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CHAIN OF CUSTODY 28

GAMMA SAMPLE AND QC DATA 37

TOTAL # PAGES IN DOCUMENT 239

Analytical Data Package Prepared For

Brown and Caldwell

Radiochemical Analysis By

TAL Richland

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

Assigned Laboratory Code: STLR

Data Package Contains _____ Pages

Report No.: 36624

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
35632		BGS-A1-28D	J7H200142-16	J475R1AA	9J475R10	7232477
		BGS-A1-28S	J7H200142-15	J475Q1AA	9J475Q10	7232477
		BGS-A1-29D	J7H200142-14	J475P1AA	9J475P10	7232477
		BGS-A1-29S	J7H200142-13	J475N1AA	9J475N10	7232477
		BGS-A1-33D	J7H200142-12	J475M1AA	9J475M10	7232477
		BGS-A1-33S	J7H200142-11	J475J1AA	9J475J10	7232477
		BGS-A1-34D	J7H200142-10	J475H1AA	9J475H10	7232477
		BGS-A1-34S	J7H200142-9	J475E1AA	9J475E10	7232477
		BGS-A1-35D	J7H200142-2	J47401AA	9J474010	7232477
		BGS-A1-35S	J7H200142-1	J474W1AA	9J474W10	7232477
		BGS-A1-36D	J7H200142-4	J47451AA	9J474510	7232477
		BGS-A1-36S	J7H200142-3	J47441AA	9J474410	7232477
		BGS-A2-38D	J7H200142-6	J475A1AA	9J475A10	7232477
		BGS-A2-38S	J7H200142-5	J47491AA	9J474910	7232477
		BGS-A2-40D	J7H200142-8	J475D1AA	9J475D10	7232477
		BGS-A2-40S	J7H200142-7	J475C1AA	9J475C10	7232477

SEVERN TRENT STL

STL Richland
2800 George Washington Way
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Certificate of Analysis

September 10, 2007

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

Attention: Penny Bassett

Date Received at Lab	:	August 16, 2007
Project Name	:	Yerington Mine Soils
Project Number	:	132039
Enfos Number	:	01KF-0109
PO Number	:	129682.001
Sample Type	:	Sixteen (16) Soil Samples
SDG Number	:	35632

CASE NARRATIVE

I. Introduction

On August 16, 2007, sixteen soil samples were received at the TestAmerica Laboratory Richland (TALR) laboratory for radiochemical analysis. Upon receipt, the samples were assigned TALR identification numbers as described on the cover page of the Analytical Data Package report form. The samples were assigned to Lot Number J7H200142.

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:

Gamma
Gamma by method STL RICH-RC-5013/1017

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

Gamma
Gamma by method STL RICH-RC-5013/5017
The LCS, batch blank, samples and sample duplicate 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 00-02	Gross Alpha (Coprecipitation)	RICH-RC-5021
EPA 903.0	Total Alpha Radium (Ra-226)	RICH-RC-5027
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr-89/90	RICH-RC-5006
ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007

Uncertainty Estimation

Test America 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/?n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c - Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *u_c the combined uncertainty*. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval. 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * 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

TAL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 10-Sep-07

Report No. : 36624

SDG No: 35632

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
BGS-A1-28D	J475R1AA	RA-226	1.41 +- 0.183	=	pCi/g		0.0464	
		RA-228	1.62 +- 0.256	=	pCi/g		0.0951	
BGS-A1-28S	J475Q1AA	RA-226	1.66 +- 0.210	=	pCi/g		0.0399	
		RA-228	1.80 +- 0.301	=	pCi/g		0.082	
BGS-A1-29D	J475P1AA	RA-226	1.45 +- 0.183	=	pCi/g		0.0388	
		RA-228	1.71 +- 0.264	=	pCi/g		0.0732	
BGS-A1-29S	J475N1AA	RA-226	1.46 +- 0.190	=	pCi/g		0.0405	
		RA-228	1.84 +- 0.306	=	pCi/g		0.0846	
BGS-A1-33D	J475M1AA	RA-226	1.94 +- 0.250	=	pCi/g		0.0478	
		RA-228	1.81 +- 0.272	=	pCi/g		0.0903	
BGS-A1-33S	J475J1AA	RA-226	1.72 +- 0.224	=	pCi/g		0.0493	
		RA-228	1.78 +- 0.289	=	pCi/g		0.0986	
BGS-A1-34D	J475H1AA	RA-226	1.33 +- 0.171	=	pCi/g		0.0449	
		RA-228	1.42 +- 0.229	=	pCi/g		0.0874	
BGS-A1-34S	J475E1AA	RA-226	1.63 +- 0.213	=	pCi/g		0.0482	
		RA-228	1.78 +- 0.270	=	pCi/g		0.0889	
BGS-A1-35D	J47401AA	RA-226	1.51 +- 0.196	=	pCi/g		0.0406	
		RA-228	1.59 +- 0.239	=	pCi/g		0.0793	
BGS-A1-35S	J474W1AA	RA-226	1.68 +- 0.220	=	pCi/g		0.056	
		RA-228	1.64 +- 0.267	=	pCi/g		0.112	
BGS-A1-35S DUP	J474W1AC	RA-226	1.70 +- 0.220	=	pCi/g		0.0476	0.1
		RA-228	1.76 +- 0.262	=	pCi/g		0.0906	0.6
BGS-A1-36D	J47451AA	RA-226	1.32 +- 0.168	=	pCi/g		0.0343	
		RA-228	1.20 +- 0.206	=	pCi/g		0.0698	
BGS-A1-36S	J47441AA	RA-226	1.31 +- 0.166	=	pCi/g		0.0336	
		RA-228	1.32 +- 0.207	=	pCi/g		0.0636	
BGS-A2-38D	J475A1AA	RA-226	1.69 +- 0.211	=	pCi/g		0.0374	
		RA-228	1.43 +- 0.239	=	pCi/g		0.076	
BGS-A2-38S	J47491AA	RA-226	1.64 +- 0.208	=	pCi/g		0.049	

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V5.1.4 A2002

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

Sample Results Summary

TAL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 10-Sep-07

Report No. : 36624

SDG No: 35632

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
BGS-A2-38S	J47491AA	RA-228	1.42 +- 0.228	=	pCi/g		0.0929	
BGS-A2-40D	J475D1AA	RA-226	1.17 +- 0.157	=	pCi/g		0.0386	
		RA-228	1.03 +- 0.180	=	pCi/g		0.0753	
BGS-A2-40S	J475C1AA	RA-226	1.20 +- 0.154	=	pCi/g		0.0343	
		RA-228	1.22 +- 0.191	=	pCi/g		0.0647	

Number of Results: 34

TAL Richland

rptSTLRchSaSum
V5.1.4 A2002

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

QC Results Summary
TAL Richland STLR

Ordered by QC Type, Batch No.

Date: 10-Sep-07

Report No. : 36624

SDG No.: 35632

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
BLANK QC	J48HV1AA	RA-226	-0.0378 +- 0.0464	N	pCi/g				0.0623
		RA-228	-0.0182 +- 0.0779	N	pCi/g				0.102
LCS	J48HV1AC	CS-137	1.22 +- 0.154	=	pCi/g		111%	0.1	0.0206

Number of Results: 3

TAL Richland
rptSTLRchQcSum
V5.1.4 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-16
Client Sample ID: BGS-A1-28D

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/30/2007 1:45:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	Work Order: J475R1AA			Report DB ID: 9J475R10								
RA-226	**1.41**	=	0.18	0.18	0.0464	pCi/g		*(30.4)* *(15.4)*	9/5/07 06:38 p		367.6 g	E901.1 GER6$1
RA-228	**1.62**	=	0.26	0.26	0.0951	pCi/g		*(17.)* *(12.6)*	9/5/07 06:38 p		367.6 g	E901.1 GER6$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-15
Client Sample ID: BGS-A1-28S

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/30/2007 1:45:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	**Work Order:** J475Q1AA			**Report DB ID:** 9J475Q10								
RA-226	**1.66**	=	0.21	0.21	0.0399	pCi/g		*(41.6)* *(15.8)*	9/5/07 06:38 p		327.1 g	E901.1 GER13$1
RA-228	**1.80**	=	0.30	0.30	0.082	pCi/g		*(22.)* *(12.)*	9/5/07 06:38 p		327.1 g	E901.1 GER13$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-14
Client Sample ID: BGS-A1-29D

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/30/2007 2:15:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	**Work Order:** J475P1AA			**Report DB ID:** 9J475P10								
RA-226	**1.45**	=	0.18	0.18	0.0388	pCi/g		*(37.3)*	9/5/07 06:05 a		344.3	E901.1
								(15.8)			g	GER10$1
RA-228	**1.71**	=	0.26	0.26	0.0732	pCi/g		*(23.4)*	9/5/07 06:05 a		344.3	E901.1
								(13.)			g	GER10$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-13
Client Sample ID: BGS-A1-29S

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/30/2007 2:15:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	**Work Order:** J475N1AA			**Report DB ID:** 9J475N10								
RA-226	**1.46**	=	0.19	0.19	0.0405	pCi/g		*(36.1)* *(15.4)*	9/5/07 06:05 a		307.2 g	E901.1 GER13$1
RA-228	**1.84**	=	0.31	0.31	0.0846	pCi/g		*(21.7)* *(12.)*	9/5/07 06:05 a		307.2 g	E901.1 GER13$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-12
Client Sample ID: BGS-A1-33D

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/30/2007 3:00:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	Work Order: J475M1AA			Report DB ID: 9J475M10								
RA-226	**1.94**	=	0.25	0.25	0.0478	pCi/g		*(40.5)* *(15.5)*	9/5/07 06:05 a		309.7 g	E901.1 GER8$1
RA-228	**1.81**	=	0.27	0.27	0.0903	pCi/g		*(20.)* *(13.3)*	9/5/07 06:05 a		309.7 g	E901.1 GER8$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name:	TA Richland	**SDG:**	35632	**Collection Date:**	7/30/2007 3:00:00 PM
Lot-Sample No.:	J7H200142-11	**Report No. :**	36624	**Received Date:**	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A1-33S	**COC No. :**		**Matrix:**	SOIL SO

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: 7232477	**Work Order:** J475J1AA			**Report DB ID:** 9J475J10								
RA-226	**1.72**	=	0.22	0.22	0.0493	pCi/g		*(34.9)*	9/5/07 06:04 a		325.8	E901.1
								(15.4)			g	GER7$1
RA-228	**1.78**	=	0.29	0.29	0.0986	pCi/g		*(18.1)*	9/5/07 06:04 a		325.8	E901.1
								(12.3)			g	GER7$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-10
Client Sample ID: BGS-A1-34D

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/30/2007 3:30:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	**Work Order:** J475H1AA			**Report DB ID:** 9J475H10								
RA-226	**1.33**	=	0.17	0.17	0.0449	pCi/g		*(29.6)*	9/5/07 06:04 a		365.3	E901.1
								(15.5)			g	GER6$1
RA-228	**1.42**	=	0.23	0.23	0.0874	pCi/g		*(16.3)*	9/5/07 06:04 a		365.3	E901.1
								(12.4)			g	GER6$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-9
Client Sample ID: BGS-A1-34S

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/30/2007 3:30:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	**Work Order:** J475E1AA			**Report DB ID:** 9J475E10								
RA-226	**1.63**	=	0.21	0.21	0.0482	pCi/g		*(33.8)* *(15.3)*	9/5/07 06:03 a		310.5 g	E901.1 GER5$1
RA-228	**1.78**	=	0.27	0.27	0.0889	pCi/g		*(20.)* *(13.2)*	9/5/07 06:03 a		310.5 g	E901.1 GER5$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-2
Client Sample ID: BGS-A1-35D

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/31/2007 2:15:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	Work Order: J47401AA			Report DB ID: 9J474010								
RA-226	**1.51**	=	0.20	0.20	0.0406	pCi/g		*(37.1)* *(15.4)*	9/4/07 06:42 a		360.9 g	E901.1 GER8$1
RA-228	**1.59**	=	0.24	0.24	0.0793	pCi/g		*(20.1)* *(13.3)*	9/4/07 06:42 a		360.9 g	E901.1 GER8$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-1
Client Sample ID: BGS-A1-35S

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/31/2007 2:15:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	**Work Order:** J474W1AA			**Report DB ID:** 9J474W10								
RA-226	**1.68**	=	0.22	0.22	0.056	pCi/g		*(30.1)*	9/4/07 06:42 a		305.1	E901.1
								(15.3)			g	GER6$1
RA-228	**1.64**	=	0.27	0.27	0.112	pCi/g		*(14.7)*	9/4/07 06:42 a		305.1	E901.1
								(12.3)			g	GER6$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name:	TA Richland	SDG:	35632	Collection Date:	7/31/2007 1:30:00 PM
Lot-Sample No.:	J7H200142-4	Report No. :	36624	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A1-36D	COC No. :		Matrix:	SOIL SO

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: 7232477	Work Order: J47451AA			Report DB ID: 9J474510								
RA-226	**1.32**	=	0.17	0.17	0.0343	pCi/g		*(38.4)*	9/4/07 06:43 a		380.3	E901.1
								(15.7)			g	GER13$1
RA-228	**1.20**	=	0.21	0.21	0.0698	pCi/g		*(17.3)*	9/4/07 06:43 a		380.3	E901.1
								(11.7)			g	GER13$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-3
Client Sample ID: BGS-A1-36S

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/31/2007 1:30:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	**Work Order:** J47441AA			**Report DB ID:** 9J474410								
RA-226	**1.31**	=	0.17	0.17	0.0336	pCi/g		*(38.9)* *(15.8)*	9/4/07 06:42 a		378.4 g	E901.1 GER10$1
RA-228	**1.32**	=	0.21	0.21	0.0636	pCi/g		*(20.8)* *(12.8)*	9/4/07 06:42 a		378.4 g	E901.1 GER10$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
SDG: 35632
Collection Date: 7/31/2007 11:45:00 AM
Lot-Sample No.: J7H200142-6
Report No. : 36624
Received Date: 8/16/2007 10:00:00 AM
Client Sample ID: BGS-A2-38D
COC No. :
Matrix: SOIL SO

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: 7232477	Work Order: J475A1AA			Report DB ID: 9J475A10								
RA-226	**1.69**	=	0.21	0.21	0.0374	pCi/g		*(45.1)*	9/4/07 05:02 p		376.1	E901.1
								(16.)			g	GER13$1
RA-228	**1.43**	=	0.24	0.24	0.076	pCi/g		*(18.8)*	9/4/07 05:02 p		376.1	E901.1
								(11.9)			g	GER13$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-5
Client Sample ID: BGS-A2-38S

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/31/2007 11:45:00 AM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	**Work Order:** J47491AA			**Report DB ID:** 9J474910								
RA-226	**1.64**	=	0.21	0.21	0.049	pCi/g		*(33.4)* *(15.8)*	9/4/07 05:01 p		349.3 g	E901.1 GER6$1
RA-228	**1.42**	=	0.23	0.23	0.0929	pCi/g		*(15.3)* *(12.4)*	9/4/07 05:01 p		349.3 g	E901.1 GER6$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-8
Client Sample ID: BGS-A2-40D

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/31/2007 10:45:00 AM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	Work Order: J475D1AA			Report DB ID: 9J475D10								
RA-226	**1.17**	=	0.16	0.16	0.0386	pCi/g		*(30.2)* *(14.9)*	9/5/07 06:03 a		378.4 g	E901.1 GER4$1
RA-228	**1.03**	=	0.18	0.18	0.0753	pCi/g		*(13.7)* *(11.5)*	9/5/07 06:03 a		378.4 g	E901.1 GER4$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 10-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200142-7
Client Sample ID: BGS-A2-40S

SDG: 35632
Report No. : 36624
COC No. :

Collection Date: 7/31/2007 10:45:00 AM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232477	Work Order: J475C1AA			Report DB ID: 9J475C10								
RA-226	**1.20**	=	0.15	0.15	0.0343	pCi/g		*(35.)* *(15.6)*	9/4/07 05:03 p		375.0 g	E901.1 GER10$1
RA-228	**1.22**	=	0.19	0.19	0.0647	pCi/g		*(18.8)* *(12.7)*	9/4/07 05:03 p		375.0 g	E901.1 GER10$1

Number of Results: 2

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM II

Date: 10-Sep-07

DUPLICATE RESULTS

Lab Name:	TA Richland	SDG:	35632	Collection Date:	7/31/2007 2:15:00 PM
Lot-Sample No.:	J7H200142-1	Report No. :	36624	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A1-35S DUP	COC No. :		Matrix:	SOIL SO

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7232477	Work Order: J474W1AC			Report DB ID: J474W1CR		Orig Sa DB ID: 9J474W10						
RA-226	1.70	=	0.22	0.22	0.0476	pCi/g		(35.7)	9/4/07 05:00 p		305.1	E901.1
	1.68	= RER2	0.1					(15.4)			g	GER8$1
RA-228	1.76	=	0.26	0.26	0.0906	pCi/g		(19.4)	9/4/07 05:00 p		305.1	E901.1
	1.64	= RER2	0.6					(13.4)			g	GER8$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchDupV5.1
.4 A2002

RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected

FORM II

BLANK RESULTS

Date: 10-Sep-07

Lab Name: TA Richland

SDG: 35632

Lot-Sample No.: J7H200000-477

Report No. : 36624

Matrix: SOIL

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: 7232477	Work Order: J48HV1AA			Report DB ID: J48HV1AB								
RA-226	-0.0378	ND	0.046	0.046	0.0623	pCi/g		-0.61	9/5/07 06:05 a		200.12	E901.1
								-(1.6)			g	GER15$1
RA-228	-0.0182	ND	0.078	0.078	0.102	pCi/g		-0.18	9/5/07 06:05 a		200.12	E901.1
								-0.47			g	GER15$1

Number of Results: 2

Comments:

TAL Richland

rptSTLRchBlank
V5.1.4 A2002

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

D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM II

LCS RESULTS

Date: 10-Sep-07

Lab Name: TA Richland

SDG: 35632

Lot-Sample No.: J7H200000-477

Report No. : 36624

Matrix: SOIL

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: 7232477	Work Order: J48HV1AC			Report DB ID: J48HV1CS									
CS-137	1.22	=	0.15	0.15	0.0206	pCi/g		1.10	0.038	111%	9/5/07 06:39 p	200.11	E901.1
							Rec Limits:	70.	130.	0.1		g	GER8$1

Number of Results: 1

Comments:

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

TAL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No. YERS000283

☐ 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 300
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200142 35632 Due 09.07.07

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA

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	BGS-A1-28S	30 Jul 2007	13:45	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J475Q					0.1 / 0.8	
02	BGS-A1-28D	30 Jul 2007	13:45	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J475R					2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE 8/15/07	TIME 0900	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/16/07	TIME 10 00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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.

TAL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No. YERS000285

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

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

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

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200142 35632 Due 09.07.07

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA

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	BGS-A1-29S 30 Jul 2007		14:15	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J475N					0.1 – 0.8	
02	BGS-A1-29D 30 Jul 2007		14:15	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J475P					2 – 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE 8/15/07	TIME 0900	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/16/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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.

TAL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No. _____

YERS000293

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

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

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

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200142 35632

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA

Due 09.07.07

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	BGS-A1-33S	30 Jul 2007	15:00	BG	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J475J					0.1 / 0.8	
02	BGS-A1-33D	30 Jul 2007	15:00	BG	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J475m					2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE 8/15/07	TIME 0900	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/16/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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.

TAL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No. _____

YERS000295

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

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

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

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 JJH200142 35632

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA Due 09.07.07

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	BGS-A1-34S	30 Jul 2007	15:30	BB	1	~~9~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J475E					----0.1 / 0.8	
02	BGS-A1-34D	30 Jul 2007	15:30	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J475H					----2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

		DATE	TIME				
COLLECTED & RELEASED BY:	BB	8/15/07	0900	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	[illegible]	8/16/07	10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:		DATE / /	TIME :				
COURIER:				SHIPPING NUMBER:			

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.

TAL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No._____

YERS000307

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

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

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

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200142 35632 Due 09-07-07

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA

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	BGS-A2-40S	31 Jul 2007	~~10:45~~	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J475C					----0.1 ~~0.8~~	
02	BGS-A2-40D	31 Jul 2007	~~10:45~~ ↑ 10:45	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J475D					----2 ~~3~~	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE 81507	TIME 0900	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 81607	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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.

TAL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No._____

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

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

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

YERS000303

PROJECT NAME: Yerington Mine Site
PROJECT NUMBER: 132039 J7H200142

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA
35632 Due 09.07.07

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN ---- END	PID READING (ppm)
01	BGS-A2-38S	31 Jul 2007	11:45	BB	1	~~9~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J4749					----0.1 0.8	
02	BGS-A2-38D	31 Jul 2007	11:45	BB	1	~~9~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J475A					----2 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

	DATE	TIME		DATE	TIME
COLLECTED & RELEASED BY: BBasr	8/15/07	0900	COOLER I.D.:		
RECEIVED BY: RJh	8/16/07	10:00	RELINQUISHED BY:	/ /	:
RECORD RETURNED BY:	/ /	:			
COURIER:			SHIPPING NUMBER:		

COMMENTS (see note on back):

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.

TAL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No. _____

YERS000299

☐ 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 1[illegible]
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200142

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA

35632 09 07 07

LINE NO.	SAMPLE – I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC – REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	BGS-A1-36S	31 Jul 2007	13:30	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J4744					0.1 / 0.8	
02	BGS-A1-36D	31 Jul 2007	13:30	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J4745					2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE 8/13/07	TIME 0900	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/16/07	TIME 10 00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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.

