2490	22511 1.0320			31.2		3B 1805 6/19/06	3C 0618 6/20/06
04/26/2006 10:20		AmtRec: FILTER		#Containers: 1			Scr:		Alpha:	Beta:

STL RICHLAND

5/9/2006 1:11:01 PM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 06/05/2006

Batch: 6129270 FILTER pCi/sampl

SEQ Batch, Test: 6129266, BXTE

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

PM, Quote: SA , 63174

Balance Id:

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
13H4X08-1-AD J6E080164-13-SAMP		0.2481	RATA 22510 6-5-06	0.8800		lin	31.3	3x50	3C 1805 6/19/06 OP	3D 06/8 6/20/06
04/26/2006 10:40		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
14H4X1A-1-AD J6E080164-14-SAMP		0.2505	22509	0.9136			30.7		3D 1805 6/19/06 OP	4A 06/8 6/20/06
04/26/2006 10:55		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
15H4X1F-1-AD J6E080164-15-SAMP		0.2462	22508	0.9389			30.9		4A 1806 6/19/06 OP	4B 06/8 6/20/06
04/26/2006 10:10		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
16H402N-1-AA-B J6E090000-270-BLK		1.0	22507	0.9012			31.0		4B 1806 6/19/06 OP	4C 06/8 6/20/06
04/26/2006 09:20		AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:	

5/9/2006 1:11:01 PM

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

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

AnalyDueDate: 06/05/2006

Batch: 6129270 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:
17H402N-1-AC-C J6E090000-270-LCS			1.0	RASC 4130 6-9-06		lin	31.1	3x50	4C 1806 6/19/06	
									YD 0618 6/20/06	
				0.9663						

04/26/2006 09:20 AmtRec: #Containers: 1 Scr: Alpha: Beta:

Comments: RATA's are not in order. MT 6-13-06

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

H4XR81AD-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:						

H402N1AA-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:						

H402N1AC-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

H4XR81AD-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

H402N1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

H402N1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

UST Number: H4XR81AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-A File: [quad7.sample.A]H4XR81AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.A_1;2922

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00044	0050	01134	1700	19-JUN-2006 16:19:01.81
2	00000	00052	0050	01129	1700	19-JUN-2006 17:14:17.40
3	00000	00056	0050	01161	1700	19-JUN-2006 18:09:33.02

Bkg File: [quad7.bkgrnd]2006-06-18_2114.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00293	0400	0.73	09173	1700	18-JUN-2006 21:14:54.67

UST Number: H4XR81AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 7-A File: [quad7.sample.A]H4XR81AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.A_1;2923

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00043	0050	01146	1700	20-JUN-2006 06:22:47.93

Bkg File: [quad7.bkgrnd]2006-06-20_0337.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00342	0400	0.86	09148	1700	20-JUN-2006 03:37:02.48

UST Number: H4XTE1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-B File: [quad7.sample.B]H4XTE1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.B_1;2909

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00067	0050	01134	1700	19-JUN-2006 16:19:01.81
2	00000	00054	0050	01129	1700	19-JUN-2006 17:14:17.40
3	00000	00047	0050	01161	1700	19-JUN-2006 18:09:33.02

Bkg File: [quad7.bkgrnd]2006-06-18_2114.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00301	0400	0.75	09173	1700	18-JUN-2006 21:14:54.67

UST Number: H4XTE1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 7-B File: [quad7.sample.B]H4XTE1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.B_1;2910

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00034	0050	01146	1700	20-JUN-2006 06:22:47.93

Bkg File: [quad7.bkgrnd]2006-06-20_0337.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00295	0400	0.74	09148	1700	20-JUN-2006 03:37:02.48

UST Number: H4XTH1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-C File: [quad7.sample.C]H4XTH1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.C_1;2914

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00068	0050	01134	1700	19-JUN-2006 16:19:01.81
2	00000	00050	0050	01129	1700	19-JUN-2006 17:14:17.40
3	00000	00053	0050	01161	1700	19-JUN-2006 18:09:33.02

Bkg File: [quad7.bkgrnd]2006-06-18_2114.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00307	0400	0.77	09173	1700	18-JUN-2006 21:14:54.67

UST Number: H4XTH1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-A File: [quad1.sample.A]H4XTH1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.A_1;2972

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00045	0050	01151	1650	20-JUN-2006 06:22:59.04

Bkg File: [quad1.bkgrnd]2006-06-20_0341.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00265	0400	0.66	09217	1650	20-JUN-2006 03:41:21.96

UST Number: H4XTL1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-A File: [quad1.sample.A]H4XTL1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.A_1;2971

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00043	0050	01156	1650	19-JUN-2006 16:19:56.04
2	00000	00049	0050	01153	1650	19-JUN-2006 17:15:11.77
3	00000	00040	0050	01186	1650	19-JUN-2006 18:10:27.52

Bkg File: [quad1.bkgrnd]2006-06-18_2113.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00219	0400	0.55	09253	1650	18-JUN-2006 21:13:16.88

UST Number: H4XTL1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-C File: [quad1.sample.C]H4XTL1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.C_1;2968

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00027	0050	01151	1650	20-JUN-2006 06:22:59.04

Bkg File: [quad1.bkgrnd]2006-06-20_0341.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00207	0400	0.52	09217	1650	20-JUN-2006 03:41:21.96

UST Number: H4XTM1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-C File: [quad1.sample.C]H4XTM1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.C_1;2967

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00044	0050	01156	1650	19-JUN-2006 16:19:56.04
2	00000	00039	0050	01153	1650	19-JUN-2006 17:15:11.77
3	00000	00028	0050	01186	1650	19-JUN-2006 18:10:27.52

Bkg File: [quad1.bkgrnd]2006-06-18_2113.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00198	0400	0.50	09253	1650	18-JUN-2006 21:13:16.88

UST Number: H4XTM1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-D File: [quad1.sample.D]H4XTM1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.D_1;2971

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00040	0050	01151	1650	20-JUN-2006 06:22:59.04

Bkg File: [quad1.bkgrnd]2006-06-20_0341.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00192	0400	0.48	09217	1650	20-JUN-2006 03:41:21.96

UST Number: H4XTN1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-D File: [quad1.sample.D]H4XTN1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.D_1;2970

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00038	0050	01156	1650	19-JUN-2006 16:19:56.04
2	00000	00039	0050	01153	1650	19-JUN-2006 17:15:11.77
3	00000	00035	0050	01186	1650	19-JUN-2006 18:10:27.52

Bkg File: [quad1.bkgrnd]2006-06-18_2113.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00278	0400	0.70	09253	1650	18-JUN-2006 21:13:16.88

UST Number: H4XTN1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-A File: [quad2.sample.A]H4XTN1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.A_1;3513

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00016	0050	01150	1810	20-JUN-2006 06:23:10.10

Bkg File: [quad2.bkgrnd]2006-06-20_0341.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00081	0400	0.20	09284	1810	20-JUN-2006 03:41:26.06

UST Number: H4XTP1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-A File: [quad2.sample.A]H4XTP1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.A_1;3512

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00028	0050	01164	1810	19-JUN-2006 16:20:31.48
2	00000	00025	0050	01170	1810	19-JUN-2006 17:15:47.36
3	00000	00016	0050	01165	1810	19-JUN-2006 18:11:03.02

Bkg File: [quad2.bkgrnd]2006-06-18_2113.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00094	0400	0.24	09336	1810	18-JUN-2006 21:13:19.01

UST Number: H4XTP1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-B File: [quad2.sample.B]H4XTP1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.B_1;3510

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00019	0050	01150	1810	20-JUN-2006 06:23:10.10

Bkg File: [quad2.bkgrnd]2006-06-20_0341.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00106	0400	0.27	09284	1810	20-JUN-2006 03:41:26.06

UST Number: H4XTR1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-B File: [quad2.sample.B]H4XTR1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.B_1;3509

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00030	0050	01164	1810	19-JUN-2006 16:20:31.48
2	00000	00020	0050	01170	1810	19-JUN-2006 17:15:47.36
3	00000	00021	0050	01165	1810	19-JUN-2006 18:11:03.02

Bkg File: [quad2.bkgrnd]2006-06-18_2113.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00123	0400	0.31	09336	1810	18-JUN-2006 21:13:19.01

UST Number: H4XTR1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-C File: [quad2.sample.C]H4XTR1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.C_1;3511

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00018	0050	01150	1810	20-JUN-2006 06:23:10.10

Bkg File: [quad2.bkgrnd]2006-06-20_0341.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00104	0400	0.26	09284	1810	20-JUN-2006 03:41:26.06

UST Number: H4X0R1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-C File: [quad2.sample.C]H4X0R1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.C_1;3510

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00032	0050	01164	1810	19-JUN-2006 16:20:31.48
2	00000	00033	0050	01170	1810	19-JUN-2006 17:15:47.36
3	00000	00020	0050	01165	1810	19-JUN-2006 18:11:03.02

Bkg File: [quad2.bkgrnd]2006-06-18_2113.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00082	0400	0.21	09336	1810	18-JUN-2006 21:13:19.01

UST Number: H4X0R1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-D File: [quad2.sample.D]H4X0R1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.D_1;3510

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00018	0050	01150	1810	20-JUN-2006 06:23:10.10

Bkg File: [quad2.bkgrnd]2006-06-20_0341.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00092	0400	0.23	09284	1810	20-JUN-2006 03:41:26.06

UST Number: H4X0W1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-D File: [quad2.sample.D]H4X0W1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.D_1;3509

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00034	0050	01164	1810	19-JUN-2006 16:20:31.48
2	00000	00027	0050	01170	1810	19-JUN-2006 17:15:47.36
3	00000	00018	0050	01165	1810	19-JUN-2006 18:11:03.02

Bkg File: [quad2.bkgrnd]2006-06-18_2113.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00100	0400	0.25	09336	1810	18-JUN-2006 21:13:19.01

UST Number: H4X0W1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-A File: [quad3.sample.A]H4X0W1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.A_1;5427

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00014	0050	01229	1920	20-JUN-2006 06:23:22.65

Bkg File: [quad3.bkgrnd]2006-06-20_0341.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00093	0400	0.23	09878	1920	20-JUN-2006 03:41:36.03

UST Number: H4X001AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-A File: [quad3.sample.A]H4X001AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.A_1;5426

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00029	0050	01256	1920	19-JUN-2006 16:21:01.79
2	00000	00019	0050	01266	1920	19-JUN-2006 17:16:17.63
3	00000	00028	0050	01256	1920	19-JUN-2006 18:11:33.23

Bkg File: [quad3.bkgrnd]2006-06-18_2113.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00092	0400	0.23	09999	1920	18-JUN-2006 21:13:21.62

UST Number: H4X001AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-B File: [quad3.sample.B]H4X001AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.B_1;5436

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00012	0050	01229	1920	20-JUN-2006 06:23:22.65

Bkg File: [quad3.bkgrnd]2006-06-20_0341.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00093	0400	0.23	09878	1920	20-JUN-2006 03:41:36.03

UST Number: H4X041AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-B File: [quad3.sample.B]H4X041AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.B_1;5435

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00020	0050	01256	1920	19-JUN-2006 16:21:01.79
2	00000	00028	0050	01266	1920	19-JUN-2006 17:16:17.63
3	00000	00037	0050	01256	1920	19-JUN-2006 18:11:33.23

Bkg File: [quad3.bkgrnd]2006-06-18_2113.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00086	0400	0.22	09999	1920	18-JUN-2006 21:13:21.62

UST Number: H4X041AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-C File: [quad3.sample.C]H4X041AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.C_1;5441

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00021	0050	01229	1920	20-JUN-2006 06:23:22.65

Bkg File: [quad3.bkgrnd]2006-06-20_0341.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00097	0400	0.24	09878	1920	20-JUN-2006 03:41:36.03

UST Number: H4X081AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-C File: [quad3.sample.C]H4X081AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.C_1;5440

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00036	0050	01256	1920	19-JUN-2006 16:21:01.79
2	00000	00027	0050	01266	1920	19-JUN-2006 17:16:17.63
3	00000	00022	0050	01256	1920	19-JUN-2006 18:11:33.23

Bkg File: [quad3.bkgrnd]2006-06-18_2113.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00095	0400	0.24	09999	1920	18-JUN-2006 21:13:21.62

UST Number: H4X081AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-D File: [quad3.sample.D]H4X081AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.D_1;5421

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00020	0050	01229	1920	20-JUN-2006 06:23:22.65

Bkg File: [quad3.bkgrnd]2006-06-20_0341.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00087	0400	0.22	09878	1920	20-JUN-2006 03:41:36.03

UST Number: H4X1A1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-D File: [quad3.sample.D]H4X1A1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.D_1;5420

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00031	0050	01256	1920	19-JUN-2006 16:21:01.79
2	00000	00018	0050	01266	1920	19-JUN-2006 17:16:17.63
3	00000	00011	0050	01256	1920	19-JUN-2006 18:11:33.23

Bkg File: [quad3.bkgrnd]2006-06-18_2113.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00085	0400	0.21	09999	1920	18-JUN-2006 21:13:21.62

UST Number: H4X1A1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 4-A File: [quad4.sample.A]H4X1A1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.A_1;5445

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00016	0050	01202	1850	20-JUN-2006 06:23:31.84

Bkg File: [quad4.bkgrnd]2006-06-20_0341.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00126	0400	0.32	09523	1850	20-JUN-2006 03:41:40.91

UST Number: H4X1F1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 4-A File: [quad4.sample.A]H4X1F1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.A_1;5444

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00022	0050	01207	1850	19-JUN-2006 16:21:40.79
2	00000	00021	0050	01211	1850	19-JUN-2006 17:16:56.53
3	00000	00022	0050	01208	1850	19-JUN-2006 18:12:12.13

Bkg File: [quad4.bkgrnd]2006-06-18_2114.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00121	0400	0.30	09613	1850	18-JUN-2006 21:14:00.15

UST Number: H4X1F1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 4-B File: [quad4.sample.B]H4X1F1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.B_1;5444

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00016	0050	01202	1850	20-JUN-2006 06:23:31.84

Bkg File: [quad4.bkgrnd]2006-06-20_0341.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00095	0400	0.24	09523	1850	20-JUN-2006 03:41:40.91

UST Number: H402N1AA Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 4-B File: [quad4.sample.B]H402N1AA.180
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.B_1;5443

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00019	0050	01207	1850	19-JUN-2006 16:21:40.79
2	00000	00025	0050	01211	1850	19-JUN-2006 17:16:56.53
3	00000	00025	0050	01208	1850	19-JUN-2006 18:12:12.13

Bkg File: [quad4.bkgrnd]2006-06-18_2114.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00091	0400	0.23	09613	1850	18-JUN-2006 21:14:00.15

UST Number: H402N1AA Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 4-C File: [quad4.sample.C]H402N1AA.430
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.C_1;5447

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00015	0050	01202	1850	20-JUN-2006 06:23:31.84

Bkg File: [quad4.bkgrnd]2006-06-20_0341.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00107	0400	0.27	09523	1850	20-JUN-2006 03:41:40.91

UST Number: H402N1AC Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 4-C File: [quad4.sample.C]H402N1AC.180
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.C_1;5446

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00170	0050	01207	1850	19-JUN-2006 16:21:40.79
2	00000	00149	0050	01211	1850	19-JUN-2006 17:16:56.53
3	00000	00120	0050	01208	1850	19-JUN-2006 18:12:12.13

Bkg File: [quad4.bkgrnd]2006-06-18_2114.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00092	0400	0.23	09613	1850	18-JUN-2006 21:14:00.15

UST Number: H402N1AC Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 4-D File: [quad4.sample.D]H402N1AC.430
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.D_1;5461

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00049	0050	01202	1850	20-JUN-2006 06:23:31.84

Bkg File: [quad4.bkgrnd]2006-06-20_0341.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00101	0400	0.25	09523	1850	20-JUN-2006 03:41:40.91

Batch Nbr: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:22 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	**H4XR81AD**	**PCI/SA**		04/26/06 09:20	06/20/06 06:22	06/14/06 11:45		1	1.00 SA	
536403,P-0606					,J6E080164-1 v4.8.24		FILTER			31.4	06/19/06 12:30		101%	0.249963 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	06/19/06 16:19	RA-228	44	293	GPC7A	1	N	N	5.1810E-01	1.0000E+00	N	92%	N		1.4713E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.197E-02)	(0.000E+00)		7%			(0.000E+00)	4.000588		
1	06/19/06 17:14	RA-228	52	293	GPC7A	1	N	N	5.1810E-01	1.0000E+00	N	92%	N		1.6322E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.197E-02)	(0.000E+00)		7%			(0.000E+00)	4.000588		
2	06/19/06 18:09	RA-228	56	293	GPC7A	1	N	N	5.1810E-01	1.0000E+00	N	92%	N		1.8108E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.197E-02)	(0.000E+00)		7%			(0.000E+00)	4.000588		
3	06/20/06 06:22	RA-228	43	342	GPC7A	1	N	N	5.1810E-01	1.0000E+00	N	92%	N		7.1785E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.197E-02)	(0.000E+00)		7%			(0.000E+00)	4.000588		

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
	06/20/06	RA-228	R	**0.83557**	U4	1.47500E-01	0.456233	0.456233	1.00 SA	92%		3.495364		
				(0.794174)		(1.3940E-01)	(0.432837)	(0.432837)	(0.028284)			1.595111		
	06/20/06	RA-228	R	**1.932514**		3.07500E-01	1.05518	1.05518	1.00 SA	92%		3.877742		
				(0.965437)		(1.5044E-01)	(0.523646)	(0.523646)	(0.028284)			1.769609		
	06/20/06	RA-228	R	**2.701692**		3.87500E-01	1.475162	1.475162	1.00 SA	92%		4.30195		
				(1.119191)		(1.5566E-01)	(0.60519)	(0.60519)	(0.028284)			1.963197		
	06/20/06	RA-228	A	**1.823259**		2.80833E-01	0.995525	0.995525	1.00 SA	92%		2.246865		
				(0.559302)		(8.5825E-02)	(0.30328)	(0.30328)	(0.01633)			1.025358		
	06/20/06	RA-228	R	**0.138199**	U4	5.00000E-03	0.075459	0.075459	1.00 SA	92%		18.304934		
				(3.843603)		(1.3906E-01)	(2.098657)	(2.098657)	(0.028284)			8.40842		

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	**H4XTE1AD**	**PCI/SA**		04/26/06 09:45	06/20/06 06:22	06/14/06 11:45		1	1.00 SA	
536403,P-0607					,J6E080164-2 v4.8.24		FILTER			30.9	06/19/06 12:30		93%	0.248193 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	06/19/06 16:19	RA-228	67	301	GPC7B	1	N	N	5.1966E-01	1.0000E+00	N	83%	N		1.4713E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.258E-02)	(0.000E+00)		7%			(0.000E+00)	4.029121		
1	06/19/06 17:14	RA-228	54	301	GPC7B	1	N	N	5.1966E-01	1.0000E+00	N	83%	N		1.6322E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.258E-02)	(0.000E+00)		7%			(0.000E+00)	4.029121		
2	06/19/06 18:09	RA-228	47	301	GPC7B	1	N	N	5.1966E-01	1.0000E+00	N	83%	N		1.8108E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.258E-02)	(0.000E+00)		7%			(0.000E+00)	4.029121		

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

RecCnt:2 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: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:23 AM

3	06/20/06 06:22	RA-228	34	295	GPC7B	1	N	N	5.1966E-01	1.0000E+00	N	83%	N	7.1785E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.258E-02)	(0.000E+00)		7%		(0.000E+00)	4.029121		

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
	06/20/06	RA-228	R	**3.67619**		5.87500E-01	1.993049	1.993049	1.00 SA	83%		3.90868		
				(1.123388)		(1.6936E-01)	(0.598187)	(0.598187)	(0.028284)			1.785826		
	06/20/06	RA-228	R	**2.273463**		3.27500E-01	1.232559	1.232559	1.00 SA	83%		4.336273		
				(1.088446)		(1.5324E-01)	(0.585838)	(0.585838)	(0.028284)			1.981188		
	06/20/06	RA-228	R	**1.44399**	U4	1.87500E-01	0.78286	0.78286	1.00 SA	83%		4.810643		
				(1.11716)		(1.4381E-01)	(0.603997)	(0.603997)	(0.028284)			2.197922		
	06/20/06	RA-228	A	**2.464548**		3.67500E-01	1.336156	1.336156	1.00 SA	83%		2.51255		
				(0.640725)		(8.9965E-02)	(0.344133)	(0.344133)	(0.01633)			1.147952		
	06/20/06	RA-228	R	**-1.755506**	U4	-5.75000E-02	-0.951749	-0.951749	1.00 SA	83%		18.896585		
				(3.798293)		(1.2427E-01)	(2.058521)	(2.058521)	(0.028284)			8.626037		

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	**H4XTH1AD**	**PCI/SA**		04/26/06 10:00	06/20/06 06:22	06/14/06 11:45		1	1.00 SA	
536403,P-0608					,J6E080164-3 v4.8.24		FILTER			31.1	06/19/06 12:30		90%	0.250313 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	06/19/06 16:19	RA-228	68	307	GPC7C	1	N	N	5.0660E-01	1.0000E+00	N	81%	N		1.4713E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.090E-02)	(0.000E+00)		7%			(0.000E+00)	3.995		
1	06/19/06 17:14	RA-228	50	307	GPC7C	1	N	N	5.0660E-01	1.0000E+00	N	81%	N		1.6322E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.090E-02)	(0.000E+00)		7%			(0.000E+00)	3.995		
2	06/19/06 18:09	RA-228	53	307	GPC7C	1	N	N	5.0660E-01	1.0000E+00	N	81%	N		1.8108E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.090E-02)	(0.000E+00)		7%			(0.000E+00)	3.995		
3	06/20/06 06:22	RA-228	45	265	GPC1A	1	N	N	5.2958E-01	1.0000E+00	N	81%	N		7.1812E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.445E-02)	(0.000E+00)		7%			(0.000E+00)	3.995		

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
	06/20/06	RA-228	R	**3.870297**		5.92500E-01	2.116212	2.116212	1.00 SA	81%		4.117292		
				(1.180975)		(1.7064E-01)	(0.63419)	(0.63419)	(0.028284)			1.882743		
	06/20/06	RA-228	R	**1.684866**	U4	2.32500E-01	0.921256	0.921256	1.00 SA	81%		4.567707		
				(1.08624)		(1.4805E-01)	(0.591575)	(0.591575)	(0.028284)			2.088707		
	06/20/06	RA-228	R	**2.351553**		2.92500E-01	1.285789	1.285789	1.00 SA	81%		5.067395		
				(1.245169)		(1.5205E-01)	(0.676819)	(0.676819)	(0.028284)			2.317203		
	06/20/06	RA-228	A	**2.635572**		3.72500E-01	1.441086	1.441086	1.00 SA	81%		2.646649		
				(0.677009)		(9.0772E-02)	(0.366703)	(0.366703)	(0.01633)			1.210252		
	06/20/06	RA-228	R	**7.243732**		2.37500E-01	3.960749	3.960749	1.00 SA	81%		17.978338		
				(4.339722)		(1.4020E-01)	(2.361952)	(2.361952)	(0.028284)			8.167471		

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

RecCnt:4

RADCALC v4.8.24
STL Richland

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: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:23 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	**H4XTL1AD**	**PCI/SA**		04/26/06 10:15	06/20/06 06:22	06/14/06 11:45		1	1.00 SA	
536403,P-0609					,J6E080164-4 v4.8.24		FILTER			31.2	06/19/06 12:30		103%	0.249245 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	06/19/06 16:19	RA-228	43	219	GPC1A	1	N	N	5.2935E-01	1.0000E+00	N	93%	N		1.4738E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.445E-02)	(0.000E+00)		7%			(0.000E+00)	4.012121		
1	06/19/06 17:15	RA-228	49	219	GPC1A	1	N	N	5.2935E-01	1.0000E+00	N	93%	N		1.6350E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.445E-02)	(0.000E+00)		7%			(0.000E+00)	4.012121		
2	06/19/06 18:10	RA-228	40	219	GPC1A	1	N	N	5.2935E-01	1.0000E+00	N	93%	N		1.8138E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.445E-02)	(0.000E+00)		7%			(0.000E+00)	4.012121		
3	06/20/06 06:22	RA-228	27	207	GPC1C	1	N	N	5.2136E-01	1.0000E+00	N	93%	N		7.1812E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.167E-02)	(0.000E+00)		7%			(0.000E+00)	4.012121		

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
	06/20/06	RA-228	R	**1.710638**		3.12500E-01	0.93136	0.93136	1.00 SA	93%		2.960288		
				(0.766146)		(1.3627E-01)	(0.413684)	(0.413684)	(0.028284)			1.332589		
	06/20/06	RA-228	R	**2.626438**		4.32500E-01	1.429968	1.429968	1.00 SA	93%		3.284028		
				(0.919416)		(1.4481E-01)	(0.493791)	(0.493791)	(0.028284)			1.478322		
	06/20/06	RA-228	R	**1.701097**		2.52500E-01	0.926165	0.926165	1.00 SA	93%		3.643287		
				(0.904736)		(1.3179E-01)	(0.489703)	(0.489703)	(0.028284)			1.640044		
	06/20/06	RA-228	A	**2.012724**		3.32500E-01	1.095831	1.095831	1.00 SA	93%		1.90287		
				(0.500095)		(7.9517E-02)	(0.269727)	(0.269727)	(0.01633)			0.856587		
	06/20/06	RA-228	R	**0.609325**	U4	2.25000E-02	0.331748	0.331748	1.00 SA	93%		14.278979		
				(2.978786)		(1.0997E-01)	(1.621693)	(1.621693)	(0.028284)			6.409398		

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	**H4XTM1AD**	**PCI/SA**		04/26/06 10:35	06/20/06 06:22	06/14/06 11:45		1	1.00 SA	
536403,P-0610					,J6E080164-5 v4.8.24		FILTER			31.2	06/19/06 12:30		93%	0.250662 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	06/19/06 16:19	RA-228	44	198	GPC1C	1	N	N	5.2136E-01	1.0000E+00	N	84%	N		1.4738E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.167E-02)	(0.000E+00)		7%			(0.000E+00)	3.989429		
1	06/19/06 17:15	RA-228	39	198	GPC1C	1	N	N	5.2136E-01	1.0000E+00	N	84%	N		1.6350E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.167E-02)	(0.000E+00)		7%			(0.000E+00)	3.989429		
2	06/19/06 18:10	RA-228	28	198	GPC1C	1	N	N	5.2136E-01	1.0000E+00	N	84%	N		1.8138E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.167E-02)	(0.000E+00)		7%			(0.000E+00)	3.989429		
3	06/20/06 06:22	RA-228	40	192	GPC1D	1	N	N	5.3120E-01	1.0000E+00	N	84%	N		7.1812E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.367E-02)	(0.000E+00)		7%			(0.000E+00)	3.989429		

() - (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: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:23 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
	06/20/06	RA-228	R	**2.356946**		3.85000E-01	1.290548	1.290548	1.00 SA	84%		3.16424		
				(0.873305)		(1.3725E-01)	(0.472397)	(0.472397)	(0.028284)			1.417057		
	06/20/06	RA-228	R	**1.93556**		2.85000E-01	1.059818	1.059818	1.00 SA	84%		3.510285		
				(0.902676)		(1.2976E-01)	(0.490497)	(0.490497)	(0.028284)			1.572028		
	06/20/06	RA-228	R	**0.489736**	**U4**	6.50000E-02	0.268155	0.268155	1.00 SA	84%		3.894296		
				(0.841717)		(1.1152E-01)	(0.460625)	(0.460625)	(0.028284)			1.744001		
	06/20/06	RA-228	A	**1.59408**		2.45000E-01	0.87284	0.87284	1.00 SA	84%		2.033971		
				(0.503981)		(7.3115E-02)	(0.274048)	(0.274048)	(0.01633)			0.910883		
	06/20/06	RA-228	R	**9.368812**		3.20000E-01	5.129902	5.129902	1.00 SA	84%		14.925837		
				(3.956377)		(1.3115E-01)	(2.146181)	(2.146181)	(0.028284)			6.67346		

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	**H4XTN1AD**	**PCI/SA**		04/26/06 10:50	06/20/06 06:23	06/14/06 11:45		1	1.00 SA	
536403,P-0611					,J6E080164-6 v4.8.24		FILTER			32.0	06/19/06 12:30		87%	0.248948 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	06/19/06 16:19	RA-228	38	278	GPC1D	1	N	N	5.3022E-01	1.0000E+00	N	81%	N		1.4738E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.364E-02)	(0.000E+00)		6%			(0.000E+00)	4.016902		
1	06/19/06 17:15	RA-228	39	278	GPC1D	1	N	N	5.3022E-01	1.0000E+00	N	81%	N		1.6350E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.364E-02)	(0.000E+00)		6%			(0.000E+00)	4.016902		
2	06/19/06 18:10	RA-228	35	278	GPC1D	1	N	N	5.3022E-01	1.0000E+00	N	81%	N		1.8138E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.364E-02)	(0.000E+00)		6%			(0.000E+00)	4.016902		
3	06/20/06 06:23	RA-228	16	81	GPC2A	1	N	N	4.2560E-01	1.0000E+00	N	81%	N		7.1837E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.178E-02)	(0.000E+00)		6%			(0.000E+00)	4.016902		

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
	06/20/06	RA-228	R	**0.412141**	**U4**	6.50000E-02	0.224125	0.224125	1.00 SA	81%		3.819766		
				(0.826262)		(1.3014E-01)	(0.449143)	(0.449143)	(0.028284)			1.739084		
	06/20/06	RA-228	R	**0.597894**	**U4**	8.50000E-02	0.325139	0.325139	1.00 SA	81%		4.237499		
				(0.928184)		(1.3167E-01)	(0.504408)	(0.504408)	(0.028284)			1.929273		
	06/20/06	RA-228	R	**0.039018**	**U4**	5.00000E-03	0.021218	0.021218	1.00 SA	81%		4.701064		
				(0.978956)		(1.2545E-01)	(0.532363)	(0.532363)	(0.028284)			2.140327		
	06/20/06	RA-228	A	**0.349684**	**U4**	5.16667E-02	0.190161	0.190161	1.00 SA	81%		2.455342		
				(0.527319)		(7.4545E-02)	(0.28666)	(0.28666)	(0.01633)			1.117882		
	06/20/06	RA-228	R	**4.524076**	**U4**	1.17500E-01	2.460228	2.460228	1.00 SA	81%		13.480753		
				(3.233029)		(8.3104E-02)	(1.752457)	(1.752457)	(0.028284)			5.700336		

() - (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 v4.8.24

STL Richland

Batch Nbr: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:23 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	**H4XTP1AD**	**PCI/SA**		04/26/06 09:25	06/20/06 06:23	06/14/06 11:45		1	1.00 SA	
536403,P-0612					,J6E080164-7 v4.8.24		FILTER			31.4	06/19/06 12:30		93%	0.24502 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	06/19/06 16:20	RA-228	28	94	GPC2A	1	N	N	4.2667E-01	1.0000E+00	N	85%	N		1.4754E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.081297		
1	06/19/06 17:15	RA-228	25	94	GPC2A	1	N	N	4.2667E-01	1.0000E+00	N	85%	N		1.6368E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.081297		
2	06/19/06 18:11	RA-228	16	94	GPC2A	1	N	N	4.2667E-01	1.0000E+00	N	85%	N		1.8159E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.081297		
3	06/20/06 06:23	RA-228	19	106	GPC2B	1	N	N	4.4405E-01	1.0000E+00	N	85%	N		7.1837E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.048E-02)	(0.000E+00)		7%			(0.000E+00)	4.081297		

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
	06/20/06	RA-228	R	**2.48427**		3.25000E-01	1.329624	1.329624	1.00 SA	85%		2.851085		
				(0.867945)		(1.0857E-01)	(0.458217)	(0.458217)	(0.028284)			1.219116		
	06/20/06	RA-228	R	**2.247231**		2.65000E-01	1.202757	1.202757	1.00 SA	85%		3.162982		
				(0.902345)		(1.0290E-01)	(0.477983)	(0.477983)	(0.028284)			1.352483		
	06/20/06	RA-228	R	**0.799664**	U4	8.50000E-02	0.427994	0.427994	1.00 SA	85%		3.508998		
				(0.790654)		(8.3591E-02)	(0.422457)	(0.422457)	(0.028284)			1.500439		
	06/20/06	RA-228	A	**1.843721**		2.25000E-01	0.986792	0.986792	1.00 SA	85%		1.832715		
				(0.493591)		(5.7118E-02)	(0.26181)	(0.26181)	(0.01633)			0.783664		
	06/20/06	RA-228	R	**4.112451**	U4	1.15000E-01	2.201055	2.201055	1.00 SA	85%		14.044025		
				(3.277136)		(9.0898E-02)	(1.749417)	(1.749417)	(0.028284)			6.0565		

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	**H4XTR1AD**	**PCI/SA**		04/26/06 09:35	06/20/06 06:23	06/14/06 11:45		1	1.00 SA	
536403,P-0613					,J6E080164-8 v4.8.24		FILTER			30.7	06/19/06 12:30		95%	0.248786 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	06/19/06 16:20	RA-228	30	123	GPC2B	1	N	N	4.4519E-01	1.0000E+00	N	84%	N		1.4754E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.050E-02)	(0.000E+00)		7%			(0.000E+00)	4.019521		
1	06/19/06 17:15	RA-228	20	123	GPC2B	1	N	N	4.4519E-01	1.0000E+00	N	84%	N		1.6368E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.050E-02)	(0.000E+00)		7%			(0.000E+00)	4.019521		
2	06/19/06 18:11	RA-228	21	123	GPC2B	1	N	N	4.4519E-01	1.0000E+00	N	84%	N		1.8159E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.050E-02)	(0.000E+00)		7%			(0.000E+00)	4.019521		
3	06/20/06 06:23	RA-228	18	104	GPC2C	1	N	N	4.3128E-01	1.0000E+00	N	84%	N		7.1837E+00	4.5045E-01	1.0163E+00	
			50	400			N		(9.380E-03)	(0.000E+00)		7%			(0.000E+00)	4.019521		

() - (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: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:24 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
	06/20/06	RA-228	R	**2.11105**		2.92500E-01	1.147238	1.147238	1.00 SA	84%		3.023038		
				(0.843101)		(1.1300E-01)	(0.453414)	(0.453414)	(0.028284)			1.316713		
	06/20/06	RA-228	R	**0.740629**	U4	9.25000E-02	0.402491	0.402491	1.00 SA	84%		3.353745		
				(0.753512)		(9.3642E-02)	(0.408839)	(0.408839)	(0.028284)			1.460756		
	06/20/06	RA-228	R	**0.999305**	U4	1.12500E-01	0.543067	0.543067	1.00 SA	84%		3.720631		
				(0.856551)		(9.5754E-02)	(0.464441)	(0.464441)	(0.028284)			1.620556		
	06/20/06	RA-228	A	**1.283661**		1.65833E-01	0.697598	0.697598	1.00 SA	84%		1.943248		
				(0.47285)		(5.8411E-02)	(0.255699)	(0.255699)	(0.01633)			0.8464		
	06/20/06	RA-228	R	**3.627388**	U4	1.00000E-01	1.971283	1.971283	1.00 SA	84%		14.129267		
				(3.234632)		(8.8600E-02)	(1.754191)	(1.754191)	(0.028284)			6.085225		

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	**H4X0R1AD**	**PCI/SA**		04/26/06 09:30	06/20/06 06:23	06/14/06 11:45		1	1.00 SA	
536403,000436					,J6E080164-9 v4.8.24		FILTER			30.1	06/19/06 12:30		91%	0.248749 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	06/19/06 16:20	RA-228	32	82	GPC2C	1	N	N	4.3317E-01	1.0000E+00	N	80%	N		1.4754E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(9.422E-03)	(0.000E+00)		6%			(0.000E+00)	4.020113		
1	06/19/06 17:15	RA-228	33	82	GPC2C	1	N	N	4.3317E-01	1.0000E+00	N	80%	N		1.6368E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(9.422E-03)	(0.000E+00)		6%			(0.000E+00)	4.020113		
2	06/19/06 18:11	RA-228	20	82	GPC2C	1	N	N	4.3317E-01	1.0000E+00	N	80%	N		1.8159E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(9.422E-03)	(0.000E+00)		6%			(0.000E+00)	4.020113		
3	06/20/06 06:23	RA-228	18	92	GPC2D	1	N	N	4.3892E-01	1.0000E+00	N	80%	N		7.1837E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.312E-02)	(0.000E+00)		6%			(0.000E+00)	4.020113		

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
	06/20/06	RA-228	R	**3.408824**		4.35000E-01	1.852231	1.852231	1.00 SA	80%		2.757975		
				(0.967324)		(1.1538E-01)	(0.514726)	(0.514726)	(0.028284)			1.167315		
	06/20/06	RA-228	R	**3.955607**		4.55000E-01	2.149333	2.149333	1.00 SA	80%		3.059686		
				(1.093416)		(1.1710E-01)	(0.581151)	(0.581151)	(0.028284)			1.295014		
	06/20/06	RA-228	R	**1.880715**		1.95000E-01	1.021912	1.021912	1.00 SA	80%		3.394403		
				(0.909844)		(9.2263E-02)	(0.490878)	(0.490878)	(0.028284)			1.436684		
	06/20/06	RA-228	A	**3.081715**		3.61667E-01	1.674492	1.674492	1.00 SA	80%		1.772863		
				(0.5734)		(6.2838E-02)	(0.306167)	(0.306167)	(0.01633)			0.750365		
	06/20/06	RA-228	R	**4.895158**	U4	1.30000E-01	2.659851	2.659851	1.00 SA	80%		13.916497		
				(3.358281)		(8.8176E-02)	(1.818359)	(1.818359)	(0.028284)			5.941324		

() - (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:10

RADCALC v4.8.24

STL Richland

Batch Nbr: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:24 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	**H4X0W1AD**	**PCI/SA**		04/26/06 09:50	06/20/06 06:23	06/14/06 11:45		1	1.00 SA	
536403,000437					,J6E080164-10 v4.8.24		FILTER			29.9	06/19/06 12:30		102%	0.247581 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	06/19/06 16:20	RA-228	34	100	GPC2D	1	N	N	4.3916E-01	1.0000E+00	N	88%	N		1.4754E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.313E-02)	(0.000E+00)		7%			(0.000E+00)	4.039076		
1	06/19/06 17:15	RA-228	27	100	GPC2D	1	N	N	4.3916E-01	1.0000E+00	N	88%	N		1.6368E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.313E-02)	(0.000E+00)		7%			(0.000E+00)	4.039076		
2	06/19/06 18:11	RA-228	18	100	GPC2D	1	N	N	4.3916E-01	1.0000E+00	N	88%	N		1.8159E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.313E-02)	(0.000E+00)		7%			(0.000E+00)	4.039076		
3	06/20/06 06:23	RA-228	14	93	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	88%	N		7.1864E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.039076		

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
	06/20/06	RA-228	R	**3.021593**		4.30000E-01	1.634123	1.634123	1.00 SA	88%		2.691358		
				(0.893936)		(1.1927E-01)	(0.474253)	(0.474253)	(0.028284)			1.155935		
	06/20/06	RA-228	R	**2.260747**		2.90000E-01	1.222646	1.222646	1.00 SA	88%		2.985782		
				(0.865142)		(1.0689E-01)	(0.46258)	(0.46258)	(0.028284)			1.282389		
	06/20/06	RA-228	R	**0.951334**	U4	1.10000E-01	0.514496	0.514496	1.00 SA	88%		3.312414		
				(0.771278)		(8.8459E-02)	(0.41607)	(0.41607)	(0.028284)			1.422677		
	06/20/06	RA-228	A	**2.077891**		2.76667E-01	1.123755	1.123755	1.00 SA	88%		1.73004		
				(0.487905)		(6.0987E-02)	(0.26077)	(0.26077)	(0.01633)			0.74305		
	06/20/06	RA-228	R	**1.52558**	U4	4.75000E-02	0.825057	0.825057	1.00 SA	88%		11.924827		
				(2.529941)		(7.8621E-02)	(1.367409)	(1.367409)	(0.028284)			5.095055		

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	**H4X001AD**	**PCI/SA**		04/26/06 10:05	06/20/06 06:23	06/14/06 11:45		1	1.00 SA	
536403,000438					,J6E080164-11 v4.8.24		FILTER			30.6	06/19/06 12:30		99%	0.247696 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	06/19/06 16:21	RA-228	29	92	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	88%	N		1.4768E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.037201		
1	06/19/06 17:16	RA-228	19	92	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	88%	N		1.6384E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.037201		
2	06/19/06 18:11	RA-228	28	92	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	88%	N		1.8176E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.037201		
3	06/20/06 06:23	RA-228	12	93	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	88%	N		7.1864E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.037201		

() - (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 v4.8.24
STL Richland

Batch Nbr: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:24 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
	06/20/06	RA-228	R	**2.30765**		3.50000E-01	1.248596	1.248596	1.00 SA	88%		2.436736		
				(0.764974)		(1.1034E-01)	(0.407641)	(0.407641)	(0.028284)			1.040308		
	06/20/06	RA-228	R	**1.097185**	U4	1.50000E-01	0.593652	0.593652	1.00 SA	88%		2.703305		
				(0.670841)		(9.0416E-02)	(0.361365)	(0.361365)	(0.028284)			1.154113		
	06/20/06	RA-228	R	**2.677867**		3.30000E-01	1.448908	1.448908	1.00 SA	88%		2.999035		
				(0.92232)		(1.0851E-01)	(0.492048)	(0.492048)	(0.028284)			1.280368		
	06/20/06	RA-228	A	**2.027567**		2.76667E-01	1.097052	1.097052	1.00 SA	88%		1.566366		
				(0.457759)		(5.9745E-02)	(0.244692)	(0.244692)	(0.01633)			0.668723		
	06/20/06	RA-228	R	**0.234958**	U4	7.50000E-03	0.127128	0.127128	1.00 SA	88%		11.631605		
				(2.298233)		(7.3357E-02)	(1.243479)	(1.243479)	(0.028284)			4.969772		

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	**H4X041AD**	**PCI/SA**		04/26/06 10:20	06/20/06 06:23	06/14/06 11:45		1	1.00 SA	
536403,000439					,J6E080164-12 v4.8.24		FILTER			31.2	06/19/06 12:30		103%	0.248992 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	06/19/06 16:21	RA-228	20	86	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	94%	N		1.4768E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.016188		
1	06/19/06 17:16	RA-228	28	86	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	94%	N		1.6384E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.016188		
2	06/19/06 18:11	RA-228	37	86	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	94%	N		1.8176E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.016188		
3	06/20/06 06:23	RA-228	21	97	GPC3C	1	N	N	4.7069E-01	1.0000E+00	N	94%	N		7.1864E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.100E-02)	(0.000E+00)		7%			(0.000E+00)	4.016188		

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
	06/20/06	RA-228	R	**1.119677**		1.85000E-01	0.608993	0.608993	1.00 SA	94%		2.17351		
				(0.57066)		(9.2399E-02)	(0.308405)	(0.308405)	(0.028284)			0.923286		
	06/20/06	RA-228	R	**2.316469**		3.45000E-01	1.259929	1.259929	1.00 SA	94%		2.411282		
				(0.764506)		(1.0834E-01)	(0.409468)	(0.409468)	(0.028284)			1.024289		
	06/20/06	RA-228	R	**3.910688**		5.25000E-01	2.127027	2.127027	1.00 SA	94%		2.675067		
				(1.004315)		(1.2384E-01)	(0.532407)	(0.532407)	(0.028284)			1.136342		
	06/20/06	RA-228	A	**2.448945**		3.51667E-01	1.331983	1.331983	1.00 SA	94%		1.39716		
				(0.461733)		(6.2904E-02)	(0.246359)	(0.246359)	(0.01633)			0.5935		
	06/20/06	RA-228	R	**5.323305**		1.77500E-01	2.89535	2.89535	1.00 SA	94%		11.337442		
				(2.896689)		(9.4901E-02)	(1.566707)	(1.566707)	(0.028284)			4.858865		

() - (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: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:24 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	**H4X081AD**	**PCI/SA**		04/26/06 10:40	06/20/06 06:23	06/14/06 11:45		1	1.00 SA	
536403,000440					,J6E080164-13 v4.8.24		FILTER			31.3	06/19/06 12:30		88%	0.248132 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	06/19/06 16:21	RA-228	36	95	GPC3C	1	N	N	4.7065E-01	1.0000E+00	N	80%	N		1.4768E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.099E-02)	(0.000E+00)		6%			(0.000E+00)	4.030115		
1	06/19/06 17:16	RA-228	27	95	GPC3C	1	N	N	4.7065E-01	1.0000E+00	N	80%	N		1.6384E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.099E-02)	(0.000E+00)		6%			(0.000E+00)	4.030115		
2	06/19/06 18:11	RA-228	22	95	GPC3C	1	N	N	4.7065E-01	1.0000E+00	N	80%	N		1.8176E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.099E-02)	(0.000E+00)		6%			(0.000E+00)	4.030115		
3	06/20/06 06:23	RA-228	20	87	GPC3D	1	N	N	4.6770E-01	1.0000E+00	N	80%	N		7.1864E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.144E-02)	(0.000E+00)		6%			(0.000E+00)	4.030115		

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
	06/20/06	RA-228	R	**3.48849**		4.82500E-01	1.890845	1.890845	1.00 SA	80%		2.708942		
				(0.953131)		(1.2245E-01)	(0.505072)	(0.505072)	(0.028284)			1.159225		
	06/20/06	RA-228	R	**2.426343**		3.02500E-01	1.315135	1.315135	1.00 SA	80%		3.005289		
				(0.890699)		(1.0674E-01)	(0.476832)	(0.476832)	(0.028284)			1.28604		
	06/20/06	RA-228	R	**1.801931**		2.02500E-01	0.97669	0.97669	1.00 SA	80%		3.334055		
				(0.881523)		(9.6921E-02)	(0.474501)	(0.474501)	(0.028284)			1.426727		
	06/20/06	RA-228	A	**2.572255**		3.29167E-01	1.394223	1.394223	1.00 SA	80%		1.741343		
				(0.524816)		(6.3053E-02)	(0.2804)	(0.2804)	(0.01633)			0.745165		
	06/20/06	RA-228	R	**6.461384**		1.82500E-01	3.502224	3.502224	1.00 SA	80%		12.777204		
				(3.337602)		(9.2432E-02)	(1.797837)	(1.797837)	(0.028284)			5.432356		

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	**H4X1A1AD**	**PCI/SA**		04/26/06 10:55	06/20/06 06:23	06/14/06 11:45		1	1.00 SA	
536403,000441					,J6E080164-14 v4.8.24		FILTER			30.7	06/19/06 12:30		91%	0.250527 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	06/19/06 16:21	RA-228	31	85	GPC3D	1	N	N	4.6790E-01	1.0000E+00	N	82%	N		1.4768E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	3.991581		
1	06/19/06 17:16	RA-228	18	85	GPC3D	1	N	N	4.6790E-01	1.0000E+00	N	82%	N		1.6384E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	3.991581		
2	06/19/06 18:11	RA-228	11	85	GPC3D	1	N	N	4.6790E-01	1.0000E+00	N	82%	N		1.8176E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	3.991581		
3	06/20/06 06:23	RA-228	16	126	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	82%	N		7.1884E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	3.991581		

() - (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: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:24 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
	06/20/06	RA-228	R	**2.882509**		4.07500E-01	1.577477	1.577477	1.00 SA	82%		2.527716		
				(0.855923)		(1.1372E-01)	(0.459562)	(0.459562)	(0.028284)			1.072799		
	06/20/06	RA-228	R	**1.157502**		1.47500E-01	0.633452	0.633452	1.00 SA	82%		2.804237		
				(0.699936)		(8.7928E-02)	(0.381313)	(0.381313)	(0.028284)			1.190159		
	06/20/06	RA-228	R	**0.065295**	U4	7.50000E-03	0.035733	0.035733	1.00 SA	82%		3.111009		
				(0.611392)		(7.0223E-02)	(0.334583)	(0.334583)	(0.028284)			1.320357		
	06/20/06	RA-228	A	**1.368435**		1.87500E-01	0.748887	0.748887	1.00 SA	82%		1.624849		
				(0.421151)		(5.3327E-02)	(0.228167)	(0.228167)	(0.01633)			0.689609		
	06/20/06	RA-228	R	**0.167259**	U4	5.00000E-03	0.091534	0.091534	1.00 SA	82%		14.159574		
				(2.836069)		(8.4779E-02)	(1.552053)	(1.552053)	(0.028284)			6.17691		

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	**H4X1F1AD**	**PCI/SA**		04/26/06 10:10	06/20/06 06:23	06/14/06 11:45		1	1.00 SA	
536403,000442					,J6E080164-15 v4.8.24		FILTER			30.9	06/19/06 12:30		94%	0.246187 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	06/19/06 16:21	RA-228	22	121	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	84%	N		1.4786E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	4.061954		
1	06/19/06 17:16	RA-228	21	121	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	84%	N		1.6404E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	4.061954		
2	06/19/06 18:12	RA-228	22	121	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	84%	N		1.8198E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	4.061954		
3	06/20/06 06:23	RA-228	16	95	GPC4B	1	N	N	4.6212E-01	1.0000E+00	N	84%	N		7.1884E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.048E-02)	(0.000E+00)		7%			(0.000E+00)	4.061954		

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
	06/20/06	RA-228	R	**0.930793**	U4	1.37500E-01	0.500554	0.500554	1.00 SA	84%		2.815295		
				(0.66841)		(9.7756E-02)	(0.3583)	(0.3583)	(0.028284)			1.224924		
	06/20/06	RA-228	R	**0.882419**	U4	1.17500E-01	0.47454	0.47454	1.00 SA	84%		3.123277		
				(0.724133)		(9.5688E-02)	(0.388462)	(0.388462)	(0.028284)			1.358926		
	06/20/06	RA-228	R	**1.145582**	U4	1.37500E-01	0.616061	0.616061	1.00 SA	84%		3.46495		
				(0.822652)		(9.7756E-02)	(0.440981)	(0.440981)	(0.028284)			1.507586		
	06/20/06	RA-228	A	**0.986265**		1.30833E-01	0.530385	0.530385	1.00 SA	84%		1.809709		
				(0.427901)		(5.6044E-02)	(0.229431)	(0.229431)	(0.01633)			0.787397		
	06/20/06	RA-228	R	**2.829554**	U4	8.25000E-02	1.521653	1.521653	1.00 SA	84%		12.850606		
				(2.882484)		(8.3629E-02)	(1.547651)	(1.547651)	(0.028284)			5.499102		

() - (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: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:25 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	**H402N1AA**	**PCI/SA**	**B**	04/26/06 09:20	06/20/06 06:23	06/14/06 11:45		1	1.00 SA	
0,INTRA-LAB BLANK					,J6E090000-270		FILTER			31.0	06/19/06 12:30		90%	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	06/19/06 16:21	RA-228	19	91	GPC4B	1	N	N	4.6209E-01	1.0000E+00	N	81%	N		1.4786E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
1	06/19/06 17:16	RA-228	25	91	GPC4B	1	N	N	4.6209E-01	1.0000E+00	N	81%	N		1.6404E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
2	06/19/06 18:12	RA-228	25	91	GPC4B	1	N	N	4.6209E-01	1.0000E+00	N	81%	N		1.8198E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
3	06/20/06 06:23	RA-228	15	107	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	81%	N		7.1884E+00	4.5045E-01	1.0163E+00	
			50	400			N		(1.147E-02)	(0.000E+00)		6%			(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
	06/20/06	RA-228	R	**0.27507**		1.52500E-01	0.600856	0.600856	1.00 SA	81%		0.663521		
				(0.165262)		(9.0381E-02)	(0.359593)	(0.359593)	(0.017321)			0.283048		
	06/20/06	RA-228	R	**0.545288**		2.72500E-01	1.191115	1.191115	1.00 SA	81%		0.736108		
				(0.212622)		(1.0280E-01)	(0.46015)	(0.46015)	(0.017321)			0.314012		
	06/20/06	RA-228	R	**0.60494**		2.72500E-01	1.321418	1.321418	1.00 SA	81%		0.816635		
				(0.235882)		(1.0280E-01)	(0.510488)	(0.510488)	(0.017321)			0.348363		
	06/20/06	RA-228	A	**0.475099**		2.32500E-01	1.037796	1.037796	1.00 SA	81%		0.42652		
				(0.119331)		(5.7064E-02)	(0.258552)	(0.258552)	(0.01)			0.181947		
	06/20/06	RA-228	R	**0.280977**	**U4**	3.25000E-02	0.61376	0.61376	1.00 SA	81%		3.409059		
				(0.706556)		(8.1662E-02)	(1.543044)	(1.543044)	(0.017321)			1.471111		

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
17	Calc	TF	FILTER	*STLE	Ra228WoBS	**H402N1AC**	**PCI/SA**	**S**	04/26/06 09:20	06/20/06 06:23	06/14/06 11:45	RASC4130	1	1.00 SA	
0,INTRA-LAB CHECK					,J6E090000-270		FILTER			31.1	06/19/06 12:30		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	06/19/06 16:21	RA-228	170	92	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	87%	N		1.4786E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.147E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
1	06/19/06 17:16	RA-228	149	92	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	87%	N		1.6404E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.147E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
2	06/19/06 18:12	RA-228	120	92	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	87%	N		1.8198E+00	4.5045E-01	1.0163E+00	
			50	400			Y		(1.147E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
3	06/20/06 06:23	RA-228	49	101	GPC4D	1	N	N	4.5384E-01	1.0000E+00	N	87%	N		7.1884E+00	4.5045E-01	1.0163E+00	
			50	400			N		(9.345E-03)	(0.000E+00)		7%			(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:17

RADCALC v4.8.24

STL Richland

Batch Nbr: 6129270

Alpha Beta, Ra-228 by GPC , Calculated Results

6/20/2006 7:14:25 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
	06/20/06	RA-228	R	**5.240548**		3.17000E+00	11.447338	11.447338	1.00 SA	87%	102%	0.610976		
				(0.675673)		(2.6187E-01)	(1.345897)	(1.345897)	(0.017321)			0.260842		
	06/20/06	RA-228	R	**5.043554**		2.75000E+00	11.017028	11.017028	1.00 SA	87%	98%	0.677814		
				(0.672067)		(2.4531E-01)	(1.347338)	(1.347338)	(0.017321)			0.289377		
	06/20/06	RA-228	R	**4.415198**		2.17000E+00	9.644462	9.644462	1.00 SA	87%	86%	0.751964		
				(0.626193)		(2.2040E-01)	(1.269075)	(1.269075)	(0.017321)			0.321033		
	06/20/06	RA-228	A	**4.899767**		2.69667E+00	10.702943	10.702943	1.00 SA	87%	95%	0.392743		
				(0.380106)		(1.4037E-01)	(0.762839)	(0.762839)	(0.01)			0.167673		
	06/20/06	RA-228	R	**6.038391**		7.27500E-01	13.190128	13.190128	1.00 SA	87%	117%	3.192625		
				(1.320873)		(1.4224E-01)	(2.799595)	(2.799595)	(0.017321)			1.372192		

() - (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:17

RADCALC v4.8.24

STL Richland

RADIUM 226

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/19/2006 12:38:51 PM

Lot No., Due Date: J6E080164; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129266; RRA2267 Ra-226 by ASC-7

SDG, Matrix: 31582; 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 [signature] **Date** 6/19/06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 612 9266

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: 6-20-06

6/19/2006 12:38:17 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	
31582	**9H4X0010**			**J6E08016411**	000438	FILTER	5/8/2006 7:30:00	4/26/2006 10:05:00 AM					
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**4.0776E+00**	1.981E+00	2.026E+00	6.989E+00	PCI/SA	1.0	1.0E+0	2.063E-2	
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.5337E+01**	1.958E+00	2.235E+00	6.222E+00	PCI/SA	1.0	1.0E+0	8.275E-2	
RA-226	BXTE		0	6/18/2006 1:27:00 PM	**2.0231E-01**	1.126E-01	1.148E-01	3.612E-01	PCI/SA	0.994	8.33E-1	2.477E-1	
31582	**9H4X0410**			**J6E08016412**	000439	FILTER	5/8/2006 7:30:00	4/26/2006 10:20:00 AM					
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**3.1173E+00**	1.77E+00	1.799E+00	6.578E+00	PCI/SA	1.0	1.0E+0	2.084E-2	
BETA	BDS8		0	6/9/2006 10:28:06 AM	**1.6114E+01**	2.069E+00	2.35E+00	6.722E+00	PCI/SA	1.0	1.0E+0	8.34E-2	
RA-226	BXTE		0	6/18/2006 1:30:01 PM	**3.2961E-01**	1.546E-01	1.58E-01	4.848E-01	PCI/SA	1.032	8.33E-1	2.49E-1	
31582	**9H4X0810**			**J6E08016413**	000440	FILTER	5/8/2006 7:30:00	4/26/2006 10:40:00 AM					
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**-1.6709E+00**	1.141E+00	1.155E+00	7.853E+00	PCI/SA	1.0	1.0E+0	2.08E-2	
BETA	BDS8		0	6/9/2006 10:28:06 AM	**1.6257E+01**	1.977E+00	2.275E+00	6.178E+00	PCI/SA	1.0	1.0E+0	8.264E-2	
RA-226	BXTE		0	6/18/2006 2:06:00 PM	**1.91E-01**	1.279E-01	1.293E-01	4.271E-01	PCI/SA	0.88	8.33E-1	2.481E-1	
31582	**9H4X0R10**			**J6E0801649**	000436	FILTER	5/8/2006 7:30:00	4/26/2006 9:30:00 AM					
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**5.2494E-01**	1.264E+00	1.265E+00	6.305E+00	PCI/SA	1.0	1.0E+0	2.081E-2	
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.1356E+01**	1.842E+00	2.08E+00	6.348E+00	PCI/SA	1.0	1.0E+0	8.268E-2	
RA-226	BXTE		0	6/18/2006 1:31:00 PM	**1.2764E-01**	1.515E-01	1.521E-01	5.632E-01	PCI/SA	0.914	8.33E-1	2.487E-1	
31582	**9H4X0W10**			**J6E08016410**	000437	FILTER	5/8/2006 7:30:00	4/26/2006 9:50:00 AM					
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**3.7255E+00**	1.738E+00	1.78E+00	5.596E+00	PCI/SA	1.0	1.0E+0	2.075E-2	
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.585E+01**	2.028E+00	2.3E+00	6.57E+00	PCI/SA	1.0	1.0E+0	8.241E-2	
RA-226	BXTE		0	6/18/2006 1:30:03 PM	**-1.513E-01**	8.946E-02	9.079E-02	4.577E-01	PCI/SA	1.017	8.33E-1	2.476E-1	
31582	**9H4X1A10**			**J6E08016414**	000441	FILTER	5/8/2006 7:30:00	4/26/2006 10:55:00 AM					
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**5.271E+00**	2.028E+00	2.099E+00	6.331E+00	PCI/SA	1.0	1.0E+0	2.064E-2	
BETA	BDS8		0	6/9/2006 10:28:06 AM	**1.6832E+01**	1.988E+00	2.499E+00	6.159E+00	PCI/SA	1.0	1.0E+0	8.257E-2	
RA-226	BXTE		0	6/18/2006 2:06:01 PM	**2.5131E-01**	1.865E-01	1.886E-01	6.484E-01	PCI/SA	0.914	8.33E-1	2.505E-1	
31582	**9H4X1F10**			**J6E08016415**	000442	FILTER	5/8/2006 7:30:00	4/26/2006 10:10:00 AM					
ALPHA	BAS7		0	6/9/2006 2:50:45 PM	**3.4081E-01**	1.06E+00	1.06E+00	5.631E+00	PCI/SA	1.0	1.0E+0	2.054E-2	
BETA	BDS8		0	6/9/2006 10:28:06 AM	**-2.298E-01**	1.578E+00	1.578E+00	7.083E+00	PCI/SA	1.0	1.0E+0	8.213E-2	
RA-226	BXTE		0	6/18/2006 2:06:01 PM	**9.4646E-02**	1.457E-01	1.46E-01	5.494E-01	PCI/SA	0.939	8.33E-1	2.462E-1	
31582	**9H4XR810**			**J6E0801641**	P-0606	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM					
ALPHA	BAS7		0	6/9/2006 11:02:42 AM	**4.0136E+00**	1.95E+00	1.994E+00	6.879E+00	PCI/SA	1.0	1.0E+0	2.097E-2	
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.1591E+01**	1.922E+00	2.101E+00	6.805E+00	PCI/SA	1.0	1.0E+0	8.428E-2	
RA-226	BXTE		0	6/18/2006 12:53:00 PM	**1.8735E-01**	1.444E-01	1.458E-01	5.055E-01	PCI/SA	1.006	8.33E-1	2.5E-1	
31582	**9H4XTE10**			**J6E0801642**	P-0607	FILTER	5/8/2006 7:30:00	4/26/2006 9:45:00 AM					
ALPHA	BAS7		0	6/9/2006 11:02:42 AM	**-6.4094E-01**	1.047E+00	1.049E+00	6.537E+00	PCI/SA	1.0	1.0E+0	2.097E-2	
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.0717E+01**	1.842E+00	1.991E+00	6.443E+00	PCI/SA	1.0	1.0E+0	8.341E-2	
RA-226	BXTE		0	6/18/2006 12:52:00 PM	**3.9262E-01**	2.483E-01	2.521E-01	8.471E-01	PCI/SA	0.929	8.33E-1	2.482E-1	
31582	**9H4XTH10**			**J6E0801643**	P-0608	FILTER	5/8/2006 7:30:00	4/26/2006 10:00:00 AM					
ALPHA	BAS7		0	6/9/2006 11:02:42 AM	**-1.673E+00**	1.143E+00	1.156E+00	7.863E+00	PCI/SA	1.0	1.0E+0	2.086E-2	
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.2171E+01**	1.882E+00	2.062E+00	6.313E+00	PCI/SA	1.0	1.0E+0	8.379E-2	
RA-226	BXTE		0	6/18/2006 12:50:00 PM	**-5.018E-02**	1.85E-01	1.851E-01	7.414E-01	PCI/SA	0.899	8.33E-1	2.503E-1	
31582	**9H4XTL10**			**J6E0801644**	P-0609	FILTER	5/8/2006 7:30:00	4/26/2006 10:15:00 AM					
ALPHA	BAS7		0	6/9/2006 11:02:42 AM	**3.6769E+00**	1.804E+00	1.843E+00	6.308E+00	PCI/SA	1.0	1.0E+0	2.072E-2	
BETA	BDS8		0	6/9/2006 10:27:56 AM	**1.0827E+01**	1.823E+00	1.966E+00	6.291E+00	PCI/SA	1.0	1.0E+0	8.401E-2	
RA-226	BXTE		0	6/18/2006 12:51:00 PM	**-4.4107E-02**	1.836E-01	1.837E-01	7.681E-01	PCI/SA	1.03	8.33E-1	2.492E-1	
31582	**9H4XTM10**			**J6E0801645**	P-0610	FILTER	5/8/2006 7:30:00	4/26/2006 10:35:00 AM					
ALPHA	BAS7		0	6/9/2006 11:02:42 AM	**2.0225E+00**	1.43E+00	1.445E+00	5.57E+00	PCI/SA	1.0	1.0E+0	2.076E-2	
BETA	BDS8		0	6/9/2006 10:27:53 AM	**8.5243E+00**	1.72E+00	1.819E+00	6.193E+00	PCI/SA	1.0	1.0E+0	8.364E-2	
RA-226	BXTE		0	6/18/2006 12:50:00 PM	**1.2687E-01**	1.953E-01	1.958E-01	7.364E-01	PCI/SA	0.93	8.33E-1	2.507E-1	
31582	**9H4XTN10**			**J6E0801646**	P-0611	FILTER	5/8/2006 7:30:00	4/26/2006 10:50:00 AM					
ALPHA	BAS7		0	6/9/2006 12:56:55 PM	**2.3808E+00**	1.704E+00	1.722E+00	6.863E+00	PCI/SA	1.0	1.0E+0	2.105E-2	
BETA	BDS8		0	6/9/2006 10:27:53 AM	**1.444E+01**	1.97E+00	2.293E+00	6.516E+00	PCI/SA	1.0	1.0E+0	8.402E-2	
RA-226	BXTE		0	6/18/2006 1:32:00 PM	**3.6385E-02**	1.6E-01	1.6E-01	6.336E-01	PCI/SA	0.867	8.33E-1	2.489E-1	

6129266, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 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	
31582	**9H4XTP10**			**J6E0801647**	P-0612	FILTER	5/8/2006 7:30:00	4/26/2006 9:25:00 AM					
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**-1.2088E+00**	9.259E-01	9.344E-01	6.725E+00	PCI/SA		1.0	1.0E+0	2.041E-2
BETA	BDS8	0		6/9/2006 10:27:53 AM	**8.8756E+00**	1.84E+00	1.983E+00	6.701E+00	PCI/SA		1.0	1.0E+0	8.176E-2
RA-226	BXTE	0		6/18/2006 1:30:00 PM	**4.6622E-02**	1.287E-01	1.288E-01	5.146E-01	PCI/SA		0.926	8.33E-1	2.45E-1
31582	**9H4XTR10**			**J6E0801648**	P-0613	FILTER	5/8/2006 7:30:00	4/26/2006 9:35:00 AM					
ALPHA	BAS7	0		6/9/2006 12:56:55 PM	**0.0E+00**	0.0E+00	1.498E+00	7.871E+00	PCI/SA		1.0	1.0E+0	2.076E-2
BETA	BDS8	0		6/9/2006 10:27:56 AM	**3.0783E+00**	1.566E+00	1.582E+00	6.447E+00	PCI/SA		1.0	1.0E+0	8.303E-2
RA-226	BXTE	0		6/18/2006 1:32:00 PM	**4.2074E-02**	1.85E-01	1.85E-01	7.327E-01	PCI/SA		0.947	8.33E-1	2.488E-1
31582	**H40151AB**			**J6E090000266**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM					
RA-226	BXTE	0	B	6/18/2006 2:05:00 PM	**-3.4186E-02**	3.925E-02	3.94E-02	1.733E-01	PCI/SA		0.901	1.0E+0	1.0E+0
31582	**H40151CS**			**J6E090000266**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00	4/26/2006 9:20:00 AM					
RA-226	BXTE	0	S	6/18/2006 2:07:00 PM	**1.1241E+00**	1.017E-01	1.594E-01	8.942E-02	PCI/SA	1.3795E+00	0.966	1.0E+0	1.0E+0

6129266, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

6/19/2006 12:38:20 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/19/2005, 6/24/2006, Batch: '6129266', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129266						
AC		**CalcC**	**HansenM**	6/12/2006 3:26:14 PM		
SC			antonsonl	IsBatched	5/9/2006 1:11:28 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/12/2006 3:26:14 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/12/2006 3:27:10 PM	RICH-RC-5016 REVISION 5
SC			TamosaitisM	InPrep	6/12/2006 4:15:33 PM	RICH-RC-5005 Revision 5
SC			TamosaitisM	Sep1C	6/14/2006 12:05:30 PM	RICH-RC-5005 REVISION 4
SC			BlackCL	InCnt1	6/14/2006 12:33:15 PM	RICH-RD-0007 REVISION 5
SC			DAWKINSO	Cnt1C	6/14/2006 7:19:27 PM	RICH-RD-0007 REVISION 5
SC			TamosaitisM	InSep2	6/15/2006 7:28:26 AM	RICH-RC-5005 REVISION 4
SC			StringerR	InSep2	6/15/2006 9:53:36 AM	RICH-RC-5005 REVISION 5
SC			StringerR	CalcC	6/18/2006 3:10:17 PM	RICH-RC-5005 REVISION 5
AC			**HansenM**	6/12/2006 3:27:10 PM		
AC			**TamosaitisM**	6/12/2006 4:15:33 PM		
AC			**TamosaitisM**	6/14/2006 12:05:30		
AC			**BlackCL**	6/14/2006 12:33:15		
AC			**DAWKINSO**	6/14/2006 7:19:27 PM		
AC			**TamosaitisM**	6/15/2006 7:28:26		
AC			**StringerR**	6/15/2006 9:53:36		
AC			**StringerR**	6/18/2006 3:10:17 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 9

ICOCFractions v4.8.18

Batch Nbr: 6129266

Alpha Beta, Ra-226 by ASC-7 , Results Summary Report

6/18/2006 3:16:53 PM

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	**H4XR81AC**	RA-226	**1.87E-01**	**(1.46E-01)**	**U4**	PCI/SA	R	2.04E-01	5.06E-01		101%	
Calc	TE	FILTER	**H4XTE1AC**	RA-226	**3.93E-01**	**(2.52E-01)**	**U4**	PCI/SA	R	3.78E-01	8.47E-01		93%	
Calc	TE	FILTER	**H4XTH1AC**	RA-226	**-5.02E-02**	**(1.85E-01)**	**U4**	PCI/SA	R	3.26E-01	7.41E-01		90%	
Calc	TE	FILTER	**H4XTL1AC**	RA-226	**-4.41E-02**	**(1.84E-01)**	**U4**	PCI/SA	R	3.24E-01	7.68E-01		103%	
Calc	TE	FILTER	**H4XTM1AC**	RA-226	**1.27E-01**	**(1.96E-01)**	**U4**	PCI/SA	R	3.11E-01	7.36E-01		93%	
Calc	TE	FILTER	**H4XTN1AC**	RA-226	**3.64E-02**	**(1.60E-01)**	**U4**	PCI/SA	R	2.68E-01	6.34E-01		87%	
Calc	TE	FILTER	**H4XTP1AC**	RA-226	**4.66E-02**	**(1.29E-01)**	**U4**	PCI/SA	R	2.10E-01	5.15E-01		93%	
Calc	TE	FILTER	**H4XTR1AC**	RA-226	**4.21E-02**	**(1.85E-01)**	**U4**	PCI/SA	R	3.10E-01	7.33E-01		95%	
Calc	TE	FILTER	**H4X0R1AC**	RA-226	**1.28E-01**	**(1.52E-01)**	**U4**	PCI/SA	R	2.32E-01	5.63E-01		91%	
Calc	TE	FILTER	**H4X0W1AC**	RA-226	**-1.51E-01**	**(9.08E-02)**	**U4**	PCI/SA	R	1.91E-01	4.58E-01		102%	
Calc	TE	FILTER	**H4X001AC**	RA-226	**2.02E-01**	**(1.15E-01)**		PCI/SA	R	1.41E-01	3.61E-01		99%	
Calc	TE	FILTER	**H4X041AC**	RA-226	**3.30E-01**	**(1.58E-01)**		PCI/SA	R	2.00E-01	4.85E-01		103%	
Calc	TE	FILTER	**H4X081AC**	RA-226	**1.91E-01**	**(1.29E-01)**	**U4**	PCI/SA	R	1.56E-01	4.27E-01		88%	
Calc	TE	FILTER	**H4X1A1AC**	RA-226	**2.51E-01**	**(1.89E-01)**	**U4**	PCI/SA	R	2.81E-01	6.48E-01		91%	
Calc	TE	FILTER	**H4X1F1AC**	RA-226	**9.46E-02**	**(1.46E-01)**	**U4**	PCI/SA	R	2.32E-01	5.49E-01		94%	
Calc	TE	FILTER	**H40151AA**	RA-226	**-3.42E-02**	**(3.94E-02)**	**U4**	PCI/SA	R	7.41E-02	1.73E-01	**B**	90%	
Calc	TE	FILTER	**H40151AC**	RA-226	**1.12E+00**	**(1.59E-01)**		PCI/SA	R	3.27E-02	8.94E-02	**S**	97%	81%

OK
GT
6/14/06

() - (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:17
RADCALC v4.8.24
STL Richland

Batch Nbr: 6129266

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/18/2006 3:16:54 PM

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	**H4XR81AC**	**PCI/SA**		04/26/06 09:20	06/18/06 12:53	06/15/06 08:11	RATA22491	1	0.833 Sa	
CID:P-0606LOT:J6E0801641 v4.8.24							FILTER				06/18/06 09:53	RATA22491 Alq	101%	0.249963 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	06/18/06 12:53	RA-226	11	7	ASC3RA	ASC		N	1.9876E+00	1.0000E+00	N	101%	N		2.4004E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(7.811E-02)	(0.000E+00)		8%			(0.000E+00)	3.33249		

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
	06/18/06	RA-226	R	**0.18735**	**U4**	1.03333E-01	0.124799	0.124799	0.833 Sa	101%		0.505511		
				(0.145774)		(7.9652E-02)	(0.096839)	(0.096839)	(0.023561)			0.203743		

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	**H4XTE1AC**	**PCI/SA**		04/26/06 09:45	06/18/06 12:52	06/15/06 08:11	RATA22492	1	0.833 Sa	
CID:P-0607LOT:J6E0801642 v4.8.24							FILTER				06/18/06 09:52	RATA22492 Alq	93%	0.248193 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	06/18/06 12:52	RA-226	35	28	ASC4HB	ASC		N	2.3219E+00	1.0000E+00	N	93%	N		2.4008E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.182E-01)	(0.000E+00)		7%			(0.000E+00)	3.356257		

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
	06/18/06	RA-226	R	**0.392615**	**U4**	2.33333E-01	0.259681	0.259681	0.833 Sa	93%		0.847095		
				(0.252098)		(1.4757E-01)	(0.166072)	(0.166072)	(0.023561)			0.378172		

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	**H4XTH1AC**	**PCI/SA**		04/26/06 10:00	06/18/06 12:50	06/15/06 08:11	RATA22493	1	0.833 Sa	
CID:P-0608LOT:J6E0801643 v4.8.24							FILTER				06/18/06 09:50	RATA22493 Alq	90%	0.250313 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	06/18/06 12:50	RA-226	16	21	ASC7HA	ASC		N	2.3933E+00	1.0000E+00	N	90%	N		2.4017E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.225E-01)	(0.000E+00)		7%			(0.000E+00)	3.327835		

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
	06/18/06	RA-226	R	**-0.05018**	**U4**	-3.00000E-02	-0.033473	-0.033473	0.833 Sa	90%		0.741407		
				(0.185089)		(1.1060E-01)	(0.123451)	(0.123451)	(0.023561)			0.325567		

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	**H4XTL1AC**	**PCI/SA**		04/26/06 10:15	06/18/06 12:51	06/15/06 08:11	RATA22494	1	0.833 Sa	
CID:P-0609LOT:J6E0801644 v4.8.24							FILTER				06/18/06 09:51	RATA22494 Alq	103%	0.249245 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	06/18/06 12:51	RA-226	9	12	ASC8RD	ASC		N	1.6393E+00	1.0000E+00	N	103%	N		2.4013E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(4.623E-02)	(0.000E+00)		8%			(0.000E+00)	3.342097		

() - (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: 6129266

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/18/2006 3:16:54 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
	06/18/06	RA-226	R	**-0.044107**	U4	-2.00000E-02	-0.029296	-0.029296	0.833 Sa	103%		0.768098		
				(0.183686)		(8.3267E-02)	(0.121995)	(0.121995)	(0.023561)			0.324477		

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	**H4XTM1AC**	**PCI/SA**		04/26/06 10:35	06/18/06 12:50	06/15/06 08:11	RATA22495	1	0.833 Sa	
CID:P-0610LOT:J6E0801645 v4.8.24							FILTER				06/18/06 09:50	RATA22495 Alq	93%	0.250662 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	06/18/06 12:50	RA-226	13	12	ASC9RC	ASC		N	1.8288E+00	1.0000E+00	N	93%	N		2.4017E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(5.139E-02)	(0.000E+00)		7%			(0.000E+00)	3.323194		

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
	06/18/06	RA-226	R	**0.126866**	U4	6.00000E-02	0.084746	0.084746	0.833 Sa	93%		0.736441		
				(0.195755)		(9.2376E-02)	(0.130672)	(0.130672)	(0.023561)			0.311104		

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	**H4XTN1AC**	**PCI/SA**		04/26/06 10:50	06/18/06 13:32	06/15/06 08:11	RATA22496	1	0.833 Sa	
CID:P-0611LOT:J6E0801646 v4.8.24							FILTER				06/18/06 10:32	RATA22496 Alq	87%	0.248948 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	06/18/06 13:32	RA-226	11	12	ASCASA	ASC		N	2.2802E+00	1.0000E+00	N	87%	N		2.3848E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.047E-01)	(0.000E+00)		7%			(0.000E+00)	3.34608		

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
	06/18/06	RA-226	R	**0.036385**	U4	2.00000E-02	0.024138	0.024138	0.833 Sa	87%		0.633624		
				(0.160031)		(8.7939E-02)	(0.106159)	(0.106159)	(0.023561)			0.26767		

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	**H4XTP1AC**	**PCI/SA**		04/26/06 09:25	06/18/06 13:30	06/15/06 08:11	RATA22497	1	0.833 Sa	
CID:P-0612LOT:J6E0801647 v4.8.24							FILTER				06/18/06 10:30	RATA22497 Alq	93%	0.24502 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	06/18/06 13:30	RA-226	8	8	ASCCSA	ASC		N	2.2567E+00	1.0000E+00	N	93%	N		2.3856E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(7.628E-02)	(0.000E+00)		7%			(0.000E+00)	3.39972		

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
	06/18/06	RA-226	R	**0.046622**	U4	2.66667E-02	0.030442	0.030442	0.833 Sa	93%		0.514574		
				(0.12883)		(7.3636E-02)	(0.084102)	(0.084102)	(0.023561)			0.210032		

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	**H4XTR1AC**	**PCI/SA**		04/26/06 09:35	06/18/06 13:32	06/15/06 08:11	RATA22498	1	0.833 Sa	
CID:P-0613LOT:J6E0801648 v4.8.24							FILTER				06/18/06 10:32	RATA22498 Alq	95%	0.248786 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: 6129266

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/18/2006 3:16:55 PM

1	06/18/06 13:32	RA-226	11	12	ASCDSA	ASC	N	1.8059E+00	1.0000E+00	N	95%	N	2.3848E+00	4.5045E-01	1.0001E+00		
			50	60		Y		(3.449E-02)	(0.000E+00)		8%		(0.000E+00)	3.348261			

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
	06/18/06	RA-226	R	**0.042074**	**U4**	2.00000E-02	0.027895	0.027895	0.833 Sa	95%		0.732697		
				(0.185045)		(8.7939E-02)	(0.122673)	(0.122673)	(0.023561)			0.309522		