TAL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No. YERS000297

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

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

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

PROJECT NAME: Yerington Mine Site

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA

PROJECT NUMBER: 132039 J7H200142 35632 Due 09.07.07

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	BGS-A1-35S	31 Jul 2007	14:15	[illegible]	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J474W					0.1 / 0.8	
02	BGS-A1-35D	31 Jul 2007	14:15	[illegible]	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J4740					2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: [illegible]	DATE 8/15/07	TIME 0900	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY: [illegible]	DATE 8/16/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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: 8-16-07 1000

Client: BRC SDG #: 35632 NA [ ] SAF #: _____ NA [ ]

Work Order Number: J711200142 Chain of Custody # YERS000297,299,303,307,295,293,285,283

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: 16
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 BGS-A1-34S
   _____ leaking
   _____ have air bubbles
   (Only for samples requiring head space)
10. Sample pH taken? SOIL NA [✓] pH<2 [ ] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: [signature] Date: 8-16-07

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, 9/03, Rev. 5

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/7/2007 3:51:43 PM

Lot No., Due Date: J7H200142; 09/07/2007

Client, Site: 536403; BRC GW/SOIL Yerington Quarterly GW/Soil

QC Batch No., Method Test: 7232477; RGAMMA Gamma by GER

SDG, Matrix: 35632; SOIL

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 Lisa Autonson **Date** 9/7/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7232477

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: 9-10-07

8/23/2007 8:00:42 AM

Sample Preparation/Analysis

Balance Id:1120421763

536403, Brown and Caldwell , Brown

and Caldwell

AX Gamma PrpRC5013/5017 [redacted]

TA Gamma by HPGE [redacted]

01 STANDARD TEST SET JSW

Pipet #:

Sep1 DT/Tm Tech:

AnalyDueDate: 09/03/2007

Batch: 7232477 SOIL pCi/g PM, Quote: SA , 73181

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,Barcotl , Wood T JSW 8/23/07

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 J474W-1-AA J7H200142-1-SAMP 07/31/2007 14:15	AmtRec: J7H200142	305.10g,in	#Containers: 1		5200	1000	66	1642	9/4/07	Scr: Alpha: Beta:
2 J474W-1-AC-X J7H200142-1-DUP 07/31/2007 14:15	AmtRec: J7H200142	Not enough sample	#Containers: 1				68	0300	9/4/07 JOD	Scr: Alpha: Beta:
3 J4740-1-AA J7H200142-2-SAMP 07/31/2007 14:15	AmtRec: J7H200142	360.90g,in	#Containers: 1		5200		68	1642	9/4/07	Scr: Alpha: Beta:
4 J4740-1-AC-S J7H200142-2-MS 07/31/2007 14:15	AmtRec: J7H200142	No MS on Granulas 8/22/07 JSW	#Containers: 1							Scr: Alpha: Beta:
5 J4744-1-AA J7H200142-3-SAMP 07/31/2007 13:30	AmtRec: J7H200142	378.40g,in	#Containers: 1		5200		610	1642	9/4/07	Scr: Alpha: Beta:
6 J4745-1-AA J7H200142-4-SAMP 07/31/2007 13:30	AmtRec: J7H200142	380.30g,in	#Containers: 1				613	1643		Scr: Alpha: Beta:
7 J4749-1-AA J7H200142-5-SAMP 07/31/2007 11:45	AmtRec: J7H200142	349.30g,in	#Containers: 1				66	0301	9/4/07 JOD	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 v4.8.26

TAL RICHLAND

39

TAL RICHLAND

8/23/2007 8:00:47 AM

Sample Preparation/Analysis

Balance Id:1120421763

536403, Brown and Caldwell and Caldwell , Brown

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 09/03/2007

Sep1 DT/Tm Tech:

Batch: 7232477 SOIL pCi/g PM, Quote: SA , 73181

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,Barcotl

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 J475A-1-AA J7H200142-6-SAMP 07/31/2007 11:45		376.10g,in AmtRec: J7H200142	#Containers: 1		5200	1000	G13 Scr:	0302 Alpha:	9/4/07 OK Beta:	
9 J475C-1-AA J7H200142-7-SAMP 07/31/2007 10:45		375.00g,in AmtRec: J7H200142	#Containers: 1				G10 Scr:	0303 Alpha:	9/4/07 OK Beta:	
10 J475D-1-AA J7H200142-8-SAMP 07/31/2007 10:45		378.40g,in AmtRec: J7H200142	#Containers: 1				G4 Scr:	1603 Alpha:	9/5/07 OK Beta:	
11 J475E-1-AA J7H200142-9-SAMP 07/30/2007 15:30		310.50g,in AmtRec: J7H200142	#Containers: 1				G5 Scr:	1603 Alpha:	Beta:	
12 J475H-1-AA J7H200142-10-SAMP 07/30/2007 15:30		365.30g,in AmtRec: J7H200142	#Containers: 1				G6 Scr:	1604 Alpha:	Beta:	
13 J475J-1-AA J7H200142-11-SAMP 07/30/2007 15:00		325.80g,in AmtRec: J7H200142	#Containers: 1				G7 Scr:	1604 Alpha:	Beta:	
14 J475M-1-AA J7H200142-12-SAMP 07/30/2007 15:00		309.70g,in AmtRec: J7H200142	#Containers: 1				G8 Scr:	1604 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 v4.8.26

40

TAL RICHLAND

8/23/2007 8:00:48 AM

Sample Preparation/Analysis

Balance Id:1120421763

536403, Brown and Caldwell and Caldwell , Brown

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 09/03/2007

Sep1 DT/Tm Tech:

Batch: 7232477 SOIL pCi/g PM, Quote: SA , 73181

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,Barcotl

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:
15 J475N-1-AA J7H200142-13-SAMP 07/30/2007 14:15		307.20g,in AmtRec: J7H200142	#Containers: 1		5200	1000	G13 Scr:	1605 Alpha:	9/5/07 Beta:	
16 J475P-1-AA J7H200142-14-SAMP 07/30/2007 14:15		344.30g,in AmtRec: J7H200142	#Containers: 1				G10 Scr:	1605 Alpha:	Beta:	
17 J475Q-1-AA J7H200142-15-SAMP 07/30/2007 13:45		327.10g,in AmtRec: J7H200142	#Containers: 1				G13 Scr:	0438 Alpha:	9/5/07 0700 Beta:	
18 J475R-1-AA J7H200142-16-SAMP 07/30/2007 13:45		367.60g,in AmtRec: J7H200142	#Containers: 1				G6 Scr:	0438 Alpha:	9/5/07 0700 Beta:	
19 J48HV-1-AA-B J7H200000-477-BLK 07/31/2007 14:15		200.12g,in AmtRec:	#Containers: 1		200		G15 Scr:	1605 Alpha:	9/5/07 Beta:	
20 J48HV-1-AC-C J7H200000-477-LCS 07/31/2007 14:15		200.11g,in AmtRec:	GSE1122 08/06/07,pd 07/15/00,r #Containers: 1				G8 Scr:	0439 Alpha:	9/5/07 0700 Beta:	

Sample Preparation/Analysis

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
01 STANDARD TEST SET

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

AnalyDueDate: 09/03/2007

Batch: 7232477 pCi/g
SEQ Batch, Test: None

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:

Comments: Not enough sample for dup, please recount on seperate detector 8/23/07 BW. 10 day ingrowth started 8/22/07 BW.

All Clients for Batch:
536403, Brown and Caldwell Brown and Caldwell , SA , 73181

J474W1AA-SAMP Constituent List:
Cs-137 RDL:0.2 pCi/g LCL:70 UCL:130 RPD:35 Cs-137DA RDL:0.2 pCi/g LCL:70 UCL:130 RPD:35

J47401AC-MS:

J48HV1AA-BLK:
Cs-137 RDL:0.2 pCi/g LCL: UCL: RPD: Cs-137DA RDL:0.2 pCi/g LCL: UCL: RPD:

J48HV1AC-LCS:
Cs-137 RDL:0.2 pCi/g LCL:70 UCL:130 RPD:35 Cs-137DA RDL:0.2 pCi/g LCL:70 UCL:130 RPD:35

J474W1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J47401AC-MS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J48HV1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J48HV1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

TAL RICHLAND

9/7/2007 3:51:05 PM

ICOC Fraction Transfer/Status Report

ByDate: 9/7/2006, 9/12/2007, Batch: '7232477', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7232477						
AC		CalcC	WoodT	8/23/2007 7:54:53		
SC			Wagarr	IsBatched	8/20/2007 4:21:41 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	8/23/2007 7:54:53 AM	RICH-RC-5013 REVISION 7
SC			WoodT	Prep1C	8/23/2007 7:55:09 AM	RICH-RC-5013 REVISION 7
SC			WoodT	InPrep2	8/23/2007 7:55:36 AM	RICH-RC-5017 REVISION 6
SC			WoodT	Prep2C	8/23/2007 7:55:50 AM	RICH-RC-5017 REVISION 6
SC			BlackCL	InCnt1	8/23/2007 8:21:54 AM	RICH-RD-0007 REVISION 6
SC			StringerR	CalcC	9/7/2007 1:15:40 PM	RICH-RD-0007 REVISION 6
AC			WoodT	8/23/2007 7:55:09		
AC			WoodT	8/23/2007 7:55:36		
AC			WoodT	8/23/2007 7:55:50		
AC			BlackCL	8/23/2007 8:21:54		
AC			StringerR	9/7/2007 1:15:40 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 6

ICOCFractions v4.8.27

9/7/2007 3:51:04 PM

Rpt DB Transfer log (Batch Results)

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
35632	**9J474010**			**J7H2001422**	BGS-A1-35D	SOIL	8/16/2007 10:00:00		7/31/2007 2:15:00 PM			
RA-226DA	AXTA	0		9/4/2007 6:42:20 AM	**1.5078E+00**	9.782E-02	9.782E-02	4.064E-02	PCI/GRAM			3.609E+2
RA-228DA	AXTA	0		9/4/2007 6:42:20 AM	**1.5932E+00**	1.196E-01	1.196E-01	7.934E-02	PCI/GRAM			3.609E+2
35632	**9J474410**			**J7H2001423**	BGS-A1-36S	SOIL	8/16/2007 10:00:00		7/31/2007 1:30:00 PM			
RA-226DA	AXTA	0		9/4/2007 6:42:48 AM	**1.3059E+00**	8.28E-02	8.28E-02	3.359E-02	PCI/GRAM			3.784E+2
RA-228DA	AXTA	0		9/4/2007 6:42:48 AM	**1.3215E+00**	1.033E-01	1.033E-01	6.361E-02	PCI/GRAM			3.784E+2
35632	**9J474510**			**J7H2001424**	BGS-A1-36D	SOIL	8/16/2007 10:00:00		7/31/2007 1:30:00 PM			
RA-226DA	AXTA	0		9/4/2007 6:43:01 AM	**1.3192E+00**	8.395E-02	8.395E-02	3.434E-02	PCI/GRAM			3.803E+2
RA-228DA	AXTA	0		9/4/2007 6:43:01 AM	**1.2045E+00**	1.028E-01	1.028E-01	6.976E-02	PCI/GRAM			3.803E+2
35632	**9J474910**			**J7H2001425**	BGS-A2-38S	SOIL	8/16/2007 10:00:00		7/31/2007 11:45:00 AM			
RA-226DA	AXTA	0		9/4/2007 5:01:06 PM	**1.6365E+00**	1.039E-01	1.039E-01	4.902E-02	PCI/GRAM			3.493E+2
RA-228DA	AXTA	0		9/4/2007 5:01:06 PM	**1.4177E+00**	1.14E-01	1.14E-01	9.287E-02	PCI/GRAM			3.493E+2
35632	**9J474W10**			**J7H2001421**	BGS-A1-35S	SOIL	8/16/2007 10:00:00		7/31/2007 2:15:00 PM			
RA-226DA	AXTA	0		9/4/2007 6:42:04 AM	**1.6833E+00**	1.101E-01	1.101E-01	5.6E-02	PCI/GRAM			3.051E+2
RA-228DA	AXTA	0		9/4/2007 6:42:04 AM	**1.6367E+00**	1.336E-01	1.336E-01	1.117E-01	PCI/GRAM			3.051E+2
35632	**9J475A10**			**J7H2001426**	BGS-A2-38D	SOIL	8/16/2007 10:00:00		7/31/2007 11:45:00 AM			
RA-226DA	AXTA	0		9/4/2007 5:02:35 PM	**1.6873E+00**	1.056E-01	1.056E-01	3.741E-02	PCI/GRAM			3.761E+2
RA-228DA	AXTA	0		9/4/2007 5:02:35 PM	**1.427E+00**	1.195E-01	1.195E-01	7.605E-02	PCI/GRAM			3.761E+2
35632	**9J475C10**			**J7H2001427**	BGS-A2-40S	SOIL	8/16/2007 10:00:00		7/31/2007 10:45:00 AM			
RA-226DA	AXTA	0		9/4/2007 5:03:06 PM	**1.2013E+00**	7.711E-02	7.711E-02	3.43E-02	PCI/GRAM			3.75E+2
RA-228DA	AXTA	0		9/4/2007 5:03:06 PM	**1.2167E+00**	9.546E-02	9.546E-02	6.47E-02	PCI/GRAM			3.75E+2
35632	**9J475D10**			**J7H2001428**	BGS-A2-40D	SOIL	8/16/2007 10:00:00		7/31/2007 10:45:00 AM			
RA-226DA	AXTA	0		9/5/2007 6:03:32 AM	**1.1675E+00**	7.851E-02	7.851E-02	3.861E-02	PCI/GRAM			3.784E+2
RA-228DA	AXTA	0		9/5/2007 6:03:32 AM	**1.0338E+00**	8.984E-02	8.984E-02	7.533E-02	PCI/GRAM			3.784E+2
35632	**9J475E10**			**J7H2001429**	BGS-A1-34S	SOIL	8/16/2007 10:00:00		7/30/2007 3:30:00 PM			
RA-226DA	AXTA	0		9/5/2007 6:03:54 AM	**1.6285E+00**	1.064E-01	1.064E-01	4.816E-02	PCI/GRAM			3.105E+2
RA-228DA	AXTA	0		9/5/2007 6:03:54 AM	**1.7799E+00**	1.352E-01	1.352E-01	8.893E-02	PCI/GRAM			3.105E+2
35632	**9J475H10**			**J7H20014210**	BGS-A1-34D	SOIL	8/16/2007 10:00:00		7/30/2007 3:30:00 PM			
RA-226DA	AXTA	0		9/5/2007 6:04:31 AM	**1.3289E+00**	8.57E-02	8.57E-02	4.489E-02	PCI/GRAM			3.653E+2
RA-228DA	AXTA	0		9/5/2007 6:04:31 AM	**1.4219E+00**	1.147E-01	1.147E-01	8.74E-02	PCI/GRAM			3.653E+2
35632	**9J475J10**			**J7H20014211**	BGS-A1-33S	SOIL	8/16/2007 10:00:00		7/30/2007 3:00:00 PM			
RA-226DA	AXTA	0		9/5/2007 6:04:46 AM	**1.7224E+00**	1.118E-01	1.118E-01	4.934E-02	PCI/GRAM			3.258E+2
RA-228DA	AXTA	0		9/5/2007 6:04:46 AM	**1.7843E+00**	1.445E-01	1.445E-01	9.862E-02	PCI/GRAM			3.258E+2
35632	**9J475M10**			**J7H20014212**	BGS-A1-33D	SOIL	8/16/2007 10:00:00		7/30/2007 3:00:00 PM			
RA-226DA	AXTA	0		9/5/2007 6:05:04 AM	**1.9395E+00**	1.25E-01	1.25E-01	4.785E-02	PCI/GRAM			3.097E+2
RA-228DA	AXTA	0		9/5/2007 6:05:04 AM	**1.8082E+00**	1.361E-01	1.361E-01	9.026E-02	PCI/GRAM			3.097E+2
35632	**9J475N10**			**J7H20014213**	BGS-A1-29S	SOIL	8/16/2007 10:00:00		7/30/2007 2:15:00 PM			
RA-226DA	AXTA	0		9/5/2007 6:05:18 AM	**1.4623E+00**	9.489E-02	9.489E-02	4.05E-02	PCI/GRAM			3.072E+2
RA-228DA	AXTA	0		9/5/2007 6:05:18 AM	**1.8361E+00**	1.529E-01	1.529E-01	8.456E-02	PCI/GRAM			3.072E+2
35632	**9J475P10**			**J7H20014214**	BGS-A1-29D	SOIL	8/16/2007 10:00:00		7/30/2007 2:15:00 PM			
RA-226DA	AXTA	0		9/5/2007 6:05:36 AM	**1.4491E+00**	9.169E-02	9.169E-02	3.884E-02	PCI/GRAM			3.443E+2
RA-228DA	AXTA	0		9/5/2007 6:05:36 AM	**1.7135E+00**	1.319E-01	1.319E-01	7.319E-02	PCI/GRAM			3.443E+2
35632	**9J475Q10**			**J7H20014215**	BGS-A1-28S	SOIL	8/16/2007 10:00:00		7/30/2007 1:45:00 PM			
RA-226DA	AXTA	0		9/5/2007 6:38:26 PM	**1.6593E+00**	1.051E-01	1.051E-01	3.993E-02	PCI/GRAM			3.271E+2
RA-228DA	AXTA	0		9/5/2007 6:38:26 PM	**1.8022E+00**	1.507E-01	1.507E-01	8.196E-02	PCI/GRAM			3.271E+2
35632	**9J475R10**			**J7H20014216**	BGS-A1-28D	SOIL	8/16/2007 10:00:00		7/30/2007 1:45:00 PM			
RA-226DA	AXTA	0		9/5/2007 6:38:48 PM	**1.4104E+00**	9.129E-02	9.129E-02	4.636E-02	PCI/GRAM			3.676E+2
RA-228DA	AXTA	0		9/5/2007 6:38:48 PM	**1.6151E+00**	1.281E-01	1.281E-01	9.509E-02	PCI/GRAM			3.676E+2
35632	**J474W1CR**			**J7H2001421**	BGS-A1-35S DUP	SOIL	8/16/2007 10:00:00		7/31/2007 2:15:00 PM			
RA-226DA	AXTA	0	R	9/4/2007 5:00:23 PM	**1.6969E+00**	1.102E-01	1.102E-01	4.757E-02	PCI/GRAM			3.051E+2
RA-228DA	AXTA	0	R	9/4/2007 5:00:23 PM	**1.7557E+00**	1.308E-01	1.308E-01	9.055E-02	PCI/GRAM			3.051E+2

7232477,7232477, **Samples Inserted | Updated | NotUpdated => 19 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 37 | 0 | 0 | 2.
**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
35632	**J48HV1AB**			**J7H200000477**	INTRA-LAB BLANK	SOIL	8/16/2007 10:00:00	7/31/2007 2:15:00 PM				
RA-226DA	AXTA	0	B	9/5/2007 6:05:44 AM	**-3.7838E-02**	2.319E-02	2.319E-02	6.229E-02	PCI/GRAM			2.001E+2
RA-228DA	AXTA	0	B	9/5/2007 6:05:44 AM	**-1.8201E-02**	3.897E-02	3.897E-02	1.02E-01	PCI/GRAM			2.001E+2
35632	**J48HV1CS**			**J7H200000477**	INTRA-LAB CHECK	SOIL	8/16/2007 10:00:00	7/31/2007 2:15:00 PM				
CS-137DA	AXTA	0	S	9/5/2007 6:39:40 PM	**1.2226E+00**	7.714E-02	7.714E-02	2.064E-02	PCI/GRAM	1.1041E+00		2.001E+2

7232477,7232477, **Samples Inserted | Updated | NotUpdated => 19 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 37 | 0 | 0 | 2.
**Diff RptDb | Qtims => .