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	**H4X0R1AC**	**PCI/SA**		04/26/06 09:30	06/18/06 13:31	06/15/06 08:30	RATA22499	1	0.833 Sa	
CID:000436LOT:J6E0801649 v4.8.24							FILTER				06/18/06 10:31	RATA22499 Alq	91%	0.248749 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	06/18/06 13:31	RA-226	11	9	ASCGSA	ASC		N	2.1653E+00	1.0000E+00	N	91%	N		2.3928E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(7.622E-02)	(0.000E+00)		7%			(0.000E+00)	3.348754		

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
	06/18/06	RA-226	R	**0.127639**	**U4**	7.00000E-02	0.084611	0.084611	0.833 Sa	91%		0.563236		
				(0.152051)		(8.3066E-02)	(0.100677)	(0.100677)	(0.023561)			0.232342		

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	**H4X0W1AC**	**PCI/SA**		04/26/06 09:50	06/18/06 13:30	06/15/06 08:30	RATA22500	1	0.833 Sa	
CID:000437LOT:J6E08016410 v4.8.24							FILTER				06/18/06 10:30	RATA22500 Alq	102%	0.247581 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	06/18/06 13:30	RA-226	3	10	ASCJMB	ASC		N	2.5572E+00	1.0000E+00	N	102%	N		2.3932E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(6.981E-02)	(0.000E+00)		8%			(0.000E+00)	3.36455		

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
	06/18/06	RA-226	R	**-0.151303**	**U4**	-1.06667E-01	-0.099827	-0.099827	0.833 Sa	102%		0.457693		
				(0.090789)		(6.3070E-02)	(0.059626)	(0.059626)	(0.023561)			0.190519		

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	**H4X001AC**	**PCI/SA**		04/26/06 10:05	06/18/06 13:27	06/15/06 08:30	RATA22501	1	0.833 Sa	
CID:000438LOT:J6E08016411 v4.8.24							FILTER				06/18/06 10:27	RATA22501 Alq	99%	0.247696 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	06/18/06 13:27	RA-226	11	5	ASCHMA	ASC		N	2.4641E+00	1.0000E+00	N	99%	N		2.3944E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.254E-01)	(0.000E+00)		8%			(0.000E+00)	3.362988		

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
	06/18/06	RA-226	R	**0.202307**		1.36667E-01	0.133541	0.133541	0.833 Sa	99%		0.361245		
				(0.11484)		(7.6085E-02)	(0.075415)	(0.075415)	(0.023561)			0.14059		

() - (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: 6129266

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/18/2006 3:16:55 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
12	Calc	TE	FILTER	*STLE	Ra226WoBS	**H4X041AC**	**PCI/SA**		04/26/06 10:20	06/18/06 13:30	06/15/06 08:30	RATA22511	1	0.833 Sa	
CID:000439LOT:J6E08016412 v4.8.24							FILTER				06/18/06 10:30	RATA22511 Alq	103%	0.248992 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	06/18/06 13:30	RA-226	18	9	ASCBMA	ASC		N	2.2978E+00	1.0000E+00	N	103%	N		2.3932E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(2.895E-02)	(0.000E+00)		8%			(0.000E+00)	3.345485		

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
	06/18/06	RA-226	R	**0.329612**		2.10000E-01	0.218712	0.218712	0.833 Sa	103%		0.48483		
				(0.158012)		(9.8489E-02)	(0.104092)	(0.104092)	(0.023561)			0.199998		

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	**H4X081AC**	**PCI/SA**		04/26/06 10:40	06/18/06 14:06	06/15/06 08:30	RATA22510	1	0.833 Sa	
CID:000440LOT:J6E08016413 v4.8.24							FILTER				06/18/06 11:06	RATA22510 Alq	88%	0.248132 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	06/18/06 14:06	RA-226	7	3	ASCKME	ASC		N	1.9262E+00	1.0000E+00	N	88%	N		2.3788E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(2.562E-02)	(0.000E+00)		7%			(0.000E+00)	3.357086		

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
	06/18/06	RA-226	R	**0.191002**	**U4**	9.00000E-02	0.1263	0.1263	0.833 Sa	88%		0.427094		
				(0.129324)		(6.0277E-02)	(0.085207)	(0.085207)	(0.023561)			0.156127		

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	**H4X1A1AC**	**PCI/SA**		04/26/06 10:55	06/18/06 14:06	06/15/06 08:30	RATA22509	1	0.833 Sa	
CID:000441LOT:J6E08016414 v4.8.24							FILTER				06/18/06 11:06	RATA22509 Alq	91%	0.250527 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	06/18/06 14:06	RA-226	22	17	ASCLMC	ASC		N	2.4313E+00	1.0000E+00	N	91%	N		2.3788E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.218E-01)	(0.000E+00)		7%			(0.000E+00)	3.324987		

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
	06/18/06	RA-226	R	**0.251311**	**U4**	1.56667E-01	0.167784	0.167784	0.833 Sa	91%		0.648446		
				(0.18859)		(1.1629E-01)	(0.12554)	(0.12554)	(0.023561)			0.280918		

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	**H4X1F1AC**	**PCI/SA**		04/26/06 10:10	06/18/06 14:06	06/15/06 08:30	RATA22508	1	0.833 Sa	
CID:000442LOT:J6E08016415 v4.8.24							FILTER				06/18/06 11:06	RATA22508 Alq	94%	0.246187 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	06/18/06 14:06	RA-226	13	12	ASCNMA	ASC		N	2.4482E+00	1.0000E+00	N	94%	N		2.3788E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(6.292E-02)	(0.000E+00)		8%			(0.000E+00)	3.383608		

() - (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: 6129266

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/18/2006 3:16:55 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
	06/18/06	RA-226	R	**0.094646**	**U4**	6.00000E-02	0.062094	0.062094	0.833 Sa	94%		0.549408		
				(0.146035)		(9.2376E-02)	(0.095742)	(0.095742)	(0.023561)			0.232093		

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	**H40151AA**	**PCI/SA**	**B**	04/26/06 09:20	06/18/06 14:05	06/15/06 08:30	RATA22507	1	1.00 Sa	
CID:INTRA-LAB BLANKLOT:J6E090000266 v4.8.24							FILTER				06/18/06 11:05	RATA22507 Alq	90%	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	06/18/06 14:05	RA-226	8	14	ASCMMA	ASC		N	2.5511E+00	1.0000E+00	N	90%	N		2.3792E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(7.398E-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
	06/18/06	RA-226	R	**-0.034186**	**U4**	-7.33333E-02	-0.075888	-0.075888	1.00 Sa	90%		0.173348		
				(0.039399)		(8.4196E-02)	(0.087368)	(0.087368)	(0.017321)			0.074085		

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
17	Calc	TE	FILTER	*STLE	Ra226WoBS	**H40151AC**	**PCI/SA**	**S**	04/26/06 09:20	06/18/06 14:07	06/15/06 08:48	RASC4130	1	1.00 Sa	
CID:INTRA-LAB CHECKLOT:J6E090000266 v4.8.24							FILTER				06/18/06 11:07	RASC4130 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	06/18/06 14:07	RA-226	129	3	ASCQMC	ASC		N	2.5030E+00	1.0000E+00	N	97%	N		2.3856E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.307E-01)	(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
	06/18/06	RA-226	R	**1.124139**		2.53000E+00	2.495442	2.495442	1.00 Sa	97%	81%	0.089418		
				(0.159439)		(2.2898E-01)	(0.32838)	(0.32838)	(0.017321)			0.032687		

() - (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:17

RADCALC v4.8.24

STL Richland

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XR81AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 0.9943
Technician: RS

Analysis Size: 0.25 Analysis Unit: SA

Report Date: 18-JUN-2006 13:43:00.58
First Separation Date: 15-JUN-2006 08:11:00.00
Second Separation Date: 18-JUN-2006 09:53:00.00

Detector ID: 3 Cell ID: 3RA

Bkg Date: 18-JUN-2006 07:35:13.11
Bkg Counts: 000007 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 12:53:00.24
Counts: 000011 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XTE1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.0763
Technician: RS

Analysis Size: 0.2482 Analysis Unit: SA

Report Date: 18-JUN-2006 13:42:01.00
First Separation Date: 15-JUN-2006 08:11:00.00
Second Separation Date: 18-JUN-2006 09:52:00.00

Detector ID: 4 Cell ID: 4HB

Bkg Date: 16-JUN-2006 19:09:30.75
Bkg Counts: 000028 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 12:52:00.46
Counts: 000035 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XTH1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.1119
Technician: RS

Analysis Size: 0.2503 Analysis Unit: SA

Report Date: 18-JUN-2006 13:40:00.93
First Separation Date: 15-JUN-2006 08:11:00.00
Second Separation Date: 18-JUN-2006 09:50:00.00

Detector ID: 7 Cell ID: 7HA

Bkg Date: 18-JUN-2006 07:44:36.22
Bkg Counts: 000021 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 12:50:00.39
Counts: 000016 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XTL1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 0.9709
Technician: RS

Analysis Size: 0.2492 Analysis Unit: SA

Report Date: 18-JUN-2006 13:41:00.97
First Separation Date: 15-JUN-2006 08:11:00.00
Second Separation Date: 18-JUN-2006 09:51:00.00

Detector ID: 8 Cell ID: 8RD

Bkg Date: 18-JUN-2006 08:04:39.27
Bkg Counts: 000012 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 12:51:00.43
Counts: 000009 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XTM1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.0755
Technician: RS

Analysis Size: 0.2507 Analysis Unit: SA

Report Date: 18-JUN-2006 13:40:00.99
First Separation Date: 15-JUN-2006 08:11:00.00
Second Separation Date: 18-JUN-2006 09:50:00.00

Detector ID: 9 Cell ID: 9RC

Bkg Date: 18-JUN-2006 07:44:56.35
Bkg Counts: 000012 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 12:50:00.43
Counts: 000013 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XTN1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.154
Technician: RS

Analysis Size: 0.2489 Analysis Unit: SA

Report Date: 18-JUN-2006 14:22:00.81
First Separation Date: 15-JUN-2006 08:11:00.00
Second Separation Date: 18-JUN-2006 10:32:00.00

Detector ID: 10 Cell ID: ASA

Bkg Date: 18-JUN-2006 07:57:40.38
Bkg Counts: 000012 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 13:32:00.36
Counts: 000011 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XTP1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.0799
Technician: RS

Analysis Size: 0.245 Analysis Unit: SA

Report Date: 18-JUN-2006 14:20:00.90
First Separation Date: 15-JUN-2006 08:11:00.00
Second Separation Date: 18-JUN-2006 10:30:00.00

Detector ID: 12 Cell ID: CSA

Bkg Date: 18-JUN-2006 08:23:29.38
Bkg Counts: 000008 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 13:30:00.45
Counts: 000008 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XTR1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.0562
Technician: RS

Analysis Size: 0.2488 Analysis Unit: SA

Report Date: 18-JUN-2006 14:22:00.92
First Separation Date: 15-JUN-2006 08:11:00.00
Second Separation Date: 18-JUN-2006 10:32:00.00

Detector ID: 13 Cell ID: DSA

Bkg Date: 18-JUN-2006 07:35:31.63
Bkg Counts: 000012 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 13:32:00.42
Counts: 000011 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X0R1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.0938
Technician: RS

Analysis Size: 0.2487 Analysis Unit: SA

Report Date: 18-JUN-2006 14:21:00.88
First Separation Date: 15-JUN-2006 08:30:00.00
Second Separation Date: 18-JUN-2006 10:31:00.00

Detector ID: 16 Cell ID: GSA

Bkg Date: 18-JUN-2006 07:35:44.19
Bkg Counts: 000009 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 13:31:00.27
Counts: 000011 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X0W1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 0.9832
Technician: RS

Analysis Size: 0.2476 Analysis Unit: SA

Report Date: 18-JUN-2006 14:20:02.90
First Separation Date: 15-JUN-2006 08:30:00.00
Second Separation Date: 18-JUN-2006 10:30:00.00

Detector ID: 18 Cell ID: JMB

Bkg Date: 18-JUN-2006 07:36:03.49
Bkg Counts: 000010 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 13:30:02.59
Counts: 000003 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X001AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.0056
Technician: RS

Analysis Size: 0.2477 Analysis Unit: SA

Report Date: 18-JUN-2006 14:17:00.59
First Separation Date: 15-JUN-2006 08:30:00.00
Second Separation Date: 18-JUN-2006 10:27:00.00

Detector ID: 17 Cell ID: HMA

Bkg Date: 18-JUN-2006 07:35:53.79
Bkg Counts: 000005 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 13:27:00.26
Counts: 000011 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X041AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 0.9689
Technician: RS

Analysis Size: 0.249 Analysis Unit: SA

Report Date: 18-JUN-2006 14:20:01.11
First Separation Date: 15-JUN-2006 08:30:00.00
Second Separation Date: 18-JUN-2006 10:30:00.00

Detector ID: 11 Cell ID: BMA

Bkg Date: 18-JUN-2006 08:09:42.10
Bkg Counts: 000009 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 13:30:00.57
Counts: 000018 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X081AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.1363
Technician: RS

Analysis Size: 0.2481 Analysis Unit: SA

Report Date: 18-JUN-2006 14:56:00.95
First Separation Date: 15-JUN-2006 08:30:00.00
Second Separation Date: 18-JUN-2006 11:06:00.00

Detector ID: 19 Cell ID: KME

Bkg Date: 18-JUN-2006 07:36:24.05
Bkg Counts: 000003 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 14:06:00.43
Counts: 000007 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X1A1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.0946
Technician: RS

Analysis Size: 0.2505 Analysis Unit: SA

Report Date: 18-JUN-2006 14:56:01.33
First Separation Date: 15-JUN-2006 08:30:00.00
Second Separation Date: 18-JUN-2006 11:06:00.00

Detector ID: 20 Cell ID: LMC

Bkg Date: 18-JUN-2006 07:45:07.48
Bkg Counts: 000017 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 14:06:00.54
Counts: 000022 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X1F1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.0651
Technician: RS

Analysis Size: 0.2462 Analysis Unit: SA

Report Date: 18-JUN-2006 14:56:01.24
First Separation Date: 15-JUN-2006 08:30:00.00
Second Separation Date: 18-JUN-2006 11:06:00.00

Detector ID: 22 Cell ID: NMA

Bkg Date: 18-JUN-2006 08:10:25.20
Bkg Counts: 000012 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 14:06:00.51
Counts: 000013 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H40151AA Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.1096
Technician: RS

Analysis Size: 1.0 Analysis Unit: SA

Report Date: 18-JUN-2006 14:55:00.56
First Separation Date: 15-JUN-2006 08:30:00.00
Second Separation Date: 18-JUN-2006 11:05:00.00

Detector ID: 21 Cell ID: MMA

Bkg Date: 18-JUN-2006 07:57:54.73
Bkg Counts: 000014 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 14:05:00.24
Counts: 000008 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H40151AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129266 Activity Unit: PCI/SA Multiplier: 1.0349
Technician: RS

Analysis Size: 1.0 Analysis Unit: SA

Report Date: 18-JUN-2006 14:57:00.62
First Separation Date: 15-JUN-2006 08:48:00.00
Second Separation Date: 18-JUN-2006 11:07:00.00

Detector ID: 24 Cell ID: QMC

Bkg Date: 18-JUN-2006 07:36:34.61
Bkg Counts: 000003 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 14:07:00.27
Counts: 000129 Count Duration: 000050.0

End of Report

STL RICHLAND

6/12/2006 4:19:51 PM

Sample Preparation/Analysis

Balance Id:1120373922,206120

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

Pipet #:

Sep1 DT/Tm Tech: 6-14-06 M 11:45

AnalyDueDate: 06/05/2006

Sep2 DT/Tm Tech:

Batch: 6129266 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: 6129270, BXTF All Tests: 6129243 7YSR, 6129247 9NS1, 6129253 BAS7, 6129255 BDS8, 6129266 BXTE, 6129270 BXTF,

Prep Tech: HansenM,TamosaitisM

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 H4XR8-1-AC J6E080164-1-SAMP	0.833sa,g	500.44sa,g	150.17g,in	0.25g 7.5573 7.601 = 0.9943	RATA22491 06/05/06		610	1425	6/14/06 6/15/06 0811 R 3RA 6/18/06 0953 R	
04/26/2006 09:20		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
2 H4XTE-1-AC J6E080164-2-SAMP	0.833sa,g	503.64sa,g	150.06g,in	0.2482g 7.5771 7.04 = 1.0763	RATA22492 06/05/06		66	1425	6/14/06 6/15/06 0811 R 4HB 6/18/06 0952 R	
04/26/2006 09:45		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
3 H4XTH-1-AC J6E080164-3-SAMP	0.833sa,g	500.34sa,g	150.35g,in	0.2503g 7.5374 6.779 = 1.1119	RATA22493 06/05/06		68	1425	6/14/06 6/15/06 0811 R 7HA 6/18/06 0950 R	
04/26/2006 10:00		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
4 H4XTL-1-AC J6E080164-4-SAMP	0.833sa,g	503.42sa,g	150.63g,in	0.2492g 7.5672 7.794 = 0.9709	RATA22494 06/05/06		613	1425	6/14/06 6/15/06 0811 R 8RD 6/18/06 0951 R	
04/26/2006 10:15		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:

STL RICHLAND

6/12/2006 4:19:52 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 06/05/2006

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:1120373922,1120373922,1120

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: HansenM,TamosaitisM

Batch: 6129266 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6129270, 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:
5 H4XTM-1-AC J6E080164-5-SAMP	0.833sa,g	501.47sa,g	150.90g,in	0.2507g	RATA22495 06/05/06		611	1425	6/14/06	
				7.5573 / 7.027 = 1.0755					6/15/06 0811 R; 9RC 6/18/06 0950 R	
04/26/2006 10:35		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
6 H4XTN-1-AC J6E080164-6-SAMP	0.833sa,g	502.28sa,g	150.11g,in	0.2489g	RATA22496 06/05/06		612	1427	6/14/06	
				7.5077 / 6.506 = 1.1540					6/15/06 0811 R; ASA 6/18/06 1032 R	
04/26/2006 10:50		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
7 H4XTP-1-AC J6E080164-7-SAMP	0.833sa,g	510.06sa,g	150.03g,in	0.245g	RATA22497 06/05/06		911	1505	6/14/06 0600	
				7.5374 / 6.98 = 1.0799					6/15/06 0811 R; CSA 6/18/06 1030 R	
04/26/2006 09:25		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
8 H4XTR-1-AC J6E080164-8-SAMP	0.833sa,g	502.44sa,g	150.06g,in	0.2488g	RATA22498 06/05/06		G5	1505	6/14/06 0600	
				7.5275 / 7.172 = 1.0562					6/15/06 0811 R; DSA 6/18/06 1032 R	
04/26/2006 09:35		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:

STL RICHLAND

6/12/2006 4:19:53 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:1120373922,1120373922,1120

Pipet #:

AnalyDueDate: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129266 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: 6129270, BXTF

Sep2 DT/Tm Tech:

Prep Tech: HansenM,TamosaitisM

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 H4X0R-1-AC J6E080164-9-SAMP	0.833sa,g	505.26sa,g	150.88g,in	0.2487g 7.5374 6.891 = 1.0938	RATA22499 06/05/06		G4	1507	6/14/06 MD 6/15/06 0830 R GSA 6/18/06 1031 R	
04/26/2006 09:30		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
10H4X0W-1-AC J6E080164-10-SAMP	0.833sa,g	505.49sa,g	150.24g,in	0.2476g 7.5275 7.656 = 0.9832	RATA22500 06/05/06		G7	1507	6/14/06 MD 6/15/06 0830 R JMB 6/18/06 1030 R	
04/26/2006 09:50		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
11H4X00-1-AC J6E080164-11-SAMP	0.833sa,g	504.65sa,g	150.06g,in	0.2477g 7.5672 7.525 = 1.0056	RATA22501 06/05/06		G10	1507	6/14/06 MD 6/15/06 0830 R HMA 6/18/06 1027 R	
04/26/2006 10:05		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
12H4X04-1-AC J6E080164-12-SAMP	0.833sa,g	501.99sa,g	150.05g,in	0.249g 7.4977 7.738 = 0.9689	RATA22511 06/05/06		G11	1507	6/14/06 MD 6/15/06 0830 R BMA 6/18/06 1030 R	
04/26/2006 10:20		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

6/12/2006 4:19:53 PM

Sample Preparation/Analysis

Balance Id:1120373922,1120373922,1120

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

Pipet #:

AnalyDueDate: 06/05/2006

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Batch: 6129266 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: 6129270, BXTF

Prep Tech: HansenM,TamosaitisM

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:
13H4X08-1-AC J6E080164-13-SAMP	0.833sa,g	504.10sa,g	150.16g,in	0.2481g 7.5077 6.607 = 1.1363	RATA22510 06/05/06		G12	1507	6/14/06 KME 6/15/06 0830 R 6/18/06 1106 R	
04/26/2006 10:40		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
14H4X1A-1-AC J6E080164-14-SAMP	0.833sa,g	504.60sa,g	151.76g,in	0.2505g 7.5275 6.877 = 1.0946	RATA22509 06/05/06		G13	1508	6/14/06 LMC 6/15/06 0830 R 6/18/06 1106 R	
04/26/2006 10:55		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
15H4X1F-1-AC J6E080164-15-SAMP	0.833sa,g	509.03sa,g	150.44g,in	0.2462g 7.5473 7.086 = 1.0651	RATA22508 06/05/06		G6	1508	6/14/06 NMA 6/15/06 0830 R 6/18/06 1106 R	
04/26/2006 10:10		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
16H4015-1-AA-B J6E090000-266-BLK	1.00g		1.00sa,in	1.00sa 7.5275 6.784 = 1.1096	RATA22507 06/05/06		G8	1506	6/14/06 MMA 6/15/06 0830 R 6/18/06 1105 R	
04/26/2006 09:20		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:

6/12/2006 4:19:54 PM

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:1120373922,1120373922,1120

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: TamosaitisM

AnalyDueDate: 06/05/2006

Batch: 6129266 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:
17H4015-1-AC-C J6E090000-266-LCS	1.00g		1.00sa,in	1.00sa 7.4925 7.24 = 1.0349	RASC4130 06/09/06		9"	1543	6/14/06 00 6/15/06 0848 QMC 6/18/06 1107	

04/26/2006 09:20 AmtRec: #Containers: 1 Scr: Alpha: Beta:

Comments:

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

H4XR81AC-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:

H40151AA-BLK:
Ba-133 RDL: pCi/sam LCL:20 UCL:115 RPD:20 Ra-226 RDL:1.00E+00 pCi/sam LCL: UCL: RPD:

H40151AC-LCS:
Ba-133 RDL: pCi/sam LCL:20 UCL:115 RPD:20 Ra-226 RDL:1 pCi/sam LCL:70 UCL:130 RPD:20

H4XR81AC-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H40151AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H40151AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

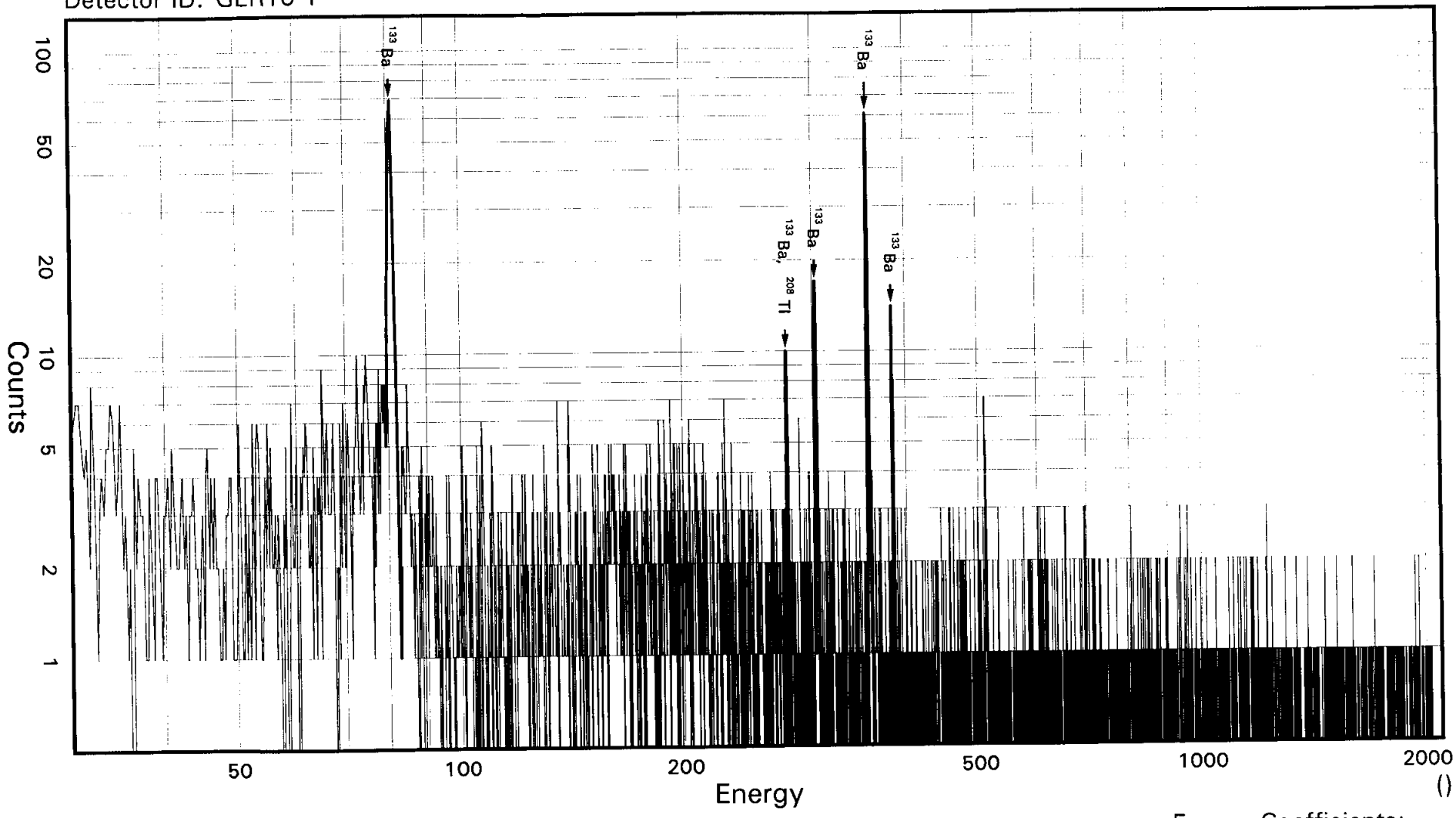
Approved By _____ Date: _____

STL Richland WA.

BA133

Sample ID: H4XR81AC
Detector ID: GER10 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 13:55:18.37
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.56336E+01
Slope: 2.46974E-01
Quadrature: -1.79881E-09

SAMPLE IDENTIFICATION: H4XR81AC

CONFIGURATION ID: GER10:H4XR81AC_140661355
TITLE : BA133
SAMPLE ID : H4XR81AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:55:18
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:24:19.75
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: 1.5634E+01 keV
ENERGY SLOPE: 2.4697E-01 keV/C
ENERGY Q COEFF: -.1799E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.5150E-01 keV
FWHM SLOPE: 2.7421E-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 14-JUN-2006 14:25:45

Configuration : $DISK1:[GER10.SAMPLE]H4XR81AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:18
Sample ID : H4XR81AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.23 0.0%
Start energy : 18.10 End energy : 2038.73
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	316	69	1.06	264.43	256	17	1.76E-01	8.3	
2	0	276.34	51	7	1.33	1055.60	1048	13	2.81E-02	17.5	
3	0	302.89	105	23	1.49	1163.11	1150	22	5.83E-02	15.0	
4	0	356.02	365	12	1.22	1378.23	1367	24	2.03E-01	5.8	
5	0	383.65	51	3	1.11	1490.12	1481	16	2.81E-02	16.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 14:25:45

Configuration : $DISK1:[GER10.SAMPLE]H4XR81AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00
Sample ID : H4XR81AC
Sample type :
Elapsed live time: 0 00:30:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 14-JUN-2006 13:55:18
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.23 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

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	316	33.00	2.399E+00	1.332E+03	1.334E+03	9.94
	276.40	51	6.90	2.578E+00	9.462E+02	9.477E+02	18.31
	302.84	105	17.80	2.582E+00	7.609E+02	7.621E+02	15.98
	356.00	365	62.05*	2.584E+00	7.588E+02	7.601E+02	7.92
	383.85	51	8.70	2.584E+00	7.499E+02	7.511E+02	17.40

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4XR81AC

Acquisition date : 14-JUN-2006 13:55:18

None

Flags: "T" = Tentatively associated

Sample ID : H4XR81AC
Acquisition date : 14-JUN-2006 13:55:18

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	9.601E+02	18.31	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 14-JUN-2006 14:25:47

Configuration : $DISK1:[GER10.SAMPLE]H4XR81AC_140661355.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 : 5-JUN-2006 12:00:00
Sample ID : H4XR81AC
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 : 14-JUN-2006 13:55:18
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.23 0.0%
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	7.601E+02	6.019E+01	3.684E+01	7.369E-01	20.630

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	1.362E-01		6.151E+01	2.411E+02	4.836E+00	0.001
NA-22	1.344E+00		3.084E+00	1.477E+01	3.121E-01	0.091
K-40	-1.307E+01		4.383E+01	2.154E+02	4.609E+00	-0.061
SC-46	-1.392E+00		4.742E+00	1.891E+01	3.953E-01	-0.074
CR-51	-6.359E+00		9.692E+01	3.599E+02	7.201E+00	-0.018
MN-54	6.683E+00		4.477E+00	2.134E+01	4.374E-01	0.313
CO-57	3.640E+01		9.273E+01	3.466E+02	7.151E+00	0.105
CO-58	4.392E+00		4.349E+00	2.046E+01	4.186E-01	0.215
FE-59	-5.031E+00		8.541E+00	3.295E+01	6.880E-01	-0.153
CO-60	4.088E+00		3.092E+00	1.648E+01	3.496E-01	0.248
ZN-65	5.101E+00		6.530E+00	3.215E+01	6.722E-01	0.159
SE-75	1.504E+01		1.511E+01	5.952E+01	1.194E+00	0.253
SR-85	-2.573E+01		1.099E+01	3.373E+01	6.776E-01	-0.763
Y-88	4.075E+00		2.489E+00	1.561E+01	3.420E-01	0.261
NB-94	1.256E+00		4.799E+00	1.989E+01	4.087E-01	0.063
NB-95	1.112E+01		5.247E+00	2.628E+01	5.361E-01	0.423
TC-95M	-1.266E+01		1.747E+01	6.158E+01	1.245E+00	-0.206
ZR-95	7.949E+00		6.897E+00	3.432E+01	6.998E-01	0.232
ZRNB-95	2.048E+01		9.670E+00	4.842E+01	9.879E-01	0.423
MO-99	5.487E+01		1.057E+02	3.970E+02	8.177E+00	0.138
RH-101	-1.102E+01		1.469E+01	5.172E+01	1.046E+00	-0.213
RH-102M	-5.457E+00		6.590E+00	2.355E+01	4.723E-01	-0.232
RU-103	-1.802E+00		8.098E+00	3.070E+01	6.163E-01	-0.059
RU-106DA	2.907E+01		5.568E+01	2.295E+02	4.639E+00	0.127
AG-108M	-8.148E+00		7.118E+00	2.469E+01	4.944E-01	-0.330
AG-110M	1.804E+00		4.986E+00	2.250E+01	4.627E-01	0.080
SN-113DA	3.719E+00		9.713E+00	3.850E+01	7.702E-01	0.097

Sample ID : H4XR81AC Acquisition date : 14-JUN-2006 13:55:18

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	3.839E+00		7.472E+00	2.962E+01	5.980E-01	0.130
SB-125	9.977E+00		1.938E+01	7.990E+01	1.600E+00	0.125
SN-126DA	2.342E+00		4.226E+00	1.843E+01	3.736E-01	0.127
I-131	1.912E+01		2.008E+01	8.003E+01	1.601E+00	0.239
CS-134	7.011E+00		4.535E+00	2.263E+01	4.627E-01	0.310
CS-137DA	1.148E+00		5.216E+00	2.166E+01	4.388E-01	0.053
LA-138	0.000E+00		0.000E+00	5.584E+00	1.193E-01	0.000
CE-139	3.728E+00		1.374E+01	5.007E+01	1.021E+00	0.074
BA-140	4.292E+01		2.837E+01	1.351E+02	2.718E+00	0.318
BALA-140	-1.397E+01		1.252E+01	4.429E+01	9.560E-01	-0.315
LA-140	-1.833E+02		1.643E+02	5.810E+02	1.254E+01	-0.316
CE-141	1.505E+01		2.154E+01	8.311E+01	1.708E+00	0.181
CE-144	-1.398E+02		9.665E+01	3.178E+02	6.567E+00	-0.440
CEPR-144	-3.032E+02		1.952E+02	6.366E+02	1.315E+01	-0.476
PM-144	-6.002E+00		6.697E+00	2.330E+01	4.707E-01	-0.258
PM-146	-1.055E+01		9.634E+00	3.353E+01	6.719E-01	-0.315
EU-152	-1.621E+01		2.388E+01	8.520E+01	1.704E+00	-0.190
EU-154	3.765E+00		8.642E+00	4.139E+01	8.746E-01	0.091
EU-155	5.097E+01		4.504E+01	1.779E+02	3.741E+00	0.287
HF-181	-1.908E+00		6.904E+00	2.688E+01	5.393E-01	-0.071
BI-207	3.015E+00		3.863E+00	1.786E+01	3.599E-01	0.169
TL-208	4.402E+00		6.430E+00	2.689E+01	5.423E-01	0.164
BI-210M	7.978E+00		1.759E+01	6.688E+01	1.341E+00	0.119
BI-212	2.370E+01		8.532E+01	3.455E+02	1.056E+01	0.069
PB-212	1.371E+01		1.818E+01	7.149E+01	1.438E+00	0.192
BI-214	-1.060E+00		1.400E+01	5.293E+01	1.069E+00	-0.020
PB-214	1.864E+01		1.951E+01	7.097E+01	1.419E+00	0.263
RA-223	-6.572E+01		6.048E+01	2.072E+02	4.155E+00	-0.317
RA-224DA	1.384E+01		1.834E+01	7.214E+01	1.451E+00	0.192
RA-226DA	-1.060E+00		1.400E+01	5.293E+01	1.069E+00	-0.020
AC-227DA	-4.317E+01		7.408E+01	2.656E+02	5.342E+00	-0.163
AC-228	-5.715E-01		1.679E+01	6.763E+01	1.394E+00	-0.008
RA-228DA	-5.732E-01		1.684E+01	6.783E+01	1.398E+00	-0.008
TH-228DA	1.236E+01		1.806E+01	7.553E+01	1.523E+00	0.164
TH-232DA	2.203E+01		5.426E+01	2.121E+02	4.243E+00	0.104
TH-234DA	-4.537E+01		6.653E+02	2.696E+03	5.591E+01	-0.017
U-234DA	4.321E+01		3.847E+01	1.562E+02	3.128E+00	0.277
U-235HP	3.891E+00		9.121E+01	3.332E+02	6.852E+00	0.012
NP-237DA	1.091E+01		1.951E+01	7.685E+01	1.538E+00	0.142
U-238DA	1.864E+01		1.951E+01	7.097E+01	1.419E+00	0.263
U-238DHP	-5.634E+02		3.769E+02	1.209E+03	2.676E+01	-0.466
AM-241HP	-1.075E-01		3.490E+01	1.234E+02	2.751E+00	-0.001

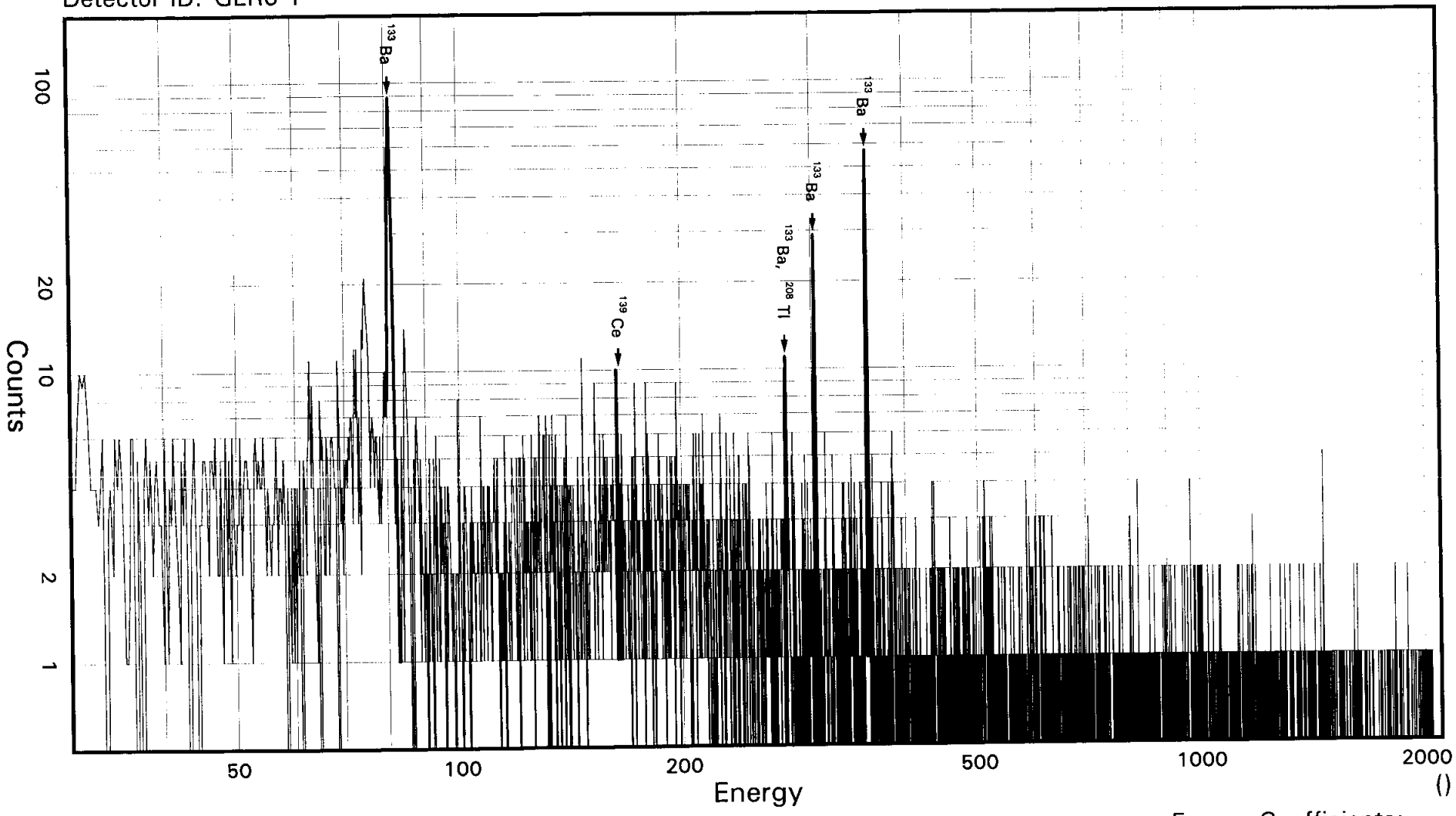
STL Richland WA.

BA133

Sample ID: H4XTE1AC

Detector ID: GER6 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 13:55:25.57

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: -6.63443E-03

Slope: 2.49415E-01

Quadrature: 6.44103E-09

SAMPLE IDENTIFICATION: H4XTE1AC

CONFIGURATION ID: GER6:H4XTE1AC_140661355
TITLE : BA133
SAMPLE ID : H4XTE1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:55:25
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:23:30.78
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: -.6634E-02 keV
ENERGY SLOPE: 2.4941E-01 keV/C
ENERGY Q COEFF: 6.4410E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.6340E-01 keV
FWHM SLOPE: 5.3905E-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 14-JUN-2006 14:26:01

Configuration : $DISK1:[GER6.SAMPLE]H4XTE1AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:25
Sample ID : H4XTE1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.25 0.0%
Start energy : 19.95 End energy : 2043.63
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	62	1.37	300.44	295	13	1.47E-02	69.7	
2	0	81.01	290	54	0.77	324.84	319	13	1.61E-01	8.0	
3	0	84.90*	6	24	0.71	340.40	336	9	3.43E-03	172.5	
4	0	147.47	11	18	0.26	591.29	585	10	6.23E-03	76.1	
5	0	165.01	10	32	0.33	661.61	651	13	5.63E-03	119.8	
6	0	276.57	35	31	1.06	1108.86	1101	14	1.92E-02	38.5	
7	0	302.96	114	13	0.79	1214.67	1208	13	6.34E-02	11.4	
8	0	356.06	306	14	1.32	1427.56	1418	18	1.70E-01	6.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 14:26:01

Configuration : $DISK1:[GER6.SAMPLE]H4XTE1AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:25
Sample ID : H4XTE1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.25 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	290	33.00	2.167E+00	1.352E+03	1.354E+03	9.72
	276.40	35	6.90	2.334E+00	7.145E+02	7.157E+02	38.84
	302.84	114	17.80	2.337E+00	9.144E+02	9.159E+02	12.61
	356.00	306	62.05*	2.339E+00	7.029E+02	7.040E+02	8.35
	383.85	------	8.70	2.338E+00	------ Line Not Found		------
CE-139	165.85	10	80.35*	2.291E+00	1.837E+01	1.923E+01	119.91

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4XTE1AC Acquisition date : 14-JUN-2006 13:55:25

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	74.93	26	62	1.37	300.44	295	13	1.47E-02	69.7	2.15E+00	
0	84.90	6	24	0.71	340.40	336	9	3.43E-03	****	2.18E+00	
0	147.47	11	18	0.26	591.29	585	10	6.23E-03	76.1	2.28E+00	

Flags: "T" = Tentatively associated

Sample ID : H4XTE1AC Acquisition date : 14-JUN-2006 13:55:25

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	7.250E+02	38.84	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 14-JUN-2006 14:26:04

Configuration : $DISK1:[GER6.SAMPLE]H4XTE1AC_140661355.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:25
Sample ID : H4XTE1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.25 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	7.040E+02	5.876E+01	4.981E+01	9.963E-01	14.133
CE-139	1.923E+01	2.306E+01	4.958E+01	1.012E+00	0.388

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	5.149E+01		6.550E+01	2.748E+02	5.513E+00	0.187
NA-22	4.584E+00		3.395E+00	1.824E+01	3.860E-01	0.251
K-40	-4.880E+01		8.574E+01	4.034E+02	8.647E+00	-0.121
SC-46	4.164E+00		5.722E+00	2.497E+01	5.229E-01	0.167
CR-51	2.724E+02		1.086E+02	4.721E+02	9.446E+00	0.577
MN-54	3.429E+00		6.228E+00	2.597E+01	5.327E-01	0.132
CO-57	5.927E+01		1.135E+02	4.239E+02	8.754E+00	0.140
CO-58	1.757E+00		5.959E+00	2.453E+01	5.023E-01	0.072
FE-59	-9.001E+00		1.005E+01	3.645E+01	7.620E-01	-0.247
CO-60	-1.522E+00		1.524E+00	4.107E+00	8.727E-02	-0.371
ZN-65	-1.375E+01		1.109E+01	3.773E+01	7.897E-01	-0.364
SE-75	1.183E+01		1.679E+01	6.407E+01	1.285E+00	0.185
SR-85	-2.042E+01		1.026E+01	3.274E+01	6.579E-01	-0.624
Y-88	-3.358E+00		2.382E+00	4.516E+00	9.920E-02	-0.744
NB-94	-2.751E+00		4.580E+00	1.759E+01	3.618E-01	-0.156
NB-95	-5.407E+00		5.845E+00	2.094E+01	4.274E-01	-0.258
TC-95M	-1.188E+00		1.915E+01	6.965E+01	1.408E+00	-0.017
ZR-95	-1.177E+01		8.287E+00	2.692E+01	5.491E-01	-0.437
ZRNB-95	-9.965E+00		1.077E+01	3.858E+01	7.876E-01	-0.258
MO-99	1.049E+02		1.271E+02	4.815E+02	9.924E+00	0.218
RH-101	2.089E+01		1.656E+01	6.407E+01	1.297E+00	0.326
RH-102M	-7.897E+00		6.385E+00	2.146E+01	4.305E-01	-0.368
RU-103	-4.799E+00		7.208E+00	2.627E+01	5.275E-01	-0.183
RU-106DA	-3.314E+01		5.686E+01	2.108E+02	4.261E+00	-0.157
AG-108M	-1.189E+01		9.556E+00	3.227E+01	6.463E-01	-0.368
AG-110M	1.457E+01		6.900E+00	3.451E+01	7.104E-01	0.422

Sample ID : H4XTE1AC Acquisition date : 14-JUN-2006 13:55:25

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SN-113DA	1.674E+01		1.049E+01	4.651E+01	9.304E-01	0.360
SB-124	-1.498E+01		6.447E+00	1.756E+01	3.547E-01	-0.853
SB-125	-2.483E+01		2.110E+01	7.252E+01	1.452E+00	-0.342
SN-126DA	-3.633E+00		6.476E+00	2.407E+01	4.881E-01	-0.151
I-131	-7.147E+00		1.960E+01	7.165E+01	1.433E+00	-0.100
CS-134	-1.142E+00		4.078E+00	1.712E+01	3.502E-01	-0.067
CS-137DA	-2.736E+00		6.631E+00	2.548E+01	5.166E-01	-0.107
LA-138	6.783E+00		5.161E+00	2.745E+01	5.874E-01	0.247
BA-140	-2.186E+01		3.381E+01	1.271E+02	2.557E+00	-0.172
BALA-140	-1.605E+01		1.193E+01	3.885E+01	8.405E-01	-0.413
LA-140	-2.106E+02		1.566E+02	5.098E+02	1.103E+01	-0.413
CE-141	-1.410E+00		3.102E+01	9.666E+01	1.988E+00	-0.015
CE-144	-3.887E+00		1.155E+02	4.178E+02	8.641E+00	-0.009
CEPR-144	-3.987E+01		2.324E+02	8.338E+02	1.724E+01	-0.048
PM-144	-2.612E+00		6.787E+00	2.520E+01	5.093E-01	-0.104
PM-146	-8.270E+00		9.497E+00	3.370E+01	6.754E-01	-0.245
EU-152	-4.081E+01		3.420E+01	1.147E+02	2.295E+00	-0.356
EU-154	1.284E+01		9.512E+00	5.110E+01	1.082E+00	0.251
EU-155	-2.618E+01		4.924E+01	1.788E+02	3.766E+00	-0.146
HF-181	1.003E+01		1.064E+01	4.312E+01	8.652E-01	0.233
BI-207	5.993E+00		6.884E+00	2.864E+01	5.771E-01	0.209
TL-208	-5.991E+00		8.371E+00	3.211E+01	6.477E-01	-0.187
BI-210M	7.856E+00		1.864E+01	7.004E+01	1.405E+00	0.112
BI-212	7.218E+01		8.015E+01	3.539E+02	1.082E+01	0.204
PB-212	-1.317E+01		2.632E+01	9.582E+01	1.927E+00	-0.137
BI-214	-1.189E+01		1.456E+01	5.717E+01	1.155E+00	-0.208
PB-214	-3.879E+01		3.187E+01	9.146E+01	1.829E+00	-0.424
RA-223	-2.315E+01		6.622E+01	2.437E+02	4.887E+00	-0.095
RA-224DA	-1.329E+01		2.656E+01	9.669E+01	1.945E+00	-0.137
RA-226DA	-1.189E+01		1.456E+01	5.717E+01	1.155E+00	-0.208
AC-227DA	-1.204E+02		1.023E+02	3.418E+02	6.876E+00	-0.352
AC-228	-1.662E+01		1.803E+01	7.455E+01	1.538E+00	-0.223
RA-228DA	-1.667E+01		1.809E+01	7.477E+01	1.542E+00	-0.223
TH-228DA	-1.683E+01		2.351E+01	9.020E+01	1.819E+00	-0.187
TH-232DA	6.790E+01		8.062E+01	3.103E+02	6.207E+00	0.219
TH-234DA	4.048E+02		8.654E+02	3.608E+03	7.491E+01	0.112
U-234DA	-9.929E+00		4.628E+01	1.708E+02	3.421E+00	-0.058
U-235HP	-1.678E+01		1.149E+02	3.697E+02	7.610E+00	-0.045
NP-237DA	1.523E+01		2.483E+01	9.641E+01	1.929E+00	0.158
U-238DA	-3.879E+01		3.187E+01	9.146E+01	1.829E+00	-0.424
U-238DHP	3.699E+02		3.761E+02	1.426E+03	3.164E+01	0.259
AM-241HP	-4.415E+01		3.259E+01	1.107E+02	2.474E+00	-0.399

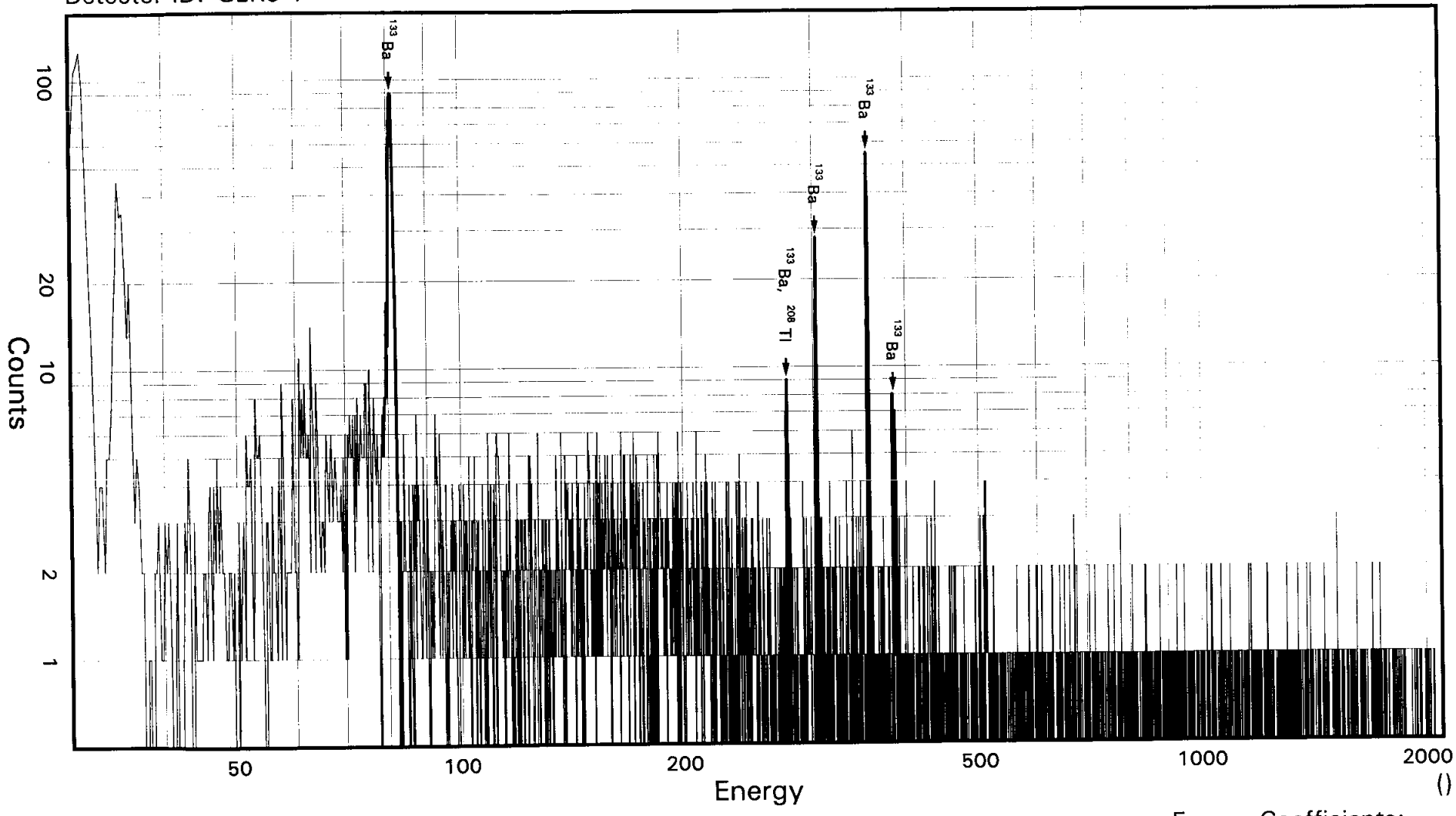
STL Richland WA.

BA133

Sample ID: H4XTH1AC

Detector ID: GER8 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 13:55:31.64

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: 2.75706E-01

Slope: 2.49832E-01

Quadrature: 1.80037E-08

SAMPLE IDENTIFICATION: H4XTH1AC

CONFIGURATION ID: GER8:H4XTH1AC_140661355
TITLE : BA133
SAMPLE ID : H4XTH1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:55:31
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:24:04.34
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: 2.7571E-01 keV
ENERGY SLOPE: 2.4983E-01 keV/C
ENERGY Q COEFF: 1.8004E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.8969E-01 keV
FWHM SLOPE: 1.8029E-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 14-JUN-2006 14:26:17

Configuration : $DISK1:[GER8.SAMPLE]H4XTH1AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:31
Sample ID : H4XTH1AC 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 : 20.26 End energy : 2048.11
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	30.80	614	111	1.18	122.18	114	17	3.41E-01	5.7	
2	0	35.24	212	39	0.95	139.94	131	20	1.18E-01	10.3	
3	0	80.98	428	64	1.06	323.04	314	17	2.38E-01	6.5	
4	0	276.20	43	4	1.47	1104.37	1095	16	2.36E-02	18.6	
5	0	302.97	107	9	0.81	1211.49	1202	18	5.94E-02	11.7	
6	0	355.99	299	13	1.38	1423.67	1415	17	1.66E-01	6.4	
7	0	384.99	60	12	3.74	1539.71	1527	24	3.33E-02	20.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 14:26:18

Configuration : $DISK1:[GER8.SAMPLE]H4XTH1AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:31
Sample ID : H4XTH1AC 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	428	33.00	2.202E+00	1.963E+03	1.967E+03	8.44
	276.40	43	6.90	2.370E+00	8.674E+02	8.688E+02	19.41
	302.84	107	17.80	2.374E+00	8.442E+02	8.455E+02	12.87
	356.00	299	62.05*	2.376E+00	6.768E+02	6.779E+02	8.36
	383.85	60	8.70	2.375E+00	9.678E+02	9.694E+02	20.71

Flag: "*" = Keyline

Sample ID : H4XTH1AC Acquisition date : 14-JUN-2006 13:55:31

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	30.80	614	111	1.18	122.18	114	17	3.41E-01	5.7	1.93E+00	
0	35.24	212	39	0.95	139.94	131	20	1.18E-01	10.3	1.97E+00	

Flags: "T" = Tentatively associated

Sample ID : H4XTH1AC Acquisition date : 14-JUN-2006 13:55:31

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	8.802E+02	19.41	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 14-JUN-2006 14:26:19

Configuration : $DISK1:[GER8.SAMPLE]H4XTH1AC_140661355.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:31
Sample ID : H4XTH1AC 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	6.779E+02	5.667E+01	4.048E+01	8.097E-01	16.745

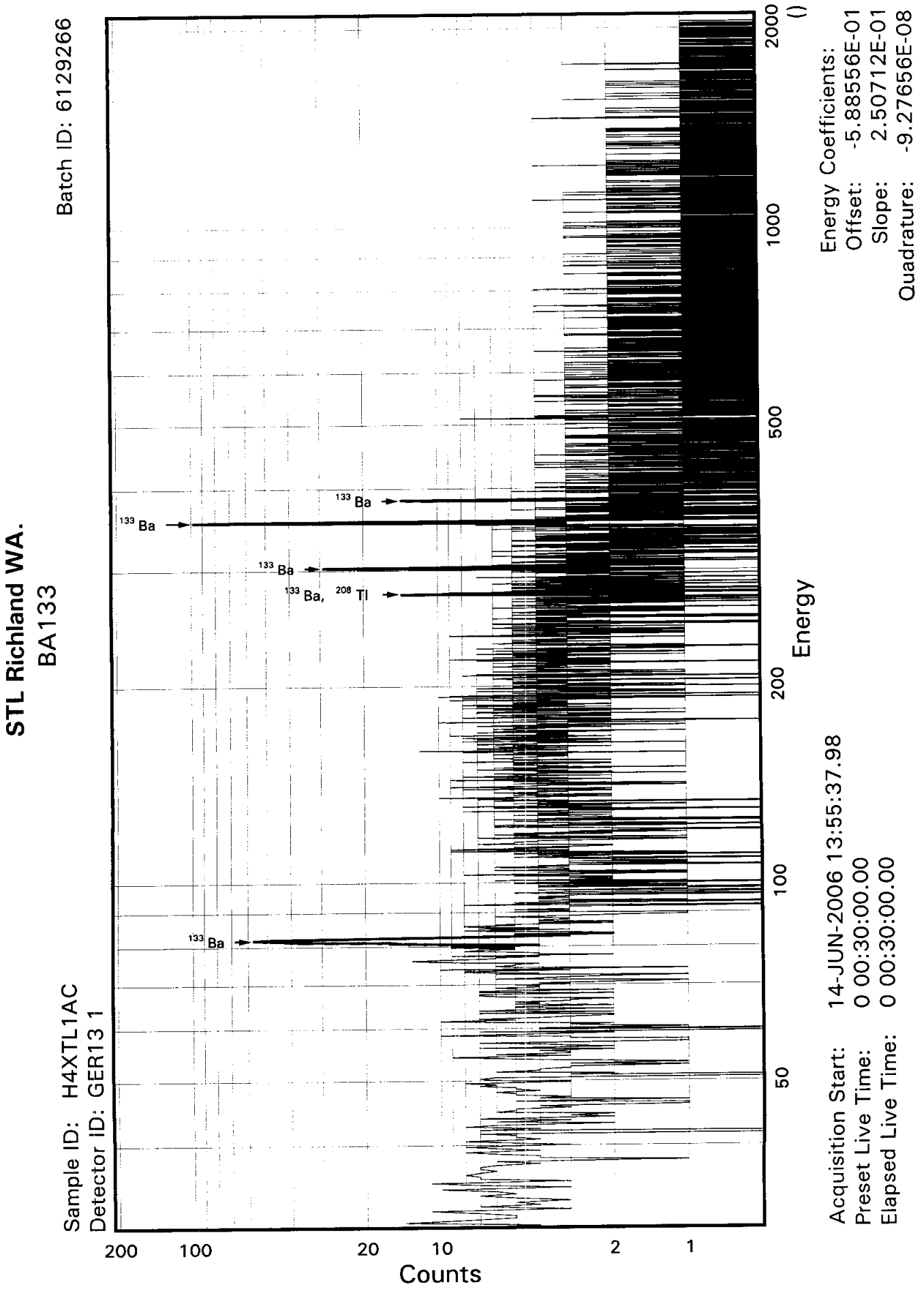
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	5.903E+01		4.872E+01	2.280E+02	4.574E+00	0.259
NA-22	-4.370E+00		3.300E+00	1.099E+01	2.327E-01	-0.397
K-40	-2.876E+01		2.158E+01	1.307E+02	2.802E+00	-0.220
SC-46	2.064E-01		3.795E+00	1.703E+01	3.565E-01	0.012
CR-51	2.309E+02		9.653E+01	4.282E+02	8.568E+00	0.539
MN-54	-1.525E+00		4.425E+00	1.763E+01	3.615E-01	-0.087
CO-57	2.756E+01		1.106E+02	4.047E+02	8.357E+00	0.068
CO-58	1.562E+00		4.745E+00	2.069E+01	4.237E-01	0.076
FE-59	-6.485E+00		5.534E+00	1.962E+01	4.100E-01	-0.331
CO-60	3.007E+00		2.987E+00	1.608E+01	3.417E-01	0.187
ZN-65	9.298E+00		8.789E+00	4.183E+01	8.753E-01	0.222
SE-75	-5.239E+00		1.271E+01	4.721E+01	9.470E-01	-0.111
SR-85	-1.421E+01		9.433E+00	3.043E+01	6.114E-01	-0.467
Y-88	-4.745E+00		2.752E+00	4.444E+00	9.758E-02	-1.068
NB-94	-3.203E+00		4.578E+00	1.710E+01	3.516E-01	-0.187
NB-95	-3.606E+00		3.369E+00	1.213E+01	2.475E-01	-0.297
TC-95M	2.239E+01		1.745E+01	6.774E+01	1.369E+00	0.330
ZR-95	1.270E-01		8.989E+00	3.741E+01	7.630E-01	0.003
ZRNB-95	-6.266E+00		6.304E+00	2.326E+01	4.747E-01	-0.269
MO-99	1.819E+02		1.286E+02	5.018E+02	1.034E+01	0.362
RH-101	1.865E+01		1.493E+01	5.751E+01	1.164E+00	0.324
RH-102M	1.032E+01		5.007E+00	2.481E+01	4.977E-01	0.416
RU-103	-1.189E+01		6.680E+00	1.998E+01	4.011E-01	-0.595
RU-106DA	-2.651E+01		4.064E+01	1.584E+02	3.202E+00	-0.167
AG-108M	-1.193E+01		8.242E+00	2.696E+01	5.400E-01	-0.442
AG-110M	-2.150E+00		4.612E+00	1.893E+01	3.896E-01	-0.114
SN-113DA	1.609E+01		1.057E+01	4.608E+01	9.220E-01	0.349

Sample ID : H4XTH1AC Acquisition date : 14-JUN-2006 13:55:31

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-5.807E+00		4.441E+00	1.522E+01	3.074E-01	-0.381
SB-125	-2.896E+01		2.208E+01	7.351E+01	1.472E+00	-0.394
SN-126DA	-1.593E+00		4.136E+00	1.663E+01	3.372E-01	-0.096
I-131	3.233E+00		1.644E+01	6.548E+01	1.310E+00	0.049
CS-134	-3.385E+00		4.794E+00	1.823E+01	3.728E-01	-0.186
CS-137DA	5.117E+00		4.394E+00	2.190E+01	4.439E-01	0.234
LA-138	-9.889E-03		3.189E+00	1.655E+01	3.540E-01	-0.001
CE-139	2.377E+01		1.501E+01	5.844E+01	1.193E+00	0.407
BA-140	2.838E+01		2.865E+01	1.323E+02	2.662E+00	0.215
BALA-140	8.905E+00		6.822E+00	4.570E+01	9.882E-01	0.195
LA-140	-1.822E+00		9.779E+01	5.017E+02	1.085E+01	-0.004
CE-141	-9.984E+00		2.764E+01	9.763E+01	2.008E+00	-0.102
CE-144	4.720E+00		1.033E+02	3.755E+02	7.766E+00	0.013
CEPR-144	8.346E+00		2.066E+02	7.506E+02	1.552E+01	0.011
PM-144	2.351E+00		3.923E+00	1.828E+01	3.696E-01	0.129
PM-146	-3.251E+00		7.208E+00	2.766E+01	5.543E-01	-0.118
EU-152	-5.703E+01		2.865E+01	8.877E+01	1.775E+00	-0.643
EU-154	-1.225E+01		9.248E+00	3.081E+01	6.519E-01	-0.397
EU-155	4.266E+01		5.193E+01	1.991E+02	4.192E+00	0.214
HF-181	1.815E+00		4.482E+00	2.122E+01	4.257E-01	0.086
BI-207	3.815E-01		4.459E+00	1.896E+01	3.822E-01	0.020
TL-208	6.331E+00		6.886E+00	2.977E+01	6.004E-01	0.213
BI-210M	7.930E+00		1.369E+01	5.554E+01	1.114E+00	0.143
BI-212	2.271E+01		5.706E+01	2.605E+02	7.962E+00	0.087
PB-212	2.699E+00		2.342E+01	8.776E+01	1.765E+00	0.031
BI-214	3.848E+00		1.082E+01	4.593E+01	9.278E-01	0.084
PB-214	-7.663E+01		2.784E+01	5.980E+01	1.196E+00	-1.281
RA-223	8.622E+00		5.780E+01	2.222E+02	4.455E+00	0.039
RA-224DA	2.724E+00		2.363E+01	8.856E+01	1.781E+00	0.031
RA-226DA	3.848E+00		1.082E+01	4.593E+01	9.278E-01	0.084
AC-227DA	-5.099E+01		8.449E+01	3.026E+02	6.088E+00	-0.168
AC-228	2.798E+01		1.431E+01	7.546E+01	1.556E+00	0.371
RA-228DA	2.806E+01		1.436E+01	7.569E+01	1.561E+00	0.371
TH-228DA	1.778E+01		1.934E+01	8.361E+01	1.686E+00	0.213
TH-232DA	5.557E+01		6.844E+01	2.704E+02	5.409E+00	0.205
TH-234DA	-4.754E+02		4.625E+02	1.647E+03	3.419E+01	-0.289
U-234DA	-7.829E+00		4.561E+01	1.733E+02	3.471E+00	-0.045
U-235HP	-2.726E+00		1.054E+02	3.800E+02	7.821E+00	-0.007
NP-237DA	-2.272E+01		2.246E+01	7.793E+01	1.559E+00	-0.292
U-238DA	-7.663E+01		2.784E+01	5.980E+01	1.196E+00	-1.281
U-238DHP	2.601E+02		4.766E+02	1.793E+03	3.977E+01	0.145
AM-241HP	-8.106E+01		4.662E+01	1.528E+02	3.416E+00	-0.530


STL Richland WA.
BA133
Batch ID: 6129266
Sample ID: H4XTL1AC
Detector ID: GER13 1
133 Ba
133 Ba
133 Ba
133 Ba, 208 Tl
133 Ba
Counts
200
100
20
10
2
1
Energy
50
100
200
500
1000
2000
()
Energy Coefficients:
Offset: -5.88556E-01
Slope: 2.50712E-01
Quadrature: -9.27656E-08
Acquisition Start: 14-JUN-2006 13:55:37.98
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

SAMPLE IDENTIFICATION: H4XTL1AC

CONFIGURATION ID: GER13:H4XTL1AC_140661355
TITLE : BA133
SAMPLE ID : H4XTL1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:55:37
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:43:45.07
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: -.5886E+00 keV
ENERGY SLOPE: 2.5071E-01 keV/C
ENERGY Q COEFF: -.9277E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0477E-01 keV
FWHM SLOPE: 4.4272E-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 14-JUN-2006 14:26:32

Configuration : $DISK1:[GER13.SAMPLE]H4XTL1AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:37
Sample ID : H4XTL1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.39 0.0%
Start energy : 19.47 End energy : 2047.02
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.82	234	67	1.02	328.74	320	17	1.30E-01	10.4	
2	0	276.33	58	11	1.10	1104.98	1100	11	3.20E-02	17.9	
3	0	302.80	127	42	0.82	1210.66	1203	17	7.08E-02	14.7	
4	0	355.84	420	50	0.93	1422.41	1412	20	2.34E-01	6.4	
5	0	383.46	69	4	0.97	1532.70	1524	17	3.83E-02	13.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 14:26:32

Configuration : $DISK1:[GER13.SAMPLE]H4XTL1AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:37
Sample ID : H4XTL1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.39 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	234	33.00	2.704E+00	8.758E+02	8.772E+02	11.70
	276.40	58	6.90	2.897E+00	9.610E+02	9.625E+02	18.73
	302.84	127	17.80	2.900E+00	8.229E+02	8.243E+02	15.63
	356.00	420	62.05*	2.903E+00	7.781E+02	7.794E+02	8.35
	383.85	69	8.70	2.902E+00	9.093E+02	9.108E+02	14.86

Flag: "*" = Keyline

None

Flags: "T" = Tentatively associated

Sample ID : H4XTL1AC Acquisition date : 14-JUN-2006 13:55:37

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	9.751E+02	18.73	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 14-JUN-2006 14:26:34

Configuration : $DISK1:[GER13.SAMPLE]H4XTL1AC_140661355.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:37
Sample ID : H4XTL1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.39 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	6.508E+01	6.320E+01	1.264E+00	12.333

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	1.005E+02		7.388E+01	3.012E+02	6.041E+00	0.334
NA-22	-1.146E+00		4.024E+00	1.598E+01	3.372E-01	-0.072
K-40	-1.687E+02		8.760E+01	4.104E+02	8.764E+00	-0.411
SC-46	-1.389E+00		5.662E+00	2.354E+01	4.916E-01	-0.059
CR-51	-2.864E+01		1.098E+02	3.921E+02	7.844E+00	-0.073
MN-54	1.299E+00		5.271E+00	2.102E+01	4.306E-01	0.062
CO-57	2.593E+01		1.077E+02	3.964E+02	8.171E+00	0.065
CO-58	1.240E+00		5.608E+00	2.241E+01	4.582E-01	0.055
FE-59	1.668E+01		1.232E+01	5.198E+01	1.084E+00	0.321
CO-60	-2.785E-01		5.172E+00	2.016E+01	4.270E-01	-0.014
ZN-65	-5.916E-01		1.097E+01	4.218E+01	8.806E-01	-0.014
SE-75	1.442E+01		1.737E+01	6.574E+01	1.319E+00	0.219
SR-85	-3.035E+01		1.158E+01	3.431E+01	6.893E-01	-0.885
Y-88	6.557E-02		3.253E+00	1.440E+01	3.147E-01	0.005
NB-94	-5.700E+00		4.709E+00	1.593E+01	3.271E-01	-0.358
NB-95	-2.148E-01		7.003E+00	2.689E+01	5.483E-01	-0.008
TC-95M	1.809E+01		1.860E+01	6.891E+01	1.392E+00	0.262
ZR-95	1.054E+01		1.137E+01	4.724E+01	9.627E-01	0.223
ZRNB-95	-8.519E-02		1.294E+01	4.976E+01	1.015E+00	-0.002
MO-99	1.470E+02		1.187E+02	4.555E+02	9.372E+00	0.323
RH-101	1.497E+01		1.432E+01	5.376E+01	1.087E+00	0.278
RH-102M	-3.761E+00		7.350E+00	2.624E+01	5.262E-01	-0.143
RU-103	-1.399E+01		8.800E+00	2.819E+01	5.659E-01	-0.496
RU-106DA	4.831E+01		6.831E+01	2.705E+02	5.465E+00	0.179
AG-108M	-7.210E+00		8.083E+00	2.812E+01	5.630E-01	-0.256
AG-110M	-3.114E+00		6.864E+00	2.559E+01	5.259E-01	-0.122
SN-113DA	-2.574E+01		1.172E+01	3.646E+01	7.295E-01	-0.706

Sample ID : H4XTL1AC Acquisition date : 14-JUN-2006 13:55:37

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	1.118E-01		7.400E+00	2.797E+01	5.645E-01	0.004
SB-125	-6.595E+00		2.221E+01	8.196E+01	1.641E+00	-0.080
SN-126DA	-2.685E+00		5.551E+00	2.029E+01	4.111E-01	-0.132
I-131	-2.613E+01		2.021E+01	6.620E+01	1.324E+00	-0.395
CS-134	4.331E+00		7.167E+00	2.869E+01	5.860E-01	0.151
CS-137DA	-2.592E+00		7.133E+00	2.615E+01	5.295E-01	-0.099
LA-138	-2.115E+00		4.963E+00	1.974E+01	4.208E-01	-0.107
CE-139	4.830E+00		1.561E+01	5.657E+01	1.153E+00	0.085
BA-140	-6.986E+01		3.875E+01	1.249E+02	2.512E+00	-0.559
BALA-140	4.232E+00		1.272E+01	5.552E+01	1.196E+00	0.076
LA-140	6.947E+01		1.498E+02	6.834E+02	1.472E+01	0.102
CE-141	1.024E+01		2.813E+01	1.036E+02	2.128E+00	0.099
CE-144	-6.693E+01		1.095E+02	3.695E+02	7.628E+00	-0.181
CEPR-144	-1.374E+02		2.189E+02	7.378E+02	1.523E+01	-0.186
PM-144	2.417E+00		6.744E+00	2.608E+01	5.268E-01	0.093
PM-146	-3.847E+00		1.126E+01	4.072E+01	8.161E-01	-0.094
EU-152	-1.472E+01		3.329E+01	1.166E+02	2.331E+00	-0.126
EU-154	1.739E-01		1.076E+01	4.479E+01	9.448E-01	0.004
EU-155	6.948E+01		4.614E+01	1.801E+02	3.782E+00	0.386
HF-181	2.606E+00		8.660E+00	3.343E+01	6.706E-01	0.078
BI-207	5.987E+00		5.836E+00	2.436E+01	4.908E-01	0.246
TL-208	2.168E-01		8.742E+00	3.492E+01	7.040E-01	0.006
BI-210M	1.150E+01		2.020E+01	7.529E+01	1.510E+00	0.153
BI-212	1.052E+02		8.490E+01	3.626E+02	1.108E+01	0.290
PB-212	1.320E+01		2.458E+01	9.380E+01	1.886E+00	0.141
BI-214	-3.542E+01		1.510E+01	5.522E+01	1.115E+00	-0.641
PB-214	1.506E+01		3.260E+01	1.102E+02	2.204E+00	0.137
RA-223	1.006E+01		6.571E+01	2.428E+02	4.869E+00	0.041
RA-224DA	1.332E+01		2.481E+01	9.465E+01	1.903E+00	0.141
RA-226DA	-3.532E+01		1.510E+01	5.527E+01	1.116E+00	-0.639
AC-227DA	-1.782E+02		1.044E+02	3.307E+02	6.650E+00	-0.539
AC-228	-1.204E+01		2.099E+01	8.838E+01	1.820E+00	-0.136
RA-228DA	-1.208E+01		2.106E+01	8.865E+01	1.825E+00	-0.136
TH-228DA	6.090E-01		2.455E+01	9.808E+01	1.977E+00	0.006
TH-232DA	1.264E+00		6.200E+01	2.271E+02	4.542E+00	0.006
TH-234DA	-3.297E+02		8.104E+02	3.047E+03	6.311E+01	-0.108
U-234DA	-5.477E+01		4.688E+01	1.581E+02	3.165E+00	-0.346
U-235HP	1.503E+01		1.053E+02	3.852E+02	7.914E+00	0.039
NP-237DA	-2.294E+01		2.796E+01	9.566E+01	1.914E+00	-0.240
U-238DA	1.506E+01		3.260E+01	1.102E+02	2.204E+00	0.137
U-238DHP	-2.391E+02		2.869E+02	1.012E+03	2.232E+01	-0.236
AM-241HP	1.362E+01		2.923E+01	1.059E+02	2.352E+00	0.129

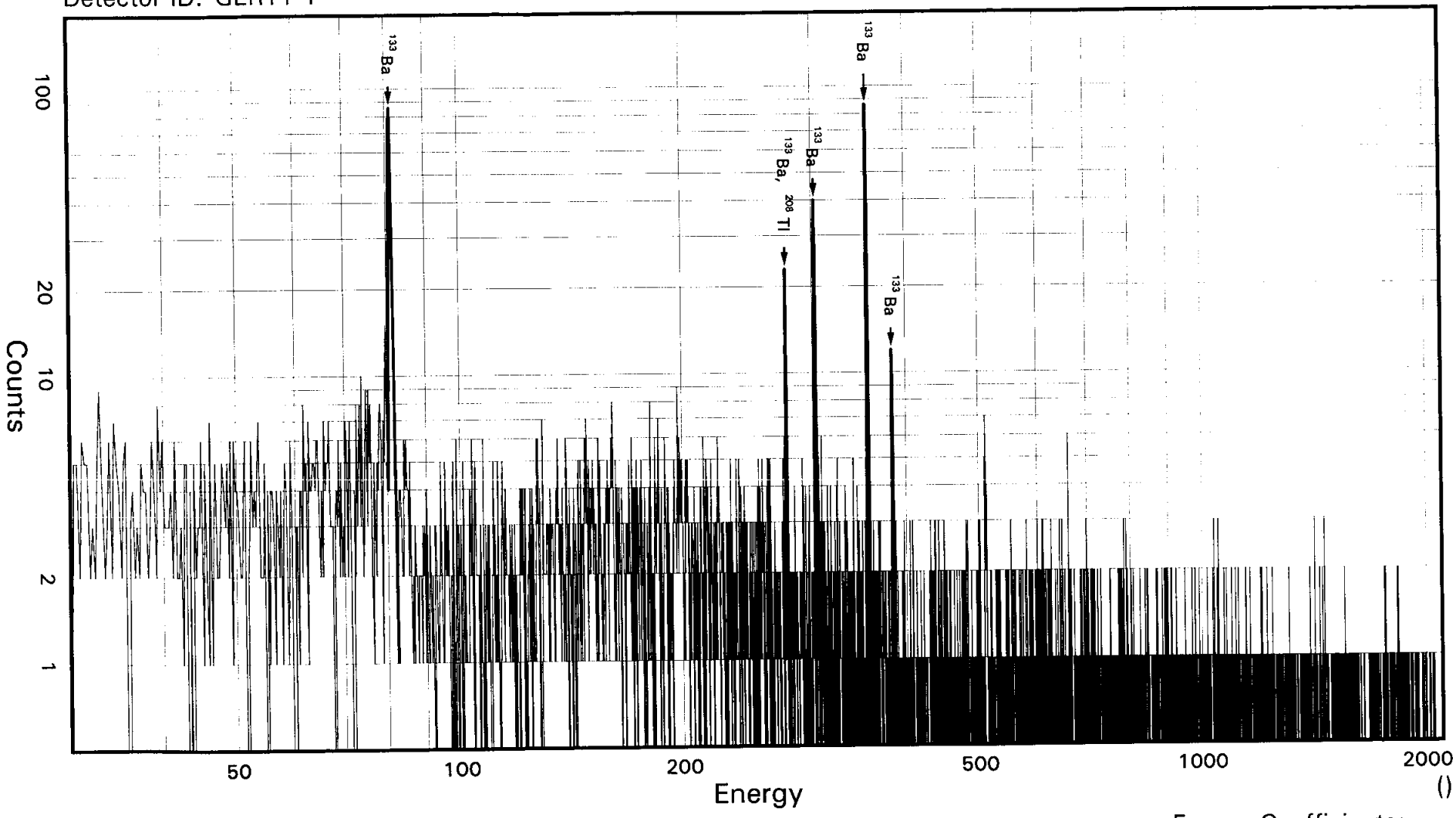
STL Richland WA.