STL

Special Instructions

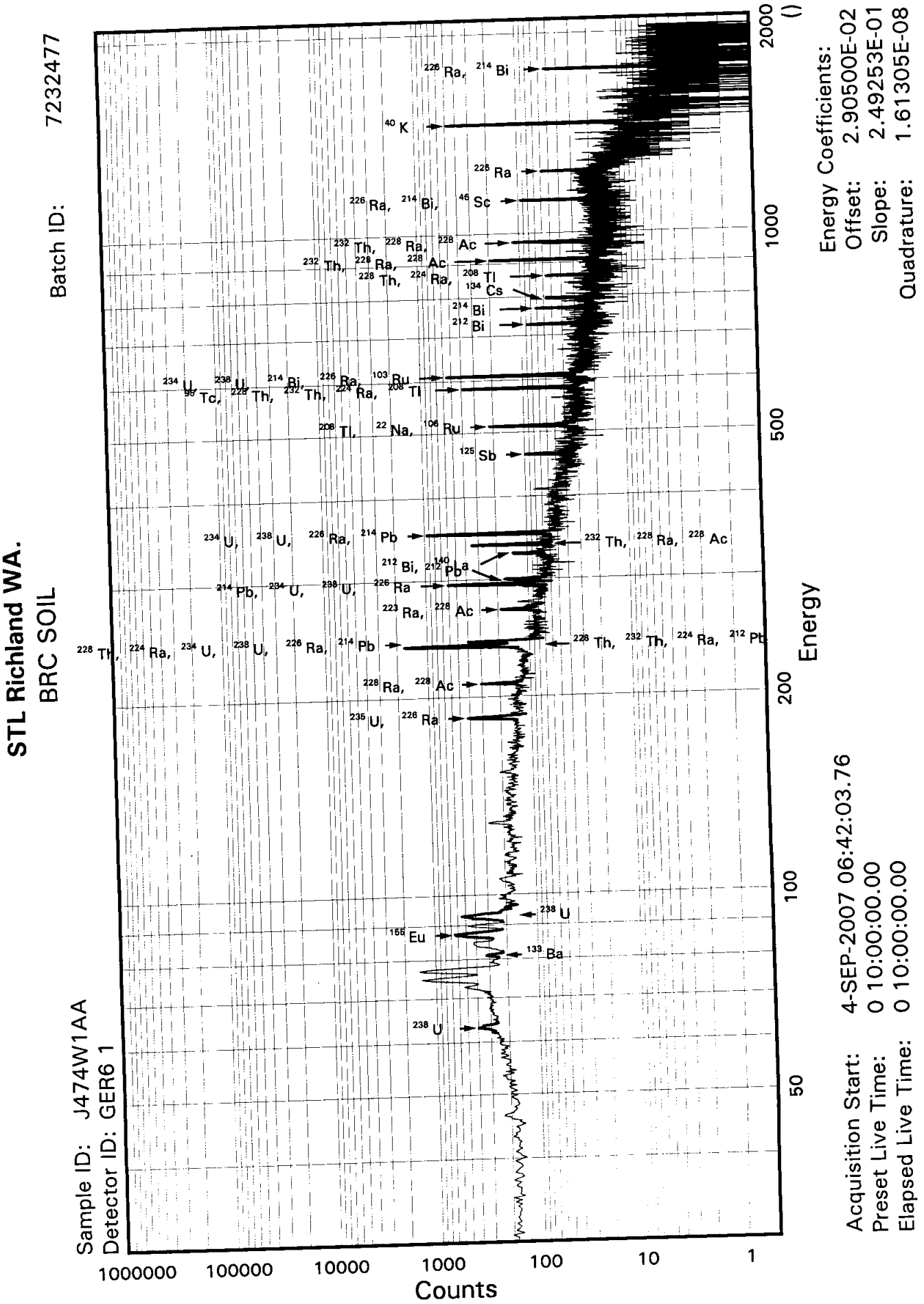
Lot # J7H200142

Analysis: γ Initials/Date: SAA/8-20-07 Batch # 7232177

LCS, Blank, MS, Dup

(16) samples

Ra 226/228


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J474W1AA
Detector ID: GER6 1
Energy Coefficients:
Offset: 2.90500E-02
Slope: 2.49253E-01
Quadrature: 1.61305E-08
Acquisition Start: 4-SEP-2007 06:42:03.76
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
1000000
100000
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
228 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
99 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 212 Pb, 140 La
214 Pb, 234 U, 238 U, 226 Ra
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
156 Eu
133 Ba
238 U

SAMPLE IDENTIFICATION: J474W1AA

CONFIGURATION ID: GER6:J474W1AA_040970642
TITLE : BRC SOIL
SAMPLE ID : J474W1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 04-SEP-07 06:42:03
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 31-JUL-2007 14:15:00.00
CALIB DATE: 4-SEP-2007 05:39:20.30
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:01:04

SAMPLE QUANTITY: 3.0510E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 2.9050E-02 keV
ENERGY SLOPE: 2.4925E-01 keV/C
ENERGY Q COEFF: 1.6131E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.1141E-02 keV
FWHM SLOPE: 7.2081E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 60.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 10:00:48

Configuration : $DISK1:[GER6.SAMPLE]J474W1AA_040970642.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 31-JUL-2007 14:15:00
Sample ID : J474W1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Start energy : 19.97
Sensitivity : 5.00
Critical level : No

Acquisition date : 4-SEP-2007 06:42:03
Sample quantity : 305.10 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:01:04.51 0.2%
End energy : 2042.99
Gaussian : 60.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.12*	456	2832	0.82	253.11	248	11	1.27E-02	23.7	
2	7	72.64*	789	4489	1.30	291.32	283	33	2.19E-02	20.4	1.86E+00
3	7	74.75*	4060	3540	1.09	299.78	283	33	1.13E-01	3.6	
4	7	77.00	5205	3356	1.04	308.80	283	33	1.45E-01	2.7	
5	0	81.11	244	1857	0.67	325.29	322	8	6.77E-03	31.4	
6	0	84.20*	679	3264	1.72	337.69	331	13	1.89E-02	18.8	
7	0	87.12*	1700	2931	1.18	349.41	344	12	4.72E-02	7.1	
8	0	89.81	1059	2197	1.07	360.18	356	10	2.94E-02	8.8	
9	0	93.05*	1876	4177	1.46	373.19	366	22	5.21E-02	9.3	
10	0	129.00	369	1965	0.98	517.41	512	11	1.02E-02	23.8	
11	0	186.02*	1518	2088	1.36	746.14	739	16	4.22E-02	7.5	
12	0	209.09	699	1595	0.80	838.69	832	13	1.94E-02	12.4	
13	6	238.59*	8015	1662	1.17	957.04	948	31	2.23E-01	1.6	2.01E+00
14	6	241.65	2384	1782	1.84	969.33	948	31	6.62E-02	5.5	
15	0	270.14	699	1470	1.50	1083.62	1075	18	1.94E-02	13.4	
16	0	295.15	3185	1403	1.35	1183.93	1173	20	8.85E-02	3.4	
17	0	300.13	493	960	1.22	1203.89	1198	13	1.37E-02	13.7	
18	0	327.76	371	991	1.39	1314.73	1309	14	1.03E-02	18.7	
19	0	338.21	1525	1024	1.27	1356.67	1348	17	4.23E-02	5.4	
20	0	351.86	5235	1267	1.31	1411.42	1400	22	1.45E-01	2.2	
21	0	409.62	250	757	1.66	1643.08	1634	17	6.95E-03	22.4	
22	0	462.82	469	820	1.91	1856.51	1844	23	1.30E-02	14.2	
23	0	510.75*	784	1138	1.82	2048.73	2034	32	2.18E-02	13.2	
24	0	582.98	2423	946	1.63	2338.45	2323	28	6.73E-02	3.6	
25	0	609.19	3793	1015	1.65	2443.56	2431	30	1.05E-01	2.6	
26	0	727.15	442	486	2.00	2916.67	2906	20	1.23E-02	10.5	
27	0	768.06	291	606	1.08	3080.73	3068	25	8.08E-03	18.2	
28	0	794.65	288	414	1.75	3187.36	3176	24	7.99E-03	15.3	
29	0	860.34	326	461	2.24	3450.78	3440	28	9.05E-03	15.0	
30	0	910.88	1592	558	2.12	3653.48	3637	31	4.42E-02	4.1	
31	0	967.66	1226	644	2.23	3881.17	3859	40	3.41E-02	5.8	
32	0	1120.18	808	508	2.53	4492.73	4477	32	2.25E-02	7.2	
33	0	1237.85	291	524	1.50	4964.53	4950	30	8.08E-03	16.8	
34	0	1460.52*	5669	423	3.08	5857.27	5833	48	1.57E-01	1.7	
35	0	1764.19	647	115	3.95	7074.54	7051	45	1.80E-02	5.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:00:48

Configuration : $DISK1:[GER6.SAMPLE]J474W1AA_040970642.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 31-JUL-2007 14:15:00
Sample ID : J474W1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 4-SEP-2007 06:42:03
Sample quantity : 305.10 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:01:04.51 0.2%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	5669	10.67*	5.925E-01	2.206E+01	2.206E+01	8.45
TL-208	277.35	------	6.80	2.285E+00	------ Line Not Found		------
	510.84	784	21.60	1.380E+00	6.474E-01	6.474E-01	14.42
	583.14	2423	84.20*	1.240E+00	5.710E-01	5.710E-01	6.99
	860.37	326	12.46	9.141E-01	7.040E-01	7.040E-01	16.54
PB-212	238.63	8015	44.60*	2.572E+00	1.719E+00	1.719E+00	6.42
	300.09	493	3.41	2.143E+00	1.660E+00	1.660E+00	15.06
BI-214	609.31	3793	46.30*	1.198E+00	1.683E+00	1.683E+00	6.54
	768.36	291	5.04	9.984E-01	1.422E+00	1.422E+00	19.27
	1120.29	808	15.10	7.420E-01	1.776E+00	1.776E+00	9.74
	1764.49	647	15.80	4.957E-01	2.032E+00	2.032E+00	8.54
PB-214	241.98	2384	7.49	2.547E+00	3.074E+00	3.074E+00	8.30
	295.21	3185	19.20	2.172E+00	1.879E+00	1.879E+00	7.03
	351.92	5235	37.20*	1.878E+00	1.844E+00	1.844E+00	6.46
	785.91	------	1.10	9.808E-01	------ Line Not Found		------
RA-224DA	238.63	8015	44.60*	2.572E+00	1.719E+00	1.780E+00	6.42
	240.98	2384	3.95	2.547E+00	5.829E+00	6.035E+00	8.30
	583.14	2423	30.25	1.240E+00	1.589E+00	1.645E+00	6.99
	860.37	326	4.48	9.141E-01	1.958E+00	2.027E+00	16.54
RA-226DA	186.21	1518	3.50	3.057E+00	3.490E+00	3.490E+00	9.69
	241.98	2384	7.49	2.547E+00	3.074E+00	3.074E+00	8.30
	295.22	3185	19.20	2.172E+00	1.879E+00	1.879E+00	7.03
	351.92	5235	37.20	1.878E+00	1.844E+00	1.844E+00	6.46
	609.32	3793	46.30*	1.198E+00	1.683E+00	1.683E+00	6.54
	1120.28	808	15.10	7.420E-01	1.776E+00	1.776E+00	9.74
	1238.11	291	5.94	6.835E-01	1.763E+00	1.763E+00	18.32
	1764.49	647	15.80	4.957E-01	2.032E+00	2.033E+00	8.54
AC-228	209.28	699	4.40	2.832E+00	1.380E+00	1.380E+00	13.84
	270.23	699	3.60	2.334E+00	2.047E+00	2.047E+00	14.77
	338.32	1525	11.40	1.941E+00	1.695E+00	1.695E+00	8.17
	911.07	1592	27.70*	8.743E-01	1.618E+00	1.618E+00	8.16
	969.11	1226	16.60	8.338E-01	2.180E+00	2.180E+00	9.07
RA-228DA	209.28	699	4.40	2.832E+00	1.380E+00	1.396E+00	13.84
	338.32	1525	11.40	1.941E+00	1.695E+00	1.715E+00	8.17
	911.07	1592	27.70*	8.743E-01	1.618E+00	1.637E+00	8.16
	964.60	------	5.20	8.359E-01	------ Line Not Found		------

Nuclide Line Activity Report (continued)
Sample ID : J474W1AA
Acquisition date : 4-SEP-2007 06:42:03

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1226	16.60	8.338E-01	2.180E+00	2.205E+00	9.07
TH-228DA	238.63	8015	44.60	2.572E+00	1.719E+00	1.780E+00	6.42
	240.98	2384	3.95	2.547E+00	5.829E+00	6.035E+00	8.30
	583.14	2423	30.25*	1.240E+00	1.589E+00	1.645E+00	6.99
	860.37	326	4.48	9.141E-01	1.958E+00	2.027E+00	16.54
TH-232DA	238.63	8015	44.60	2.572E+00	1.719E+00	1.719E+00	6.42
	338.32	1525	12.40*	1.941E+00	1.559E+00	1.559E+00	8.17
	583.14	2423	30.25	1.240E+00	1.589E+00	1.589E+00	6.99
	911.07	1592	27.70	8.743E-01	1.618E+00	1.618E+00	8.16
	964.60	------	5.20	8.359E-01	------ Line Not Found		------
	969.11	1226	16.60	8.338E-01	2.180E+00	2.180E+00	9.07
U-234DA	241.98	2384	7.49	2.547E+00	3.074E+00	3.074E+00	8.30
	295.22	3185	19.20*	2.172E+00	1.879E+00	1.879E+00	7.03
	351.92	5235	37.20	1.878E+00	1.844E+00	1.844E+00	6.46
	609.31	3793	46.30	1.198E+00	1.683E+00	1.683E+00	6.54
U-238DA	241.98	2384	7.49	2.547E+00	3.074E+00	3.074E+00	8.30
	295.22	3185	19.20	2.172E+00	1.879E+00	1.879E+00	7.03
	351.92	5235	37.20*	1.878E+00	1.844E+00	1.844E+00	6.46
	609.31	3793	46.30	1.198E+00	1.683E+00	1.683E+00	6.54
U-238DHP	63.28	456	3.80*	2.139E+00	1.379E+00	1.379E+00	24.53
	92.59	1876	5.41	3.373E+00	2.529E+00	2.529E+00	11.46

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J474W1AA
Acquisition date : 4-SEP-2007 06:42:03

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
7	72.64	789	4489	1.30	291.32	283	33	2.19E-02	20.4	2.68E+00	
7	74.75	4060	3540	1.09	299.78	283	33	1.13E-01	3.6	2.79E+00	
7	77.00	5205	3356	1.04	308.80	283	33	1.45E-01	2.7	2.88E+00	
0	81.11	244	1857	0.67	325.29	322	8	6.77E-03	31.4	3.05E+00	T
0	84.20	679	3264	1.72	337.69	331	13	1.89E-02	18.8	3.15E+00	
0	87.12	1700	2931	1.18	349.41	344	12	4.72E-02	7.1	3.23E+00	T
0	89.81	1059	2197	1.07	360.18	356	10	2.94E-02	8.8	3.30E+00	
0	129.00	369	1965	0.98	517.41	512	11	1.02E-02	23.8	3.56E+00	
0	327.76	371	991	1.39	1314.73	1309	14	1.03E-02	18.7	1.99E+00	T
0	409.62	250	757	1.66	1643.08	1634	17	6.95E-03	22.4	1.65E+00	
0	462.82	469	820	1.91	1856.51	1844	23	1.30E-02	14.2	1.50E+00	T
0	727.15	442	486	2.00	2916.67	2906	20	1.23E-02	10.5	1.04E+00	T
0	794.65	288	414	1.75	3187.36	3176	24	7.99E-03	15.3	9.72E-01	T

Flags: "T" = Tentatively associated

Sample ID : J474W1AA
Acquisition date : 4-SEP-2007 06:42:03

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	7.983E-02	14.42	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.42	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.578E-01	9.74	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.57	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.439E+00	6.99	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.89	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.573E+01	6.54	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.09	511.85	20.60	7.249E-01	14.42	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.03	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	7.632E-01	15.41	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	6.005E-02	32.05	Abun.
			276.40	6.90	--- Not Found ---		
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		25.69			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	8.805E-02	16.66	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	20.82	328.77	20.50	4.135E+05	19.69	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.243E-01	9.76	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J474W1AA Acquisition date : 4-SEP-2007 06:42:03

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.294E+01	21.22	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.585E+00	12.42	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	5.435E-01	14.77	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.262E-01	9.69	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:00:50

Configuration : $DISK1:[GER6.SAMPLE]J474W1AA_040970642.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 : BRC SOIL
Sample date : 31-JUL-2007 14:15:00
Sample ID : J474W1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 4-SEP-2007 06:42:03
Sample quantity : 305.10 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:01:04.51 0.2%
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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.206E+01	1.864E+00	2.975E-01	1.965E-02	74.163
TL-208	5.710E-01	3.990E-02	2.914E-02	9.487E-04	19.594
PB-212	1.719E+00	1.104E-01	3.999E-02	1.484E-03	42.991
BI-214	1.683E+00	1.100E-01	5.600E-02	1.838E-03	30.057
PB-214	1.844E+00	1.191E-01	5.286E-02	1.815E-03	34.888
RA-224DA	1.780E+00	1.143E-01	4.140E-02	1.537E-03	42.991
RA-226DA	1.683E+00	1.101E-01	5.600E-02	1.838E-03	30.057
AC-228	1.618E+00	1.320E-01	1.104E-01	5.474E-03	14.657
RA-228DA	1.637E+00	1.336E-01	1.117E-01	5.537E-03	14.657
TH-228DA	1.645E+00	1.150E-01	8.397E-02	2.734E-03	19.594
TH-232DA	1.559E+00	1.273E-01	1.618E-01	5.607E-03	9.636
U-234DA	1.879E+00	1.322E-01	9.948E-02	3.593E-03	18.890
U-238DA	1.844E+00	1.191E-01	5.286E-02	1.815E-03	34.888
U-238DHP	1.379E+00	3.382E-01	6.264E-01	2.240E-02	2.201

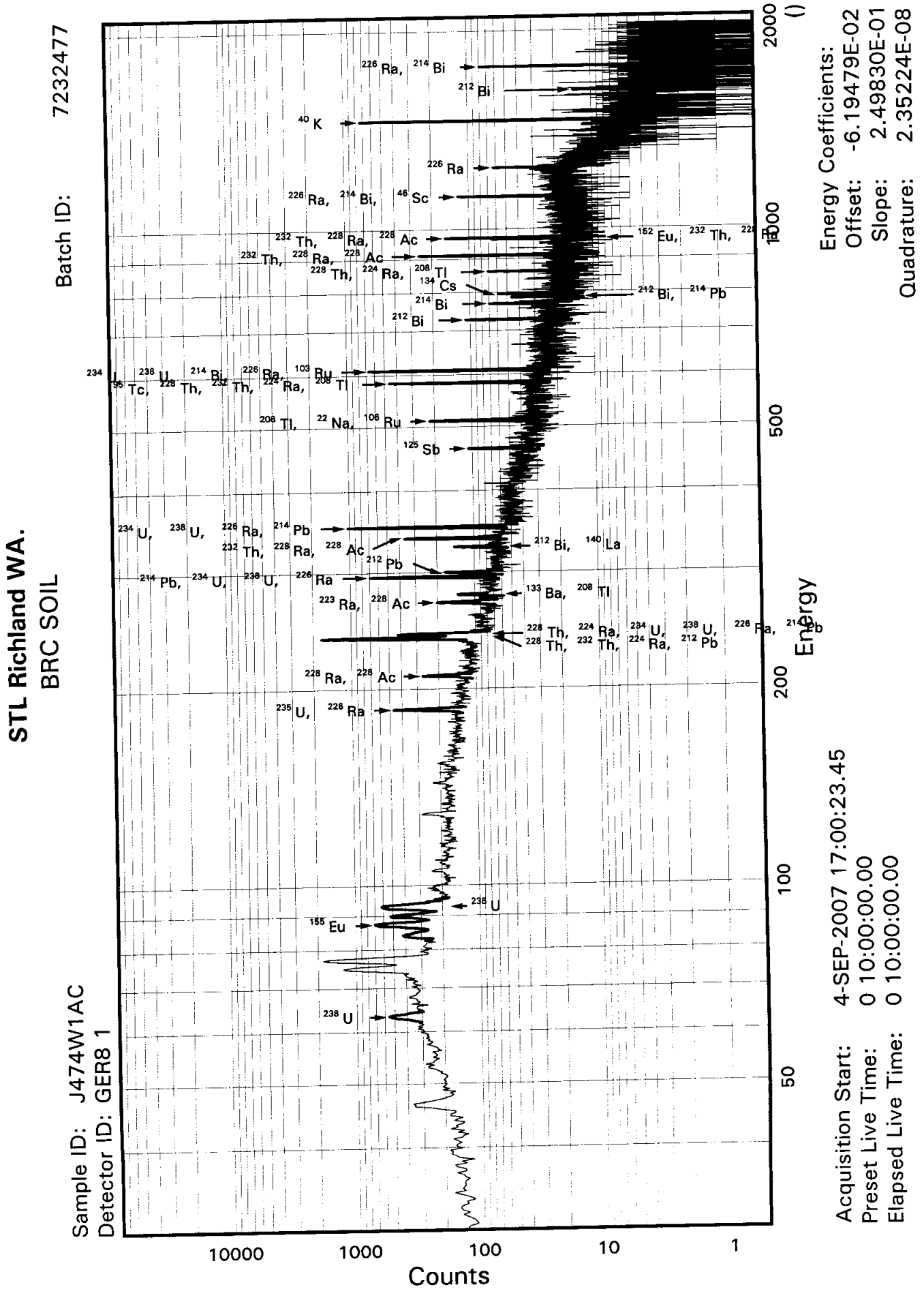
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-9.602E-02		9.595E-02	3.194E-01	1.033E-02	-0.301
NA-22	-1.927E-02		1.130E-02	3.690E-02	2.236E-03	-0.522
SC-46	3.578E-01	+	3.485E-02	7.472E-02	3.207E-03	4.788
CR-51	-8.231E-02		1.336E-01	4.430E-01	1.547E-02	-0.186
MN-54	1.768E-03		9.509E-03	3.221E-02	1.453E-03	0.055
CO-57	1.944E-02		4.400E-02	1.445E-01	5.414E-03	0.135
CO-58	-4.143E-02		1.186E-02	3.700E-02	1.604E-03	-1.120
FE-59	-5.744E-03		3.094E-02	1.047E-01	4.585E-03	-0.055
CO-60	1.573E-03		9.311E-03	3.170E-02	2.319E-03	0.050
ZN-65	1.351E-01		2.975E-02	8.841E-02	3.813E-03	1.528
SE-75	1.290E-02		1.102E-02	3.529E-02	1.304E-03	0.366
SR-85	8.814E-02		1.329E-02	3.891E-02	1.225E-03	2.265
Y-88	6.264E-03		9.551E-03	3.388E-02	1.148E-03	0.185
NB-94	-7.592E-03		8.216E-03	2.722E-02	1.301E-03	-0.279