BA133

Sample ID: H4XTM1AC

Detector ID: GER11 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 13:55:52.67

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: -1.94186E+00

Slope: 2.50342E-01

Quadrature: 3.76880E-08

SAMPLE IDENTIFICATION: H4XTM1AC

CONFIGURATION ID: GER11:H4XTM1AC_140661355
TITLE : BA133
SAMPLE ID : H4XTM1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:55:52
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:24:34.34
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: -.1942E+01 keV
ENERGY SLOPE: 2.5034E-01 keV/C
ENERGY Q COEFF: 3.7688E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.1872E-01 keV
FWHM SLOPE: 4.0499E-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 14-JUN-2006 14:26:47

Configuration : $DISK1:[GER11.SAMPLE]H4XTM1AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:52
Sample ID : H4XTM1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.96 0.1%
Start energy : 0.56 End energy : 2051.39
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.16	221	56	0.61	331.93	327	10	1.23E-01	9.3	
2	0	276.38	49	21	0.46	1111.60	1105	11	2.70E-02	23.5	
3	0	302.83	142	31	0.97	1217.19	1209	18	7.89E-02	12.5	
4	0	355.82	376	16	0.92	1428.78	1422	16	2.09E-01	5.7	
5	0	383.40	57	0	1.11	1538.89	1531	14	3.17E-02	13.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 14:26:47

Configuration : $DISK1:[GER11.SAMPLE]H4XTM1AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:52
Sample ID : H4XTM1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.96 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	221	33.00	2.679E+00	8.334E+02	8.348E+02	10.82
	276.40	49	6.90	2.873E+00	8.187E+02	8.200E+02	24.07
	302.84	142	17.80	2.877E+00	9.251E+02	9.266E+02	13.60
	356.00	376	62.05*	2.879E+00	7.016E+02	7.027E+02	7.83
	383.85	57	8.70	2.878E+00	7.587E+02	7.600E+02	14.30

Flag: "*" = Keyline

None

Flags: "T" = Tentatively associated

Sample ID : H4XTM1AC Acquisition date : 14-JUN-2006 13:55:52

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	8.307E+02	24.07	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 14-JUN-2006 14:26:49

Configuration : $DISK1:[GER11.SAMPLE]H4XTM1AC_140661355.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:55:52
Sample ID : H4XTM1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.96 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	7.027E+02	5.500E+01	3.361E+01	6.722E-01	20.910

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.608E+01		5.962E+01	2.272E+02	4.558E+00	-0.071
NA-22	3.691E+00		2.140E+00	1.323E+01	2.792E-01	0.279
K-40	-2.662E+01		4.273E+01	2.180E+02	4.655E+00	-0.122
SC-46	-1.182E+00		3.613E+00	1.451E+01	3.030E-01	-0.081
CR-51	-1.843E+01		7.023E+01	2.681E+02	5.364E+00	-0.069
MN-54	1.376E+00		3.755E+00	1.622E+01	3.323E-01	0.085
CO-57	6.471E+01		7.976E+01	3.062E+02	6.311E+00	0.211
CO-58	1.046E+00		4.361E+00	1.827E+01	3.737E-01	0.057
FE-59	-5.408E+00		7.139E+00	2.647E+01	5.520E-01	-0.204
CO-60	-3.773E+00		2.795E+00	9.045E+00	1.916E-01	-0.417
ZN-65	2.649E+00		8.391E+00	3.516E+01	7.340E-01	0.075
SE-75	-6.824E+00		1.144E+01	4.049E+01	8.121E-01	-0.169
SR-85	-2.254E+01		8.462E+00	2.490E+01	5.001E-01	-0.905
Y-88	1.416E+00		2.991E+00	1.453E+01	3.174E-01	0.097
NB-94	1.392E+00		3.740E+00	1.607E+01	3.299E-01	0.087
NB-95	-3.088E+00		4.883E+00	1.831E+01	3.733E-01	-0.169
TC-95M	-1.234E+01		1.384E+01	4.838E+01	9.775E-01	-0.255
ZR-95	2.371E+00		7.057E+00	3.084E+01	6.284E-01	0.077
ZRNB-95	-5.378E+00		9.043E+00	3.407E+01	6.946E-01	-0.158
MO-99	-1.274E+01		8.181E+01	3.049E+02	6.274E+00	-0.042
RH-101	1.478E+01		1.354E+01	5.297E+01	1.072E+00	0.279
RH-102M	-2.812E-01		5.229E+00	2.066E+01	4.144E-01	-0.014
RU-103	1.994E+00		6.199E+00	2.550E+01	5.118E-01	0.078
RU-106DA	1.285E+01		4.544E+01	1.861E+02	3.760E+00	0.069
AG-108M	-1.228E+01		6.814E+00	2.098E+01	4.202E-01	-0.585
AG-110M	-2.833E+00		5.152E+00	2.017E+01	4.146E-01	-0.140
SN-113DA	-5.513E+00		6.940E+00	2.513E+01	5.028E-01	-0.219

Sample ID : H4XTM1AC Acquisition date : 14-JUN-2006 13:55:52

---- Non-Identified Nuclides ----

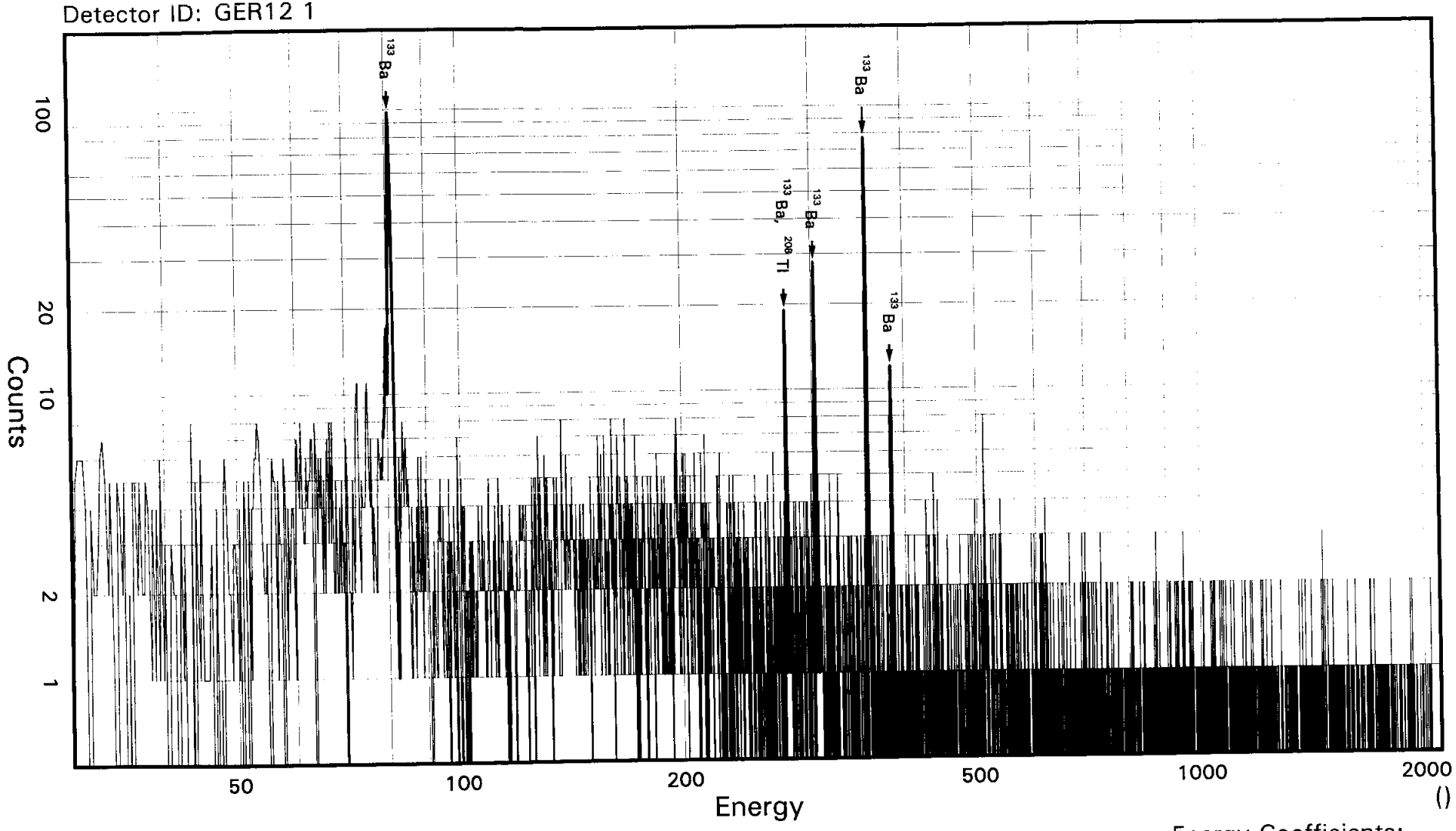
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	8.001E+00		6.068E+00	2.607E+01	5.261E-01	0.307
SB-125	-2.880E+01		1.628E+01	4.938E+01	9.886E-01	-0.583
SN-126DA	3.708E+00		3.465E+00	1.654E+01	3.351E-01	0.224
I-131	-3.927E+00		1.603E+01	5.999E+01	1.200E+00	-0.065
CS-134	-5.925E+00		4.465E+00	1.482E+01	3.028E-01	-0.400
CS-137DA	-1.062E+01		6.609E+00	2.886E+01	5.845E-01	-0.368
LA-138	-1.601E+00		4.028E+00	1.717E+01	3.661E-01	-0.093
CE-139	-8.655E-01		1.019E+01	3.654E+01	7.450E-01	-0.024
BA-140	-2.238E+01		2.516E+01	9.149E+01	1.840E+00	-0.245
BALA-140	4.270E+00		9.562E+00	4.598E+01	9.902E-01	0.093
LA-140	5.602E+01		1.255E+02	6.033E+02	1.299E+01	0.093
CE-141	1.557E+01		1.990E+01	7.639E+01	1.569E+00	0.204
CE-144	-5.012E+01		7.472E+01	2.613E+02	5.393E+00	-0.192
CEPR-144	-1.002E+02		1.494E+02	5.225E+02	1.079E+01	-0.192
PM-144	1.494E+00		4.516E+00	1.858E+01	3.752E-01	0.080
PM-146	-6.303E-01		7.504E+00	2.876E+01	5.763E-01	-0.022
EU-152	2.115E+01		1.964E+01	8.399E+01	1.680E+00	0.252
EU-154	1.034E+01		5.998E+00	3.708E+01	7.825E-01	0.279
EU-155	2.219E+01		3.313E+01	1.323E+02	2.777E+00	0.168
HF-181	1.469E+01		6.640E+00	3.149E+01	6.317E-01	0.466
BI-207	-2.378E+00		4.838E+00	1.806E+01	3.639E-01	-0.132
TL-208	-4.021E+00		5.507E+00	1.995E+01	4.022E-01	-0.202
BI-210M	6.623E+00		1.247E+01	4.878E+01	9.784E-01	0.136
BI-212	-5.238E+01		3.955E+01	1.316E+02	4.020E+00	-0.398
PB-212	-3.512E+00		1.679E+01	6.119E+01	1.230E+00	-0.057
BI-214	1.428E+01		1.205E+01	5.075E+01	1.025E+00	0.281
PB-214	1.680E+01		1.510E+01	6.004E+01	1.201E+00	0.280
RA-223	-1.875E+00		4.164E+01	1.574E+02	3.155E+00	-0.012
RA-224DA	-3.543E+00		1.695E+01	6.175E+01	1.241E+00	-0.057
RA-226DA	1.689E+01		1.177E+01	5.074E+01	1.024E+00	0.333
AC-227DA	2.229E+01		5.860E+01	2.264E+02	4.553E+00	0.098
AC-228	6.042E+00		1.745E+01	7.192E+01	1.481E+00	0.084
RA-228DA	6.060E+00		1.750E+01	7.214E+01	1.485E+00	0.084
TH-228DA	-1.129E+01		1.547E+01	5.603E+01	1.130E+00	-0.202
TH-232DA	5.873E+01		4.696E+01	1.985E+02	3.969E+00	0.296
TH-234DA	-1.840E+02		3.194E+02	1.357E+03	2.810E+01	-0.136
U-234DA	4.540E+00		3.341E+01	1.250E+02	2.504E+00	0.036
U-235HP	5.721E+00		6.925E+01	2.568E+02	5.278E+00	0.022
NP-237DA	-1.415E+01		1.760E+01	6.332E+01	1.267E+00	-0.224
U-238DA	1.680E+01		1.510E+01	6.004E+01	1.201E+00	0.280
U-238DHP	1.819E+01		2.678E+02	9.581E+02	2.114E+01	0.019
AM-241HP	-2.646E+01		2.229E+01	7.399E+01	1.644E+00	-0.358

STL Richland WA.

BA133

Sample ID: H4XTN1AC
Detector ID: GER12 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 13:55:59.37
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.25125E+01
Slope: 2.47553E-01
Quadrature: -1.23727E-08

SAMPLE IDENTIFICATION: H4XTN1AC

CONFIGURATION ID: GER12:H4XTN1AC_140661355
TITLE : BA133
SAMPLE ID : H4XTN1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:55:59
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:25:05.00
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: 1.2512E+01 keV
ENERGY SLOPE: 2.4755E-01 keV/C
ENERGY Q COEFF: -.1237E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.6475E-01 keV
FWHM SLOPE: 3.7941E-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 14-JUN-2006 14:27:02

Configuration	: $DISK1:[GER12.SAMPLE]H4XTN1AC_140661355.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6		
Sample title	: BA133		
Sample date	: 5-JUN-2006 12:00:00	Acquisition date	: 14-JUN-2006 13:55:59
Sample ID	: H4XTN1AC	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	: 12.76	End energy	: 2039.64
Sensitivity	: 5.00	Gaussian	: 10.00
Critical level	: No		

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	72.92*	5	25	0.62	244.03	240	7	2.59E-03	195.5	
2	0	80.86	328	61	0.68	276.09	268	15	1.82E-01	7.5	
3	0	276.42	55	26	0.78	1066.11	1058	15	3.07E-02	24.2	
4	0	302.80	125	13	0.85	1172.71	1166	16	6.97E-02	10.9	
5	0	356.01	376	19	1.10	1387.68	1378	19	2.09E-01	5.9	
6	0	383.66	68	4	1.45	1499.38	1492	16	3.76E-02	13.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 14:27:02

Configuration : $DISK1:[GER12.SAMPLE]H4XTN1AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00
Sample ID : H4XTN1AC
Sample type :
Elapsed live time: 0 00:30:00.00
Energy tolerance : 2.00
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 14-JUN-2006 13:55:59
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.35 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

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	328	33.00	2.899E+00	1.145E+03	1.146E+03	9.30
	276.40	55	6.90	3.105E+00	8.606E+02	8.621E+02	24.81
	302.84	125	17.80	3.109E+00	7.557E+02	7.569E+02	12.13
	356.00	376	62.05*	3.111E+00	6.495E+02	6.506E+02	7.96
	383.85	68	8.70	3.111E+00	8.343E+02	8.357E+02	14.86

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4XTN1AC

Acquisition date : 14-JUN-2006 13:55:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	72.92	5	25	0.62	244.03	240	7	2.59E-03	****	2.87E+00	

Flags: "T" = Tentatively associated

Sample ID : H4XTN1AC
Acquisition date : 14-JUN-2006 13:55:59

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	8.733E+02	24.81	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 14-JUN-2006 14:27:04

Configuration : $DISK1:[GER12.SAMPLE]H4XTN1AC_140661355.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 : 5-JUN-2006 12:00:00
Sample ID : H4XTN1AC
Sample type :
Elapsed live time: 0 00:30:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 2.00
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 14-JUN-2006 13:55:59
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.35 0.0%
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	6.506E+02	5.176E+01	3.272E+01	6.544E-01	19.884

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-3.627E+01		3.578E+01	1.259E+02	2.526E+00	-0.288
NA-22	-2.369E+00		1.680E+00	3.074E+00	6.477E-02	-0.771
K-40	-1.532E+01		4.885E+01	2.402E+02	5.121E+00	-0.064
SC-46	5.678E-02		3.793E+00	1.579E+01	3.294E-01	0.004
CR-51	-6.557E+01		6.923E+01	2.379E+02	4.760E+00	-0.276
MN-54	2.356E+00		3.857E+00	1.682E+01	3.443E-01	0.140
CO-57	-2.544E+01		7.957E+01	2.862E+02	5.896E+00	-0.089
CO-58	4.914E+00		3.786E+00	1.807E+01	3.693E-01	0.272
FE-59	2.466E+00		7.489E+00	3.206E+01	6.680E-01	0.077
CO-60	1.178E+00		1.947E+00	1.055E+01	2.231E-01	0.112
ZN-65	2.385E+00		7.456E+00	3.184E+01	6.640E-01	0.075
SE-75	1.046E-01		9.968E+00	3.799E+01	7.620E-01	0.003
SR-85	-2.301E+01		8.591E+00	2.451E+01	4.922E-01	-0.939
Y-88	-1.253E+00		1.255E+00	3.371E+00	7.352E-02	-0.372
NB-94	4.401E+00		4.403E+00	1.914E+01	3.927E-01	0.230
NB-95	-3.857E+00		4.160E+00	1.528E+01	3.115E-01	-0.252
TC-95M	9.601E+00		1.465E+01	5.395E+01	1.090E+00	0.178
ZR-95	-2.953E+00		6.793E+00	2.696E+01	5.491E-01	-0.110
ZRNB-95	-7.400E+00		7.621E+00	2.781E+01	5.667E-01	-0.266
MO-99	1.091E+01		9.495E+01	3.560E+02	7.321E+00	0.031
RH-101	-9.117E+00		1.379E+01	4.784E+01	9.675E-01	-0.191
RH-102M	-4.802E+00		3.686E+00	1.224E+01	2.454E-01	-0.392
RU-103	-4.428E+00		6.750E+00	2.410E+01	4.838E-01	-0.184
RU-106DA	-8.866E+01		5.265E+01	1.686E+02	3.405E+00	-0.526
AG-108M	-1.671E+01		6.597E+00	1.892E+01	3.789E-01	-0.883
AG-110M	1.225E+00		5.579E+00	2.308E+01	4.740E-01	0.053
SN-113DA	-3.594E+00		7.178E+00	2.707E+01	5.415E-01	-0.133

Sample ID : H4XTN1AC Acquisition date : 14-JUN-2006 13:55:59

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	2.296E+00		5.401E+00	2.198E+01	4.434E-01	0.104
SB-125	4.514E-01		1.645E+01	6.425E+01	1.286E+00	0.007
SN-126DA	3.178E+00		3.628E+00	1.629E+01	3.299E-01	0.195
I-131	-5.824E+00		1.405E+01	5.273E+01	1.055E+00	-0.110
CS-134	1.379E+00		2.851E+00	1.389E+01	2.837E-01	0.099
CS-137DA	-9.017E+00		4.324E+00	1.198E+01	2.425E-01	-0.753
LA-138	1.734E+00		3.814E+00	1.839E+01	3.916E-01	0.094
CE-139	-1.829E+01		1.223E+01	3.980E+01	8.111E-01	-0.459
BA-140	3.187E+01		3.236E+01	1.373E+02	2.761E+00	0.232
BALA-140	-2.059E+01		1.083E+01	2.903E+01	6.243E-01	-0.709
LA-140	-2.703E+02		1.421E+02	3.810E+02	8.193E+00	-0.709
CE-141	-1.088E+01		1.907E+01	6.755E+01	1.386E+00	-0.161
CE-144	-1.066E+02		7.651E+01	2.561E+02	5.282E+00	-0.416
CEPR-144	-2.124E+02		1.531E+02	5.125E+02	1.057E+01	-0.414
PM-144	1.007E+01		5.340E+00	2.366E+01	4.779E-01	0.426
PM-146	1.138E+01		6.449E+00	2.991E+01	5.993E-01	0.380
EU-152	2.525E+01		2.086E+01	8.612E+01	1.723E+00	0.293
EU-154	-3.319E+00		3.324E+00	8.612E+00	1.815E-01	-0.385
EU-155	-5.150E+00		3.415E+01	1.282E+02	2.690E+00	-0.040
HF-181	9.276E-01		6.670E+00	2.615E+01	5.246E-01	0.035
BI-207	-2.938E+00		4.185E+00	1.557E+01	3.136E-01	-0.189
TL-208	3.924E+00		3.371E+00	1.680E+01	3.387E-01	0.234
BI-210M	6.657E+00		1.231E+01	4.819E+01	9.665E-01	0.138
BI-212	1.231E+01		5.620E+01	2.333E+02	7.125E+00	0.053
PB-212	1.336E+01		1.481E+01	5.902E+01	1.186E+00	0.226
BI-214	-3.370E+00		1.318E+01	4.881E+01	9.853E-01	-0.069
PB-214	-5.892E+00		1.636E+01	5.220E+01	1.044E+00	-0.113
RA-223	-1.195E+01		4.496E+01	1.658E+02	3.324E+00	-0.072
RA-224DA	1.348E+01		1.494E+01	5.955E+01	1.197E+00	0.226
RA-226DA	-3.466E+00		1.317E+01	4.875E+01	9.842E-01	-0.071
AC-227DA	2.174E+01		6.133E+01	2.348E+02	4.722E+00	0.093
AC-228	-1.606E-01		1.393E+01	5.630E+01	1.158E+00	-0.003
RA-228DA	-1.611E-01		1.397E+01	5.647E+01	1.162E+00	-0.003
TH-228DA	1.102E+01		9.468E+00	4.719E+01	9.512E-01	0.234
TH-232DA	3.519E+01		4.620E+01	1.835E+02	3.669E+00	0.192
TH-234DA	1.217E+02		5.222E+02	2.222E+03	4.600E+01	0.055
U-234DA	1.342E+00		3.133E+01	1.178E+02	2.359E+00	0.011
U-235HP	-1.047E+02		7.532E+01	2.505E+02	5.145E+00	-0.418
NP-237DA	1.071E+01		1.551E+01	6.184E+01	1.238E+00	0.173
U-238DA	-5.892E+00		1.636E+01	5.220E+01	1.044E+00	-0.113
U-238DHP	2.285E+02		2.715E+02	1.016E+03	2.236E+01	0.225
AM-241HP	-5.124E+00		2.564E+01	9.224E+01	2.045E+00	-0.056

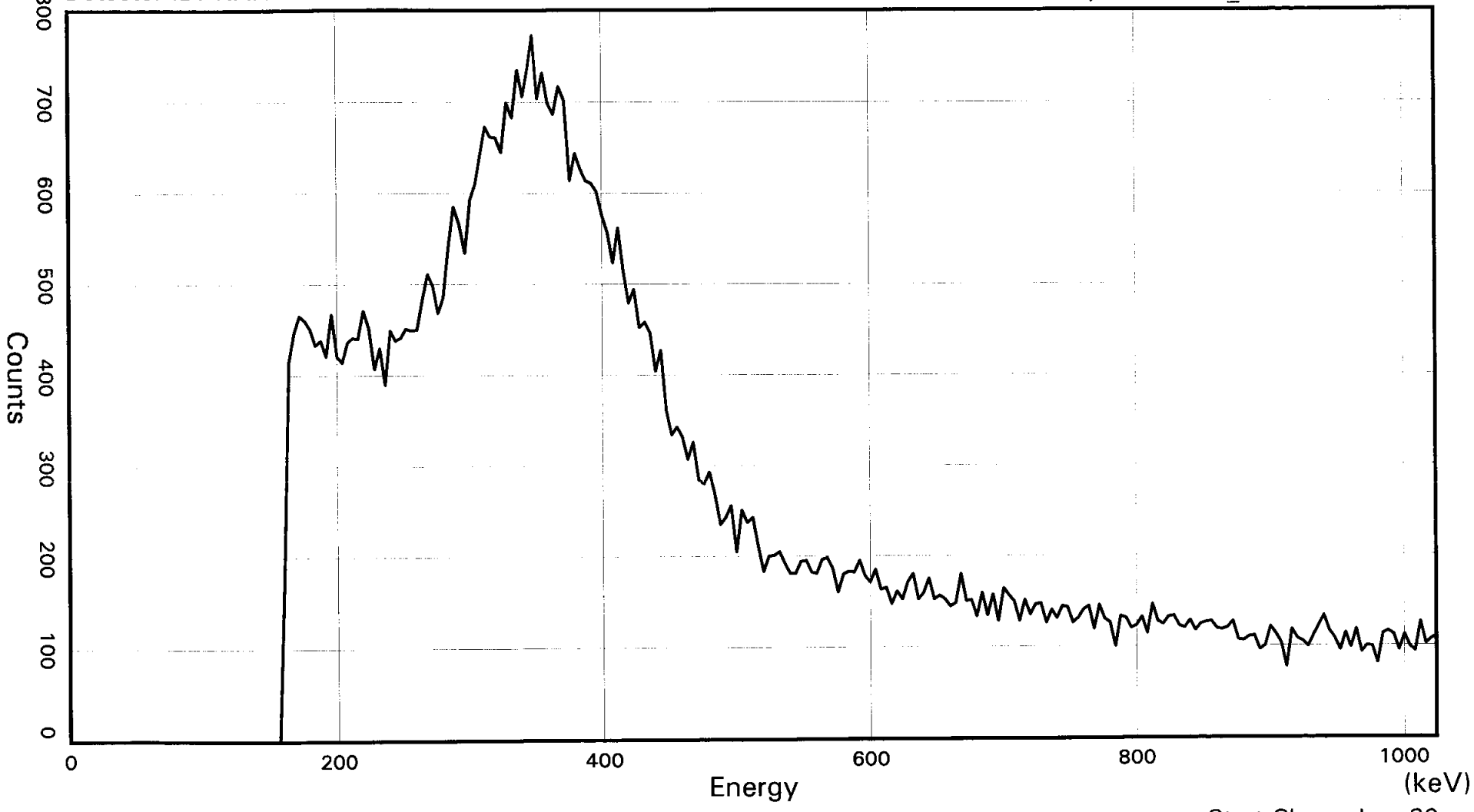
STL Richland WA.

BA133

Sample ID: H4XTP1AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start:	14-JUN-2006 14:35:44.17
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: H4XTP1AC

CONFIGURATION ID: NAI1:H4XTP1AC_140661435
TITLE : BA133
SAMPLE ID : H4XTP1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 14:35:44
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-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 14-JUN-2006 15:05:49

Configuration	: RDND06$DKA100:[NAI1.SAMPLE]H4XTP1AC_140661435.CNF;1		
Analyses by	: NAI V3.0		
Sample title	: BA133		
Sample date	: 5-JUN-2006 12:00:00	Acquisition date	: 14-JUN-2006 14:35:44
Sample ID	: H4XTP1AC	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:	4.2	2.2	4.2	3.3	5.8	2.7	3.4	3.7
88:	0.4	1.7	-0.9	-0.8	2.2	-0.2	-1.6	-0.2
96:	-1.9	-2.4	-0.5	-0.8	-4.2	-2.4	-3.7	-1.8
104:	-3.5	-4.4	-2.5	-4.0	-3.9	-2.4	-3.0	-2.7
112:	-4.6	-5.2						

List of Suspicious Channels

81 82 83 84 85 86

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	9.72E+00	0.00E+00	1.03E+00
2	4.28E+00	0.00E+00	1.05E+00
3	1.13E+00	0.00E+00	1.07E+00

Sample ID : H4XTP1AC Acquisition date : 14-JUN-2006 14:35:44

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	698.	9.77

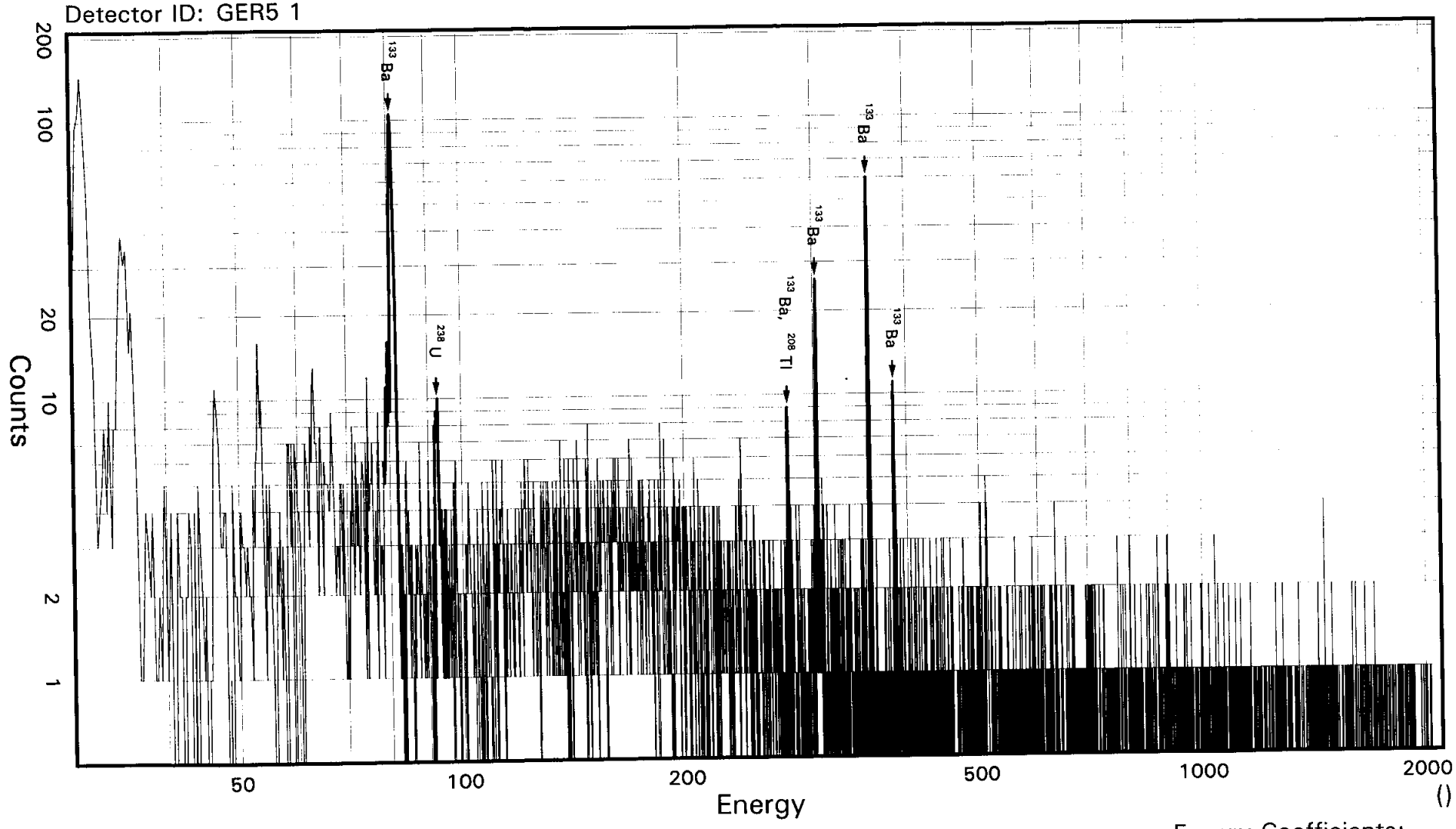
Total Activity :	698.	

STL Richland WA.

BA133

Sample ID: H4XTR1AC
Detector ID: GER5 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 14:35:56.02
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -3.90595E-01
Slope: 2.49428E-01
Quadrature: -2.97805E-09

SAMPLE IDENTIFICATION: H4XTR1AC

CONFIGURATION ID: GER5:H4XTR1AC_140661435
TITLE : BA133
SAMPLE ID : H4XTR1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 14:35:56
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:22:50.27
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: -.3906E+00 keV
ENERGY SLOPE: 2.4943E-01 keV/C
ENERGY Q COEFF: -.2978E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.0617E-01 keV
FWHM SLOPE: 2.2993E-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 14-JUN-2006 15:06:09

Configuration : RDND06$DKA100:[GER5.SAMPLE]H4XTR1AC_140661435.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:35:56
Sample ID : H4XTR1AC 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 : 19.56 End energy : 2042.73
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	30.94	550	114	0.97	125.63	116	16	3.05E-01	6.0	
2	0	35.34	179	58	1.41	143.25	135	16	9.97E-02	12.2	
3	0	46.84*	28	6	0.90	189.37	184	12	1.56E-02	30.6	
4	0	53.56*	58	14	0.76	216.30	210	15	3.22E-02	19.8	
5	0	80.90	442	44	0.91	325.90	316	20	2.46E-01	6.0	
6	0	92.65*	30	15	1.26	373.03	366	18	1.65E-02	38.8	
7	0	276.34	47	4	1.00	1109.47	1103	14	2.63E-02	16.8	
8	0	302.77	96	25	1.00	1215.43	1209	16	5.32E-02	15.4	
9	0	355.99	277	19	1.12	1428.82	1419	18	1.54E-01	7.0	
10	0	384.25	30	23	1.12	1542.14	1533	15	1.64E-02	39.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 14-JUN-2006 15:06:09

Configuration : RDND06$DKA100:[GER5.SAMPLE]H4XTR1AC_140661435.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:35:56
Sample ID : H4XTR1AC 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	442	33.00	1.924E+00	2.321E+03	2.325E+03	8.13
	276.40	47	6.90	2.077E+00	1.100E+03	1.101E+03	17.66
	302.84	96	17.80	2.080E+00	8.615E+02	8.630E+02	16.31
	356.00	277	62.05*	2.082E+00	7.160E+02	7.172E+02	8.83
	383.85	30	8.70	2.081E+00	5.431E+02	5.440E+02	39.95

Flag: "*" = Keyline

Unidentified Energy Lines
Page : 2
Sample ID : H4XTR1AC
Acquisition date : 14-JUN-2006 14:35:56

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	30.94	550	114	0.97	125.63	116	16	3.05E-01	6.0	1.68E+00	
0	35.34	179	58	1.41	143.25	135	16	9.97E-02	12.2	1.72E+00	
0	46.84	28	6	0.90	189.37	184	12	1.56E-02	30.6	1.80E+00	
0	53.56	58	14	0.76	216.30	210	15	3.22E-02	19.8	1.83E+00	
0	92.65	30	15	1.26	373.03	366	18	1.65E-02	38.8	1.95E+00	T

Flags: "T" = Tentatively associated

Sample ID : H4XTR1AC
Acquisition date : 14-JUN-2006 14:35:56

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	1.116E+03	17.66	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	--- Not Found ---		Abun.
			92.59	5.41	9.405E+02	39.20	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 14-JUN-2006 15:06:10

Configuration : RDND06$DKA100:[GER5.SAMPLE]H4XTR1AC_140661435.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:35:56
Sample ID : H4XTR1AC 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	7.172E+02	6.333E+01	4.996E+01	9.992E-01	14.354

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-8.358E+01		6.667E+01	2.277E+02	4.568E+00	-0.367
NA-22	-1.600E+00		3.775E+00	1.587E+01	3.364E-01	-0.101
NA-24	-3.783E-02		2.683E-02	Half-Life too short		
K-40	8.164E+01		6.577E+01	3.434E+02	7.378E+00	0.238
SC-46	3.165E+00		4.464E+00	2.142E+01	4.491E-01	0.148
CR-51	-1.193E+02		1.172E+02	3.986E+02	7.975E+00	-0.299
MN-54	1.765E+00		4.406E+00	2.013E+01	4.133E-01	0.088
CO-57	1.042E+02		1.264E+02	4.730E+02	9.778E+00	0.220
CO-58	5.714E+00		4.793E+00	2.386E+01	4.890E-01	0.239
FE-59	-7.493E+00		8.652E+00	3.171E+01	6.639E-01	-0.236
CO-60	3.574E-02		3.403E+00	1.587E+01	3.379E-01	0.002
ZN-65	-1.106E+01		9.332E+00	3.149E+01	6.599E-01	-0.351
SE-75	1.186E+01		1.672E+01	6.565E+01	1.317E+00	0.181
SR-85	-2.959E+01		1.073E+01	3.028E+01	6.086E-01	-0.977
Y-88	-1.805E+00		3.219E+00	1.385E+01	3.050E-01	-0.130
NB-94	8.279E+00		5.472E+00	2.613E+01	5.378E-01	0.317
NB-95	-9.314E+00		5.744E+00	1.821E+01	3.719E-01	-0.512
TC-95M	-1.538E+01		2.065E+01	7.227E+01	1.462E+00	-0.213
ZR-95	-7.045E+00		8.802E+00	3.350E+01	6.837E-01	-0.210
ZRNB-95	-1.716E+01		1.058E+01	3.354E+01	6.851E-01	-0.512
MO-99	-3.644E+01		1.516E+02	5.300E+02	1.094E+01	-0.069
RH-101	-9.983E+00		1.895E+01	6.688E+01	1.354E+00	-0.149
RH-102M	1.906E+00		6.535E+00	2.697E+01	5.409E-01	0.071
RU-103	1.761E-02		8.432E+00	3.353E+01	6.732E-01	0.001
RU-106DA	-1.077E+02		6.920E+01	2.202E+02	4.454E+00	-0.489
AG-108M	-1.503E+01		8.752E+00	2.828E+01	5.665E-01	-0.531
AG-110M	2.361E+00		6.156E+00	2.797E+01	5.763E-01	0.084

Sample ID : H4XTR1AC Acquisition date : 14-JUN-2006 14:35:56

---- Non-Identified Nuclides ----

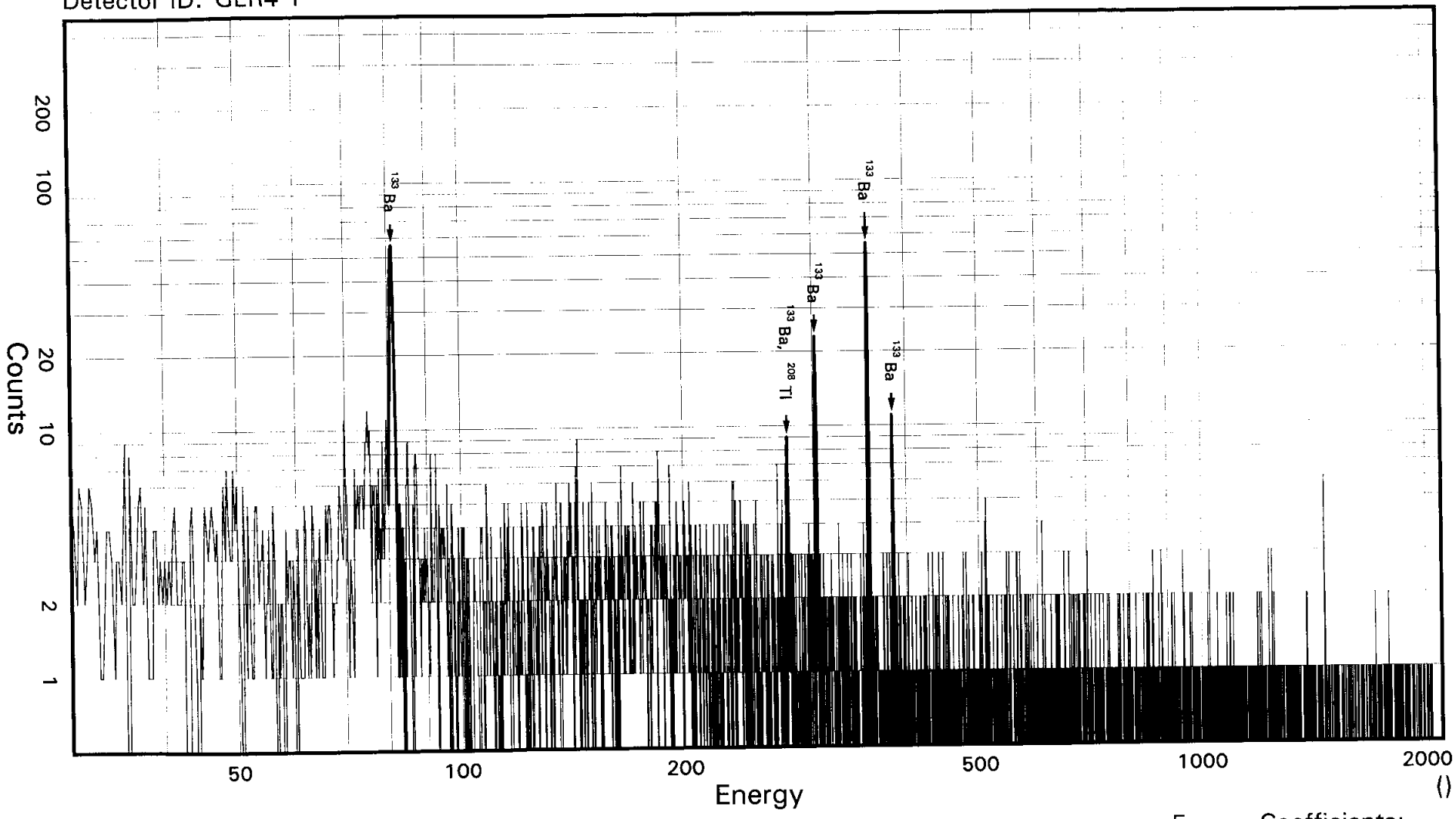
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SN-113DA	-1.806E+01		1.341E+01	4.565E+01	9.133E-01	-0.396
SB-124	2.392E+00		6.833E+00	2.831E+01	5.719E-01	0.084
SB-125	2.012E+01		2.616E+01	1.081E+02	2.165E+00	0.186
SN-126DA	-3.929E+00		6.266E+00	2.290E+01	4.645E-01	-0.172
I-131	-1.514E+01		1.978E+01	6.958E+01	1.392E+00	-0.218
CS-134	-1.611E+00		6.322E+00	2.535E+01	5.190E-01	-0.064
CS-137DA	-1.550E-01		6.841E+00	2.730E+01	5.536E-01	-0.006
LA-138	-5.216E+00		5.190E+00	1.893E+01	4.060E-01	-0.276
CE-139	-4.375E+00		1.828E+01	6.585E+01	1.345E+00	-0.066
BA-140	-2.800E+01		2.887E+01	1.044E+02	2.100E+00	-0.268
BALA-140	-1.855E+01		1.076E+01	1.611E+01	3.493E-01	-1.151
LA-140	-2.458E+02		1.426E+02	2.135E+02	4.630E+00	-1.151
CE-141	-6.847E+01		3.517E+01	1.148E+02	2.364E+00	-0.596
CE-144	-1.861E+02		1.322E+02	4.278E+02	8.857E+00	-0.435
CEPR-144	-4.723E+02		2.714E+02	8.560E+02	1.772E+01	-0.552
PM-144	-3.561E-01		5.862E+00	2.343E+01	4.737E-01	-0.015
PM-146	-2.835E+00		9.943E+00	3.843E+01	7.702E-01	-0.074
EU-152	9.130E+00		3.184E+01	1.224E+02	2.449E+00	0.075
EU-154	-4.481E+00		1.058E+01	4.446E+01	9.427E-01	-0.101
EU-155	-3.264E+01		5.632E+01	1.969E+02	4.154E+00	-0.166
HF-181	8.650E+00		8.326E+00	3.710E+01	7.444E-01	0.233
BI-207	9.793E+00		6.239E+00	2.877E+01	5.799E-01	0.340
TL-208	9.413E+00		6.986E+00	3.195E+01	6.446E-01	0.295
BI-210M	8.722E+00		1.967E+01	7.543E+01	1.513E+00	0.116
BI-212	-1.313E+02		6.054E+01	1.417E+02	4.331E+00	-0.927
PB-212	4.144E+01		2.915E+01	1.193E+02	2.400E+00	0.347
BI-214	-2.310E+01		1.424E+01	4.486E+01	9.065E-01	-0.515
PB-214	1.916E+00		2.823E+01	9.000E+01	1.800E+00	0.021
RA-223	-1.182E+01		6.221E+01	2.318E+02	4.650E+00	-0.051
RA-224DA	4.182E+01		2.942E+01	1.204E+02	2.422E+00	0.347
RA-226DA	-2.296E+01		1.426E+01	4.500E+01	9.095E-01	-0.510
AC-227DA	2.522E+00		1.153E+02	4.185E+02	8.420E+00	0.006
AC-228	2.039E+01		1.627E+01	8.954E+01	1.848E+00	0.228
RA-228DA	2.045E+01		1.632E+01	8.981E+01	1.854E+00	0.228
TH-228DA	2.644E+01		1.962E+01	8.974E+01	1.810E+00	0.295
TH-232DA	3.118E+01		5.746E+01	2.328E+02	4.657E+00	0.134
TH-234DA	-1.970E+02		7.026E+02	2.864E+03	5.952E+01	-0.069
U-234DA	-1.378E+01		4.870E+01	1.774E+02	3.552E+00	-0.078
U-235HP	2.518E+02		1.233E+02	5.002E+02	1.030E+01	0.504
NP-237DA	1.040E+01		2.684E+01	1.022E+02	2.046E+00	0.102
U-238DA	1.916E+00		2.823E+01	9.000E+01	1.800E+00	0.021
U-238DHP	8.169E+02		5.297E+02	2.074E+03	4.616E+01	0.394
AM-241HP	3.293E+01		4.770E+01	1.763E+02	3.956E+00	0.187

STL Richland WA.