Sample ID : J474W1AA
Acquisition date : 4-SEP-2007 06:42:03

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	1.481E-01		2.320E-02	6.749E-02	2.710E-03	2.194
TC-95M	-9.473E-03		1.113E-02	3.679E-02	1.353E-03	-0.257
ZR-95	3.348E-02		2.177E-02	7.425E-02	2.935E-03	0.451
ZRNB-95	2.168E-01		3.391E-02	9.862E-02	3.961E-03	2.198
RH-101	7.425E-03		7.138E-03	2.355E-02	8.633E-04	0.315
RH-102M	8.490E-04		6.690E-03	2.266E-02	7.338E-04	0.037
RU-103	5.326E-03		1.301E-02	4.400E-02	1.405E-03	0.121
RU-106DA	3.157E-02		7.919E-02	2.672E-01	8.795E-03	0.118
AG-108M	-1.140E-02		7.025E-03	2.276E-02	7.481E-04	-0.501
AG-110M	2.039E-03		1.244E-02	4.198E-02	2.049E-03	0.049
SN-113DA	-2.042E-02		1.159E-02	3.795E-02	1.246E-03	-0.538
SB-124	-5.746E-03		1.386E-02	3.884E-02	1.273E-03	-0.148
SB-125	9.974E-03		2.197E-02	7.352E-02	2.419E-03	0.136
SN-126DA	2.270E-02		7.693E-03	2.678E-02	8.948E-04	0.848
I-131	-6.631E-02		1.404E-01	4.735E-01	1.608E-02	-0.140
BA-133	2.389E-02		1.094E-02	3.145E-02	1.076E-03	0.760
CS-134	8.805E-02	+	1.467E-02	3.946E-02	1.669E-03	2.231
CS-137DA	-4.183E-04		9.226E-03	3.070E-02	1.016E-03	-0.014
LA-138	-6.351E-04		1.235E-02	4.237E-02	2.863E-03	-0.015
CE-139	-4.382E-03		6.560E-03	2.183E-02	7.859E-04	-0.201
BA-140	6.726E-02		1.776E-01	5.949E-01	1.898E-02	0.113
BALA-140	-1.858E-01		1.322E-01	4.367E-01	2.465E-02	-0.425
CE-141	-9.567E-03		1.862E-02	6.298E-02	2.316E-03	-0.152
CE-144	-4.632E-02		4.297E-02	1.393E-01	5.256E-03	-0.332
CEPR-144	-9.338E-02		8.593E-02	2.786E-01	1.051E-02	-0.335
PM-144	-1.856E-03		8.431E-03	2.675E-02	8.797E-04	-0.069
PM-146	7.237E-03		9.699E-03	3.320E-02	1.086E-03	0.218
EU-152	-2.109E-02		2.276E-02	7.445E-02	2.571E-03	-0.283
EU-154	-5.031E-02		3.114E-02	1.019E-01	6.173E-03	-0.494
EU-155	1.211E-01		2.170E-02	7.146E-02	2.912E-03	1.694
HF-181	1.103E-02		1.346E-02	4.586E-02	1.480E-03	0.240
BI-207	5.680E-03		7.139E-03	2.442E-02	7.911E-04	0.233
BI-210M	-5.848E-03		1.223E-02	3.401E-02	1.256E-03	-0.172
BI-212	1.585E+00	+	1.969E-01	5.447E-01	2.390E-02	2.910
RA-223	5.435E-01	+	8.026E-02	1.567E-01	5.775E-03	3.468
AC-227DA	4.818E-01		6.725E-02	1.869E-01	6.938E-03	2.577
TH-234DA	6.025E-01		1.417E+00	4.812E+00	2.276E-01	0.125
U-235HP	7.162E-02		4.086E-02	1.400E-01	5.166E-03	0.511
NP-237DA	-1.178E-04		1.518E-02	5.086E-02	1.799E-03	-0.002
AM-241HP	-1.980E-02		2.077E-02	7.015E-02	2.435E-03	-0.282


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J474W1AC
Detector ID: GER8 1
Energy Coefficients:
Offset: -6.19479E-02
Slope: 2.49830E-01
Quadrature: 2.35224E-08
Acquisition Start: 4-SEP-2007 17:00:23.45
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
212 Bi
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
152 Eu, 232 Th,
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
212 Bi, 214 Pb
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Pb
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
223 Ra, 228 Ac
133 Ba, 208 Tl
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J474W1AC

CONFIGURATION ID: GER8:J474W1AC_040971700
TITLE : BRC SOIL
SAMPLE ID : J474W1AC

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 04-SEP-07 17:00:23
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 31-JUL-2007 14:15:00.00
CALIB DATE: 4-SEP-2007 05:27:43.86
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 3.0510E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6195E-01 keV
ENERGY SLOPE: 2.4983E-01 keV/C
ENERGY Q COEFF: 2.3522E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.0717E-01 keV
FWHM SLOPE: 2.5844E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 30.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 10:02:09

Configuration : $DISK1:[GER8.SAMPLE]J474W1AC_040971700.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 31-JUL-2007 14:15:00 Acquisition date : 4-SEP-2007 17:00:23
Sample ID : J474W1AC Sample quantity : 305.10 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.22 0.0%
Start energy : 19.92 End energy : 2048.13
Sensitivity : 5.00 Gaussian : 30.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.56*	455	2312	1.06	186.60	181	13	1.27E-02	23.9	
2	0	63.27*	782	3741	1.03	253.48	248	12	2.17E-02	16.7	
3	1	74.88*	4480	4808	1.18	299.95	290	40	1.24E-01	3.6	1.29E+00
4	1	77.14*	7079	3951	1.09	309.01	290	40	1.97E-01	2.3	
5	4	84.22	932	3326	1.27	337.35	331	54	2.59E-02	12.6	2.18E+00
6	4	87.24	2722	3833	1.37	349.43	331	54	7.56E-02	5.3	
7	4	89.93	1523	3119	1.13	360.22	331	54	4.23E-02	8.3	
8	4	92.93*	2632	4109	1.63	372.22	331	54	7.31E-02	6.7	
9	0	129.01	704	2124	1.23	516.62	510	13	1.96E-02	14.0	
10	0	186.03*	1481	2128	1.13	744.80	736	16	4.11E-02	7.7	
11	0	209.19	760	1909	1.10	837.52	829	16	2.11E-02	13.4	
12	3	238.67*	8302	1623	1.21	955.51	946	30	2.31E-01	1.5	2.08E+00
13	3	241.74	2265	1530	1.74	967.79	946	30	6.29E-02	4.9	
14	0	270.17	930	1382	1.39	1081.55	1072	20	2.58E-02	10.3	
15	0	277.45	295	1356	1.28	1110.67	1100	17	8.20E-03	29.2	
16	0	295.22	3361	1053	1.27	1181.79	1174	16	9.34E-02	2.8	
17	0	299.98	532	1108	1.12	1200.84	1193	16	1.48E-02	14.6	
18	0	328.07	400	914	1.07	1313.25	1306	14	1.11E-02	16.8	
19	0	338.35	1702	1120	1.35	1354.41	1345	18	4.73E-02	5.2	
20	0	351.93*	5299	1100	1.34	1408.73	1399	20	1.47E-01	2.1	
21	0	409.51	207	499	1.24	1639.14	1634	12	5.76E-03	22.6	
22	0	463.00	562	639	1.56	1853.19	1844	21	1.56E-02	12.0	
23	0	510.87*	983	678	1.93	2044.71	2033	27	2.73E-02	9.3	
24	0	583.13	2549	600	1.39	2333.82	2323	22	7.08E-02	2.9	
25	0	609.28*	3885	594	1.36	2438.46	2426	25	1.08E-01	2.2	
26	0	727.31	587	515	1.60	2910.67	2898	26	1.63E-02	9.8	
27	0	769.03	421	669	1.65	3077.58	3063	32	1.17E-02	16.2	
28	0	785.68	127	260	1.02	3144.18	3137	15	3.51E-03	25.5	
29	0	794.78	335	387	1.86	3180.59	3169	24	9.29E-03	14.3	
30	0	860.31	333	334	1.04	3442.69	3432	22	9.25E-03	13.1	
31	0	911.15	1688	323	1.59	3646.07	3635	23	4.69E-02	3.4	
32	0	933.79	256	216	1.70	3736.63	3726	20	7.10E-03	13.5	
33	0	964.54	276	367	1.04	3859.61	3849	21	7.66E-03	15.9	
34	0	969.03	988	355	1.64	3877.58	3869	25	2.74E-02	5.4	
35	0	1120.29	721	422	1.79	4482.57	4472	22	2.00E-02	7.2	
36	0	1238.04	316	279	1.89	4953.47	4944	18	8.78E-03	12.0	
37	0	1378.30	185	157	1.85	5514.34	5502	24	5.15E-03	17.0	
38	0	1460.80*	5875	149	1.89	5844.20	5829	31	1.63E-01	1.4	
39	0	1509.46	87	93	1.27	6038.75	6028	20	2.41E-03	25.5	
40	0	1590.75	230	187	6.85	6363.73	6342	45	6.40E-03	18.8	
41	0	1620.98	48	66	1.51	6484.59	6475	18	1.33E-03	36.9	
42	0	1729.84	167	34	2.29	6919.78	6908	24	4.63E-03	11.2	
43	0	1764.71	671	54	2.00	7059.17	7044	29	1.86E-02	4.7	

Sample ID : J474W1AC
Acquisition date : 4-SEP-2007 17:00:23

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:02:09

Configuration : $DISK1:[GER8.SAMPLE]J474W1AC_040971700.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 31-JUL-2007 14:15:00
Sample ID : J474W1AC
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 4-SEP-2007 17:00:23
Sample quantity : 305.10 GRAMS
Sample geometry : ES200
Elapsed real time: 0 10:00:14.22 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	5875	10.67*	5.801E-01	2.336E+01	2.336E+01	6.28
TL-208	277.35	295	6.80	2.335E+00	4.576E-01	4.576E-01	29.82
	510.84	983	21.60	1.413E+00	7.923E-01	7.923E-01	11.04
	583.14	2549	84.20*	1.263E+00	5.897E-01	5.897E-01	6.70
	860.37	333	12.46	9.073E-01	7.250E-01	7.250E-01	14.62
PB-212	238.63	8302	44.60*	2.617E+00	1.750E+00	1.750E+00	6.49
	300.09	532	3.41	2.196E+00	1.749E+00	1.749E+00	15.90
BI-214	609.31	3885	46.30*	1.217E+00	1.697E+00	1.697E+00	6.50
	768.36	421	5.04	9.981E-01	2.059E+00	2.059E+00	17.47
	1120.29	721	15.10	7.255E-01	1.619E+00	1.619E+00	9.44
	1764.49	671	15.80	4.949E-01	2.112E+00	2.112E+00	7.57
PB-214	241.98	2265	7.49	2.592E+00	2.871E+00	2.871E+00	7.98
	295.21	3361	19.20	2.224E+00	1.937E+00	1.937E+00	6.81
	351.92	5299	37.20*	1.930E+00	1.816E+00	1.816E+00	6.41
	785.91	127	1.10	9.801E-01	2.888E+00	2.888E+00	26.26
RA-224DA	238.63	8302	44.60*	2.617E+00	1.750E+00	1.813E+00	6.49
	240.98	2265	3.95	2.592E+00	5.444E+00	5.638E+00	7.98
	583.14	2549	30.25	1.263E+00	1.641E+00	1.700E+00	6.70
	860.37	333	4.48	9.073E-01	2.016E+00	2.089E+00	14.62
RA-226DA	186.21	1481	3.50	3.108E+00	3.350E+00	3.350E+00	9.97
	241.98	2265	7.49	2.592E+00	2.871E+00	2.871E+00	7.98
	295.22	3361	19.20	2.224E+00	1.937E+00	1.937E+00	6.81
	351.92	5299	37.20	1.930E+00	1.816E+00	1.816E+00	6.41
	609.32	3885	46.30*	1.217E+00	1.697E+00	1.697E+00	6.50
	1120.28	721	15.10	7.255E-01	1.619E+00	1.619E+00	9.44
	1238.11	316	5.94	6.668E-01	1.963E+00	1.963E+00	13.40
	1764.49	671	15.80	4.949E-01	2.112E+00	2.112E+00	7.57
AC-228	209.28	760	4.40	2.875E+00	1.478E+00	1.478E+00	14.77
	270.23	930	3.60	2.384E+00	2.668E+00	2.668E+00	12.08
	338.32	1702	11.40	1.993E+00	1.843E+00	1.843E+00	8.02
	911.07	1688	27.70*	8.642E-01	1.735E+00	1.735E+00	7.45
	969.11	988	16.60	8.202E-01	1.785E+00	1.785E+00	8.47
RA-228DA	209.28	760	4.40	2.875E+00	1.478E+00	1.495E+00	14.77
	338.32	1702	11.40	1.993E+00	1.843E+00	1.865E+00	8.02
	911.07	1688	27.70*	8.642E-01	1.735E+00	1.756E+00	7.45
	964.60	276	5.20	8.235E-01	1.584E+00	1.602E+00	17.23

Sample ID : J474W1AC Acquisition date : 4-SEP-2007 17:00:23

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	988	16.60	8.202E-01	1.785E+00	1.806E+00	8.47
TH-228DA	238.63	8302	44.60	2.617E+00	1.750E+00	1.813E+00	6.49
	240.98	2265	3.95	2.592E+00	5.444E+00	5.638E+00	7.98
	583.14	2549	30.25*	1.263E+00	1.641E+00	1.700E+00	6.70
	860.37	333	4.48	9.073E-01	2.016E+00	2.089E+00	14.62
TH-232DA	238.63	8302	44.60	2.617E+00	1.750E+00	1.750E+00	6.49
	338.32	1702	12.40*	1.993E+00	1.695E+00	1.695E+00	8.02
	583.14	2549	30.25	1.263E+00	1.641E+00	1.641E+00	6.70
	911.07	1688	27.70	8.642E-01	1.735E+00	1.735E+00	7.45
	964.60	276	5.20	8.235E-01	1.584E+00	1.584E+00	17.23
	969.11	988	16.60	8.202E-01	1.785E+00	1.785E+00	8.47
U-234DA	241.98	2265	7.49	2.592E+00	2.871E+00	2.871E+00	7.98
	295.22	3361	19.20*	2.224E+00	1.937E+00	1.937E+00	6.81
	351.92	5299	37.20	1.930E+00	1.816E+00	1.816E+00	6.41
	609.31	3885	46.30	1.217E+00	1.697E+00	1.697E+00	6.50
U-238DA	241.98	2265	7.49	2.592E+00	2.871E+00	2.871E+00	7.98
	295.22	3361	19.20	2.224E+00	1.937E+00	1.937E+00	6.81
	351.92	5299	37.20*	1.930E+00	1.816E+00	1.816E+00	6.41
	609.31	3885	46.30	1.217E+00	1.697E+00	1.697E+00	6.50
U-238DHP	63.28	782	3.80*	3.724E+00	1.359E+00	1.359E+00	17.76
	92.59	2632	5.41	4.071E+00	2.941E+00	2.941E+00	9.04

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
BI-212	288.07	------	0.31	2.267E+00	------	Line Not Found	------
	327.96	400	0.14	2.044E+00	3.463E+01	3.463E+01	19.55
	452.83	------	0.31	1.565E+00	------	Line Not Found	------
	727.33	587	6.58*	1.047E+00	2.098E+00	2.098E+00	11.92
	785.37	127	1.10	9.801E-01	2.888E+00	2.888E+00	26.40
	893.41	------	0.38	8.787E-01	------	Line Not Found	------
	952.12	------	0.17	8.326E-01	------	Line Not Found	------
	1078.62	------	0.56	7.491E-01	------	Line Not Found	------
	1512.70	------	0.29	5.633E-01	------	Line Not Found	------
	1620.50	48	1.49	5.315E-01	1.488E+00	1.488E+00	37.53
	1806.00	------	0.09	4.854E-01	------	Line Not Found	------

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J474W1AC

Acquisition date : 4-SEP-2007 17:00:23

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.56	455	2312	1.06	186.60	181	13	1.27E-02	23.9	2.84E+00	
1	74.88	4480	4808	1.18	299.95	290	40	1.24E-01	3.6	3.99E+00	
1	77.14	7079	3951	1.09	309.01	290	40	1.97E-01	2.3	4.01E+00	
4	84.22	932	3326	1.27	337.35	331	54	2.59E-02	12.6	4.07E+00	
4	87.24	2722	3833	1.37	349.43	331	54	7.56E-02	5.3	4.07E+00	T
4	89.93	1523	3119	1.13	360.22	331	54	4.23E-02	8.3	4.08E+00	
0	129.01	704	2124	1.23	516.62	510	13	1.96E-02	14.0	3.77E+00	
0	409.51	207	499	1.24	1639.14	1634	12	5.76E-03	22.6	1.70E+00	
0	463.00	562	639	1.56	1853.19	1844	21	1.56E-02	12.0	1.54E+00	T
0	794.78	335	387	1.86	3180.59	3169	24	9.29E-03	14.3	9.71E-01	T
0	933.79	256	216	1.70	3736.63	3726	20	7.10E-03	13.5	8.46E-01	
0	1378.30	185	157	1.85	5514.34	5502	24	5.15E-03	17.0	6.09E-01	
0	1509.46	87	93	1.27	6038.75	6028	20	2.41E-03	25.5	5.64E-01	
0	1590.75	230	187	6.85	6363.73	6342	45	6.40E-03	18.8	5.40E-01	
0	1729.84	167	34	2.29	6919.78	6908	24	4.63E-03	11.2	5.03E-01	

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : J474W1AC

Acquisition date : 4-SEP-2007 17:00:23

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	9.773E-02	11.04	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.42	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.274E-01	9.44	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.58	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.531E+00	6.70	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.90	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.614E+01	6.50	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	8.879E-01	11.04	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.03	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	8.918E-01	13.40	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	4.538E-01	29.82	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	1.026E-01	15.65	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.08	328.77	20.50	5.192E+05	17.88	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	5.747E-01	17.23	

Sample ID : J474W1AC Acquisition date : 4-SEP-2007 17:00:23

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	--- Not Found ---		
		% Abundances Found =		10.78			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	5.392E-01	8.06	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	7.084E-01	12.08	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.171E-01	9.97	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:02:12

Configuration : $DISK1:[GER8.SAMPLE]J474W1AC_040971700.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 : BRC SOIL
Sample date : 31-JUL-2007 14:15:00
Sample ID : J474W1AC
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 4-SEP-2007 17:00:23
Sample quantity : 305.10 GRAMS
Sample geometry : ES200
Elapsed real time: 0 10:00:14.22 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.336E+01	1.467E+00	2.167E-01	7.647E-03	107.785
TL-208	5.897E-01	3.951E-02	2.542E-02	8.680E-04	23.195
BI-212	2.098E+00	2.501E-01	3.544E-01	1.597E-02	5.920
PB-212	1.750E+00	1.135E-01	4.043E-02	1.555E-03	43.285
BI-214	1.697E+00	1.102E-01	4.756E-02	1.665E-03	35.675
PB-214	1.816E+00	1.165E-01	4.882E-02	1.670E-03	37.189
RA-224DA	1.813E+00	1.176E-01	4.188E-02	1.610E-03	43.285
RA-226DA	1.697E+00	1.102E-01	4.757E-02	1.665E-03	35.674
AC-228	1.735E+00	1.293E-01	8.950E-02	3.912E-03	19.389
RA-228DA	1.756E+00	1.308E-01	9.055E-02	3.958E-03	19.389
TH-228DA	1.700E+00	1.139E-01	7.329E-02	2.502E-03	23.195
TH-232DA	1.695E+00	1.359E-01	1.551E-01	5.413E-03	10.924
U-234DA	1.937E+00	1.318E-01	9.289E-02	3.439E-03	20.849
U-238DA	1.816E+00	1.165E-01	4.882E-02	1.670E-03	37.189
U-238DHP	1.359E+00	2.414E-01	5.298E-01	1.689E-02	2.565

RER= 0.5875
RER= 0.6996
UMA 9/7/07

---- Non-Identified Nuclides ----

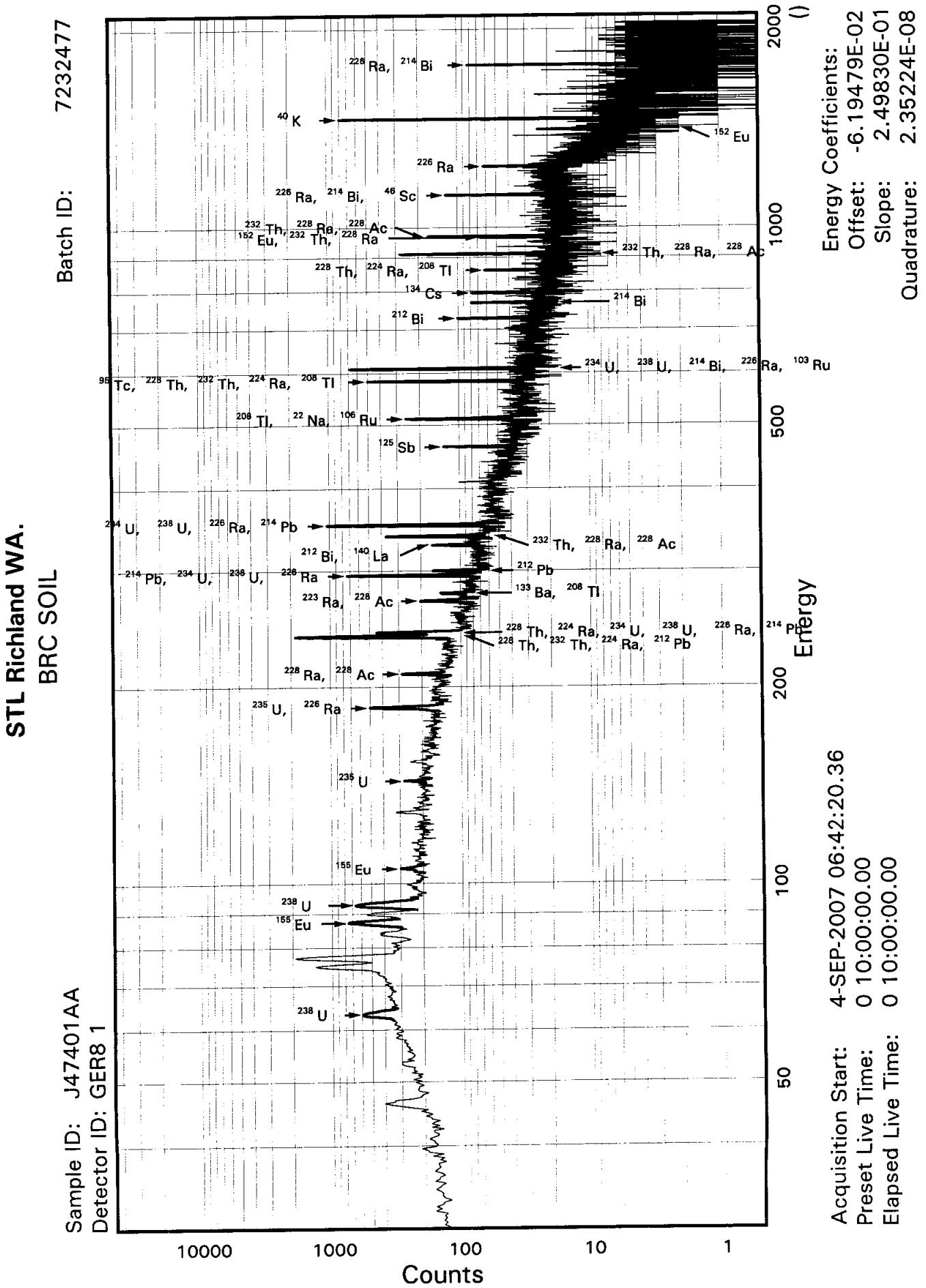
UMA

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	3.832E-02		8.844E-02	3.005E-01	9.613E-03	0.128
NA-22	-3.847E-03		9.018E-03	3.043E-02	1.047E-03	-0.126
SC-46	3.274E-01	+	3.091E-02	7.238E-02	2.545E-03	4.523
CR-51	-1.307E-01		1.329E-01	4.363E-01	1.555E-02	-0.300
MN-54	4.654E-03		8.427E-03	2.877E-02	1.215E-03	0.162
CO-57	-5.091E-02		4.909E-02	1.603E-01	5.479E-03	-0.318
CO-58	-3.077E-02		1.004E-02	3.151E-02	1.309E-03	-0.977
FE-59	-3.578E-02		2.526E-02	8.393E-02	3.046E-03	-0.426
CO-60	-8.310E-04		7.768E-03	2.648E-02	9.448E-04	-0.031
ZN-65	-2.618E-02		2.339E-02	6.510E-02	2.307E-03	-0.402
SE-75	1.459E-03		1.109E-02	3.440E-02	1.310E-03	0.042
SR-85	6.535E-02		1.159E-02	3.473E-02	1.101E-03	1.882
Y-88	1.802E-02		7.745E-03	2.935E-02	9.163E-04	0.614

Sample ID : J474W1AC Acquisition date : 4-SEP-2007 17:00:23

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	-1.694E-03		7.012E-03	2.367E-02	1.025E-03	-0.072
NB-95	1.062E-01		1.934E-02	5.864E-02	2.353E-03	1.811
TC-95M	-9.394E-03		1.306E-02	3.944E-02	1.508E-03	-0.238
ZR-95	5.996E-02		1.977E-02	6.910E-02	2.752E-03	0.868
ZRNB-95	1.577E-01		2.825E-02	8.561E-02	3.435E-03	1.842
RH-101	6.352E-03		7.240E-03	2.452E-02	9.348E-04	0.259
RH-102M	-1.533E-02		6.264E-03	2.023E-02	6.474E-04	-0.758
RU-103	-8.638E-04		1.165E-02	3.933E-02	1.253E-03	-0.022
RU-106DA	7.661E-02		6.880E-02	2.340E-01	8.282E-03	0.327
AG-108M	-9.816E-03		6.293E-03	2.082E-02	6.651E-04	-0.472
AG-110M	9.113E-03		1.121E-02	3.845E-02	1.679E-03	0.237
SN-113DA	-1.066E-02		1.093E-02	3.667E-02	1.155E-03	-0.291
SB-124	-9.361E-03		1.090E-02	3.278E-02	1.140E-03	-0.286
SB-125	-7.017E-03		1.995E-02	6.734E-02	2.149E-03	-0.104
SN-126DA	2.777E-02		7.186E-03	2.468E-02	9.071E-04	1.125
I-131	-1.095E-01		1.404E-01	4.599E-01	1.538E-02	-0.238
BA-133	-3.273E-03		1.018E-02	2.838E-02	9.641E-04	-0.115
CS-134	1.026E-01	+	1.606E-02	3.679E-02	1.511E-03	2.789
CS-137DA	-2.577E-02		8.450E-03	2.626E-02	9.607E-04	-0.981
LA-138	1.378E-02		1.070E-02	3.784E-02	1.340E-03	0.364
CE-139	3.252E-03		7.428E-03	2.441E-02	9.097E-04	0.133
BA-140	2.800E-01		1.647E-01	5.651E-01	1.840E-02	0.496
BALA-140	1.858E-01		1.090E-01	3.457E-01	1.187E-02	0.537
CE-141	4.389E-02		2.229E-02	7.377E-02	2.602E-03	0.595
CE-144	-3.800E-02		4.974E-02	1.564E-01	5.293E-03	-0.243
CEPR-144	-3.755E-02		1.015E-01	3.128E-01	1.059E-02	-0.120
PM-144	4.971E-03		6.906E-03	2.336E-02	8.240E-04	0.213
PM-146	1.438E-02		9.153E-03	3.145E-02	1.007E-03	0.457
EU-152	-2.175E-02		2.160E-02	6.945E-02	2.403E-03	-0.313
EU-154	-9.861E-03		2.494E-02	8.422E-02	2.897E-03	-0.117
EU-155	5.650E-02		2.247E-02	7.500E-02	2.470E-03	0.753
HF-181	7.141E-03		1.278E-02	4.346E-02	1.389E-03	0.164
BI-207	1.329E-02		6.619E-03	2.269E-02	7.646E-04	0.586
BI-210M	-6.505E-03		1.186E-02	3.339E-02	1.270E-03	-0.195
RA-223	7.084E-01	+	8.555E-02	1.590E-01	6.036E-03	4.456
AC-227DA	7.236E-01		7.684E-02	1.981E-01	7.617E-03	3.654
TH-234DA	1.939E+00		1.283E+00	4.408E+00	1.796E-01	0.440
U-235HP	1.401E-01		4.891E-02	1.616E-01	5.666E-03	0.867
NP-237DA	1.179E-02		1.510E-02	5.060E-02	1.829E-03	0.233
AM-241HP	8.491E-02		1.865E-02	5.551E-02	1.791E-03	1.530


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J47401AA
Detector ID: GER8 1
Energy Coefficients:
Offset: -6.19479E-02
Slope: 2.49830E-01
Quadrature: 2.35224E-08
Acquisition Start: 4-SEP-2007 06:42:20.36
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
^{228}Ra, ^{214}Bi
^{40}K
^{152}Eu
^{226}Ra
^{226}Ra, ^{214}Bi, ^{46}Sc
^{232}Th, ^{228}Ra, ^{228}Ac
^{152}Eu, ^{232}Th, ^{228}Ra
^{232}Th, ^{228}Ra, ^{228}Ac
^{228}Th, ^{224}Ra, ^{208}Tl
^{134}Cs
^{214}Bi
^{212}Bi
^{234}U, ^{238}U, ^{214}Bi, ^{226}Ra, ^{103}Ru
^{95}Tc, ^{228}Th, ^{232}Th, ^{224}Ra, ^{208}Tl
^{208}Tl, ^{22}Na, ^{106}Ru
^{125}Sb
^{234}U, ^{238}U, ^{226}Ra, ^{214}Pb
^{232}Th, ^{228}Ra, ^{228}Ac
^{212}Bi, ^{140}La
^{212}Pb
^{214}Pb, ^{234}U, ^{238}U, ^{226}Ra
^{133}Ba, ^{208}Tl
^{223}Ra, ^{228}Ac
^{228}Th, ^{224}Ra, ^{234}U, ^{238}U, ^{226}Ra, ^{214}Pb
^{228}Th, ^{232}Th, ^{224}Ra, ^{212}Pb
^{228}Ra, ^{228}Ac
^{235}U, ^{226}Ra
^{235}U
^{155}Eu
^{238}U
^{155}Eu
^{238}U

SAMPLE IDENTIFICATION: J47401AA

CONFIGURATION ID: GER8:J47401AA_040970642
TITLE : BRC SOIL
SAMPLE ID : J47401AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 04-SEP-07 06:42:20
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 31-JUL-2007 14:15:00.00
CALIB DATE: 4-SEP-2007 05:27:43.86
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.6090E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6195E-01 keV
ENERGY SLOPE: 2.4983E-01 keV/C
ENERGY Q COEFF: 2.3522E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.0717E-01 keV
FWHM SLOPE: 2.5844E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 10:04:54

Configuration : $DISK1:[GER8.SAMPLE]J47401AA_040970642.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 31-JUL-2007 14:15:00 Acquisition date : 4-SEP-2007 06:42:20
Sample ID : J47401AA Sample quantity : 360.90 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.35 0.0%
Start energy : 19.92 End energy : 2048.13
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.42*	584	2482	1.09	186.06	180	13	1.62E-02	19.3	
2	0	63.30*	980	4041	1.16	253.62	248	12	2.72E-02	13.9	
3	1	74.83*	4848	5339	1.23	299.78	288	43	1.35E-01	3.6	5.27E+00
4	1	77.15*	7486	4341	1.13	309.05	288	43	2.08E-01	2.3	
5	0	83.94	896	3286	1.44	336.23	331	12	2.49E-02	13.2	
6	0	87.12	2086	4099	1.18	348.96	343	13	5.79E-02	6.7	
7	0	89.90	1308	3384	1.22	360.10	355	12	3.63E-02	9.4	
8	0	92.99*	2611	3543	1.59	372.47	366	15	7.25E-02	5.5	
9	0	105.44	407	2653	0.86	422.28	416	13	1.13E-02	26.5	
10	0	128.95	545	2363	0.94	516.38	511	12	1.51E-02	18.3	
11	0	143.84	273	2224	0.54	575.98	571	12	7.59E-03	35.0	
12	0	185.95*	1922	2978	1.33	744.51	736	20	5.34E-02	7.5	
13	0	209.38	753	1771	1.25	838.29	832	13	2.09E-02	12.1	
14	4	238.65*	8871	1650	1.22	955.41	948	29	2.46E-01	1.5	1.21E+00
15	4	241.67	2438	1945	1.72	967.48	948	29	6.77E-02	5.1	
16	0	270.30	932	1412	1.39	1082.06	1073	18	2.59E-02	10.0	
17	0	277.40	282	1063	1.11	1110.49	1105	12	7.85E-03	23.9	
18	0	295.23	3463	1560	1.21	1181.85	1171	20	9.62E-02	3.3	
19	0	300.04	565	998	1.29	1201.09	1194	15	1.57E-02	12.9	
20	0	327.84	444	1123	1.32	1312.32	1306	16	1.23E-02	17.5	
21	0	338.27	1624	1466	1.24	1354.05	1341	22	4.51E-02	6.5	
22	0	351.88*	5681	1129	1.33	1408.55	1398	21	1.58E-01	2.0	
23	0	409.29	323	996	1.46	1638.28	1626	21	8.97E-03	25.1	
24	0	462.80	424	869	0.98	1852.40	1841	22	1.18E-02	18.4	
25	0	510.78*	1127	904	1.73	2044.36	2031	31	3.13E-02	9.4	
26	0	583.09	2728	731	1.35	2333.69	2319	24	7.58E-02	2.9	
27	0	609.26*	4084	692	1.48	2438.38	2427	24	1.13E-01	2.2	
28	0	727.25	603	479	1.65	2910.43	2900	22	1.68E-02	8.8	
29	0	768.25	407	380	1.57	3074.44	3064	20	1.13E-02	11.1	
30	0	795.05	351	450	1.43	3181.66	3169	25	9.76E-03	14.8	
31	0	860.39	343	368	1.55	3443.01	3431	23	9.53E-03	13.4	
32	0	911.05	1813	393	1.64	3645.69	3631	27	5.03E-02	3.5	
33	0	934.19	197	323	1.63	3738.22	3727	21	5.46E-03	20.7	
34	0	964.51	340	296	1.96	3859.50	3850	18	9.45E-03	11.5	
35	0	968.90	1073	419	1.51	3877.07	3868	25	2.98E-02	5.3	
36	0	1120.15	900	348	1.91	4482.01	4470	24	2.50E-02	5.7	
37	0	1237.98	312	352	1.73	4953.23	4943	19	8.68E-03	13.5	
38	0	1377.79	209	132	1.90	5512.28	5502	20	5.80E-03	13.4	
39	0	1408.32	123	156	1.60	5634.37	5619	26	3.42E-03	25.1	
40	0	1460.75*	6579	220	1.95	5843.99	5827	37	1.83E-01	1.4	
41	0	1590.37	291	170	6.22	6362.23	6335	48	8.10E-03	14.6	
42	0	1729.90	169	51	1.88	6920.05	6906	29	4.69E-03	12.9	
43	0	1764.58	666	69	1.92	7058.67	7043	29	1.85E-02	4.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:04:54

Configuration : $DISK1:[GER8.SAMPLE]J47401AA_040970642.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 31-JUL-2007 14:15:00 Acquisition date : 4-SEP-2007 06:42:20
Sample ID : J47401AA Sample quantity : 360.90 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.35 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	6579	10.67*	5.801E-01	2.211E+01	2.211E+01	6.28
TL-208	277.35	282	6.80	2.335E+00	3.700E-01	3.700E-01	24.66
	510.84	1127	21.60	1.414E+00	7.681E-01	7.681E-01	11.07
	583.14	2728	84.20*	1.263E+00	5.335E-01	5.335E-01	6.72
	860.37	343	12.46	9.073E-01	6.313E-01	6.313E-01	14.96
PB-212	238.63	8871	44.60*	2.617E+00	1.581E+00	1.581E+00	6.48
	300.09	565	3.41	2.196E+00	1.569E+00	1.569E+00	14.33
BI-214	609.31	4084	46.30*	1.217E+00	1.508E+00	1.508E+00	6.49
	768.36	407	5.04	9.989E-01	1.683E+00	1.683E+00	12.84
	1120.29	900	15.10	7.256E-01	1.709E+00	1.709E+00	8.36
	1764.49	666	15.80	4.950E-01	1.772E+00	1.772E+00	7.71
PB-214	241.98	2438	7.49	2.593E+00	2.611E+00	2.611E+00	8.12
	295.21	3463	19.20	2.224E+00	1.687E+00	1.687E+00	7.03
	351.92	5681	37.20*	1.931E+00	1.645E+00	1.645E+00	6.39
	785.91	------	1.10	9.798E-01	------ Line Not Found		------
RA-224DA	238.63	8871	44.60*	2.617E+00	1.581E+00	1.637E+00	6.48
	240.98	2438	3.95	2.593E+00	4.952E+00	5.127E+00	8.12
	583.14	2728	30.25	1.263E+00	1.485E+00	1.537E+00	6.72
	860.37	343	4.48	9.073E-01	1.756E+00	1.818E+00	14.96
RA-226DA	186.21	1922	3.50	3.109E+00	3.674E+00	3.674E+00	9.78
	241.98	2438	7.49	2.593E+00	2.611E+00	2.612E+00	8.12
	295.22	3463	19.20	2.224E+00	1.687E+00	1.687E+00	7.03
	351.92	5681	37.20	1.931E+00	1.645E+00	1.645E+00	6.39
	609.32	4084	46.30*	1.217E+00	1.508E+00	1.508E+00	6.49
	1120.28	900	15.10	7.256E-01	1.709E+00	1.710E+00	8.36
	1238.11	312	5.94	6.669E-01	1.641E+00	1.641E+00	14.77
	1764.49	666	15.80	4.950E-01	1.772E+00	1.772E+00	7.71
AC-228	209.28	753	4.40	2.873E+00	1.238E+00	1.238E+00	13.63
	270.23	932	3.60	2.383E+00	2.260E+00	2.260E+00	11.81
	338.32	1624	11.40	1.994E+00	1.486E+00	1.486E+00	8.92
	911.07	1813	27.70*	8.643E-01	1.575E+00	1.575E+00	7.50
	969.11	1073	16.60	8.203E-01	1.639E+00	1.639E+00	8.43
RA-228DA	209.28	753	4.40	2.873E+00	1.238E+00	1.253E+00	13.63
	338.32	1624	11.40	1.994E+00	1.486E+00	1.503E+00	8.92
	911.07	1813	27.70*	8.643E-01	1.575E+00	1.593E+00	7.50
	964.60	340	5.20	8.235E-01	1.652E+00	1.671E+00	13.22

Sample ID : J47401AA Acquisition date : 4-SEP-2007 06:42:20

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1073	16.60	8.203E-01	1.639E+00	1.658E+00	8.43
TH-228DA	238.63	8871	44.60	2.617E+00	1.581E+00	1.637E+00	6.48
	240.98	2438	3.95	2.593E+00	4.952E+00	5.127E+00	8.12
	583.14	2728	30.25*	1.263E+00	1.485E+00	1.537E+00	6.72
	860.37	343	4.48	9.073E-01	1.756E+00	1.818E+00	14.96
TH-232DA	238.63	8871	44.60	2.617E+00	1.581E+00	1.581E+00	6.48
	338.32	1624	12.40*	1.994E+00	1.366E+00	1.366E+00	8.92
	583.14	2728	30.25	1.263E+00	1.485E+00	1.485E+00	6.72
	911.07	1813	27.70	8.643E-01	1.575E+00	1.575E+00	7.50
	964.60	340	5.20	8.235E-01	1.652E+00	1.652E+00	13.22
	969.11	1073	16.60	8.203E-01	1.639E+00	1.639E+00	8.43
U-234DA	241.98	2438	7.49	2.593E+00	2.611E+00	2.611E+00	8.12
	295.22	3463	19.20*	2.224E+00	1.687E+00	1.687E+00	7.03
	351.92	5681	37.20	1.931E+00	1.645E+00	1.645E+00	6.39
	609.31	4084	46.30	1.217E+00	1.508E+00	1.508E+00	6.49
U-235HP	143.76	273	10.50*	3.592E+00	1.507E-01	1.507E-01	35.58
	185.71	1922	54.00	3.109E+00	2.381E-01	2.381E-01	9.78
	205.31	------	4.70	2.912E+00	------ Line Not Found		------
U-238DA	241.98	2438	7.49	2.593E+00	2.611E+00	2.611E+00	8.12
	295.22	3463	19.20	2.224E+00	1.687E+00	1.687E+00	7.03
	351.92	5681	37.20*	1.931E+00	1.645E+00	1.645E+00	6.39
	609.31	4084	46.30	1.217E+00	1.508E+00	1.508E+00	6.49
U-238DHP	63.28	980	3.80*	3.725E+00	1.441E+00	1.441E+00	15.10
	92.59	2611	5.41	4.071E+00	2.466E+00	2.466E+00	8.18

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J47401AA

Acquisition date : 4-SEP-2007 06:42:20

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.42	584	2482	1.09	186.06	180	13	1.62E-02	19.3	2.83E+00	
1	74.83	4848	5339	1.23	299.78	288	43	1.35E-01	3.6	3.99E+00	
1	77.15	7486	4341	1.13	309.05	288	43	2.08E-01	2.3	4.01E+00	
0	83.94	896	3286	1.44	336.23	331	12	2.49E-02	13.2	4.06E+00	
0	87.12	2086	4099	1.18	348.96	343	13	5.79E-02	6.7	4.07E+00	T
0	89.90	1308	3384	1.22	360.10	355	12	3.63E-02	9.4	4.08E+00	
0	105.44	407	2653	0.86	422.28	416	13	1.13E-02	26.5	4.01E+00	T
0	128.95	545	2363	0.94	516.38	511	12	1.51E-02	18.3	3.77E+00	
0	327.84	444	1123	1.32	1312.32	1306	16	1.23E-02	17.5	2.05E+00	T
0	409.29	323	996	1.46	1638.28	1626	21	8.97E-03	25.1	1.70E+00	
0	462.80	424	869	0.98	1852.40	1841	22	1.18E-02	18.4	1.54E+00	T
0	727.25	603	479	1.65	2910.43	2900	22	1.68E-02	8.8	1.05E+00	T
0	795.05	351	450	1.43	3181.66	3169	25	9.76E-03	14.8	9.70E-01	T
0	934.19	197	323	1.63	3738.22	3727	21	5.46E-03	20.7	8.46E-01	
0	1377.79	209	132	1.90	5512.28	5502	20	5.80E-03	13.4	6.09E-01	
0	1408.32	123	156	1.60	5634.37	5619	26	3.42E-03	25.1	5.98E-01	T
0	1590.37	291	170	6.22	6362.23	6335	48	8.10E-03	14.6	5.40E-01	
0	1729.90	169	51	1.88	6920.05	6906	29	4.69E-03	12.9	5.03E-01	

Flags: "T" = Tentatively associated

Sample ID : J47401AA Acquisition date : 4-SEP-2007 06:42:20

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	9.472E-02	11.07	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.42	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.445E-01	8.36	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.57	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.279E+00	6.72	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.89	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.305E+01	6.49	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.09	511.85	20.60	8.601E-01	11.07	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.03	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	5.677E-01	19.33	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	3.669E-01	24.66	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	9.106E-02	16.13	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	20.82	328.77	20.50	4.076E+05	18.52	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	5.995E-01	13.22	

Sample ID : J47401AA Acquisition date : 4-SEP-2007 06:42:20

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	2.077E-01	25.85	
		% Abundances Found =		26.29			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.494E-01	9.01	
			105.31*	20.70	1.036E-01	27.19	
		% Abundances Found =		70.92			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.247E+01	20.14	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.822E+00	11.11	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	6.001E-01	11.81	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:04:57