BA133

Sample ID: H4X0R1AC
Detector ID: GER4 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 14:37:08.45
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -1.20822E-01
Slope: 2.48870E-01
Quadrature: 1.07398E-08

SAMPLE IDENTIFICATION: H4X0R1AC

CONFIGURATION ID: GER4:H4X0R1AC_140661437
TITLE : BA133
SAMPLE ID : H4X0R1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 14:37:08
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:23:11.01
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: -.1208E+00 keV
ENERGY SLOPE: 2.4887E-01 keV/C
ENERGY Q COEFF: 1.0740E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.0346E-01 keV
FWHM SLOPE: 4.4942E-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 14-JUN-2006 15:07:25

Configuration : $DISK1:[GER4.SAMPLE]H4X0R1AC_140661437.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:37:08
Sample ID : H4X0R1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.40 0.0%
Start energy : 19.79 End energy : 2039.34
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.31	193	75	0.89	327.18	321	16	1.07E-01	13.0	
2	0	276.68	43	18	1.40	1112.17	1104	21	2.39E-02	27.9	
3	0	302.65	118	0	0.97	1216.53	1207	18	6.56E-02	9.2	
4	0	355.96	283	12	1.23	1430.69	1423	17	1.57E-01	6.6	
5	0	383.96	39	10	0.63	1543.20	1532	18	2.18E-02	24.1	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 15:07:25

Configuration : $DISK1:[GER4.SAMPLE]H4X0R1AC_140661437.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00
Sample ID : H4X0R1AC
Sample type :
Elapsed live time: 0 00:30:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 14-JUN-2006 14:37:08
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.40 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

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	193	33.00	2.044E+00	9.555E+02	9.571E+02	14.19
	276.40	43	6.90	2.203E+00	9.437E+02	9.452E+02	28.40
	302.84	118	17.80	2.205E+00	1.002E+03	1.004E+03	10.73
	356.00	283	62.05*	2.207E+00	6.879E+02	6.891E+02	9.47
	383.85	39	8.70	2.207E+00	6.816E+02	6.828E+02	24.87

Flag: "*" = Keyline

Sample ID : H4X0R1AC
Acquisition date : 14-JUN-2006 14:37:08

None

Flags: "T" = Tentatively associated

Sample ID : H4X0R1AC Acquisition date : 14-JUN-2006 14:37:08

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	9.576E+02	28.40	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 14-JUN-2006 15:07:28

Configuration : $DISK1:[GER4.SAMPLE]H4X0R1AC_140661437.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:37:08
Sample ID : H4X0R1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.40 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	6.891E+02	6.528E+01	4.568E+01	2.141E+00	15.083

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-2.939E+01		6.802E+01	2.579E+02	9.417E+00	-0.114
NA-22	-1.463E-01		3.296E+00	1.495E+01	5.764E-01	-0.010
K-40	9.848E+01		8.482E+01	4.147E+02	1.620E+01	0.237
SC-46	3.460E+00		4.813E+00	2.235E+01	8.522E-01	0.155
CR-51	-1.720E+02		8.877E+01	2.784E+02	6.463E+00	-0.618
MN-54	4.907E+00		4.700E+00	2.228E+01	8.323E-01	0.220
CO-57	-1.298E+02		1.016E+02	3.408E+02	8.169E+00	-0.381
CO-58	1.857E+00		3.737E+00	1.830E+01	6.823E-01	0.101
FE-59	-6.051E+00		1.105E+01	4.219E+01	1.606E+00	-0.143
CO-60	-2.029E+00		4.669E+00	1.862E+01	7.207E-01	-0.109
ZN-65	-6.179E+00		1.005E+01	3.838E+01	1.463E+00	-0.161
SE-75	-2.249E+00		1.536E+01	5.655E+01	1.316E+00	-0.040
SR-85	-1.228E+01		1.074E+01	3.650E+01	1.335E+00	-0.336
Y-88	-4.810E+00		4.961E+00	1.771E+01	7.091E-01	-0.272
NB-94	-4.523E+00		4.068E+00	1.441E+01	5.397E-01	-0.314
NB-95	7.199E+00		5.931E+00	2.776E+01	1.032E+00	0.259
TC-95M	1.473E+01		1.814E+01	7.047E+01	1.653E+00	0.209
ZR-95	-3.554E+00		9.389E+00	3.691E+01	1.371E+00	-0.096
ZRNB-95	1.710E+01		1.041E+01	5.140E+01	1.910E+00	0.333
MO-99	1.339E+02		1.308E+02	5.028E+02	1.203E+01	0.266
RH-101	-1.760E+01		1.518E+01	5.228E+01	1.228E+00	-0.337
RH-102M	9.783E+00		5.543E+00	2.671E+01	9.750E-01	0.366
RU-103	1.671E+00		7.084E+00	2.955E+01	1.080E+00	0.057
RU-106DA	-1.074E+01		5.979E+01	2.372E+02	8.728E+00	-0.045
AG-108M	7.398E+00		7.508E+00	3.150E+01	1.148E+00	0.235
AG-110M	2.322E+00		7.249E+00	3.096E+01	1.160E+00	0.075
SN-113DA	5.082E+00		1.004E+01	4.143E+01	1.509E+00	0.123

Sample ID : H4X0R1AC Acquisition date : 14-JUN-2006 14:37:08

---- Non-Identified Nuclides ----

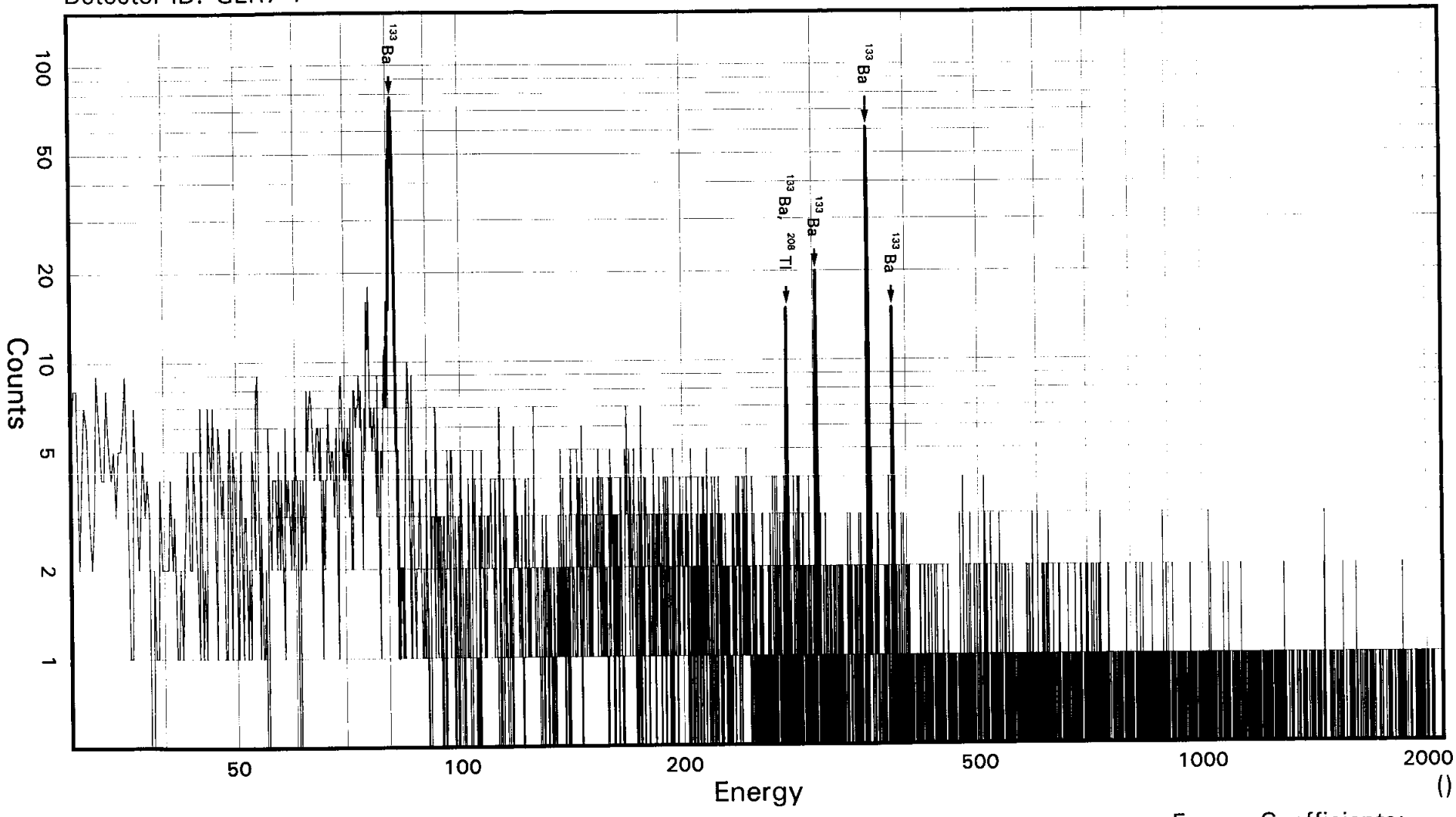
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	3.007E+00		6.159E+00	2.602E+01	9.566E-01	0.116
SB-125	-1.812E+01		1.945E+01	6.795E+01	2.476E+00	-0.267
SN-126DA	2.129E-01		5.675E+00	2.299E+01	8.484E-01	0.009
I-131	3.034E+01		1.985E+01	8.560E+01	3.116E+00	0.354
CS-134	-4.519E+00		7.024E+00	2.561E+01	9.537E-01	-0.176
CS-137DA	-6.873E+00		6.156E+00	2.160E+01	7.970E-01	-0.318
LA-138	-3.769E-02		4.869E+00	2.250E+01	8.774E-01	-0.002
CE-139	-9.795E+00		1.541E+01	5.303E+01	1.256E+00	-0.185
BA-140	-1.160E+01		3.609E+01	1.397E+02	5.116E+00	-0.083
BALA-140	-2.732E+01		1.234E+01	1.517E+01	5.981E-01	-1.800
LA-140	-4.346E+02		1.796E+02	2.012E+02	7.930E+00	-2.161
CE-141	-3.783E+01		2.764E+01	9.131E+01	2.180E+00	-0.414
CE-144	-3.515E+01		9.708E+01	3.509E+02	8.423E+00	-0.100
CEPR-144	-7.149E+01		1.941E+02	7.012E+02	1.683E+01	-0.102
PM-144	-6.954E+00		5.508E+00	1.904E+01	7.006E-01	-0.365
PM-146	7.708E+00		9.418E+00	4.051E+01	1.478E+00	0.190
EU-152	1.930E+00		2.772E+01	1.077E+02	2.498E+00	0.018
EU-154	-4.096E-01		9.236E+00	4.189E+01	1.615E+00	-0.010
EU-155	-5.235E+00		4.310E+01	1.640E+02	4.009E+00	-0.032
HF-181	1.717E+01		8.991E+00	4.127E+01	1.507E+00	0.416
BI-207	2.830E+00		5.484E+00	2.338E+01	8.577E-01	0.121
TL-208	-7.662E+00		9.079E+00	3.403E+01	1.249E+00	-0.225
BI-210M	-3.822E+01		1.889E+01	5.774E+01	1.344E+00	-0.662
BI-212	5.152E+01		8.245E+01	3.563E+02	1.550E+01	0.145
PB-212	2.326E+01		2.369E+01	9.854E+01	2.299E+00	0.236
BI-214	1.244E+01		1.557E+01	7.123E+01	2.619E+00	0.175
PB-214	-3.137E+01		2.697E+01	7.903E+01	1.834E+00	-0.397
RA-223	9.721E+01		7.677E+01	3.021E+02	7.028E+00	0.322
RA-224DA	2.347E+01		2.391E+01	9.944E+01	2.320E+00	0.236
RA-226DA	1.257E+01		1.558E+01	7.131E+01	2.622E+00	0.176
AC-227DA	-2.378E+02		9.946E+01	3.022E+02	7.054E+00	-0.787
AC-228	1.561E+01		1.901E+01	9.366E+01	3.517E+00	0.167
RA-228DA	1.565E+01		1.907E+01	9.394E+01	3.528E+00	0.167
TH-228DA	-2.152E+01		2.550E+01	9.557E+01	3.509E+00	-0.225
TH-232DA	-1.433E+01		6.175E+01	2.327E+02	5.400E+00	-0.062
TH-234DA	9.104E+02		5.885E+02	3.113E+03	1.177E+02	0.292
U-234DA	6.710E+01		4.994E+01	1.993E+02	4.631E+00	0.337
U-235HP	1.713E+02		1.118E+02	4.409E+02	1.053E+01	0.389
NP-237DA	-2.825E+01		2.233E+01	7.672E+01	1.781E+00	-0.368
U-238DA	-3.137E+01		2.697E+01	7.903E+01	1.834E+00	-0.397
U-238DHP	-1.242E+02		2.732E+02	1.018E+03	2.626E+01	-0.122
AM-241HP	7.213E+00		2.607E+01	1.010E+02	2.623E+00	0.071

STL Richland WA.

BA133

Sample ID: H4X0W1AC
Detector ID: GER7 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 14:37:20.37
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 6.38639E-01
Slope: 2.49141E-01
Quadrature: 1.28954E-07

SAMPLE IDENTIFICATION: H4X0W1AC

CONFIGURATION ID: GER7:H4X0W1AC_140661437
TITLE : BA133
SAMPLE ID : H4X0W1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 14:37:20
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:23:46.43
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: 6.3864E-01 keV
ENERGY SLOPE: 2.4914E-01 keV/C
ENERGY Q COEFF: 1.2895E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.5734E-01 keV
FWHM SLOPE: 4.2090E-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 14-JUN-2006 15:07:41

Configuration : $DISK1:[GER7.SAMPLE]H4X0W1AC_140661437.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00
Sample ID : H4X0W1AC
Sample type :
Elapsed live time: 0 00:30:00.00
Start energy : 20.57
Sensitivity : 5.00
Critical level : No

Acquisition date : 14-JUN-2006 14:37:20
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.19 0.0%
End energy : 2050.25
Gaussian : 10.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	75.10*	7	39	0.76	298.81	295	9	4.11E-03	175.2	
2	0	81.06	321	75	0.99	322.75	316	18	1.78E-01	8.9	
3	0	277.20	29	31	0.40	1109.42	1096	17	1.64E-02	46.4	
4	0	302.74	105	11	1.06	1211.82	1201	22	5.83E-02	12.7	
5	0	355.84	296	37	1.07	1424.67	1416	18	1.64E-01	7.5	
6	0	383.66	57	3	0.56	1536.14	1528	15	3.14E-02	15.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 15:07:42

Configuration : $DISK1:[GER7.SAMPLE]H4X0W1AC_140661437.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00
Sample ID : H4X0W1AC
Sample type :
Elapsed live time: 0 00:30:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 14-JUN-2006 14:37:20
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.19 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

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	321	33.00	1.923E+00	1.685E+03	1.688E+03	10.46
	276.40	29	6.90	2.076E+00	6.856E+02	6.867E+02	46.66
	302.84	105	17.80	2.078E+00	9.460E+02	9.476E+02	13.75
	356.00	296	62.05*	2.080E+00	7.644E+02	7.656E+02	9.25
	383.85	57	8.70	2.080E+00	1.042E+03	1.044E+03	16.13

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4X0W1AC

Acquisition date : 14-JUN-2006 14:37:20

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	75.10	7	39	0.76	298.81	295	9	4.11E-03	****	1.91E+00	

Flags: "T" = Tentatively associated

Sample ID : H4X0W1AC
Acquisition date : 14-JUN-2006 14:37:20

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	6.957E+02	46.66	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 14-JUN-2006 15:07:44

Configuration : $DISK1:[GER7.SAMPLE]H4X0W1AC_140661437.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:37:20
Sample ID : H4X0W1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.19 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	7.656E+02	7.079E+01	5.368E+01	1.074E+00	14.263

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.751E+01		6.918E+01	2.648E+02	5.312E+00	-0.066
NA-22	8.543E-02		4.156E+00	1.841E+01	3.903E-01	0.005
K-40	-8.172E+01		4.743E+01	2.273E+02	4.884E+00	-0.359
SC-46	1.695E+00		4.838E+00	2.174E+01	4.559E-01	0.078
CR-51	-6.905E+01		8.670E+01	3.081E+02	6.165E+00	-0.224
MN-54	6.651E+00		6.308E+00	2.795E+01	5.738E-01	0.238
CO-57	1.126E+02		9.471E+01	3.866E+02	7.992E+00	0.291
CO-58	-4.182E+00		3.461E+00	1.178E+01	2.414E-01	-0.355
FE-59	6.180E-01		5.099E+00	2.663E+01	5.574E-01	0.023
CO-60	0.000E+00		0.000E+00	4.625E+00	9.848E-02	0.000
ZN-65	-7.126E+00		9.730E+00	3.652E+01	7.655E-01	-0.195
SE-75	-1.053E+01		1.587E+01	5.690E+01	1.142E+00	-0.185
SR-85	-8.091E+00		9.528E+00	3.292E+01	6.615E-01	-0.246
Y-88	5.758E+00		4.956E+00	2.469E+01	5.438E-01	0.233
NB-94	8.608E+00		5.595E+00	2.653E+01	5.462E-01	0.324
NB-95	2.009E+00		3.376E+00	1.822E+01	3.721E-01	0.110
TC-95M	-5.775E+00		1.843E+01	6.552E+01	1.325E+00	-0.088
ZR-95	-2.252E+00		7.346E+00	3.147E+01	6.425E-01	-0.072
ZRNB-95	3.702E+00		6.220E+00	3.356E+01	6.856E-01	0.110
MO-99	1.225E+02		1.184E+02	4.706E+02	9.709E+00	0.260
RH-101	2.274E+01		1.637E+01	6.410E+01	1.298E+00	0.355
RH-102M	-4.126E-01		6.479E+00	2.554E+01	5.122E-01	-0.016
RU-103	-1.359E+01		7.022E+00	1.969E+01	3.955E-01	-0.690
RU-106DA	3.982E+01		5.948E+01	2.583E+02	5.225E+00	0.154
AG-108M	-1.395E+01		6.306E+00	1.720E+01	3.445E-01	-0.811
AG-110M	8.973E+00		8.160E+00	3.690E+01	7.604E-01	0.243
SN-113DA	9.983E+00		1.143E+01	4.836E+01	9.676E-01	0.206

---- Non-Identified Nuclides ----

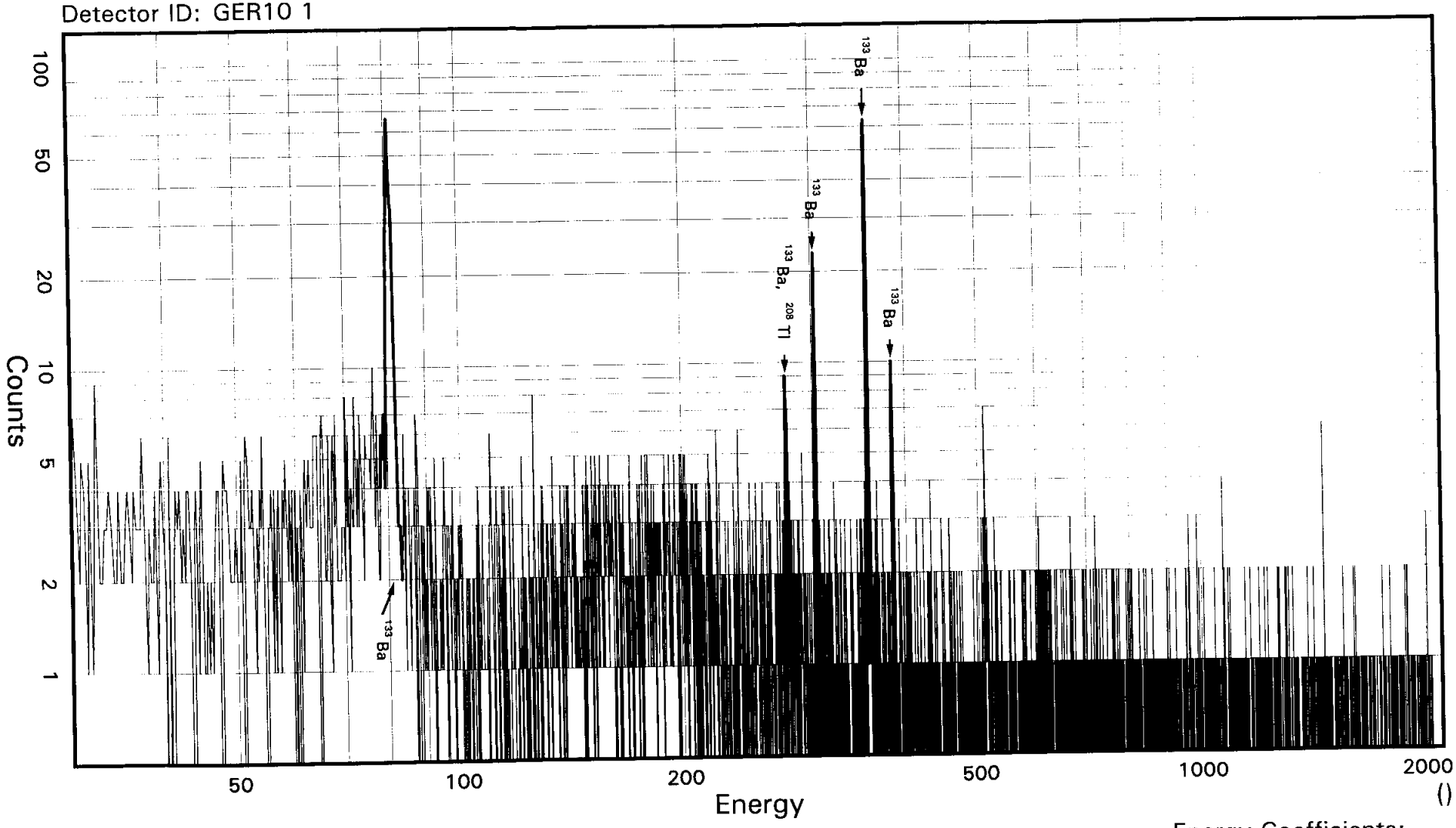
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-7.135E+00		6.892E+00	2.423E+01	4.895E-01	-0.294
SB-125	-1.864E-02		2.460E+01	9.577E+01	1.918E+00	0.000
SN-126DA	-1.798E+00		4.983E+00	1.962E+01	3.981E-01	-0.092
I-131	4.448E+01		2.260E+01	9.906E+01	1.981E+00	0.449
CS-134	-2.086E+00		5.053E+00	2.052E+01	4.202E-01	-0.102
CS-137DA	6.943E-01		5.644E+00	2.397E+01	4.861E-01	0.029
LA-138	8.207E+00		5.934E+00	3.156E+01	6.768E-01	0.260
CE-139	-2.085E+01		1.549E+01	5.154E+01	1.053E+00	-0.405
BA-140	-3.763E+00		3.491E+01	1.427E+02	2.872E+00	-0.026
BALA-140	1.198E+01		1.192E+01	6.416E+01	1.391E+00	0.187
LA-140	1.589E+02		1.580E+02	8.507E+02	1.845E+01	0.187
CE-141	1.839E+01		3.043E+01	1.159E+02	2.386E+00	0.159
CE-144	-1.338E+02		8.659E+01	2.886E+02	5.974E+00	-0.464
CEPR-144	-2.677E+02		1.732E+02	5.772E+02	1.195E+01	-0.464
PM-144	-6.742E+00		6.258E+00	2.179E+01	4.406E-01	-0.309
PM-146	7.281E+00		7.480E+00	3.487E+01	6.988E-01	0.209
EU-152	-1.895E+01		3.430E+01	1.214E+02	2.427E+00	-0.156
EU-154	-1.406E+00		1.130E+01	4.930E+01	1.045E+00	-0.029
EU-155	-4.363E+01		5.406E+01	1.848E+02	3.899E+00	-0.236
HF-181	1.628E+00		8.892E+00	3.573E+01	7.170E-01	0.046
BI-207	1.908E+00		6.340E+00	2.622E+01	5.285E-01	0.073
TL-208	-1.826E+01		7.903E+00	2.576E+01	5.197E-01	-0.709
BI-210M	4.041E+00		1.776E+01	6.850E+01	1.374E+00	0.059
BI-212	6.717E+01		9.280E+01	4.025E+02	1.230E+01	0.167
PB-212	-4.809E+01		2.607E+01	9.055E+01	1.821E+00	-0.531
BI-214	-3.415E-02		1.565E+01	6.087E+01	1.230E+00	-0.001
PB-214	5.265E+00		1.785E+01	6.852E+01	1.370E+00	0.077
RA-223	5.000E+01		6.664E+01	2.656E+02	5.326E+00	0.188
RA-224DA	-4.853E+01		2.630E+01	9.138E+01	1.838E+00	-0.531
RA-226DA	-3.415E-02		1.565E+01	6.087E+01	1.230E+00	-0.001
AC-227DA	4.402E+01		9.998E+01	3.811E+02	7.668E+00	0.116
AC-228	1.301E+01		1.747E+01	8.006E+01	1.653E+00	0.163
RA-228DA	1.305E+01		1.752E+01	8.030E+01	1.658E+00	0.163
TH-228DA	-5.128E+01		2.220E+01	7.235E+01	1.460E+00	-0.709
TH-232DA	-7.653E+00		6.809E+01	2.531E+02	5.062E+00	-0.030
TH-234DA	5.229E+02		6.238E+02	3.074E+03	6.390E+01	0.170
U-234DA	7.404E+01		4.382E+01	1.874E+02	3.753E+00	0.395
U-235HP	-9.907E+01		1.161E+02	4.049E+02	8.340E+00	-0.245
NP-237DA	-1.606E+00		2.123E+01	8.072E+01	1.615E+00	-0.020
U-238DA	5.265E+00		1.785E+01	6.852E+01	1.370E+00	0.077
U-238DHP	1.003E+03		4.474E+02	1.789E+03	3.982E+01	0.561
AM-241HP	1.605E+01		3.816E+01	1.441E+02	3.233E+00	0.111

STL Richland WA.

BA133

Sample ID: H4X001AC
Detector ID: GER10 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 14:37:31.72
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.56336E+01
Slope: 2.46974E-01
Quadrature: -1.79881E-09