Configuration : $DISK1:[GER8.SAMPLE]J47401AA_040970642.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 : BRC SOIL
Sample date : 31-JUL-2007 14:15:00
Sample ID : J47401AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 4-SEP-2007 06:42:20
Sample quantity : 360.90 GRAMS
Sample geometry : ES200
Elapsed real time: 0 10:00:15.35 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.211E+01	1.387E+00	1.825E-01	6.439E-03	121.169
TL-208	5.335E-01	3.586E-02	2.217E-02	7.571E-04	24.058
PB-212	1.581E+00	1.024E-01	3.789E-02	1.457E-03	41.729
BI-214	1.508E+00	9.782E-02	4.063E-02	1.422E-03	37.105
PB-214	1.645E+00	1.051E-01	4.401E-02	1.505E-03	37.384
RA-224DA	1.637E+00	1.061E-01	3.922E-02	1.508E-03	41.729
RA-226DA	1.508E+00	9.782E-02	4.064E-02	1.422E-03	37.104
AC-228	1.575E+00	1.182E-01	7.843E-02	3.428E-03	20.081
RA-228DA	1.593E+00	1.195E-01	7.934E-02	3.468E-03	20.081
TH-228DA	1.537E+00	1.033E-01	6.390E-02	2.182E-03	24.059
TH-232DA	1.366E+00	1.219E-01	1.361E-01	4.748E-03	10.039
U-234DA	1.687E+00	1.186E-01	8.143E-02	3.015E-03	20.717
U-235HP	1.507E-01	5.362E-02	1.393E-01	4.884E-03	1.082
U-238DA	1.645E+00	1.051E-01	4.401E-02	1.505E-03	37.384
U-238DHP	1.441E+00	2.175E-01	4.600E-01	1.466E-02	3.132

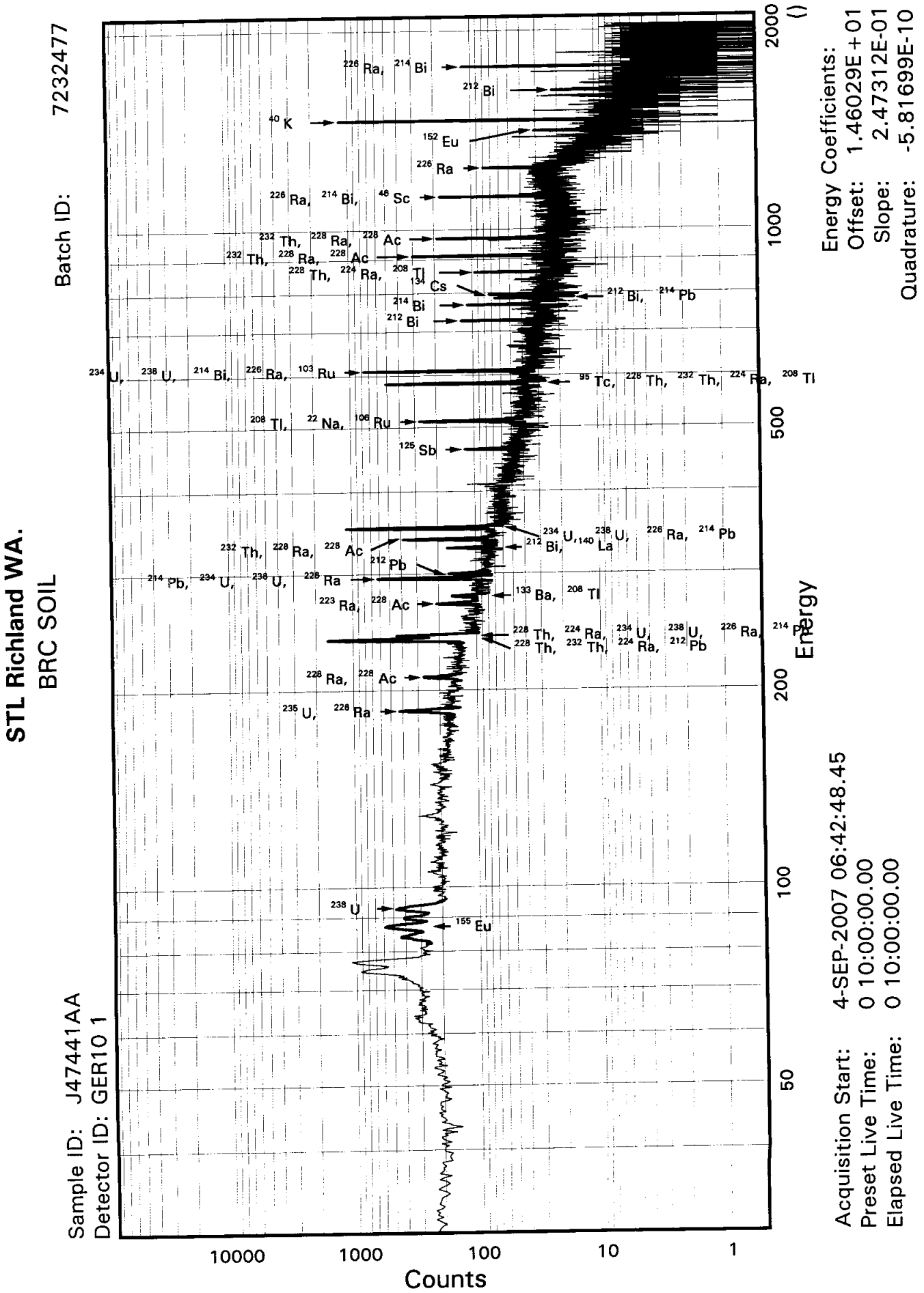
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-2.861E-01		7.780E-02	2.433E-01	7.782E-03	-1.176
NA-22	-3.841E-03		7.818E-03	2.632E-02	9.056E-04	-0.146
SC-46	3.445E-01	+	2.881E-02	6.304E-02	2.217E-03	5.464
CR-51	-8.186E-02		1.177E-01	3.878E-01	1.382E-02	-0.211
MN-54	-2.341E-03		7.592E-03	2.553E-02	1.079E-03	-0.092
CO-57	-3.275E-02		4.417E-02	1.446E-01	4.943E-03	-0.226
CO-58	-1.660E-02		8.735E-03	2.845E-02	1.182E-03	-0.584
FE-59	-4.257E-02		2.239E-02	7.344E-02	2.665E-03	-0.580
CO-60	3.353E-03		6.603E-03	2.284E-02	8.147E-04	0.147
ZN-65	-1.555E-02		1.935E-02	5.440E-02	1.928E-03	-0.286
SE-75	-2.687E-03		9.845E-03	3.106E-02	1.183E-03	-0.086
SR-85	5.208E-02		9.932E-03	2.968E-02	9.407E-04	1.755
Y-88	-2.620E-03		6.468E-03	2.233E-02	6.972E-04	-0.117

Sample ID : J47401AA Acquisition date : 4-SEP-2007 06:42:20

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	-1.773E-03		6.172E-03	2.079E-02	9.002E-04	-0.085
NB-95	6.861E-02		1.625E-02	4.910E-02	1.970E-03	1.397
TC-95M	3.867E-03		1.078E-02	3.516E-02	1.344E-03	0.110
ZR-95	2.594E-02		1.688E-02	5.844E-02	2.328E-03	0.444
ZRNB-95	1.026E-01		2.380E-02	7.194E-02	2.887E-03	1.426
RH-101	1.023E-02		6.601E-03	2.236E-02	8.524E-04	0.458
RH-102M	1.218E-03		5.420E-03	1.836E-02	5.876E-04	0.066
RU-103	-2.196E-02		1.061E-02	3.448E-02	1.099E-03	-0.637
RU-106DA	-1.271E-02		6.077E-02	2.025E-01	7.167E-03	-0.063
AG-108M	-1.036E-03		5.448E-03	1.842E-02	5.883E-04	-0.056
AG-110M	-1.698E-02		9.351E-03	3.034E-02	1.325E-03	-0.560
SN-113DA	-2.058E-02		9.548E-03	3.139E-02	9.887E-04	-0.655
SB-124	-4.471E-03		9.297E-03	2.880E-02	1.002E-03	-0.155
SB-125	5.735E-03		1.734E-02	5.897E-02	1.882E-03	0.097
SN-126DA	1.385E-02		6.241E-03	2.127E-02	7.816E-04	0.651
I-131	-1.737E-01		1.175E-01	3.803E-01	1.272E-02	-0.457
BA-133	2.519E-02		8.972E-03	2.604E-02	8.844E-04	0.967
CS-134	9.106E-02	+	1.469E-02	3.231E-02	1.327E-03	2.819
CS-137DA	-2.651E-02		7.456E-03	2.283E-02	8.352E-04	-1.161
LA-138	-7.855E-03		8.744E-03	2.912E-02	1.031E-03	-0.270
CE-139	4.482E-03		6.709E-03	2.205E-02	8.218E-04	0.203
BA-140	-1.885E-01		1.390E-01	4.569E-01	1.487E-02	-0.412
BALA-140	1.253E-01		8.980E-02	2.816E-01	9.663E-03	0.445
CE-141	7.777E-02		2.321E-02	6.564E-02	2.315E-03	1.185
CE-144	-9.824E-02		4.545E-02	1.402E-01	4.747E-03	-0.701
CEPR-144	-1.821E-01		9.294E-02	2.805E-01	9.494E-03	-0.649
PM-144	3.073E-03		5.987E-03	2.018E-02	7.117E-04	0.152
PM-146	2.004E-02		8.068E-03	2.781E-02	8.903E-04	0.721
EU-152	-2.244E-02		1.891E-02	6.062E-02	2.097E-03	-0.370
EU-154	-1.356E-02		2.156E-02	7.238E-02	2.490E-03	-0.187
EU-155	1.036E-01	+	2.816E-02	6.846E-02	2.254E-03	1.513
HF-181	1.067E-02		1.073E-02	3.664E-02	1.171E-03	0.291
BI-207	2.581E-03		5.797E-03	1.954E-02	6.585E-04	0.132
BI-210M	-9.205E-03		1.071E-02	2.996E-02	1.140E-03	-0.307
BI-212	1.822E+00	+	2.024E-01	4.594E-01	2.070E-02	3.965
RA-223	6.001E-01	+	7.090E-02	1.392E-01	5.283E-03	4.312
AC-227DA	5.505E-01		6.495E-02	1.723E-01	6.626E-03	3.195
TH-234DA	3.234E+00		1.083E+00	3.773E+00	1.537E-01	0.857
NP-237DA	-5.501E-03		1.323E-02	4.376E-02	1.582E-03	-0.126
AM-241HP	6.319E-02		1.645E-02	4.913E-02	1.585E-03	1.286


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J47441AA
Detector ID: GER10 1
Energy Coefficients:
Offset: 1.46029E+01
Slope: 2.47312E-01
Quadrature: -5.81699E-10
Acquisition Start: 4-SEP-2007 06:42:48.45
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
40 K
152 Eu
226 Ra
226 Ra, 214 Bi
212 Bi
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
212 Bi, 214 Pb
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
212 Bi, 140 La
232 Th, 228 Ra, 228 Ac
212 Pb
214 Pb, 234 U, 238 U, 228 Ra
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu

SAMPLE IDENTIFICATION: J47441AA

CONFIGURATION ID: GER10:J47441AA_040970642
TITLE : BRC SOIL
SAMPLE ID : J47441AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 04-SEP-07 06:42:48
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 31-JUL-2007 13:30:00.00
CALIB DATE: 4-SEP-2007 05:41:49.29
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:19

SAMPLE QUANTITY: 3.7840E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.4603E+01 keV
ENERGY SLOPE: 2.4731E-01 keV/C
ENERGY Q COEFF: -.5817E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1182E+00 keV
FWHM SLOPE: 2.3177E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 10:50:25

Configuration : $DISK1:[GER10.SAMPLE]J47441AA_040970642.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 31-JUL-2007 13:30:00 Acquisition date : 4-SEP-2007 06:42:48
Sample ID : J47441AA Sample quantity : 378.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:19.01 0.1%
Start energy : 17.08 End energy : 2040.54
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	74.81*	4190	6875	1.93	243.44	229	37	1.16E-01	5.6	4.00E+00
2	4	77.09	4406	4504	1.31	252.66	229	37	1.22E-01	3.9	
3	3	84.36*	622	4310	1.33	282.06	273	37	1.73E-02	24.7	7.03E-01
4	3	87.15	1928	4846	1.46	293.35	273	37	5.36E-02	8.8	
5	3	89.84	745	3229	1.13	304.23	273	37	2.07E-02	15.7	
6	0	93.14	1626	4155	1.74	317.57	310	18	4.52E-02	9.7	
7	0	185.92	1903	3015	1.34	692.71	682	20	5.29E-02	7.4	
8	0	209.31	1045	2842	1.56	787.31	777	21	2.90E-02	13.1	
9	4	238.65	9144	2280	1.47	905.92	892	38	2.54E-01	1.6	1.70E+00
10	4	241.74	2669	2527	1.94	918.45	892	38	7.41E-02	5.9	
11	0	270.33	652	2183	1.68	1034.04	1024	21	1.81E-02	15.7	
12	0	277.42	546	2074	2.11	1062.70	1051	23	1.52E-02	18.9	
13	0	295.24	3796	1851	1.58	1134.75	1123	23	1.05E-01	3.0	
14	0	300.03	551	1362	1.72	1154.12	1146	17	1.53E-02	13.8	
15	0	328.19	497	1321	0.99	1268.01	1260	18	1.38E-02	15.3	
16	0	338.40	1732	1774	1.33	1309.26	1297	22	4.81E-02	5.8	
17	0	351.95*	6419	1531	1.48	1364.07	1352	22	1.78E-01	1.9	
18	0	409.53	304	1058	1.34	1596.89	1589	20	8.44E-03	23.0	
19	0	462.88	604	884	2.10	1812.63	1803	21	1.68E-02	11.2	
20	0	510.84*	968	1183	2.00	2006.54	1995	26	2.69E-02	10.4	
21	0	583.25	3016	879	1.40	2299.33	2288	23	8.38E-02	2.8	
22	0	609.32*	5034	912	1.65	2404.76	2392	26	1.40E-01	2.0	
23	0	727.24	726	507	1.56	2881.54	2871	21	2.02E-02	7.6	
24	0	768.21	501	708	1.36	3047.23	3035	24	1.39E-02	12.7	
25	0	785.83	221	478	1.52	3118.46	3110	19	6.13E-03	21.5	
26	0	794.93	321	446	1.30	3155.28	3145	19	8.90E-03	14.6	
27	0	860.57	413	471	1.36	3420.67	3411	22	1.15E-02	12.4	
28	0	911.21	2218	544	1.78	3625.45	3612	27	6.16E-02	3.3	
29	0	934.12	342	453	1.75	3718.10	3707	28	9.50E-03	15.8	
30	0	969.33	939	1193	1.41	3860.47	3841	31	2.61E-02	9.7	
31	0	1120.48	1087	618	1.60	4471.66	4458	27	3.02E-02	6.2	
32	0	1238.25	442	557	2.37	4947.84	4937	24	1.23E-02	12.9	
33	0	1378.04	302	222	2.21	5513.09	5501	23	8.40E-03	12.3	
34	0	1407.85	138	211	1.86	5633.65	5623	22	3.82E-03	22.2	
35	0	1460.78*	10195	351	2.06	5847.68	5832	38	2.83E-01	1.1	
36	0	1509.14	137	140	1.61	6043.21	6032	22	3.80E-03	18.8	
37	0	1588.17	181	115	2.01	6362.77	6352	20	5.03E-03	13.3	
38	0	1620.85	89	94	1.01	6494.94	6484	22	2.48E-03	23.5	
39	0	1729.44	210	84	1.53	6934.02	6920	28	5.83E-03	11.5	
40	0	1764.37	1036	71	2.32	7075.28	7056	35	2.88E-02	3.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:50:25

Configuration : $DISK1:[GER10.SAMPLE]J47441AA_040970642.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 31-JUL-2007 13:30:00 Acquisition date : 4-SEP-2007 06:42:48
Sample ID : J47441AA Sample quantity : 378.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:19.01 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	10195	10.67*	8.324E-01	2.278E+01	2.278E+01	6.34
TL-208	277.35	546	6.80	2.751E+00	5.785E-01	5.785E-01	19.93
	510.84	968	21.60	1.867E+00	4.761E-01	4.761E-01	11.92
	583.14	3016	84.20*	1.704E+00	4.170E-01	4.170E-01	6.61
	860.37	413	12.46	1.273E+00	5.167E-01	5.167E-01	14.17
PB-212	238.63	9144	44.60*	3.006E+00	1.353E+00	1.353E+00	6.62
	300.09	551	3.41	2.624E+00	1.222E+00	1.222E+00	15.15
BI-214	609.31	5034	46.30*	1.652E+00	1.306E+00	1.306E+00	6.34
	768.36	501	5.04	1.391E+00	1.417E+00	1.417E+00	14.25
	1120.29	1087	15.10	1.028E+00	1.389E+00	1.389E+00	8.81
	1764.49	1036	15.80	7.322E-01	1.776E+00	1.776E+00	7.01
PB-214	241.98	2669	7.49	2.984E+00	2.370E+00	2.370E+00	8.75
	295.21	3796	19.20	2.650E+00	1.480E+00	1.480E+00	6.97
	351.92	6419	37.20*	2.377E+00	1.440E+00	1.440E+00	6.37
	785.91	221	1.10	1.367E+00	2.912E+00	2.912E+00	22.44
RA-224DA	238.63	9144	44.60*	3.006E+00	1.353E+00	1.401E+00	6.62
	240.98	2669	3.95	2.984E+00	4.493E+00	4.652E+00	8.75
	583.14	3016	30.25	1.704E+00	1.161E+00	1.202E+00	6.61
	860.37	413	4.48	1.273E+00	1.437E+00	1.488E+00	14.17
RA-226DA	186.21	1903	3.50	3.434E+00	3.142E+00	3.142E+00	9.83
	241.98	2669	7.49	2.984E+00	2.370E+00	2.370E+00	8.75
	295.22	3796	19.20	2.650E+00	1.480E+00	1.480E+00	6.97
	351.92	6419	37.20	2.377E+00	1.440E+00	1.440E+00	6.37
	609.32	5034	46.30*	1.652E+00	1.306E+00	1.306E+00	6.34
	1120.28	1087	15.10	1.028E+00	1.389E+00	1.389E+00	8.81
	1238.11	442	5.94	9.473E-01	1.559E+00	1.559E+00	14.29
	1764.49	1036	15.80	7.322E-01	1.776E+00	1.776E+00	7.01
AC-228	209.28	1045	4.40	3.233E+00	1.457E+00	1.457E+00	14.62
	270.23	652	3.60	2.794E+00	1.287E+00	1.287E+00	16.93
	338.32	1732	11.40	2.436E+00	1.237E+00	1.237E+00	8.44
	911.07	2218	27.70*	1.216E+00	1.306E+00	1.306E+00	7.82
	969.11	939	16.60	1.157E+00	9.699E-01	9.699E-01	11.93
RA-228DA	209.28	1045	4.40	3.233E+00	1.457E+00	1.474E+00	14.62
	338.32	1732	11.40	2.436E+00	1.237E+00	1.252E+00	8.44
	911.07	2218	27.70*	1.216E+00	1.306E+00	1.322E+00	7.82
	964.60	------	5.20	1.162E+00	------	Line Not Found	------

Sample ID : J47441AA Acquisition date : 4-SEP-2007 06:42:48

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	939	16.60	1.157E+00	9.699E-01	9.812E-01	11.93
TH-228DA	238.63	9144	44.60	3.006E+00	1.353E+00	1.401E+00	6.62
	240.98	2669	3.95	2.984E+00	4.493E+00	4.652E+00	8.75
	583.14	3016	30.25*	1.704E+00	1.161E+00	1.202E+00	6.61
	860.37	413	4.48	1.273E+00	1.437E+00	1.488E+00	14.17
TH-232DA	238.63	9144	44.60	3.006E+00	1.353E+00	1.353E+00	6.62
	338.32	1732	12.40*	2.436E+00	1.138E+00	1.138E+00	8.44
	583.14	3016	30.25	1.704E+00	1.161E+00	1.161E+00	6.61
	911.07	2218	27.70	1.216E+00	1.306E+00	1.306E+00	7.82
	964.60	------	5.20	1.162E+00	------ Line Not Found		------
	969.11	939	16.60	1.157E+00	9.699E-01	9.699E-01	11.93
U-234DA	241.98	2669	7.49	2.984E+00	2.370E+00	2.370E+00	8.75
	295.22	3796	19.20*	2.650E+00	1.480E+00	1.480E+00	6.97
	351.92	6419	37.20	2.377E+00	1.440E+00	1.440E+00	6.37
	609.31	5034	46.30	1.652E+00	1.306E+00	1.306E+00	6.34
U-238DA	241.98	2669	7.49	2.984E+00	2.370E+00	2.370E+00	8.75
	295.22	3796	19.20	2.650E+00	1.480E+00	1.480E+00	6.97
	351.92	6419	37.20*	2.377E+00	1.440E+00	1.440E+00	6.37
	609.31	5034	46.30	1.652E+00	1.306E+00	1.306E+00	6.34

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
BI-212	288.07	------	0.31	2.690E+00	------ Line Not Found		------
	327.96	497	0.14	2.483E+00	2.854E+01	2.854E+01	18.32
	452.83	------	0.31	2.023E+00	------ Line Not Found		------
	727.33	726	6.58*	1.451E+00	1.509E+00	1.509E+00	10.10
	785.37	221	1.10	1.367E+00	2.912E+00	2.912E+00	22.61
	893.41	------	0.38	1.236E+00	------ Line Not Found		------
	952.12	------	0.17	1.174E+00	------ Line Not Found		------
	1078.62	------	0.56	1.060E+00	------ Line Not Found		------
	1512.70	------	0.29	8.112E-01	------ Line Not Found		------
	1620.50	89	1.49	7.728E-01	1.539E+00	1.539E+00	24.50
	1806.00	------	0.09	7.223E-01	------ Line Not Found		------