SAMPLE IDENTIFICATION: H4X001AC

CONFIGURATION ID: GER10:H4X001AC_140661437
TITLE : BA133
SAMPLE ID : H4X001AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 14:37:31
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:24:19.75
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: 1.5634E+01 keV
ENERGY SLOPE: 2.4697E-01 keV/C
ENERGY Q COEFF: -.1799E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.5150E-01 keV
FWHM SLOPE: 2.7421E-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 14-JUN-2006 15:07:56

```
Configuration     : $DISK1:[GER10.SAMPLE]H4X001AC_140661437.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 5-JUN-2006 12:00:00  Acquisition date : 14-JUN-2006 14:37:31
Sample ID         : H4X001AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.23   0.0%
Start energy      :    18.10             End energy       :  2038.73
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.81	320	55	1.11	263.90	253	22	1.78E-01	8.1	
2	0	276.71	45	14	1.47	1057.10	1047	18	2.52E-02	24.1	
3	0	302.68	108	10	1.01	1162.24	1151	18	5.99E-02	12.4	
4	0	356.09	361	28	1.46	1378.52	1367	23	2.01E-01	6.5	
5	0	383.96	61	0	1.83	1491.36	1485	13	3.39E-02	12.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 15:07:57

Configuration : $DISK1:[GER10.SAMPLE]H4X001AC_140661437.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:37:31
Sample ID : H4X001AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.23 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	320	33.00	2.398E+00	1.349E+03	1.351E+03	9.78
	276.40	45	6.90	2.578E+00	8.504E+02	8.518E+02	24.70
	302.84	108	17.80	2.582E+00	7.821E+02	7.834E+02	13.52
	356.00	361	62.05*	2.584E+00	7.513E+02	7.525E+02	8.45
	383.85	61	8.70	2.583E+00	9.047E+02	9.061E+02	13.89

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4X001AC
Acquisition date : 14-JUN-2006 14:37:31

None

Flags: "T" = Tentatively associated

Sample ID : H4X001AC Acquisition date : 14-JUN-2006 14:37:31

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	8.629E+02	24.70	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 14-JUN-2006 15:07:59

Configuration : $DISK1:[GER10.SAMPLE]H4X001AC_140661437.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:37:31
Sample ID : H4X001AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.23 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	7.525E+02	6.361E+01	4.511E+01	9.023E-01	16.681

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	1.294E+01		4.952E+01	2.072E+02	4.157E+00	0.062
NA-22	-6.938E+00		3.126E+00	3.711E+00	7.843E-02	-1.870
K-40	1.380E+01		5.385E+01	2.518E+02	5.389E+00	0.055
SC-46	4.464E+00		4.337E+00	2.050E+01	4.287E-01	0.218
CR-51	4.758E+01		7.258E+01	2.994E+02	5.990E+00	0.159
MN-54	1.104E-02		4.264E+00	1.768E+01	3.624E-01	0.001
CO-57	-5.957E+01		9.522E+01	3.326E+02	6.863E+00	-0.179
CO-58	-3.033E+00		4.054E+00	1.536E+01	3.143E-01	-0.197
FE-59	-3.778E-01		6.507E+00	2.871E+01	5.995E-01	-0.013
CO-60	-4.276E+00		3.699E+00	1.274E+01	2.703E-01	-0.336
ZN-65	5.717E+00		8.544E+00	3.842E+01	8.032E-01	0.149
SE-75	-1.082E+01		1.300E+01	4.581E+01	9.189E-01	-0.236
SR-85	-1.905E+01		1.045E+01	3.349E+01	6.729E-01	-0.569
Y-88	-3.868E-02		2.161E+00	1.109E+01	2.431E-01	-0.003
NB-94	-2.697E+00		3.269E+00	1.230E+01	2.528E-01	-0.219
NB-95	-5.118E+00		5.950E+00	2.158E+01	4.403E-01	-0.237
TC-95M	-1.245E+01		1.822E+01	6.425E+01	1.299E+00	-0.194
ZR-95	3.891E-01		8.981E+00	3.699E+01	7.543E-01	0.011
ZRNB-95	-9.429E+00		1.096E+01	3.976E+01	8.111E-01	-0.237
MO-99	1.190E+02		1.148E+02	4.387E+02	9.036E+00	0.271
RH-101	-1.251E+01		1.481E+01	5.180E+01	1.048E+00	-0.242
RH-102M	2.113E-01		5.069E+00	2.056E+01	4.123E-01	0.010
RU-103	3.132E+00		5.832E+00	2.529E+01	5.077E-01	0.124
RU-106DA	-2.267E+01		5.632E+01	2.106E+02	4.257E+00	-0.108
AG-108M	-1.277E+01		6.942E+00	2.211E+01	4.427E-01	-0.578
AG-110M	-9.372E-02		5.335E+00	2.250E+01	4.628E-01	-0.004
SN-113DA	1.818E+01		1.204E+01	4.968E+01	9.939E-01	0.366

Sample ID : H4X001AC Acquisition date : 14-JUN-2006 14:37:31

---- Non-Identified Nuclides ----

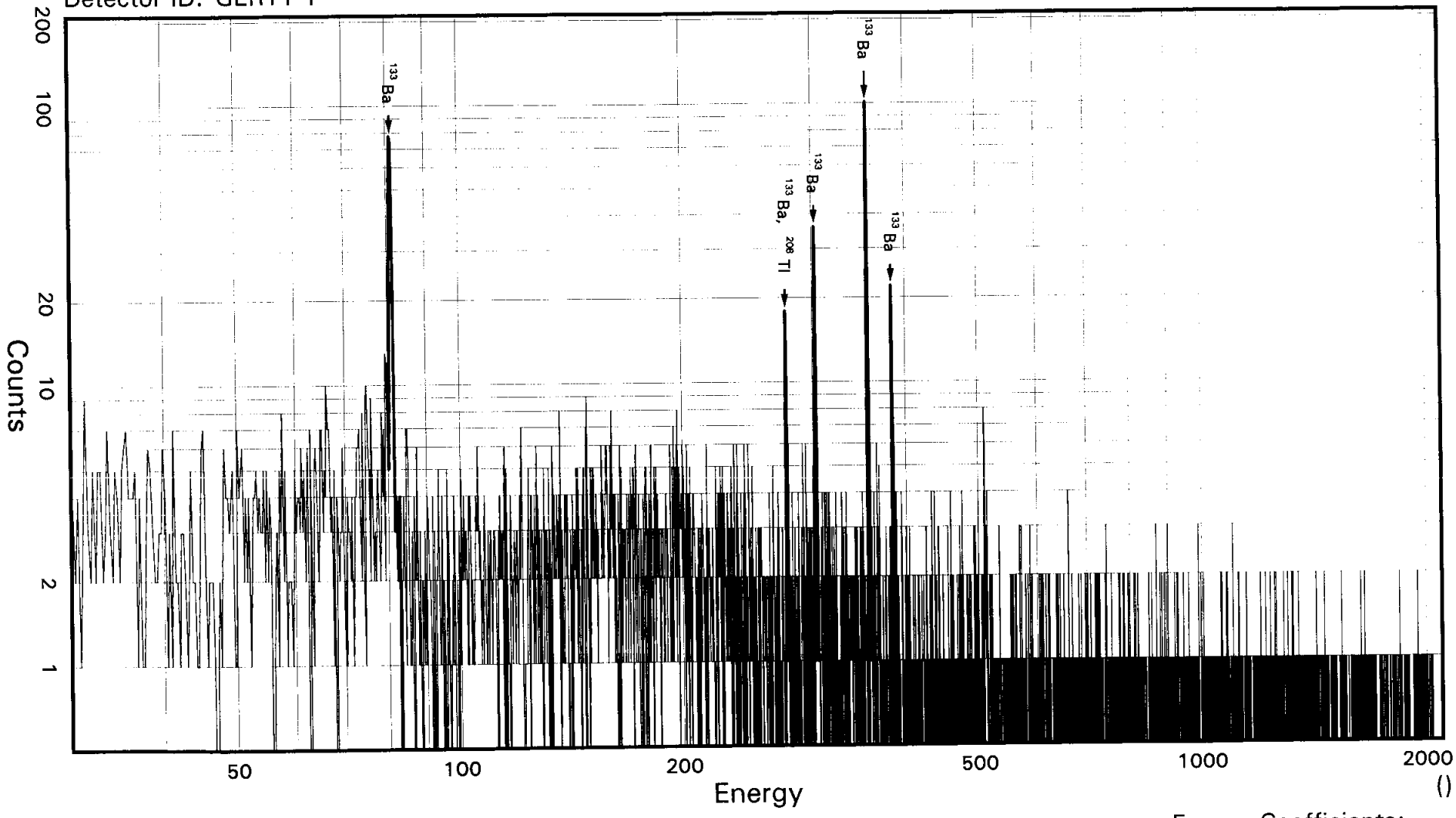
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	4.006E+00		7.180E+00	2.877E+01	5.809E-01	0.139
SB-125	2.846E+01		2.463E+01	1.015E+02	2.032E+00	0.280
SN-126DA	8.291E-01		5.191E+00	2.074E+01	4.203E-01	0.040
I-131	2.475E+01		2.125E+01	8.499E+01	1.700E+00	0.291
CS-134	-2.431E-01		6.137E+00	2.435E+01	4.978E-01	-0.010
CS-137DA	1.506E+00		4.761E+00	2.042E+01	4.138E-01	0.074
LA-138	-2.247E+00		3.686E+00	1.519E+01	3.245E-01	-0.148
CE-139	1.783E+01		1.303E+01	5.071E+01	1.035E+00	0.352
BA-140	-1.307E+00		3.396E+01	1.340E+02	2.696E+00	-0.010
BALA-140	2.089E-01		1.162E+01	5.142E+01	1.110E+00	0.004
LA-140	9.806E+01		1.482E+02	7.241E+02	1.563E+01	0.135
CE-141	-3.498E+01		2.587E+01	8.534E+01	1.754E+00	-0.410
CE-144	2.895E+00		9.034E+01	3.308E+02	6.835E+00	0.009
CEPR-144	6.876E+00		1.808E+02	6.621E+02	1.368E+01	0.010
PM-144	2.417E+00		5.781E+00	2.338E+01	4.724E-01	0.103
PM-146	-1.011E+01		9.279E+00	3.237E+01	6.487E-01	-0.312
EU-152	1.822E+01		2.527E+01	1.012E+02	2.025E+00	0.180
EU-154	-1.944E+01		8.758E+00	1.040E+01	2.198E-01	-1.870
EU-155	6.079E+01		3.988E+01	1.644E+02	3.459E+00	0.370
HF-181	-5.503E+00		6.903E+00	2.521E+01	5.058E-01	-0.218
BI-207	2.481E+00		5.359E+00	2.214E+01	4.461E-01	0.112
TL-208	-1.276E+01		6.316E+00	1.854E+01	3.739E-01	-0.688
BI-210M	-1.988E+01		1.456E+01	4.874E+01	9.776E-01	-0.408
BI-212	-8.489E+01		7.166E+01	2.494E+02	7.620E+00	-0.340
PB-212	2.580E+01		1.873E+01	7.591E+01	1.527E+00	0.340
BI-214	7.835E+00		1.431E+01	5.678E+01	1.147E+00	0.138
PB-214	1.843E+01		2.637E+01	8.795E+01	1.759E+00	0.210
RA-223	4.156E+01		5.853E+01	2.293E+02	4.599E+00	0.181
RA-224DA	2.603E+01		1.890E+01	7.661E+01	1.540E+00	0.340
RA-226DA	7.835E+00		1.431E+01	5.678E+01	1.147E+00	0.138
AC-227DA	5.849E+01		7.185E+01	2.835E+02	5.702E+00	0.206
AC-228	-2.857E-01		1.187E+01	5.162E+01	1.064E+00	-0.006
RA-228DA	-2.866E-01		1.191E+01	5.177E+01	1.067E+00	-0.006
TH-228DA	-3.583E+01		1.774E+01	5.208E+01	1.050E+00	-0.688
TH-232DA	4.297E+01		4.253E+01	1.834E+02	3.669E+00	0.234
TH-234DA	-4.388E+02		4.259E+02	1.513E+03	3.138E+01	-0.290
U-234DA	-1.937E+01		3.385E+01	1.228E+02	2.458E+00	-0.158
U-235HP	-3.969E+01		9.537E+01	3.369E+02	6.928E+00	-0.118
NP-237DA	-2.362E+01		2.103E+01	7.139E+01	1.429E+00	-0.331
U-238DA	1.843E+01		2.637E+01	8.795E+01	1.759E+00	0.210
U-238DHP	4.129E+02		3.700E+02	1.363E+03	3.016E+01	0.303
AM-241HP	-1.632E+01		3.552E+01	1.222E+02	2.723E+00	-0.134

STL Richland WA.

BA133

Sample ID: H4X041AC
Detector ID: GER11 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 14:37:42.99
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -1.94186E+00
Slope: 2.50342E-01
Quadrature: 3.76880E-08

SAMPLE IDENTIFICATION: H4X041AC

CONFIGURATION ID: GER11:H4X041AC_140661437
TITLE : BA133
SAMPLE ID : H4X041AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 14:37:42
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:24:34.34
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: -.1942E+01 keV
ENERGY SLOPE: 2.5034E-01 keV/C
ENERGY Q COEFF: 3.7688E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.1872E-01 keV
FWHM SLOPE: 4.0499E-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 14-JUN-2006 15:08:13

Configuration : $DISK1:[GER11.SAMPLE]H4X041AC_140661437.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:37:42
Sample ID : H4X041AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.93 0.1%
Start energy : 0.56 End energy : 2051.39
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.10	209	70	0.71	331.70	327	13	1.16E-01	11.5	
2	0	148.56	18	4	0.78	601.15	598	7	1.01E-02	29.3	
3	0	276.32	68	7	0.65	1111.34	1105	13	3.75E-02	14.4	
4	0	302.66	134	16	0.93	1216.50	1208	16	7.44E-02	10.9	
5	0	355.82	414	17	0.97	1428.77	1420	17	2.30E-01	5.4	
6	0	383.66	78	7	0.64	1539.95	1533	14	4.33E-02	13.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 15:08:13

Configuration : $DISK1:[GER11.SAMPLE]H4X041AC_140661437.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00
Sample ID : H4X041AC
Sample type :
Elapsed live time: 0 00:30:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 14-JUN-2006 14:37:42
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.93 0.1%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

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	209	33.00	2.679E+00	7.877E+02	7.890E+02	12.70
	276.40	68	6.90	2.873E+00	1.135E+03	1.137E+03	15.42
	302.84	134	17.80	2.876E+00	8.724E+02	8.738E+02	12.17
	356.00	414	62.05*	2.879E+00	7.725E+02	7.738E+02	7.64
	383.85	78	8.70	2.878E+00	1.038E+03	1.040E+03	14.46

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4X041AC

Acquisition date : 14-JUN-2006 14:37:42

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	148.56	18	4	0.78	601.15	598	7	1.01E-02	29.3	2.81E+00	

Flags: "T" = Tentatively associated

Sample ID : H4X041AC
Acquisition date : 14-JUN-2006 14:37:42

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	1.152E+03	15.42	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 14-JUN-2006 15:08:15

Configuration : $DISK1:[GER11.SAMPLE]H4X041AC_140661437.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:37:42
Sample ID : H4X041AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.93 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	7.738E+02	5.911E+01	3.840E+01	7.680E-01	20.151

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-6.312E+00		5.022E+01	1.989E+02	3.988E+00	-0.032
NA-22	9.732E-03		3.010E+00	1.323E+01	2.793E-01	0.001
K-40	-7.207E+01		4.553E+01	2.097E+02	4.479E+00	-0.344
SC-46	4.095E+00		4.042E+00	1.872E+01	3.910E-01	0.219
CR-51	1.042E+02		7.472E+01	3.193E+02	6.388E+00	0.326
MN-54	-1.460E-01		3.025E+00	1.302E+01	2.667E-01	-0.011
CO-57	8.360E+01		7.582E+01	2.984E+02	6.151E+00	0.280
CO-58	5.066E+00		4.561E+00	2.065E+01	4.223E-01	0.245
FE-59	4.632E+00		7.072E+00	3.225E+01	6.726E-01	0.144
CO-60	-2.543E+00		3.050E+00	1.141E+01	2.418E-01	-0.223
ZN-65	-7.895E+00		6.694E+00	2.268E+01	4.734E-01	-0.348
SE-75	2.036E+01		1.193E+01	4.968E+01	9.966E-01	0.410
SR-85	-1.961E+01		7.891E+00	2.349E+01	4.719E-01	-0.835
Y-88	-3.921E+00		2.969E+00	9.931E+00	2.170E-01	-0.395
NB-94	-2.160E+00		3.992E+00	1.499E+01	3.078E-01	-0.144
NB-95	-5.688E+00		3.492E+00	1.041E+01	2.123E-01	-0.546
TC-95M	5.041E-01		1.343E+01	5.008E+01	1.012E+00	0.010
ZR-95	1.667E-02		6.654E+00	2.826E+01	5.759E-01	0.001
ZRNB-95	-1.048E+01		6.433E+00	1.919E+01	3.912E-01	-0.546
MO-99	-1.728E+02		8.135E+01	2.544E+02	5.235E+00	-0.679
RH-101	-6.630E+00		1.330E+01	4.835E+01	9.781E-01	-0.137
RH-102M	4.636E+00		5.783E+00	2.409E+01	4.832E-01	0.192
RU-103	6.118E-01		6.722E+00	2.669E+01	5.358E-01	0.023
RU-106DA	8.282E+01		5.115E+01	2.291E+02	4.628E+00	0.362
AG-108M	-1.294E+01		6.754E+00	2.045E+01	4.095E-01	-0.633
AG-110M	6.364E+00		5.144E+00	2.467E+01	5.070E-01	0.258
SN-113DA	-1.387E+01		7.404E+00	2.229E+01	4.460E-01	-0.622

Sample ID : H4X041AC Acquisition date : 14-JUN-2006 14:37:42

---- Non-Identified Nuclides ----

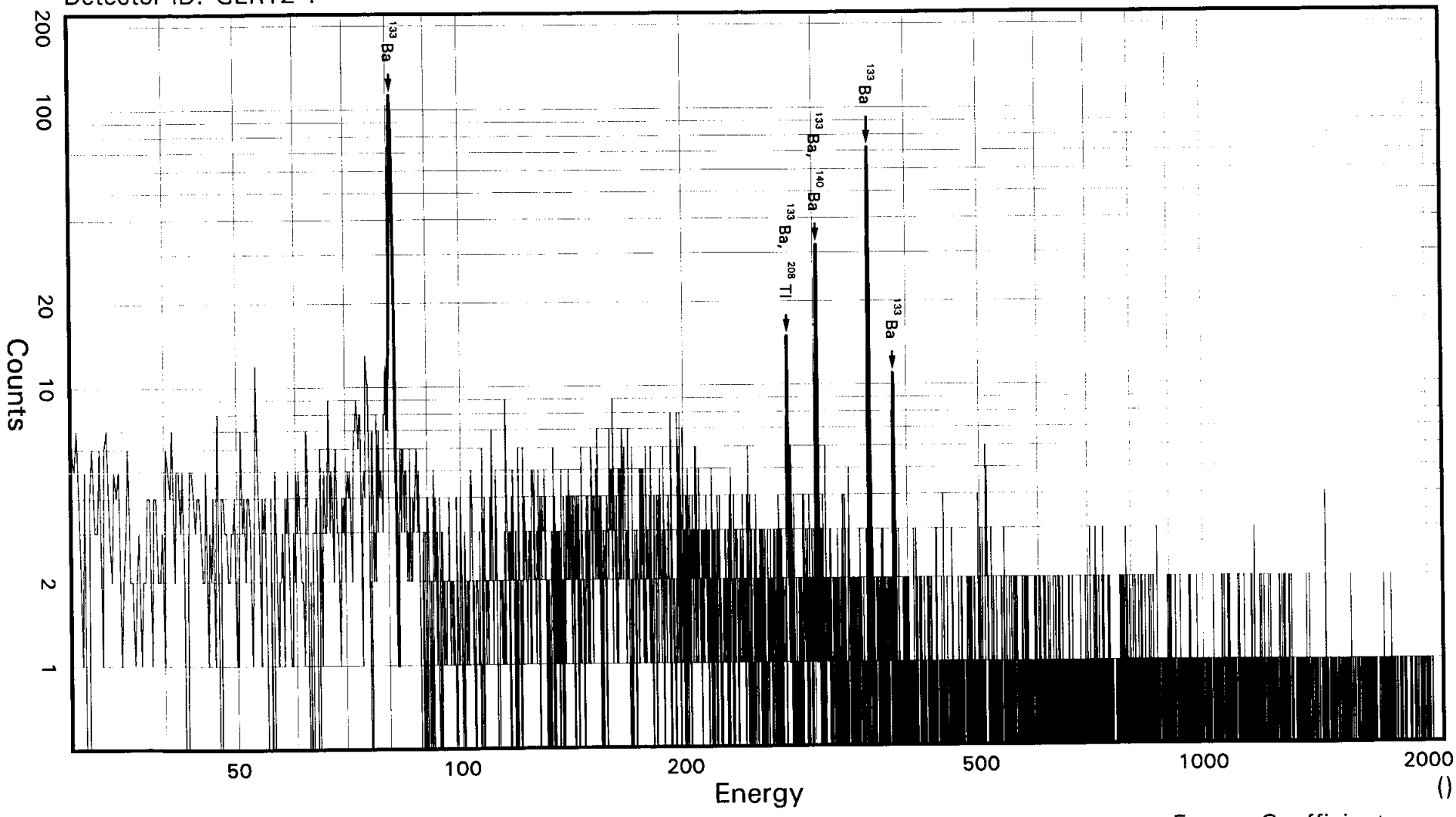
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	6.633E+00		5.590E+00	2.425E+01	4.894E-01	0.274
SB-125	-3.203E+01		1.793E+01	5.474E+01	1.096E+00	-0.585
SN-126DA	5.456E+00		4.079E+00	1.902E+01	3.854E-01	0.287
I-131	2.043E+01		1.723E+01	7.092E+01	1.418E+00	0.288
CS-134	2.684E+00		4.454E+00	1.968E+01	4.021E-01	0.136
CS-137DA	-5.766E+00		6.570E+00	3.016E+01	6.108E-01	-0.191
LA-138	3.532E+00		3.601E+00	1.956E+01	4.171E-01	0.181
CE-139	4.313E+00		1.057E+01	3.910E+01	7.973E-01	0.110
BA-140	-3.886E+01		2.505E+01	8.042E+01	1.617E+00	-0.483
BALA-140	9.030E-01		6.368E+00	3.348E+01	7.211E-01	0.027
LA-140	5.673E+01		9.839E+01	5.267E+02	1.134E+01	0.108
CE-141	-1.375E+01		1.966E+01	6.805E+01	1.397E+00	-0.202
CE-144	3.863E+01		7.246E+01	2.770E+02	5.717E+00	0.139
CEPR-144	7.817E+01		1.450E+02	5.544E+02	1.144E+01	0.141
PM-144	-1.929E+00		5.059E+00	1.888E+01	3.813E-01	-0.102
PM-146	3.003E+00		5.840E+00	2.519E+01	5.048E-01	0.119
EU-152	-3.709E+01		2.391E+01	7.898E+01	1.580E+00	-0.470
EU-154	2.727E-02		8.434E+00	3.708E+01	7.825E-01	0.001
EU-155	7.953E+01		3.549E+01	1.527E+02	3.206E+00	0.521
HF-181	3.548E+00		6.332E+00	2.688E+01	5.392E-01	0.132
BI-207	8.383E+00		4.354E+00	2.084E+01	4.199E-01	0.402
TL-208	4.057E+00		4.198E+00	1.953E+01	3.938E-01	0.208
BI-210M	-1.945E+01		1.376E+01	4.476E+01	8.976E-01	-0.435
BI-212	9.109E+01		6.909E+01	3.115E+02	9.516E+00	0.292
PB-212	-1.777E+01		1.611E+01	5.476E+01	1.101E+00	-0.324
BI-214	1.710E+01		1.120E+01	4.920E+01	9.934E-01	0.348
PB-214	-2.506E+01		2.209E+01	6.203E+01	1.241E+00	-0.404
RA-223	2.187E+01		4.579E+01	1.783E+02	3.575E+00	0.123
RA-224DA	-1.793E+01		1.626E+01	5.525E+01	1.111E+00	-0.324
RA-226DA	1.437E+01		1.149E+01	4.914E+01	9.921E-01	0.292
AC-227DA	2.806E+01		6.089E+01	2.352E+02	4.730E+00	0.119
AC-228	5.646E+00		1.135E+01	5.259E+01	1.083E+00	0.107
RA-228DA	5.663E+00		1.138E+01	5.275E+01	1.086E+00	0.107
TH-228DA	1.140E+01		1.179E+01	5.487E+01	1.106E+00	0.208
TH-232DA	-6.848E+01		5.165E+01	1.751E+02	3.502E+00	-0.391
TH-234DA	-3.675E+02		5.833E+02	2.215E+03	4.588E+01	-0.166
U-234DA	-6.562E+01		3.927E+01	1.226E+02	2.455E+00	-0.535
U-235HP	9.687E+01		7.086E+01	2.850E+02	5.857E+00	0.340
NP-237DA	-1.382E+01		2.056E+01	7.397E+01	1.480E+00	-0.187
U-238DA	-2.506E+01		2.209E+01	6.203E+01	1.241E+00	-0.404
U-238DHP	-4.972E+01		2.382E+02	8.464E+02	1.867E+01	-0.059
AM-241HP	-2.157E+01		2.266E+01	7.688E+01	1.708E+00	-0.281

STL Richland WA.

BA133

Sample ID: H4X081AC
Detector ID: GER12 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 14:37:56.28
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.25125E+01
Slope: 2.47553E-01
Quadrature: -1.23727E-08

SAMPLE IDENTIFICATION: H4X081AC

CONFIGURATION ID: GER12:H4X081AC_140661437
TITLE : BA133
SAMPLE ID : H4X081AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 14:37:56
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:25:05.00
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: 1.2512E+01 keV
ENERGY SLOPE: 2.4755E-01 keV/C
ENERGY Q COEFF: -.1237E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.6475E-01 keV
FWHM SLOPE: 3.7941E-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 14-JUN-2006 15:08:29

Configuration : $DISK1:[GER12.SAMPLE]H4X081AC_140661437.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:37:56
Sample ID : H4X081AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.33 0.0%
Start energy : 12.76 End energy : 2039.64
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.98	348	57	0.70	276.59	271	12	1.94E-01	7.0	
2	0	276.68	44	42	0.59	1067.16	1060	16	2.47E-02	35.3	
3	0	303.06	153	33	1.08	1173.73	1163	23	8.48E-02	12.8	
4	0	356.08	382	13	1.28	1387.96	1381	19	2.12E-01	5.6	
5	0	383.97	55	8	1.47	1500.62	1494	12	3.05E-02	17.3	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 15:08:29

Configuration : $DISK1:[GER12.SAMPLE]H4X081AC_140661437.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:37:56
Sample ID : H4X081AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.33 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	348	33.00	2.899E+00	1.214E+03	1.216E+03	8.86
	276.40	44	6.90	3.105E+00	6.922E+02	6.933E+02	35.66
	302.84	153	17.80	3.109E+00	9.198E+02	9.214E+02	13.92
	356.00	382	62.05*	3.111E+00	6.596E+02	6.607E+02	7.79
	383.85	55	8.70	3.111E+00	6.760E+02	6.771E+02	18.11

Flag: "*" = Keyline

Sample ID : H4X081AC
Acquisition date : 14-JUN-2006 14:37:56

None

Flags: "T" = Tentatively associated

Sample ID : H4X081AC
Acquisition date : 14-JUN-2006 14:37:56

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
BA-140	12.79D	0.71	162.64	6.70	--- Not Found ---		Abun.
			304.84	4.50	5.965E+03	13.92	
			423.70	3.20	--- Not Found ---		
			537.32*	25.00	--- Not Found ---		
		% Abundances Found =		11.42			
TL-208	1.41E+10Y	0.00	277.35	6.80	7.024E+02	35.66	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 14-JUN-2006 15:08:31

Configuration : $DISK1:[GER12.SAMPLE]H4X081AC_140661437.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:37:56
Sample ID : H4X081AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.33 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 ----

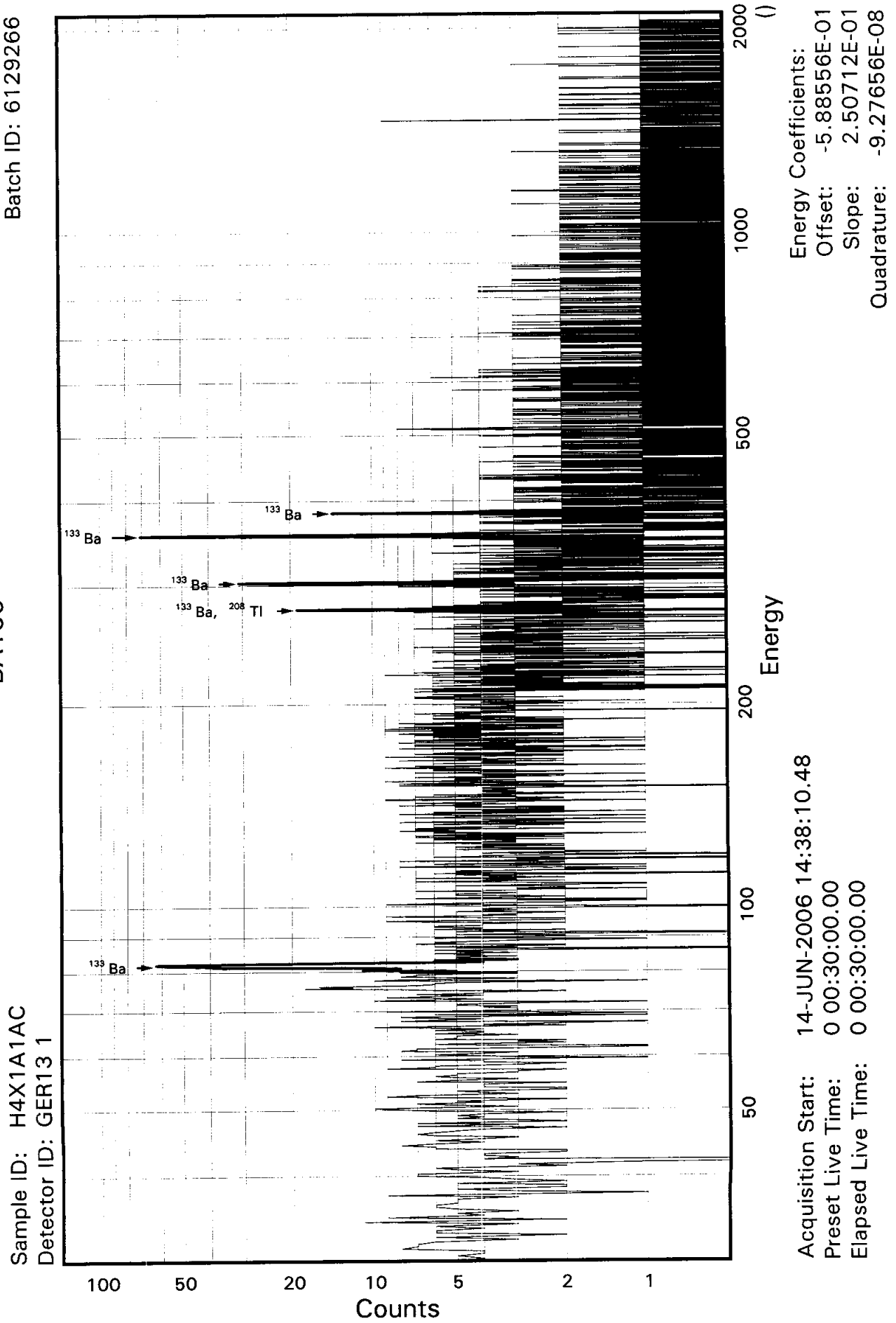
Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.607E+02	5.148E+01	3.858E+01	7.715E-01	17.126

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-4.914E+01		3.766E+01	1.248E+02	2.504E+00	-0.394
NA-22	-2.848E-01		4.022E+00	1.603E+01	3.377E-01	-0.018
K-40	-4.613E+00		5.224E+01	2.516E+02	5.365E+00	-0.018
SC-46	4.543E-02		3.393E+00	1.447E+01	3.018E-01	0.003
CR-51	-7.086E+01		7.166E+01	2.447E+02	4.897E+00	-0.290
MN-54	3.101E+00		3.644E+00	1.650E+01	3.379E-01	0.188
CO-57	-2.056E+01		6.800E+01	2.483E+02	5.114E+00	-0.083
CO-58	3.777E+00		4.303E+00	1.910E+01	3.904E-01	0.198
FE-59	1.510E+00		7.345E+00	3.115E+01	6.490E-01	0.048
CO-60	-3.152E-01		2.642E+00	1.162E+01	2.458E-01	-0.027
ZN-65	9.113E+00		7.138E+00	3.390E+01	7.071E-01	0.269
SE-75	-1.574E+00		1.116E+01	4.145E+01	8.314E-01	-0.038
SR-85	-1.381E+01		7.469E+00	2.313E+01	4.646E-01	-0.597
Y-88	-1.259E-02		2.501E+00	1.157E+01	2.524E-01	-0.001
NB-94	-3.730E+00		3.907E+00	1.394E+01	2.861E-01	-0.268
NB-95	1.497E+00		3.397E+00	1.572E+01	3.205E-01	0.095
TC-95M	-6.123E+00		1.308E+01	4.533E+01	9.157E-01	-0.135
ZR-95	2.254E-01		4.245E+00	2.021E+01	4.116E-01	0.011
ZRNB-95	2.758E+00		6.259E+00	2.897E+01	5.904E-01	0.095
MO-99	-1.523E+01		8.929E+01	3.327E+02	6.842E+00	-0.046
RH-101	-1.098E+01		1.253E+01	4.334E+01	8.764E-01	-0.253
RH-102M	-3.700E+00		4.186E+00	1.490E+01	2.989E-01	-0.248
RU-103	-7.484E-01		6.816E+00	2.571E+01	5.161E-01	-0.029
RU-106DA	3.137E+01		4.586E+01	1.934E+02	3.907E+00	0.162
AG-108M	-9.515E+00		5.624E+00	1.793E+01	3.591E-01	-0.531
AG-110M	-3.430E+00		4.366E+00	1.634E+01	3.356E-01	-0.210
SN-113DA	-9.675E+00		6.851E+00	2.299E+01	4.600E-01	-0.421

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	5.910E+00		4.992E+00	2.198E+01	4.436E-01	0.269
SB-125	-7.937E+00		1.633E+01	6.067E+01	1.215E+00	-0.131
SN-126DA	-1.123E+00		4.261E+00	1.639E+01	3.320E-01	-0.069
I-131	1.671E+01		1.424E+01	6.033E+01	1.207E+00	0.277
CS-134	7.925E+00		4.806E+00	2.249E+01	4.592E-01	0.352
CS-137DA	2.559E+00		4.074E+00	1.806E+01	3.656E-01	0.142
LA-138	1.222E-02		2.410E+00	1.257E+01	2.677E-01	0.001
CE-139	3.488E+01		1.229E+01	4.982E+01	1.015E+00	0.700
BA-140	-2.289E+01		2.572E+01	9.428E+01	1.896E+00	-0.243
BALA-140	-4.239E+00		7.019E+00	2.908E+01	6.253E-01	-0.146
LA-140	-5.622E+01		9.308E+01	3.856E+02	8.292E+00	-0.146
CE-141	5.749E+00		1.948E+01	7.288E+01	1.496E+00	0.079
CE-144	4.944E+01		6.402E+01	2.527E+02	5.212E+00	0.196
CEPR-144	9.805E+01		1.280E+02	5.049E+02	1.042E+01	0.194
PM-144	-2.292E+00		4.402E+00	1.653E+01	3.338E-01	-0.139
PM-146	-3.492E+00		5.278E+00	1.982E+01	3.971E-01	-0.176
EU-152	2.898E+01		2.208E+01	9.070E+01	1.814E+00	0.320
EU-154	2.522E+00		1.077E+01	4.491E+01	9.464E-01	0.056
EU-155	-7.889E+01		3.385E+01	1.058E+02	2.220E+00	-0.745
HF-181	-1.974E+00		5.530E+00	2.115E+01	4.243E-01	-0.093
BI-207	3.523E+00		3.931E+00	1.752E+01	3.528E-01	0.201
TL-208	2.313E+00		4.999E+00	2.095E+01	4.223E-01	0.110
BI-210M	-8.830E+00		1.316E+01	4.670E+01	9.365E-01	-0.189
BI-212	-5.560E+01		5.680E+01	1.987E+02	6.068E+00	-0.280
PB-212	1.288E+01		1.477E+01	5.878E+01	1.182E+00	0.219
BI-214	-1.270E+00		1.019E+01	3.945E+01	7.964E-01	-0.032
PB-214	4.938E+00		1.757E+01	6.170E+01	1.234E+00	0.080
RA-223	2.373E+01		4.928E+01	1.896E+02	3.801E+00	0.125
RA-224DA	1.300E+01		1.490E+01	5.931E+01	1.192E+00	0.219
RA-226DA	-1.365E+00		1.018E+01	3.938E+01	7.950E-01	-0.035
AC-227DA	-1.428E+01		5.990E+01	2.211E+02	4.447E+00	-0.065
AC-228	-1.210E+01		1.213E+01	4.312E+01	8.872E-01	-0.281
RA-228DA	-1.213E+01		1.216E+01	4.325E+01	8.899E-01	-0.281
TH-228DA	6.497E+00		1.404E+01	5.884E+01	1.186E+00	0.110
TH-232DA	4.972E+01		4.580E+01	1.865E+02	3.730E+00	0.267
TH-234DA	3.229E+02		4.258E+02	2.048E+03	4.239E+01	0.158
U-234DA	1.496E+01		3.152E+01	1.224E+02	2.450E+00	0.122
U-235HP	-4.338E+01		7.792E+01	2.751E+02	5.650E+00	-0.158
NP-237DA	2.490E+01		1.898E+01	7.594E+01	1.520E+00	0.328
U-238DA	4.938E+00		1.757E+01	6.170E+01	1.234E+00	0.080
U-238DHP	-1.839E+02		1.984E+02	6.841E+02	1.506E+01	-0.269
AM-241HP	9.647E+00		2.111E+01	8.083E+01	1.792E+00	0.119


STL Richland WA.
BA133
Batch ID: 6129266
Sample ID: H4X1A1AC
Detector ID: GER13 1
133 Ba
133 Ba
133 Ba
133 Ba, 208 Tl
133 Ba
Counts
100
50
20
10
5
2
1
Energy
50
100
200
500
1000
2000
()
Acquisition Start: 14-JUN-2006 14:38:10.48
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00
Energy Coefficients:
Offset: -5.88556E-01
Slope: 2.50712E-01
Quadrature: -9.27656E-08

SAMPLE IDENTIFICATION: H4X1A1AC

CONFIGURATION ID: GER13:H4X1A1AC_140661438
TITLE : BA133
SAMPLE ID : H4X1A1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 14:38:10
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:43:45.07
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: -.5886E+00 keV
ENERGY SLOPE: 2.5071E-01 keV/C
ENERGY Q COEFF: -.9277E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0477E-01 keV
FWHM SLOPE: 4.4272E-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 14-JUN-2006 15:08:44

Configuration : $DISK1:[GER13.SAMPLE]H4X1A1AC_140661438.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:38:10
Sample ID : H4X1A1AC 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 : 19.47 End energy : 2047.02
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.74	247	52	1.00	328.43	320	16	1.37E-01	9.1	
2	0	276.06	74	30	0.97	1103.91	1097	16	4.10E-02	19.9	
3	0	302.65	143	64	1.27	1210.07	1201	22	7.96E-02	16.7	
4	0	355.77	371	33	1.18	1422.13	1412	22	2.06E-01	6.5	
5	0	383.64	69	11	0.76	1533.41	1522	21	3.85E-02	16.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 15:08:44

Configuration : $DISK1:[GER13.SAMPLE]H4X1A1AC_140661438.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:38:10
Sample ID : H4X1A1AC 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	247	33.00	2.704E+00	9.223E+02	9.239E+02	10.62
	276.40	74	6.90	2.897E+00	1.230E+03	1.232E+03	20.64
	302.84	143	17.80	2.900E+00	9.250E+02	9.265E+02	17.51
	356.00	371	62.05*	2.903E+00	6.865E+02	6.877E+02	8.46
	383.85	69	8.70	2.902E+00	9.155E+02	9.170E+02	17.61

Flag: "*" = Keyline

Sample ID : H4X1A1AC Acquisition date : 14-JUN-2006 14:38:10

None

Flags: "T" = Tentatively associated

Sample ID : H4X1A1AC Acquisition date : 14-JUN-2006 14:38:10

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	20.64	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 14-JUN-2006 15:08:46

Configuration : $DISK1:[GER13.SAMPLE]H4X1A1AC_140661438.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:38:10
Sample ID : H4X1A1AC 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	6.877E+02	5.816E+01	5.280E+01	1.056E+00	13.025

---- 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+01		7.284E+01	2.752E+02	5.519E+00	0.046
NA-22	-3.598E+00		3.211E+00	1.132E+01	2.388E-01	-0.318
K-40	2.974E+01		1.006E+02	4.737E+02	1.012E+01	0.063
SC-46	-5.667E+00		5.795E+00	2.238E+01	4.674E-01	-0.253
CR-51	-1.139E+02		1.182E+02	4.012E+02	8.027E+00	-0.284
MN-54	-6.275E+00		5.777E+00	1.987E+01	4.070E-01	-0.316
CO-57	1.164E+02		1.062E+02	4.056E+02	8.360E+00	0.287
CO-58	3.298E+00		5.553E+00	2.297E+01	4.698E-01	0.144
FE-59	1.092E+01		1.003E+01	4.353E+01	9.078E-01	0.251
CO-60	-1.248E+00		2.741E+00	1.132E+01	2.397E-01	-0.110
ZN-65	2.009E+00		9.494E+00	3.842E+01	8.021E-01	0.052
SE-75	-6.811E+00		1.631E+01	5.827E+01	1.169E+00	-0.117
SR-85	-3.892E+01		1.179E+01	3.287E+01	6.604E-01	-1.184
Y-88	-2.300E-01		3.192E+00	1.400E+01	3.059E-01	-0.016
NB-94	3.367E+00		4.613E+00	1.963E+01	4.031E-01	0.172
NB-95	3.139E-01		5.886E+00	2.339E+01	4.769E-01	0.013
TC-95M	3.536E+01		1.996E+01	7.561E+01	1.528E+00	0.468
ZR-95	9.885E+00		1.034E+01	4.393E+01	8.951E-01	0.225
ZRNB-95	5.782E-01		1.084E+01	4.309E+01	8.786E-01	0.013
MO-99	-9.899E+01		1.211E+02	4.234E+02	8.712E+00	-0.234
RH-101	1.161E+01		1.431E+01	5.316E+01	1.075E+00	0.218
RH-102M	-2.871E+00		6.540E+00	2.375E+01	4.762E-01	-0.121
RU-103	1.053E+00		8.955E+00	3.356E+01	6.736E-01	0.031
RU-106DA	-1.710E+00		7.023E+01	2.628E+02	5.310E+00	-0.007
AG-108M	1.445E+00		8.916E+00	3.316E+01	6.642E-01	0.044
AG-110M	-1.247E+01		8.521E+00	2.775E+01	5.704E-01	-0.449
SN-113DA	-2.697E+00		9.661E+00	3.631E+01	7.265E-01	-0.074

Sample ID : H4X1A1AC Acquisition date : 14-JUN-2006 14:38:10

---- Non-Identified Nuclides ----

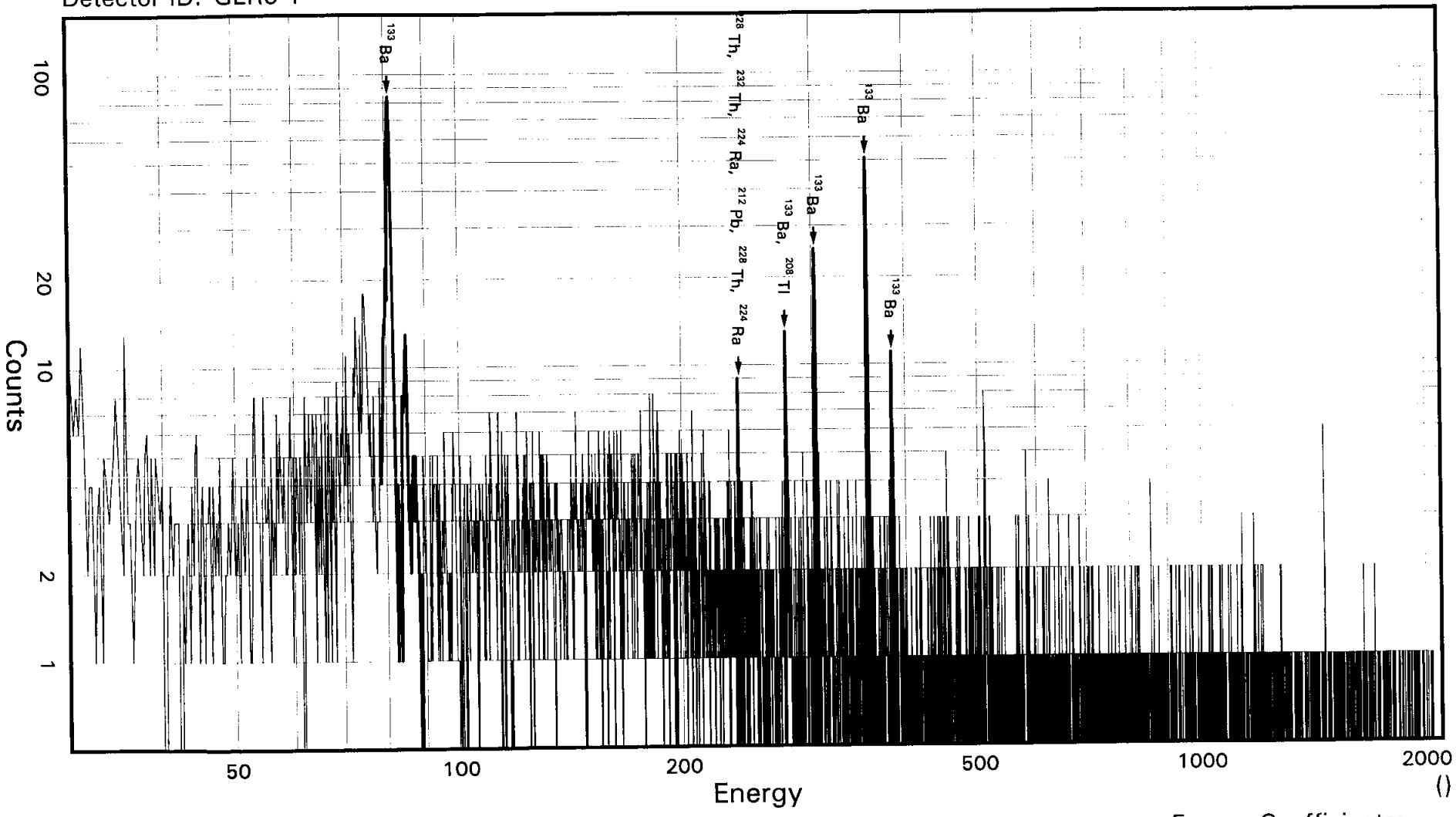