Flag: "*" = Keyline

Sample ID : J47441AA Acquisition date : 4-SEP-2007 06:42:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	74.81	4190	6875	1.93	243.44	229	37	1.16E-01	5.6	2.87E+00	
4	77.09	4406	4504	1.31	252.66	229	37	1.22E-01	3.9	3.00E+00	
3	84.36	622	4310	1.33	282.06	273	37	1.73E-02	24.7	3.33E+00	
3	87.15	1928	4846	1.46	293.35	273	37	5.36E-02	8.8	3.43E+00	T
3	89.84	745	3229	1.13	304.23	273	37	2.07E-02	15.7	3.51E+00	
0	93.14	1626	4155	1.74	317.57	310	18	4.52E-02	9.7	3.60E+00	T
0	409.53	304	1058	1.34	1596.89	1589	20	8.44E-03	23.0	2.16E+00	
0	462.88	604	884	2.10	1812.63	1803	21	1.68E-02	11.2	1.99E+00	T
0	794.93	321	446	1.30	3155.28	3145	19	8.90E-03	14.6	1.35E+00	T
0	934.12	342	453	1.75	3718.10	3707	28	9.50E-03	15.8	1.19E+00	
0	1378.04	302	222	2.21	5513.09	5501	23	8.40E-03	12.3	8.70E-01	
0	1407.85	138	211	1.86	5633.65	5623	22	3.82E-03	22.2	8.56E-01	T
0	1509.14	137	140	1.61	6043.21	6032	22	3.80E-03	18.8	8.13E-01	
0	1588.17	181	115	2.01	6362.77	6352	20	5.03E-03	13.3	7.84E-01	
0	1729.44	210	84	1.53	6934.02	6920	28	5.83E-03	11.5	7.41E-01	

Flags: "T" = Tentatively associated

Sample ID : J47441AA Acquisition date : 4-SEP-2007 06:42:48

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	5.871E-02	11.92	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.42	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.800E-01	8.81	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.57	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.782E+00	6.61	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.89	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.997E+01	6.34	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.09	511.85	20.60	5.331E-01	11.92	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.03	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	5.942E-01	12.67	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	5.737E-01	19.93	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	5.676E-02	16.00	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	20.84	328.77	20.50	3.630E+05	16.52	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		

Sample ID : J47441AA
Acquisition date : 4-SEP-2007 06:42:48

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	1.548E-01	23.04	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.661E-01	10.82	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.416E-01	16.93	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.036E-01	9.83	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	1.656E+00	11.50	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:50:29

Configuration : $DISK1:[GER10.SAMPLE]J47441AA_040970642.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 : BRC SOIL
Sample date : 31-JUL-2007 13:30:00
Sample ID : J47441AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 4-SEP-2007 06:42:48
Sample quantity : 378.40 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:19.01 0.1%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.278E+01	1.445E+00	1.561E-01	5.843E-03	145.914
TL-208	4.170E-01	2.758E-02	1.805E-02	5.911E-04	23.099
BI-212	1.509E+00	1.525E-01	2.372E-01	1.060E-02	6.364
PB-212	1.353E+00	8.959E-02	3.324E-02	1.339E-03	40.714
BI-214	1.306E+00	8.280E-02	3.358E-02	1.116E-03	38.884
PB-214	1.440E+00	9.178E-02	3.838E-02	1.340E-03	37.518
RA-224DA	1.401E+00	9.275E-02	3.441E-02	1.386E-03	40.714
RA-226DA	1.306E+00	8.280E-02	3.359E-02	1.116E-03	38.884
AC-228	1.306E+00	1.021E-01	6.288E-02	3.177E-03	20.774
RA-228DA	1.322E+00	1.033E-01	6.361E-02	3.214E-03	20.774
TH-228DA	1.202E+00	7.947E-02	5.202E-02	1.703E-03	23.099
TH-232DA	1.138E+00	9.602E-02	1.173E-01	4.209E-03	9.697
U-234DA	1.480E+00	1.032E-01	7.565E-02	2.907E-03	19.568
U-238DA	1.440E+00	9.178E-02	3.838E-02	1.340E-03	37.518

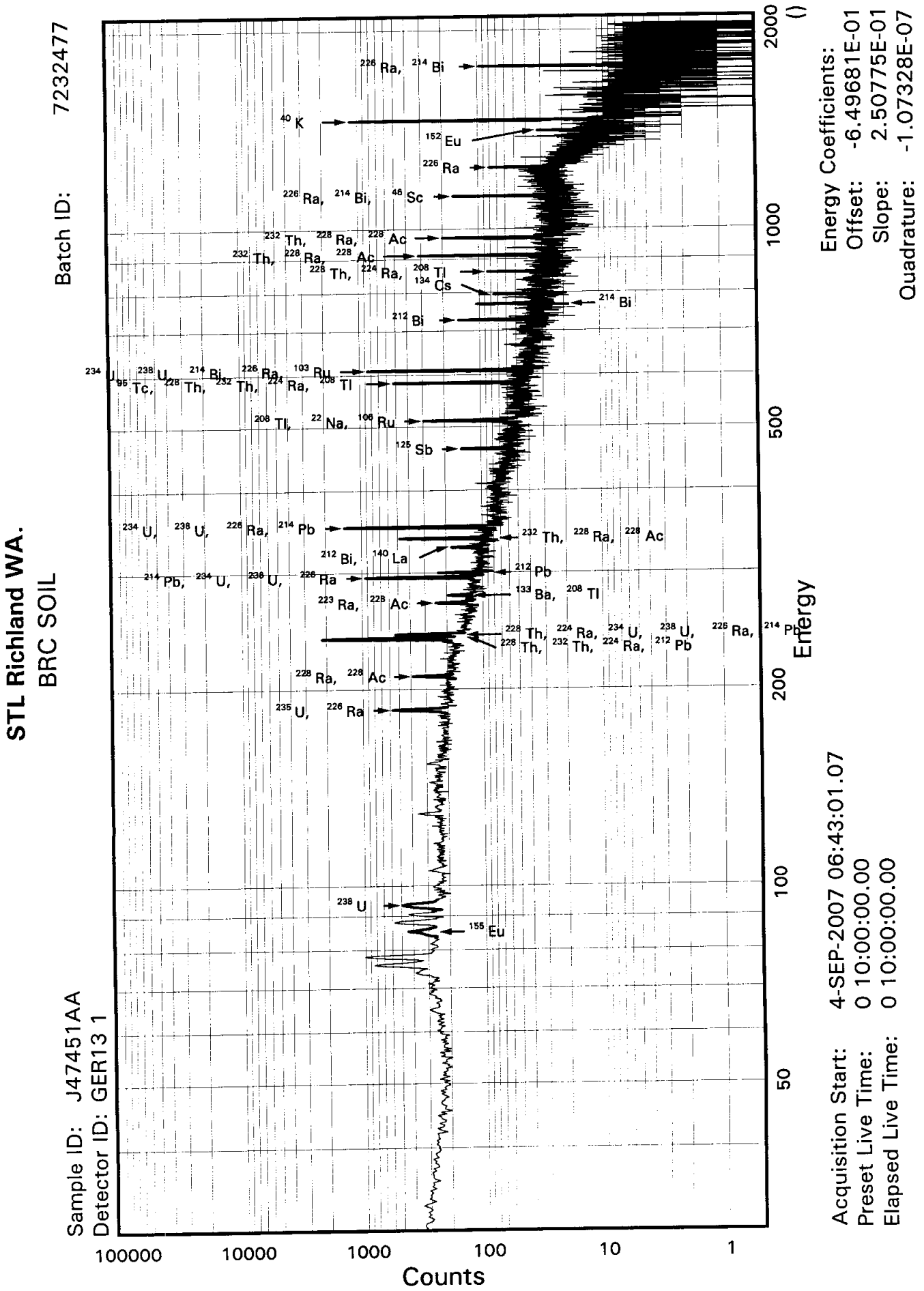
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	4.089E-02		6.376E-02	2.160E-01	6.825E-03	0.189
NA-22	-1.439E-02		6.153E-03	1.983E-02	7.265E-04	-0.726
SC-46	2.800E-01	+	2.467E-02	4.902E-02	1.869E-03	5.713
CR-51	-1.336E-01		1.058E-01	3.450E-01	1.278E-02	-0.387
MN-54	2.011E-03		5.904E-03	2.001E-02	9.241E-04	0.100
CO-57	-1.660E-02		4.428E-02	1.448E-01	5.120E-03	-0.115
CO-58	-2.166E-02		7.020E-03	2.216E-02	9.837E-04	-0.977
FE-59	-2.892E-02		1.842E-02	5.965E-02	2.368E-03	-0.485
CO-60	-2.817E-04		5.240E-03	1.785E-02	6.810E-04	-0.016
ZN-65	-1.731E-02		1.635E-02	4.439E-02	1.709E-03	-0.390
SE-75	1.067E-02		9.679E-03	2.907E-02	1.153E-03	0.367
SR-85	7.587E-02		9.547E-03	2.710E-02	8.484E-04	2.799
Y-88	4.678E-03		4.699E-03	1.698E-02	5.359E-04	0.275
NB-94	-6.107E-03		4.720E-03	1.557E-02	7.620E-04	-0.392

Sample ID : J47441AA Acquisition date : 4-SEP-2007 06:42:48

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	8.779E-02		1.395E-02	4.088E-02	1.682E-03	2.147
TC-95M	2.220E-02		1.162E-02	3.329E-02	1.350E-03	0.667
ZR-95	1.974E-02		1.276E-02	4.399E-02	1.781E-03	0.449
ZRNB-95	1.304E-01		2.046E-02	5.987E-02	2.463E-03	2.178
RH-101	-7.247E-03		7.232E-03	2.120E-02	8.593E-04	-0.342
RH-102M	-1.165E-02		4.659E-03	1.505E-02	4.756E-04	-0.774
RU-103	2.511E-03		8.631E-03	2.912E-02	9.162E-04	0.086
RU-106DA	2.796E-02		4.909E-02	1.650E-01	5.520E-03	0.169
AG-108M	-7.295E-03		4.730E-03	1.562E-02	4.950E-04	-0.467
AG-110M	-3.238E-03		7.578E-03	2.541E-02	1.271E-03	-0.127
SN-113DA	2.195E-03		8.086E-03	2.741E-02	8.635E-04	0.080
SB-124	2.335E-02		8.213E-03	2.511E-02	8.315E-04	0.930
SB-125	-4.390E-03		1.484E-02	4.991E-02	1.581E-03	-0.088
SN-126DA	-2.625E-03		4.990E-03	1.647E-02	5.663E-04	-0.159
I-131	7.387E-02		1.037E-01	3.447E-01	1.169E-02	0.214
BA-133	7.205E-03		7.989E-03	2.252E-02	7.789E-04	0.320
CS-134	5.676E-02	+	9.080E-03	2.436E-02	1.055E-03	2.330
CS-137DA	-6.635E-04		5.915E-03	1.963E-02	6.695E-04	-0.034
LA-138	9.129E-04		6.762E-03	2.322E-02	8.736E-04	0.039
CE-139	-7.119E-03		6.296E-03	2.096E-02	8.462E-04	-0.340
BA-140	1.542E-01		1.151E-01	3.912E-01	1.245E-02	0.394
BALA-140	-5.576E-02		6.982E-02	2.295E-01	8.249E-03	-0.243
CE-141	5.278E-02		1.930E-02	6.332E-02	2.357E-03	0.833
CE-144	-4.524E-02		4.365E-02	1.419E-01	4.941E-03	-0.319
CEPR-144	-1.559E-01		8.807E-02	2.839E-01	9.883E-03	-0.549
PM-144	9.397E-03		4.942E-03	1.680E-02	5.608E-04	0.559
PM-146	1.245E-02		6.541E-03	2.237E-02	7.087E-04	0.557
EU-152	-5.207E-02		1.812E-02	5.316E-02	1.885E-03	-0.979
EU-154	-4.179E-02		1.704E-02	5.473E-02	2.005E-03	-0.763
EU-155	6.000E-02		2.156E-02	7.128E-02	2.432E-03	0.842
HF-181	-3.381E-03		8.974E-03	3.005E-02	9.488E-04	-0.113
BI-207	4.529E-03		4.636E-03	1.567E-02	5.090E-04	0.289
BI-210M	-1.443E-02		1.022E-02	2.808E-02	1.112E-03	-0.514
RA-223	3.416E-01	+	5.783E-02	1.235E-01	4.878E-03	2.767
AC-227DA	1.363E+00		1.037E-01	1.884E-01	7.597E-03	7.232
TH-234DA	1.219E+00		8.472E-01	2.896E+00	1.333E-01	0.421
U-235HP	1.128E-01		4.234E-02	1.390E-01	5.123E-03	0.812
NP-237DA	-3.458E-03		1.201E-02	3.968E-02	1.489E-03	-0.087
U-238DHP	9.898E-01		2.445E-01	8.047E-01	2.882E-02	1.230
AM-241HP	-1.403E-01		2.892E-02	8.929E-02	3.303E-03	-1.571


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J47451AA
Detector ID: GER13 1
Counts
Energy
Energy Coefficients:
Offset: -6.49681E-01
Slope: 2.50775E-01
Quadrature: -1.07328E-07
Acquisition Start: 4-SEP-2007 06:43:01.07
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00

SAMPLE IDENTIFICATION: J47451AA

CONFIGURATION ID: GER13:J47451AA_040970643
TITLE : BRC SOIL
SAMPLE ID : J47451AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 04-SEP-07 06:43:01
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 31-JUL-2007 13:30:00.00
CALIB DATE: 4-SEP-2007 05:28:33.83
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:22

SAMPLE QUANTITY: 3.8030E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6497E+00 keV
ENERGY SLOPE: 2.5077E-01 keV/C
ENERGY Q COEFF: -.1073E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.3106E-01 keV
FWHM SLOPE: 4.4809E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 40.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 10:51:44

Configuration : $DISK1:[GER13.SAMPLE]J47451AA_040970643.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 31-JUL-2007 13:30:00 Acquisition date : 4-SEP-2007 06:43:01
Sample ID : J47451AA Sample quantity : 380.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:22.22 0.1%
Start energy : 19.41 End energy : 2046.49
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	73.65*	201	2953	0.90	296.33	291	29	5.57E-03	57.3	3.95E+00
2	1	75.82*	1716	3000	0.90	304.98	291	29	4.77E-02	7.1	
3	1	78.05	2762	3054	0.91	313.88	291	29	7.67E-02	4.3	
4	0	85.21*	443	3181	0.76	342.43	337	12	1.23E-02	27.6	
5	0	88.01	1352	2906	1.06	353.60	348	11	3.76E-02	8.2	
6	0	90.58	762	2516	1.00	363.86	360	10	2.12E-02	12.8	
7	0	93.64	1100	3524	1.36	376.05	369	13	3.05E-02	11.5	
8	0	129.36	419	2180	1.07	518.53	514	9	1.16E-02	20.7	
9	0	185.93	1901	3459	1.17	744.26	735	17	5.28E-02	7.5	
10	0	209.11	783	2568	0.99	836.73	829	14	2.18E-02	14.2	
11	3	238.50*	8724	2363	1.10	954.02	946	28	2.42E-01	1.6	4.32E+00
12	3	241.63	2409	2119	1.50	966.53	946	28	6.69E-02	4.7	
13	0	269.94	734	2202	1.38	1079.50	1070	18	2.04E-02	15.4	
14	0	277.10	237	1398	0.88	1108.09	1104	11	6.59E-03	31.1	
15	0	295.05*	3833	2053	1.12	1179.75	1171	18	1.06E-01	3.3	
16	0	299.94	568	1329	1.12	1199.27	1193	13	1.58E-02	13.9	
17	0	327.55	576	1772	1.39	1309.49	1301	19	1.60E-02	18.0	
18	0	338.09	2107	1934	1.24	1351.55	1342	23	5.85E-02	5.8	
19	0	351.72*	6876	1541	1.25	1405.98	1396	20	1.91E-01	2.0	
20	0	462.76	465	886	1.20	1849.40	1842	15	1.29E-02	14.7	
21	0	510.64*	760	1563	1.65	2040.63	2027	28	2.11E-02	18.1	
22	0	583.03*	2771	1073	1.40	2329.82	2317	23	7.70E-02	3.4	
23	0	609.21*	5150	1036	1.47	2434.43	2420	27	1.43E-01	2.2	
24	0	727.30	677	744	1.26	2906.41	2895	22	1.88E-02	9.5	
25	0	768.05	612	493	1.30	3069.32	3059	19	1.70E-02	8.4	
26	0	795.11	362	505	1.79	3177.52	3168	19	1.01E-02	13.7	
27	0	860.61	398	524	1.41	3439.45	3429	21	1.10E-02	13.2	
28	0	911.27*	1978	684	1.62	3642.09	3630	26	5.49E-02	4.0	
29	0	934.05	328	523	2.30	3733.20	3723	24	9.10E-03	16.5	
30	0	969.51*	779	1247	1.32	3875.08	3857	27	2.16E-02	11.6	
31	0	1120.44*	1003	541	1.78	4479.08	4466	23	2.78E-02	6.6	
32	0	1238.37	468	651	1.96	4951.27	4939	26	1.30E-02	13.4	
33	0	1377.73	351	230	1.89	5509.48	5497	23	9.74E-03	10.1	
34	0	1408.16	201	223	1.91	5631.39	5618	26	5.58E-03	16.9	
35	0	1460.57*	9400	569	2.11	5841.41	5823	36	2.61E-01	1.3	
36	0	1587.35	76	344	1.89	6349.62	6336	32	2.11E-03	56.0	
37	0	1729.16	249	86	2.92	6918.34	6905	29	6.93E-03	10.2	
38	0	1763.73*	928	144	2.46	7057.05	7036	36	2.58E-02	4.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:51:44

Configuration : $DISK1:[GER13.SAMPLE]J47451AA_040970643.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 31-JUL-2007 13:30:00
Sample ID : J47451AA
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 4-SEP-2007 06:43:01
Sample quantity : 380.30 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:22.22 0.1%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	9400	10.67*	7.699E-01	2.259E+01	2.259E+01	6.56
TL-208	277.35	237	6.80	2.836E+00	2.430E-01	2.430E-01	31.79
	510.84	760	21.60	1.898E+00	3.658E-01	3.658E-01	19.04
	583.14	2771	84.20*	1.721E+00	3.774E-01	3.774E-01	6.88
	860.37	398	12.46	1.247E+00	5.054E-01	5.054E-01	15.08
PB-212	238.63	8724	44.60*	3.095E+00	1.248E+00	1.248E+00	6.58
	300.09	568	3.41	2.701E+00	1.218E+00	1.218E+00	15.30
BI-214	609.31	5150	46.30*	1.664E+00	1.319E+00	1.319E+00	6.36
	768.36	612	5.04	1.378E+00	1.740E+00	1.740E+00	10.72
	1120.29	1003	15.10	9.769E-01	1.342E+00	1.342E+00	9.26
	1764.49	928	15.80	6.731E-01	1.723E+00	1.723E+00	7.82
PB-214	241.98	2409	7.49	3.072E+00	2.067E+00	2.067E+00	7.94
	295.21	3833	19.20	2.729E+00	1.444E+00	1.444E+00	7.19
	351.92	6876	37.20*	2.443E+00	1.494E+00	1.494E+00	6.48
	785.91	------	1.10	1.351E+00	------ Line Not Found		------
RA-224DA	238.63	8724	44.60*	3.095E+00	1.248E+00	1.292E+00	6.58
	240.98	2409	3.95	3.072E+00	3.919E+00	4.058E+00	7.94
	583.14	2771	30.25	1.721E+00	1.051E+00	1.088E+00	6.88
	860.37	398	4.48	1.247E+00	1.406E+00	1.455E+00	15.08
RA-226DA	186.21	1901	3.50	3.493E+00	3.070E+00	3.071E+00	9.79
	241.98	2409	7.49	3.072E+00	2.067E+00	2.067E+00	7.94
	295.22	3833	19.20	2.729E+00	1.444E+00	1.444E+00	7.19
	351.92	6876	37.20	2.443E+00	1.494E+00	1.494E+00	6.48
	609.32	5150	46.30*	1.664E+00	1.319E+00	1.319E+00	6.36
	1120.28	1003	15.10	9.769E-01	1.342E+00	1.342E+00	9.26
	1238.11	468	5.94	8.900E-01	1.746E+00	1.746E+00	14.84
	1764.49	928	15.80	6.731E-01	1.723E+00	1.723E+00	7.82
AC-228	209.28	783	4.40	3.316E+00	1.060E+00	1.060E+00	15.54
	270.23	734	3.60	2.881E+00	1.397E+00	1.397E+00	16.70
	338.32	2107	11.40	2.505E+00	1.457E+00	1.457E+00	8.55
	911.07	1978	27.70*	1.184E+00	1.191E+00	1.191E+00	8.53
	969.11	779	16.60	1.118E+00	8.281E-01	8.281E-01	13.70
RA-228DA	209.28	783	4.40	3.316E+00	1.060E+00	1.072E+00	15.54
	338.32	2107	11.40	2.505E+00	1.457E+00	1.473E+00	8.55
	911.07	1978	27.70*	1.184E+00	1.191E+00	1.204E+00	8.53
	964.60	------	5.20	1.124E+00	------ Line Not Found		------

Nuclide Line Activity Report (continued)
Sample ID : J47451AA
Acquisition date : 4-SEP-2007 06:43:01