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-1.262E+00		7.511E+00	2.794E+01	5.638E-01	-0.045
SB-125	3.394E+00		2.618E+01	9.782E+01	1.959E+00	0.035
SN-126DA	-6.187E+00		4.899E+00	1.640E+01	3.323E-01	-0.377
I-131	5.875E+00		1.718E+01	6.574E+01	1.315E+00	0.089
CS-134	9.510E+00		6.008E+00	2.679E+01	5.473E-01	0.355
CS-137DA	1.346E+01		6.500E+00	2.913E+01	5.899E-01	0.462
LA-138	1.555E+00		5.600E+00	2.404E+01	5.125E-01	0.065
CE-139	2.204E+01		1.476E+01	5.639E+01	1.150E+00	0.391
BA-140	-2.328E+01		4.298E+01	1.568E+02	3.154E+00	-0.148
BALA-140	-1.716E+00		1.170E+01	4.891E+01	1.053E+00	-0.035
LA-140	-9.304E-02		1.593E+02	6.757E+02	1.455E+01	0.000
CE-141	3.672E+01		2.762E+01	1.060E+02	2.177E+00	0.346
CE-144	-1.089E+02		1.101E+02	3.633E+02	7.499E+00	-0.300
CEPR-144	-2.159E+02		2.203E+02	7.273E+02	1.501E+01	-0.297
PM-144	-1.357E-02		6.525E+00	2.467E+01	4.983E-01	-0.001
PM-146	-1.057E+00		9.996E+00	3.728E+01	7.471E-01	-0.028
EU-152	3.537E+01		3.296E+01	1.263E+02	2.526E+00	0.280
EU-154	-1.008E+01		8.996E+00	3.172E+01	6.692E-01	-0.318
EU-155	1.878E+01		4.888E+01	1.791E+02	3.761E+00	0.105
HF-181	-2.791E+00		9.094E+00	3.320E+01	6.659E-01	-0.084
BI-207	-2.100E+00		6.364E+00	2.364E+01	4.761E-01	-0.089
TL-208	-4.201E+00		8.169E+00	3.204E+01	6.460E-01	-0.131
BI-210M	1.376E+01		1.879E+01	7.119E+01	1.428E+00	0.193
BI-212	1.738E+02		8.200E+01	3.732E+02	1.140E+01	0.466
PB-212	1.041E+01		2.210E+01	8.552E+01	1.719E+00	0.122
BI-214	-2.367E+01		1.674E+01	6.380E+01	1.288E+00	-0.371
PB-214	-1.446E+01		2.952E+01	9.575E+01	1.915E+00	-0.151
RA-223	-1.168E+02		6.917E+01	2.269E+02	4.551E+00	-0.515
RA-224DA	1.050E+01		2.231E+01	8.630E+01	1.735E+00	0.122
RA-226DA	-2.367E+01		1.674E+01	6.380E+01	1.288E+00	-0.371
AC-227DA	-2.262E+02		8.344E+01	2.394E+02	4.815E+00	-0.945
AC-228	-1.240E+01		2.273E+01	9.335E+01	1.922E+00	-0.133
RA-228DA	-1.243E+01		2.280E+01	9.363E+01	1.928E+00	-0.133
TH-228DA	-1.180E+01		2.295E+01	9.000E+01	1.814E+00	-0.131
TH-232DA	-5.093E+01		6.257E+01	2.152E+02	4.305E+00	-0.237
TH-234DA	2.960E+01		7.693E+02	3.047E+03	6.311E+01	0.010
U-234DA	-5.047E+01		5.148E+01	1.753E+02	3.510E+00	-0.288
U-235HP	4.425E+01		1.090E+02	4.019E+02	8.259E+00	0.110
NP-237DA	2.617E+01		2.585E+01	9.841E+01	1.969E+00	0.266
U-238DA	-1.446E+01		2.952E+01	9.575E+01	1.915E+00	-0.151
U-238DHP	-2.373E+02		2.936E+02	1.036E+03	2.285E+01	-0.229
AM-241HP	-6.386E+01		3.488E+01	1.082E+02	2.403E+00	-0.590

STL Richland WA.

BA133

Sample ID: H4X1F1AC
Detector ID: GER6 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 14:38:38.05
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -6.63443E-03
Slope: 2.49415E-01
Quadrature: 6.44103E-09

SAMPLE IDENTIFICATION: H4X1F1AC

CONFIGURATION ID: GER6:H4X1F1AC_140661438
TITLE : BA133
SAMPLE ID : H4X1F1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 14:38:38
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:23:30.78
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: -.6634E-02 keV
ENERGY SLOPE: 2.4941E-01 keV/C
ENERGY Q COEFF: 6.4410E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.6340E-01 keV
FWHM SLOPE: 5.3905E-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 14-JUN-2006 15:08:59

Configuration : $DISK1:[GER6.SAMPLE]H4X1F1AC_140661438.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:38:38
Sample ID : H4X1F1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.28 0.0%
Start energy : 19.95 End energy : 2043.63
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	80.97	308	45	0.93	324.66	315	41	1.71E-01	7.3	1.38E+00
2	1	84.96*	17	18	0.95	340.65	315	41	9.67E-03	77.7	
3	0	239.54*	2	26	0.43	960.40	949	15	1.31E-03	499.5	
4	0	276.33	56	9	0.61	1107.92	1100	17	3.13E-02	17.8	
5	0	303.19	123	26	1.15	1215.61	1204	21	6.81E-02	13.8	
6	0	356.04	308	0	1.42	1427.47	1419	17	1.71E-01	5.7	
7	0	384.22	51	15	1.00	1540.43	1529	19	2.85E-02	22.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 15:09:00

Configuration : $DISK1:[GER6.SAMPLE]H4X1F1AC_140661438.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00
Sample ID : H4X1F1AC
Sample type :
Elapsed live time: 0 00:30:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 14-JUN-2006 14:38:38
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.28 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

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	308	33.00	2.167E+00	1.437E+03	1.440E+03	9.10
	276.40	56	6.90	2.334E+00	1.168E+03	1.170E+03	18.63
	302.84	123	17.80	2.337E+00	9.824E+02	9.840E+02	14.83
	356.00	308	62.05*	2.339E+00	7.075E+02	7.086E+02	7.84
	383.85	51	8.70	2.338E+00	8.415E+02	8.429E+02	23.15

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
PB-212	238.63	2	44.60*	2.326E+00	7.553E+00	7.553E+00	499.56
	300.09	------	3.41	2.336E+00	------	Line Not Found	------

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4X1F1AC

Acquisition date : 14-JUN-2006 14:38:38

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	84.96	17	18	0.95	340.65	315	41	9.67E-03	77.7	2.18E+00	

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : H4X1F1AC
Acquisition date : 14-JUN-2006 14:38:38

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	1.185E+03	18.63	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			
RA-224DA	1.91Y	0.01	238.63*	44.60	7.621E+00	499.56	Abun.
			240.98	3.95	8.605E+01	499.56	
			583.14	30.25	--- Not Found ---		
			860.37	4.48	--- Not Found ---		
		% Abundances Found =		58.30			
TH-228DA	1.91Y	0.01	238.63	44.60	7.621E+00	499.56	Abun.
			240.98	3.95	8.605E+01	499.56	
			583.14*	30.25	--- Not Found ---		
			860.37	4.48	--- Not Found ---		
		% Abundances Found =		58.30			
TH-232DA	1.41E+10Y	0.00	238.63	44.60	7.553E+00	499.56	Abun.
			338.32*	12.40	--- Not Found ---		
			583.14	30.25	--- Not Found ---		
			911.07	27.70	--- Not Found ---		
			964.60	5.20	--- Not Found ---		
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		32.61			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 15:09:01

Configuration : $DISK1:[GER6.SAMPLE]H4X1F1AC_140661438.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 : 5-JUN-2006 12:00:00
Sample ID : H4X1F1AC
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 : 14-JUN-2006 14:38:38
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.28 0.0%
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	7.086E+02	5.556E+01	4.843E+01	9.686E-01	14.632
PB-212	7.553E+00	3.773E+01	8.884E+01	1.787E+00	0.085

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-2.755E+01		7.114E+01	2.636E+02	5.288E+00	-0.105
NA-22	8.012E+00		4.106E+00	2.178E+01	4.609E-01	0.368
K-40	4.981E+01		8.480E+01	4.212E+02	9.029E+00	0.118
SC-46	3.191E+00		6.030E+00	2.551E+01	5.341E-01	0.125
CR-51	-2.185E+02		1.067E+02	3.299E+02	6.601E+00	-0.662
MN-54	-2.527E+00		3.616E+00	1.422E+01	2.917E-01	-0.178
CO-57	1.775E+02		1.031E+02	4.145E+02	8.561E+00	0.428
CO-58	-9.966E-01		6.046E+00	2.358E+01	4.828E-01	-0.042
FE-59	-5.983E+00		9.583E+00	3.647E+01	7.623E-01	-0.164
CO-60	-3.735E-01		4.236E+00	1.781E+01	3.784E-01	-0.021
ZN-65	-3.040E+00		1.169E+01	4.526E+01	9.472E-01	-0.067
SE-75	-1.843E+01		1.530E+01	5.066E+01	1.016E+00	-0.364
SR-85	-4.325E+01		1.238E+01	3.448E+01	6.929E-01	-1.254
Y-88	5.006E+00		3.751E+00	2.006E+01	4.406E-01	0.250
NB-94	-1.984E+00		4.234E+00	1.679E+01	3.453E-01	-0.118
NB-95	8.653E+00		5.830E+00	2.767E+01	5.649E-01	0.313
TC-95M	-1.221E+01		1.934E+01	6.801E+01	1.375E+00	-0.180
ZR-95	8.048E+00		1.123E+01	4.794E+01	9.779E-01	0.168
ZRNB-95	1.594E+01		1.074E+01	5.098E+01	1.041E+00	0.313
MO-99	9.249E+00		1.238E+02	4.522E+02	9.321E+00	0.020
RH-101	-4.165E-01		1.704E+01	6.184E+01	1.252E+00	-0.007
RH-102M	-5.738E+00		6.980E+00	2.467E+01	4.948E-01	-0.233
RU-103	-1.469E+01		1.013E+01	3.286E+01	6.598E-01	-0.447
RU-106DA	1.431E+02		6.730E+01	3.071E+02	6.209E+00	0.466
AG-108M	7.370E-01		8.720E+00	3.323E+01	6.655E-01	0.022
AG-110M	-1.421E+01		7.430E+00	2.229E+01	4.589E-01	-0.637

---- Non-Identified Nuclides ----

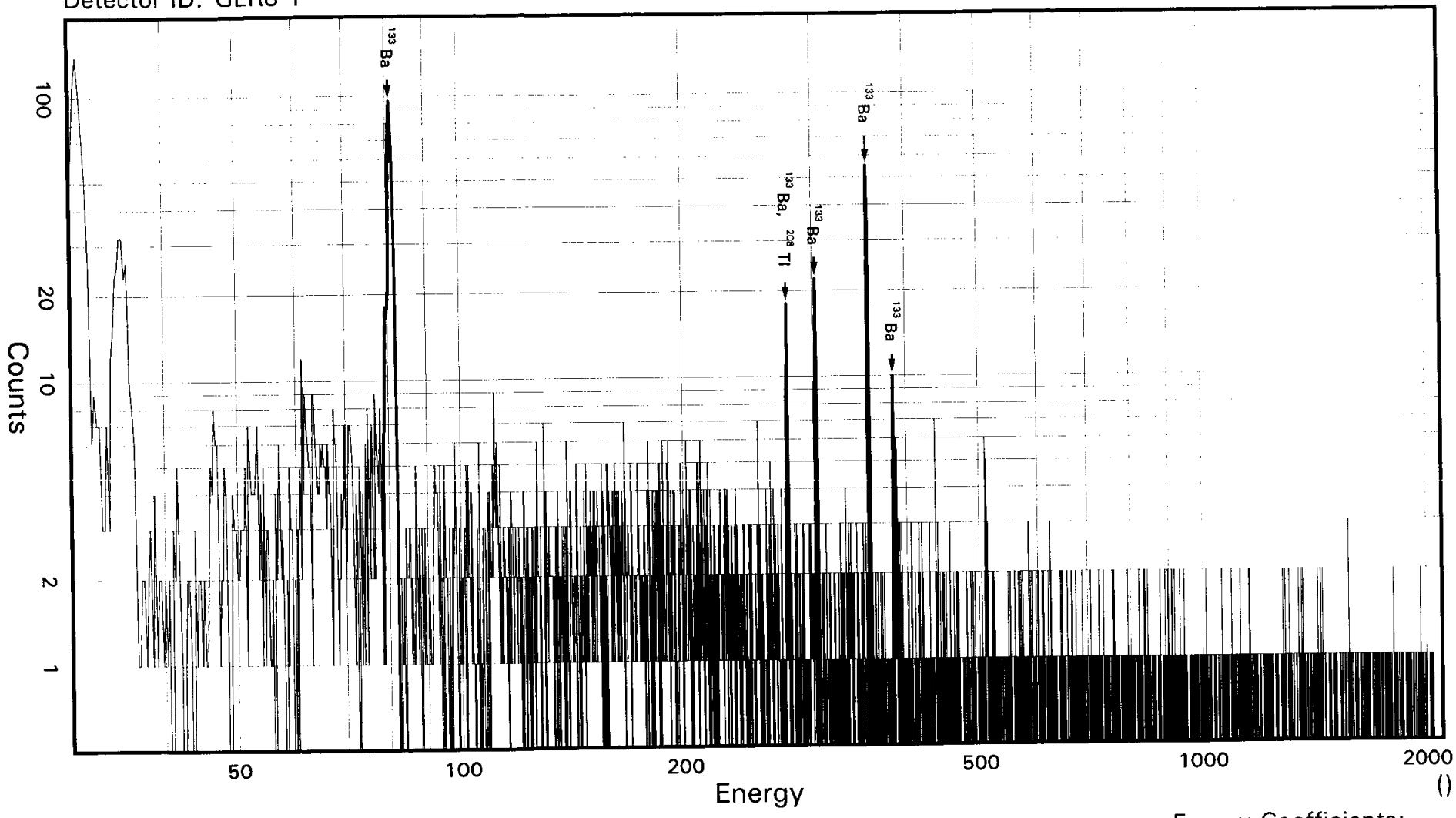
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SN-113DA	-1.344E+01		1.142E+01	3.954E+01	7.910E-01	-0.340
SB-124	-6.745E+00		6.179E+00	2.140E+01	4.321E-01	-0.315
SB-125	-1.915E+01		2.380E+01	8.493E+01	1.701E+00	-0.225
SN-126DA	-1.786E+01		6.163E+00	1.555E+01	3.153E-01	-1.148
I-131	-8.784E+00		2.029E+01	7.345E+01	1.469E+00	-0.120
CS-134	-1.246E+00		5.371E+00	2.149E+01	4.397E-01	-0.058
CS-137DA	1.034E+01		5.354E+00	2.693E+01	5.458E-01	0.384
LA-138	-7.672E-02		3.288E+00	1.681E+01	3.598E-01	-0.005
CE-139	-1.717E+01		1.608E+01	5.353E+01	1.093E+00	-0.321
BA-140	2.078E+01		3.713E+01	1.566E+02	3.150E+00	0.133
BALA-140	-5.439E+00		1.190E+01	4.911E+01	1.062E+00	-0.111
LA-140	-7.215E+01		1.579E+02	6.514E+02	1.409E+01	-0.111
CE-141	1.857E+01		3.136E+01	1.162E+02	2.389E+00	0.160
CE-144	-9.956E+01		1.114E+02	3.838E+02	7.938E+00	-0.259
CEPR-144	-1.981E+02		2.229E+02	7.681E+02	1.589E+01	-0.258
PM-144	-4.764E+00		5.819E+00	2.084E+01	4.213E-01	-0.229
PM-146	-4.334E+00		1.175E+01	4.311E+01	8.639E-01	-0.101
EU-152	-1.421E+01		3.175E+01	1.141E+02	2.283E+00	-0.125
EU-154	2.030E+01		1.109E+01	5.898E+01	1.248E+00	0.344
EU-155	-7.316E+00		5.501E+01	2.028E+02	4.272E+00	-0.036
HF-181	-1.511E+01		1.027E+01	3.338E+01	6.698E-01	-0.453
BI-207	6.701E+00		6.318E+00	2.717E+01	5.475E-01	0.247
TL-208	1.963E+01		8.932E+00	4.099E+01	8.268E-01	0.479
BI-210M	-9.158E+00		1.676E+01	5.913E+01	1.186E+00	-0.155
BI-212	2.211E+02		9.431E+01	4.432E+02	1.355E+01	0.499
BI-214	-1.033E+01		1.539E+01	6.033E+01	1.219E+00	-0.171
PB-214	-8.991E+00		2.266E+01	7.656E+01	1.531E+00	-0.117
RA-223	-8.151E+01		6.628E+01	2.279E+02	4.571E+00	-0.358
RA-224DA	7.621E+00	+	3.807E+01	9.893E+01	1.990E+00	0.077
RA-226DA	-1.020E+01		1.540E+01	6.041E+01	1.220E+00	-0.169
AC-227DA	-4.178E+01		1.034E+02	3.087E+02	6.211E+00	-0.135
AC-228	-3.754E+01		2.232E+01	7.962E+01	1.642E+00	-0.471
RA-228DA	-3.765E+01		2.238E+01	7.986E+01	1.647E+00	-0.471
TH-228DA	5.514E+01		2.509E+01	1.151E+02	2.322E+00	0.479
TH-232DA	-1.458E+01		7.067E+01	2.584E+02	5.168E+00	-0.056
TH-234DA	-5.307E+02		9.298E+02	3.415E+03	7.089E+01	-0.155
U-234DA	6.089E+01		4.283E+01	1.777E+02	3.558E+00	0.343
U-235HP	3.730E+01		1.218E+02	4.439E+02	9.137E+00	0.084
NP-237DA	2.213E+01		2.478E+01	9.789E+01	1.959E+00	0.226
U-238DA	-8.991E+00		2.266E+01	7.656E+01	1.531E+00	-0.117
U-238DHP	6.541E+02		3.628E+02	1.428E+03	3.169E+01	0.458
AM-241HP	1.271E+01		3.667E+01	1.369E+02	3.060E+00	0.093

STL Richland WA.

BA133

Sample ID: H40151AA
Detector ID: GER8 1

Batch ID: 6129266



Acquisition Start: 14-JUN-2006 14:38:47.48
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 2.75706E-01
Slope: 2.49832E-01
Quadrature: 1.80037E-08

SAMPLE IDENTIFICATION: H40151AA

CONFIGURATION ID: GER8:H40151AA_140661438
TITLE : BA133
SAMPLE ID : H40151AA

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 14:38:47
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:24:04.34
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: 2.7571E-01 keV
ENERGY SLOPE: 2.4983E-01 keV/C
ENERGY Q COEFF: 1.8004E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.8969E-01 keV
FWHM SLOPE: 1.8029E-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 14-JUN-2006 15:09:14

Configuration : $DISK1:[GER8.SAMPLE]H40151AA_140661438.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00
Sample ID : H40151AA
Sample type :
Elapsed live time: 0 00:30:00.00
Start energy : 20.26
Sensitivity : 5.00
Critical level : No

Acquisition date : 14-JUN-2006 14:38:47
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.22 0.0%
End energy : 2048.11
Gaussian : 10.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	30.71	655	105	1.00	121.82	111	21	3.64E-01	5.5	
2	0	35.11	192	35	1.54	139.43	132	16	1.07E-01	10.0	
3	0	80.87	509	14	1.16	322.60	313	17	2.83E-01	4.7	
4	0	276.68	54	23	0.83	1106.26	1097	14	2.97E-02	22.9	
5	0	302.76	92	7	0.80	1210.66	1203	14	5.11E-02	12.1	
6	0	356.09	300	12	1.31	1424.05	1416	17	1.66E-01	6.4	
7	1	384.11	56	0	1.48	1536.18	1527	26	3.13E-02	13.6	7.53E-01
8	1	386.63	34	0	1.48	1546.30	1527	26	1.88E-02	17.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 15:09:14

Configuration : $DISK1:[GER8.SAMPLE]H40151AA_140661438.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00
Sample ID : H40151AA
Sample type :
Elapsed live time: 0 00:30:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 14-JUN-2006 14:38:47
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.22 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

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	509	33.00	2.202E+00	2.334E+03	2.338E+03	7.21
	276.40	54	6.90	2.371E+00	1.090E+03	1.092E+03	23.48
	302.84	92	17.80	2.374E+00	7.258E+02	7.270E+02	13.23
	356.00	300	62.05*	2.376E+00	6.772E+02	6.784E+02	8.36
	383.85	56	8.70	2.375E+00	9.099E+02	9.114E+02	14.64

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H40151AA

Acquisition date : 14-JUN-2006 14:38:47

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	30.71	655	105	1.00	121.82	111	21	3.64E-01	5.5	1.93E+00	
0	35.11	192	35	1.54	139.43	132	16	1.07E-01	10.0	1.97E+00	
1	386.63	34	0	1.48	1546.30	1527	26	1.88E-02	17.7	2.38E+00	

Flags: "T" = Tentatively associated

Sample ID : H40151AA
Acquisition date : 14-JUN-2006 14:38:47

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	1.106E+03	23.48	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 14-JUN-2006 15:09:16

Configuration : $DISK1:[GER8.SAMPLE]H40151AA_140661438.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 14:38:47
Sample ID : H40151AA 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	6.784E+02	5.668E+01	4.549E+01	9.098E-01	14.913

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-6.358E+01		4.969E+01	1.653E+02	3.315E+00	-0.385
NA-22	2.891E-02		2.094E+00	1.099E+01	2.327E-01	0.003
K-40	4.169E+01		3.822E+01	2.114E+02	4.531E+00	0.197
SC-46	-4.407E+00		4.068E+00	1.469E+01	3.076E-01	-0.300
CR-51	5.885E+00		7.998E+01	3.146E+02	6.294E+00	0.019
MN-54	3.588E+00		3.746E+00	1.839E+01	3.772E-01	0.195
CO-57	1.623E+01		1.002E+02	3.686E+02	7.611E+00	0.044
CO-58	-3.177E+00		3.881E+00	1.466E+01	3.002E-01	-0.217
FE-59	2.202E+00		4.821E+00	2.615E+01	5.467E-01	0.084
CO-60	-2.959E+00		2.098E+00	4.042E+00	8.587E-02	-0.732
ZN-65	3.100E+00		5.069E+00	2.754E+01	5.764E-01	0.113
SE-75	-1.975E+01		1.667E+01	5.699E+01	1.143E+00	-0.347
SR-85	-3.889E+01		1.108E+01	2.820E+01	5.667E-01	-1.379
Y-88	1.645E+00		1.647E+00	1.209E+01	2.655E-01	0.136
NB-94	4.284E+00		3.840E+00	1.890E+01	3.886E-01	0.227
NB-95	5.942E-02		5.414E+00	2.251E+01	4.594E-01	0.003
TC-95M	6.621E+00		1.812E+01	6.647E+01	1.344E+00	0.100
ZR-95	-2.678E+00		1.025E+01	4.025E+01	8.211E-01	-0.067
ZRNB-95	1.095E-01		9.975E+00	4.147E+01	8.464E-01	0.003
MO-99	-7.011E+00		1.214E+02	4.430E+02	9.130E+00	-0.016
RH-101	2.537E+01		1.455E+01	5.770E+01	1.168E+00	0.440
RH-102M	3.154E+00		2.174E+00	1.411E+01	2.830E-01	0.224
RU-103	-1.957E+00		5.086E+00	2.030E+01	4.075E-01	-0.096
RU-106DA	-2.597E+01		5.737E+01	2.193E+02	4.434E+00	-0.118
AG-108M	-2.261E+01		7.901E+00	2.048E+01	4.101E-01	-1.104
AG-110M	1.016E+01		5.439E+00	2.875E+01	5.917E-01	0.354
SN-113DA	9.143E+00		1.174E+01	4.748E+01	9.499E-01	0.193

Sample ID : H40151AA Acquisition date : 14-JUN-2006 14:38:47

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-1.107E+00		5.660E+00	2.266E+01	4.575E-01	-0.049
SB-125	8.235E-01		1.563E+01	6.454E+01	1.292E+00	0.013
SN-126DA	5.522E+00		5.226E+00	2.340E+01	4.745E-01	0.236
I-131	-1.085E+01		1.747E+01	6.362E+01	1.272E+00	-0.171
CS-134	-3.386E+00		4.153E+00	1.572E+01	3.216E-01	-0.215
CS-137DA	-3.039E+00		5.193E+00	2.007E+01	4.067E-01	-0.151
LA-138	-4.530E+00		4.522E+00	1.655E+01	3.540E-01	-0.274
CE-139	5.851E+00		1.582E+01	5.759E+01	1.175E+00	0.102
BA-140	-3.037E+01		2.553E+01	8.587E+01	1.728E+00	-0.354
BALA-140	-1.069E+01		7.585E+00	1.408E+01	3.044E-01	-0.760
LA-140	-2.128E+02		1.234E+02	1.867E+02	4.038E+00	-1.140
CE-141	-1.595E+01		2.728E+01	9.500E+01	1.954E+00	-0.168
CE-144	-7.702E+01		1.056E+02	3.643E+02	7.533E+00	-0.211
CEPR-144	-1.551E+02		2.110E+02	7.281E+02	1.506E+01	-0.213
PM-144	3.268E+00		5.357E+00	2.308E+01	4.666E-01	0.142
PM-146	-9.338E+00		8.849E+00	3.053E+01	6.119E-01	-0.306
EU-152	-1.838E+01		2.819E+01	1.013E+02	2.025E+00	-0.182
EU-154	8.101E-02		5.868E+00	3.081E+01	6.519E-01	0.003
EU-155	-7.310E+01		5.204E+01	1.720E+02	3.623E+00	-0.425
HF-181	1.518E+01		6.866E+00	3.402E+01	6.825E-01	0.446
BI-207	-3.658E+00		5.066E+00	1.904E+01	3.837E-01	-0.192
TL-208	3.775E+00		5.707E+00	2.522E+01	5.086E-01	0.150
BI-210M	2.900E+01		1.757E+01	7.272E+01	1.459E+00	0.399
BI-212	-2.883E+01		6.308E+01	2.500E+02	7.641E+00	-0.115
PB-212	-2.120E+01		2.177E+01	7.667E+01	1.542E+00	-0.277
BI-214	1.666E+01		1.181E+01	5.379E+01	1.087E+00	0.310
PB-214	-5.219E+01		2.808E+01	7.271E+01	1.454E+00	-0.718
RA-223	3.551E+01		6.185E+01	2.424E+02	4.860E+00	0.147
RA-224DA	-2.140E+01		2.197E+01	7.736E+01	1.556E+00	-0.277
RA-226DA	1.666E+01		1.181E+01	5.379E+01	1.087E+00	0.310
AC-227DA	4.694E+01		8.983E+01	3.427E+02	6.895E+00	0.137
AC-228	1.530E+01		1.581E+01	7.360E+01	1.518E+00	0.208
RA-228DA	1.535E+01		1.586E+01	7.382E+01	1.522E+00	0.208
TH-228DA	1.060E+01		1.603E+01	7.083E+01	1.429E+00	0.150
TH-232DA	-3.898E+01		6.798E+01	2.436E+02	4.872E+00	-0.160
TH-234DA	-4.056E+02		4.789E+02	1.798E+03	3.733E+01	-0.226
U-234DA	1.593E+01		4.045E+01	1.632E+02	3.268E+00	0.098
U-235HP	-4.125E+01		1.028E+02	3.629E+02	7.468E+00	-0.114
NP-237DA	2.337E+01		1.971E+01	8.264E+01	1.654E+00	0.283
U-238DA	-5.219E+01		2.808E+01	7.271E+01	1.454E+00	-0.718
U-238DHP	2.551E+02		4.798E+02	1.802E+03	3.997E+01	0.142
AM-241HP	-9.262E+01		4.158E+01	1.318E+02	2.946E+00	-0.703

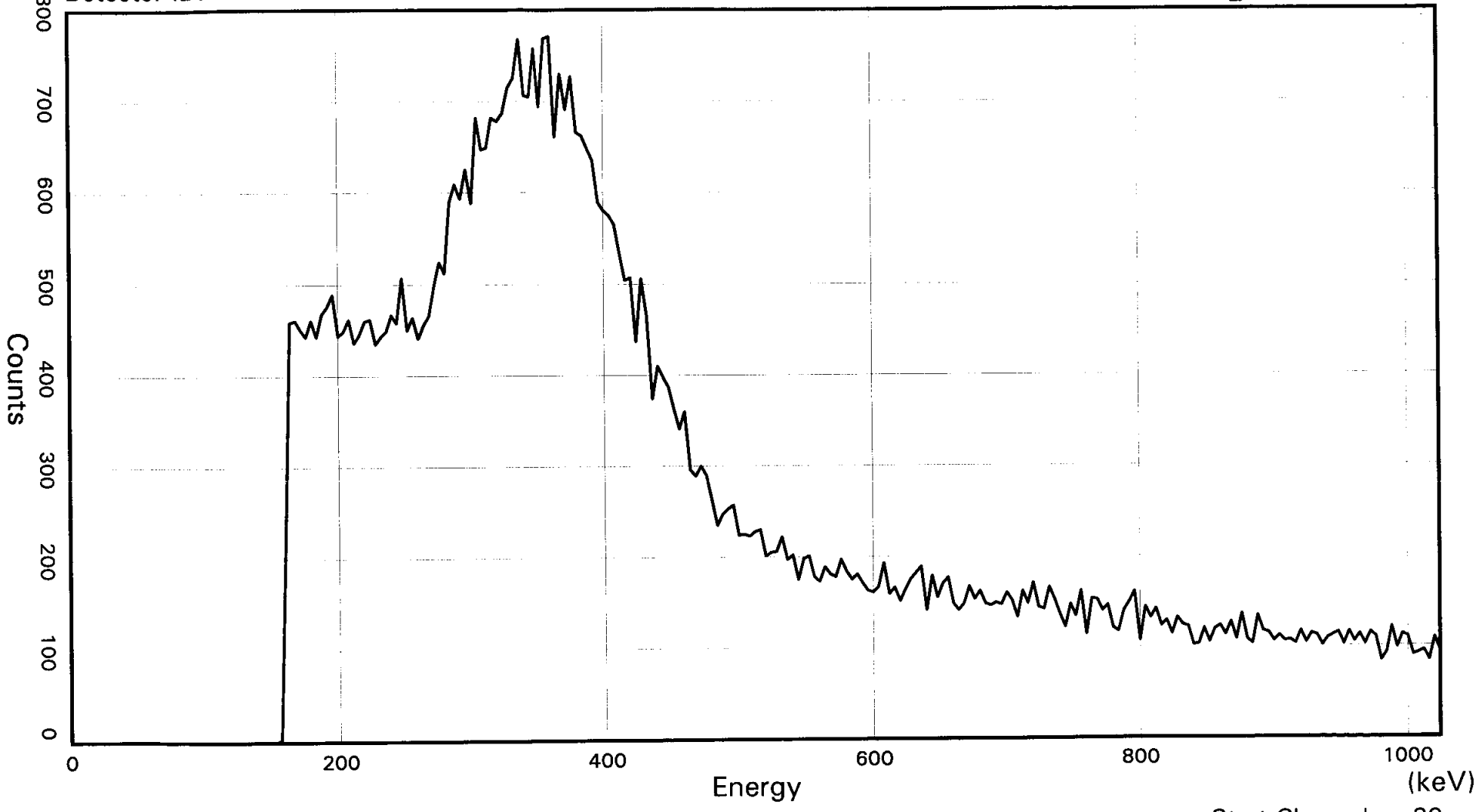
STL Richland WA.

BA133

Sample ID: H40151AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start: 14-JUN-2006 15:13:47.6

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: H40151AC

CONFIGURATION ID: NAI1:H40151AC_140661513
TITLE : BA133
SAMPLE ID : H40151AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 15:13:47
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 9-JUN-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 14-JUN-2006 15:43:52

Configuration	: RDND06$DKA100:[NAI1.SAMPLE]H40151AC_140661513.CNF;1		
Analyses by	: NAI V3.0		
Sample title	: BA133		
Sample date	: 9-JUN-2006 12:00:00	Acquisition date	: 14-JUN-2006 15:13:47
Sample ID	: H40151AC	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:	4.9	4.8	5.0	3.9	5.5	2.2	2.0	2.7
88:	-0.2	3.1	2.8	-2.3	0.8	-2.1	0.7	0.1
96:	0.7	-2.1	-2.5	-3.1	-4.0	-1.6	-2.5	-2.9
104:	-4.0	-4.0	-6.3	-2.3	-2.9	-6.1	-4.2	-3.5
112:	-4.4	-5.3						

List of Suspicious Channels

81	82	83	84	85	86

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.42E+01	0.00E+00	1.02E+00
2	7.33E+00	0.00E+00	1.04E+00
3	2.86E+00	0.00E+00	1.06E+00
4	1.19E+00	0.00E+00	1.07E+00

Sample ID : H40151AC Acquisition date : 14-JUN-2006 15:13:47

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	724.	10.1

Total Activity :	724.	

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		
RATA22507	BA-133	**7.5275E+02**	± **1.403E+00**	DPM	0.0759	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22508	BA-133	**7.5473E+02**	± **1.403E+00**	DPM	0.0761	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22509	BA-133	**7.5275E+02**	± **1.403E+00**	DPM	0.0759	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22510	BA-133	**7.5077E+02**	± **1.403E+00**	DPM	0.0757	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22511	BA-133	**7.4977E+02**	± **1.403E+00**	DPM	0.0756	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
		7.5215E+002	± 1.933E+000	(5)		0.257%	7.4977E+002 , 7.5473E+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		
RASC4130	BA-133	**7.4925E+02**	**± 1.402E+00** DPM	0.0756	g	6/9/2006	6/9/2006	Armstron	9.9107E+03	± 0.000E+00	DPM/G
		7.4925E+002	± 7.492E+002 (1)			7.4925E+002 , 7.4925E+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		
RATA22491	BA-133	**7.5573E+02**	**± 1.403E+00**	DPM	0.0762	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22492	BA-133	**7.5771E+02**	**± 1.403E+00**	DPM	0.0764	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22493	BA-133	**7.5374E+02**	**± 1.403E+00**	DPM	0.076	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22494	BA-133	**7.5672E+02**	**± 1.403E+00**	DPM	0.0763	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22495	BA-133	**7.5573E+02**	**± 1.403E+00**	DPM	0.0762	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22496	BA-133	**7.5077E+02**	**± 1.403E+00**	DPM	0.0757	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22497	BA-133	**7.5374E+02**	**± 1.403E+00**	DPM	0.076	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22498	BA-133	**7.5275E+02**	**± 1.403E+00**	DPM	0.0759	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22499	BA-133	**7.5374E+02**	**± 1.403E+00**	DPM	0.076	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22500	BA-133	**7.5275E+02**	**± 1.403E+00**	DPM	0.0759	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22501	BA-133	**7.5672E+02**	**± 1.403E+00**	DPM	0.0763	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
		7.5455E+002 ± 2.119E+000 (11)				0.281%	7.5077E+002 , 7.5771E+002					

6/14/2006 12:34:49 PM

Standard Material Fractions (Vials)

Vial Prep: 6/13/05 to 6/15/06,SMFractionIdentifier Between RATA22491 and RATA22501, 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			
RATA22491	BA	**3.0218E+01**	± **1.994E-01**	mg	1.0384	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22492	BA	**3.0221E+01**	± **1.994E-01**	mg	1.0385	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22493	BA	**3.0189E+01**	± **1.992E-01**	mg	1.0374	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22494	BA	**3.0209E+01**	± **1.994E-01**	mg	1.0381	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22495	BA	**3.0200E+01**	± **1.993E-01**	mg	1.0378	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22496	BA	**3.0250E+01**	± **1.996E-01**	mg	1.0395	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22497	BA	**3.0247E+01**	± **1.996E-01**	mg	1.0394	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22498	BA	**3.0180E+01**	± **1.992E-01**	mg	1.0371	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22499	BA	**3.0224E+01**	± **1.995E-01**	mg	1.0386	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22500	BA	**3.0328E+01**	± **2.001E-01**	mg	1.0422	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22501	BA	**3.0267E+01**	± **1.997E-01**	mg	1.0401	g	6/5/2006	6/5/2006	Armstron		±	mg/g
		3.0230E+001	± 4.189E-002	(11)		0.139%	3.0180E+001 , 3.0328E+001					

6/14/2006 12:35:20 PM

Standard Material Fractions (Vials)

Vial Prep: 6/13/05 to 6/15/06,SMFractionIdentifier Between RATA22507 and RATA22511, 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			
RATA22507	BA	**3.0107E+01**	± **1.987E-01**	mg	1.0346	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22508	BA	**3.0081E+01**	± **1.985E-01**	mg	1.0337	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22509	BA	**3.0334E+01**	± **2.002E-01**	mg	1.0424	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22510	BA	**3.0285E+01**	± **1.999E-01**	mg	1.0407	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22511	BA	**3.0133E+01**	± **1.989E-01**	mg	1.0355	g	6/5/2006	6/5/2006	Armstron		±	mg/g
		3.0188E+001	± 1.137E-001	(5)		0.377%	3.0081E+001 , 3.0334E+001					

6/14/2006 12:35:29 PM

Standard Material Fractions (Vials)

Vial Prep: 6/13/05 to 6/15/06,SMFractionIdentifier Like: RASC4130%, Order by SMIdentifier,ConstituentCode,SMFractionIdentifier

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			
RASC4130	BA	**3.0311E+01**	± **2.000E-01**	mg	1.0416	g	6/9/2006	6/9/2006	Armstron		±	mg/g
		3.0311E+001	± 3.031E+001	(1)			3.0311E+001 , 3.0311E+001					

STL Richland, SMFractions v4.8.12

Page 1

Record Count: 2

* - 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:	Ra22606A100			Ref: 11/1/2001		2.1060E+01	± 3.234E-01		DPM/G		
RASC4130	RA-226	**3.0623E+00**	**± 4.712E-02**	DPM	0.1457	g	6/9/2006	6/9/2006	Armstron	2.1018E+01	± 3.228E-01	DPM/G
		3.0623E+000	± 3.062E+000	(1)			3.0623E+000 , 3.0623E+000					

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	RA22806A000		Ref:	12/15/2003		4.4881E+02	±		DPM/G		
RASC4130	RA-228	**1.1284E+01**	**± 4.707E-02**	DPM	0.0339	g	6/9/2006	6/9/2006	Armstron	3.3285E+02	± 0.000E+00	DPM/G
		1.1284E+001	± 1.128E+001	(1)			1.1284E+001 , 1.1284E+001					

STL Richland, SMFractions v4.8.12

* - Isotope is an Impurity

Record Count: 4