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	779	16.60	1.118E+00	8.281E-01	8.377E-01	13.70
TH-228DA	238.63	8724	44.60	3.095E+00	1.248E+00	1.292E+00	6.58
	240.98	2409	3.95	3.072E+00	3.919E+00	4.058E+00	7.94
	583.14	2771	30.25*	1.721E+00	1.051E+00	1.088E+00	6.88
	860.37	398	4.48	1.247E+00	1.406E+00	1.455E+00	15.08
TH-232DA	238.63	8724	44.60	3.095E+00	1.248E+00	1.248E+00	6.58
	338.32	2107	12.40*	2.505E+00	1.339E+00	1.339E+00	8.55
	583.14	2771	30.25	1.721E+00	1.051E+00	1.051E+00	6.88
	911.07	1978	27.70	1.184E+00	1.191E+00	1.191E+00	8.53
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	779	16.60	1.118E+00	8.281E-01	8.281E-01	13.70
U-234DA	241.98	2409	7.49	3.072E+00	2.067E+00	2.067E+00	7.94
	295.22	3833	19.20*	2.729E+00	1.444E+00	1.444E+00	7.19
	351.92	6876	37.20	2.443E+00	1.494E+00	1.494E+00	6.48
	609.31	5150	46.30	1.664E+00	1.319E+00	1.319E+00	6.36
U-238DA	241.98	2409	7.49	3.072E+00	2.067E+00	2.067E+00	7.94
	295.22	3833	19.20	2.729E+00	1.444E+00	1.444E+00	7.19
	351.92	6876	37.20*	2.443E+00	1.494E+00	1.494E+00	6.48
	609.31	5150	46.30	1.664E+00	1.319E+00	1.319E+00	6.36

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J47451AA

Acquisition date : 4-SEP-2007 06:43:01

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	73.65	201	2953	0.90	296.33	291	29	5.57E-03	57.3	1.60E+00	
1	75.82	1716	3000	0.90	304.98	291	29	4.77E-02	7.1	1.75E+00	
1	78.05	2762	3054	0.91	313.88	291	29	7.67E-02	4.3	1.90E+00	
0	85.21	443	3181	0.76	342.43	337	12	1.23E-02	27.6	2.35E+00	T
0	88.01	1352	2906	1.06	353.60	348	11	3.76E-02	8.2	2.50E+00	
0	90.58	762	2516	1.00	363.86	360	10	2.12E-02	12.8	2.64E+00	
0	93.64	1100	3524	1.36	376.05	369	13	3.05E-02	11.5	2.79E+00	T
0	129.36	419	2180	1.07	518.53	514	9	1.16E-02	20.7	3.65E+00	
0	327.55	576	1772	1.39	1309.49	1301	19	1.60E-02	18.0	2.56E+00	T
0	462.76	465	886	1.20	1849.40	1842	15	1.29E-02	14.7	2.03E+00	T
0	727.30	677	744	1.26	2906.41	2895	22	1.88E-02	9.5	1.44E+00	T
0	795.11	362	505	1.79	3177.52	3168	19	1.01E-02	13.7	1.34E+00	T
0	934.05	328	523	2.30	3733.20	3723	24	9.10E-03	16.5	1.16E+00	
0	1377.73	351	230	1.89	5509.48	5497	23	9.74E-03	10.1	8.09E-01	
0	1408.16	201	223	1.91	5631.39	5618	26	5.58E-03	16.9	7.94E-01	T
0	1587.35	76	344	1.89	6349.62	6336	32	2.11E-03	56.0	7.21E-01	
0	1729.16	249	86	2.92	6918.34	6905	29	6.93E-03	10.2	6.81E-01	

Flags: "T" = Tentatively associated

Sample ID : J47451AA
Acquisition date : 4-SEP-2007 06:43:01

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	4.511E-02	19.04	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.42	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.704E-01	9.26	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.57	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.613E+00	6.88	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.89	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.018E+01	6.36	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.09	511.85	20.60	4.096E-01	19.04	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.03	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	4.466E-01	15.85	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	2.410E-01	31.79	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	6.467E-02	15.33	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	20.84	328.77	20.50	4.074E+05	19.05	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		

Sample ID : J47451AA Acquisition date : 4-SEP-2007 06:43:01

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	2.424E-01	18.11	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.221E-01	28.44	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.203E+01	20.63	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.407E+00	11.67	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.711E-01	16.70	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.990E-01	9.79	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	1.439E+00	13.30	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:51:46

Configuration : $DISK1:[GER13.SAMPLE]J47451AA_040970643.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 : BRC SOIL
Sample date : 31-JUL-2007 13:30:00
Sample ID : J47451AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 4-SEP-2007 06:43:01
Sample quantity : 380.30 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:22.22 0.1%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.259E+01	1.483E+00	1.952E-01	7.913E-03	115.735
TL-208	3.774E-01	2.596E-02	1.933E-02	6.296E-04	19.528
PB-212	1.248E+00	8.207E-02	3.244E-02	1.285E-03	38.469
BI-214	1.319E+00	8.395E-02	3.434E-02	1.131E-03	38.412
PB-214	1.494E+00	9.679E-02	3.686E-02	1.336E-03	40.529
RA-224DA	1.292E+00	8.497E-02	3.358E-02	1.330E-03	38.469
RA-226DA	1.319E+00	8.395E-02	3.434E-02	1.131E-03	38.411
AC-228	1.191E+00	1.016E-01	6.896E-02	3.887E-03	17.265
RA-228DA	1.204E+00	1.028E-01	6.976E-02	3.933E-03	17.265
TH-228DA	1.088E+00	7.482E-02	5.570E-02	1.814E-03	19.528
TH-232DA	1.339E+00	1.144E-01	1.107E-01	4.148E-03	12.097
U-234DA	1.444E+00	1.038E-01	7.141E-02	2.815E-03	20.224
U-238DA	1.494E+00	9.679E-02	3.686E-02	1.336E-03	40.529

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-2.163E-02		6.676E-02	2.198E-01	6.997E-03	-0.098
NA-22	3.901E-03		7.090E-03	2.407E-02	9.472E-04	0.162
SC-46	2.704E-01	+	2.504E-02	5.223E-02	2.138E-03	5.178
CR-51	1.050E-01		1.027E-01	3.408E-01	1.327E-02	0.308
MN-54	-9.196E-03		6.395E-03	2.079E-02	1.040E-03	-0.442
CO-57	3.248E-02		4.009E-02	1.355E-01	4.943E-03	0.240
CO-58	-2.684E-02		7.755E-03	2.391E-02	1.136E-03	-1.123
FE-59	-3.189E-02		2.007E-02	6.490E-02	2.787E-03	-0.491
CO-60	-3.960E-03		6.108E-03	2.030E-02	8.434E-04	-0.195
ZN-65	3.029E-03		1.779E-02	5.103E-02	2.113E-03	0.059
SE-75	1.088E-02		8.709E-03	2.756E-02	1.093E-03	0.395
SR-85	6.204E-02		8.549E-03	2.496E-02	7.841E-04	2.486
Y-88	4.240E-03		5.363E-03	1.911E-02	6.165E-04	0.222
NB-94	2.582E-03		5.489E-03	1.838E-02	9.921E-04	0.140
NB-95	6.706E-02		1.386E-02	4.065E-02	1.748E-03	1.650

Sample ID : J47451AA Acquisition date : 4-SEP-2007 06:43:01

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	1.517E-02		9.775E-03	3.148E-02	1.235E-03	0.482
ZR-95	3.004E-02		1.379E-02	4.728E-02	1.992E-03	0.635
ZRNB-95	1.015E-01		2.035E-02	5.964E-02	2.565E-03	1.702
RH-101	3.030E-03		5.872E-03	1.931E-02	7.564E-04	0.157
RH-102M	8.769E-04		4.690E-03	1.554E-02	4.952E-04	0.056
RU-103	6.332E-04		8.799E-03	2.989E-02	9.459E-04	0.021
RU-106DA	2.881E-02		5.033E-02	1.690E-01	5.593E-03	0.170
AG-108M	-3.228E-03		4.692E-03	1.550E-02	4.970E-04	-0.208
AG-110M	1.014E-04		8.048E-03	2.741E-02	1.521E-03	0.004
SN-113DA	-1.021E-02		7.911E-03	2.613E-02	8.358E-04	-0.391
SB-124	4.575E-03		8.827E-03	2.510E-02	8.245E-04	0.182
SB-125	2.405E-02		1.525E-02	5.145E-02	1.650E-03	0.468
SN-126DA	6.916E-03		5.181E-03	1.738E-02	5.899E-04	0.398
I-131	1.815E-02		9.948E-02	3.364E-01	1.177E-02	0.054
BA-133	8.528E-03		7.409E-03	2.165E-02	7.760E-04	0.394
CS-134	6.467E-02	+	9.917E-03	2.533E-02	1.165E-03	2.553
CS-137DA	-1.280E-02		5.918E-03	1.888E-02	6.335E-04	-0.678
LA-138	1.222E-03		8.340E-03	2.868E-02	1.170E-03	0.043
CE-139	-2.043E-03		5.816E-03	1.927E-02	7.533E-04	-0.106
BA-140	6.125E-02		1.168E-01	3.961E-01	1.261E-02	0.155
BALA-140	-4.323E-02		8.524E-02	2.533E-01	9.738E-03	-0.171
CE-141	9.561E-03		1.742E-02	5.852E-02	2.186E-03	0.163
CE-144	4.725E-03		3.923E-02	1.323E-01	4.800E-03	0.036
CEPR-144	9.750E-03		7.847E-02	2.647E-01	9.601E-03	0.037
PM-144	-3.851E-03		5.023E-03	1.657E-02	5.476E-04	-0.232
PM-146	1.353E-02		6.684E-03	2.253E-02	7.211E-04	0.601
EU-152	1.888E-02		1.680E-02	5.332E-02	1.970E-03	0.354
EU-154	1.032E-02		1.959E-02	6.651E-02	2.617E-03	0.155
EU-155	8.611E-02		2.229E-02	7.278E-02	2.798E-03	1.183
HF-181	-1.222E-02		9.572E-03	3.104E-02	9.872E-04	-0.394
BI-207	-1.646E-03		4.808E-03	1.606E-02	5.200E-04	-0.102
BI-210M	-1.093E-02		9.522E-03	2.667E-02	1.058E-03	-0.410
BI-212	1.407E+00	+	1.643E-01	3.602E-01	1.638E-02	3.907
RA-223	3.711E-01	+	6.197E-02	1.170E-01	4.642E-03	3.170
AC-227DA	4.322E-01		5.400E-02	1.455E-01	5.757E-03	2.971
TH-234DA	1.994E+00		9.275E-01	3.184E+00	1.621E-01	0.626
U-235HP	2.392E-02		3.815E-02	1.283E-01	4.770E-03	0.186
NP-237DA	1.191E-02		1.155E-02	3.840E-02	1.503E-03	0.310
U-238DHP	-2.958E-01		3.983E-01	1.336E+00	6.488E-02	-0.221
AM-241HP	8.908E-03		5.429E-02	1.842E-01	8.838E-03	0.048

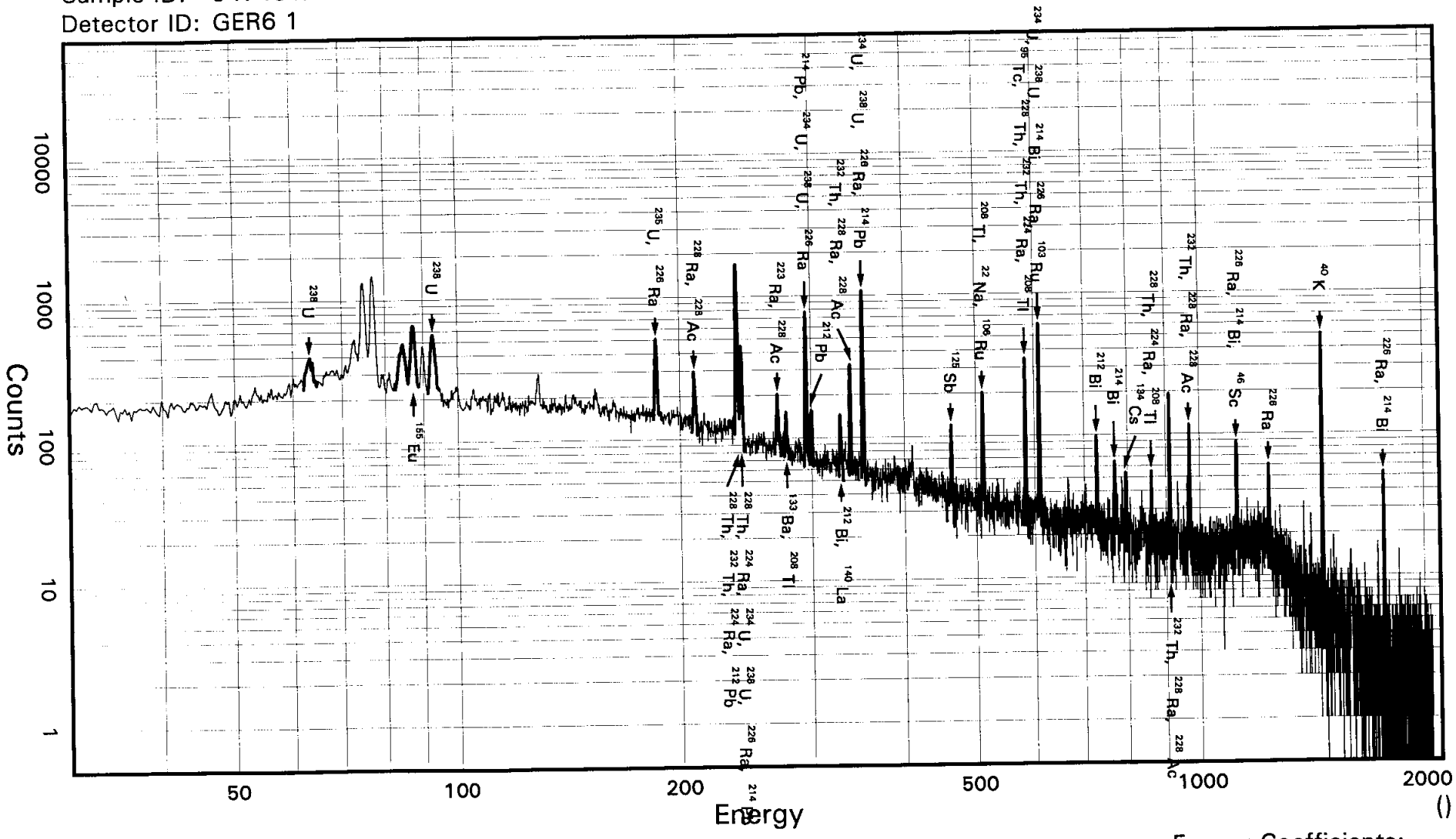
STL Richland WA.

BRC SOIL

Sample ID: J47491AA

Detector ID: GER6 1

Batch ID: 7232477



Acquisition Start: 4-SEP-2007 17:01:06.49

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 2.90500E-02

Slope: 2.49253E-01

Quadrature: 1.61305E-08

SAMPLE IDENTIFICATION: J47491AA

CONFIGURATION ID: GER6:J47491AA_040971701
TITLE : BRC SOIL
SAMPLE ID : J47491AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 04-SEP-07 17:01:06
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 31-JUL-2007 11:45:00.00
CALIB DATE: 4-SEP-2007 05:39:20.30
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.4930E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 2.9050E-02 keV
ENERGY SLOPE: 2.4925E-01 keV/C
ENERGY Q COEFF: 1.6131E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.1141E-02 keV
FWHM SLOPE: 7.2081E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 10:56:42

Configuration : $DISK1:[GER6.SAMPLE]J47491AA_040971701.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 31-JUL-2007 11:45:00 Acquisition date : 4-SEP-2007 17:01:06
Sample ID : J47491AA Sample quantity : 349.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.91 0.0%
Start energy : 19.97 End energy : 2042.99
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.22*	579	2855	1.29	253.51	249	11	1.61E-02	18.8	
2	4	72.77*	355	3844	0.97	291.81	285	31	9.86E-03	36.3	4.68E+00
3	4	74.71*	3636	3575	0.99	299.62	285	31	1.01E-01	3.9	
4	4	77.03	5145	3192	1.00	308.93	285	31	1.43E-01	2.7	
5	9	84.35*	1003	3449	1.48	338.28	331	25	2.79E-02	13.5	6.92E-01
6	9	87.12*	1865	2941	1.12	349.41	331	25	5.18E-02	6.5	
7	0	89.88	964	2328	0.97	360.45	356	10	2.68E-02	9.9	
8	0	92.77*	1628	3198	1.37	372.05	366	14	4.52E-02	8.0	
9	0	128.90	485	1987	1.00	517.03	512	11	1.35E-02	18.4	
10	0	185.93*	1731	2225	1.25	745.78	739	15	4.81E-02	6.6	
11	0	209.26	868	1756	0.91	839.39	832	15	2.41E-02	11.1	
12	3	238.60*	7804	1636	1.17	957.09	949	29	2.17E-01	1.6	2.33E+00
13	3	241.72	2194	1660	1.56	969.59	949	29	6.09E-02	5.1	
14	0	270.29	714	1697	1.28	1084.22	1074	20	1.98E-02	14.6	
15	0	277.63	354	1463	0.86	1113.66	1104	18	9.84E-03	25.9	
16	0	295.17	3701	1423	1.22	1184.02	1175	21	1.03E-01	3.0	
17	0	300.07	509	928	1.40	1203.68	1197	14	1.41E-02	13.4	
18	0	328.12	625	1112	1.48	1316.17	1306	20	1.73E-02	13.7	
19	0	338.30	1388	1257	1.30	1357.04	1346	19	3.85E-02	6.7	
20	0	351.87	6009	1018	1.33	1411.47	1403	19	1.67E-01	1.8	
21	0	409.79	201	855	1.53	1643.79	1634	17	5.58E-03	29.5	
22	0	462.79	484	881	1.33	1856.38	1845	24	1.34E-02	14.5	
23	0	510.54*	969	1058	2.02	2047.88	2032	37	2.69E-02	10.9	
24	0	582.91	2296	1000	1.71	2338.15	2322	34	6.38E-02	4.1	
25	0	609.19	4222	740	1.69	2443.57	2431	25	1.17E-01	2.1	
26	0	727.14	541	506	1.64	2916.63	2905	22	1.50E-02	9.1	
27	0	768.03	390	731	2.03	3080.62	3067	31	1.08E-02	16.1	
28	0	794.40	276	398	1.79	3186.37	3175	21	7.66E-03	15.0	
29	0	860.52	232	438	1.30	3451.50	3441	23	6.43E-03	19.0	
30	0	910.99	1579	486	2.04	3653.90	3640	28	4.39E-02	3.9	
31	0	967.80	1147	693	2.20	3881.70	3858	40	3.19E-02	6.3	
32	0	1120.19	837	638	3.21	4492.75	4477	36	2.32E-02	7.9	
33	0	1237.93	534	624	3.17	4964.84	4946	42	1.48E-02	11.6	
34	0	1377.44	266	192	2.40	5524.21	5506	32	7.40E-03	12.3	
35	0	1460.61*	6036	307	3.06	5857.64	5833	47	1.68E-01	1.5	
36	0	1729.55	149	70	4.28	6935.72	6918	32	4.14E-03	14.2	
37	0	1764.36	754	112	3.76	7075.24	7054	48	2.09E-02	5.0	
38	0	1848.51	99	75	1.45	7412.52	7391	32	2.74E-03	20.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:56:42

Configuration : $DISK1:[GER6.SAMPLE]J47491AA_040971701.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 31-JUL-2007 11:45:00
Sample ID : J47491AA
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 4-SEP-2007 17:01:06
Sample quantity : 349.30 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:15.91 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	6036	10.67*	5.925E-01	2.052E+01	2.052E+01	8.42
TL-208	277.35	354	6.80	2.283E+00	4.904E-01	4.904E-01	26.66
	510.84	969	21.60	1.380E+00	6.985E-01	6.985E-01	12.38
	583.14	2296	84.20*	1.240E+00	4.725E-01	4.725E-01	7.25
	860.37	232	12.46	9.139E-01	4.370E-01	4.370E-01	20.20
PB-212	238.63	7804	44.60*	2.572E+00	1.462E+00	1.462E+00	6.43
	300.09	509	3.41	2.143E+00	1.498E+00	1.498E+00	14.78
BI-214	609.31	4222	46.30*	1.198E+00	1.636E+00	1.636E+00	6.35
	768.36	390	5.04	9.985E-01	1.664E+00	1.664E+00	17.35
	1120.29	837	15.10	7.420E-01	1.605E+00	1.605E+00	10.30
	1764.49	754	15.80	4.956E-01	2.070E+00	2.070E+00	8.17
PB-214	241.98	2194	7.49	2.547E+00	2.472E+00	2.472E+00	8.02
	295.21	3701	19.20	2.172E+00	1.907E+00	1.907E+00	6.87
	351.92	6009	37.20*	1.878E+00	1.849E+00	1.849E+00	6.33
	785.91	------	1.10	9.808E-01	------ Line Not Found		------
RA-224DA	238.63	7804	44.60*	2.572E+00	1.462E+00	1.514E+00	6.43
	240.98	2194	3.95	2.547E+00	4.687E+00	4.855E+00	8.02
	583.14	2296	30.25	1.240E+00	1.315E+00	1.362E+00	7.25
	860.37	232	4.48	9.139E-01	1.215E+00	1.259E+00	20.20
RA-226DA	186.21	1731	3.50	3.058E+00	3.476E+00	3.476E+00	9.04
	241.98	2194	7.49	2.547E+00	2.472E+00	2.472E+00	8.02
	295.22	3701	19.20	2.172E+00	1.907E+00	1.907E+00	6.87
	351.92	6009	37.20	1.878E+00	1.849E+00	1.849E+00	6.33
	609.32	4222	46.30*	1.198E+00	1.636E+00	1.636E+00	6.35
	1120.28	837	15.10	7.420E-01	1.605E+00	1.605E+00	10.30
	1238.11	534	5.94	6.835E-01	2.825E+00	2.825E+00	13.67
	1764.49	754	15.80	4.956E-01	2.070E+00	2.070E+00	8.17
AC-228	209.28	868	4.40	2.831E+00	1.497E+00	1.497E+00	12.68
	270.23	714	3.60	2.333E+00	1.826E+00	1.826E+00	15.90
	338.32	1388	11.40	1.940E+00	1.348E+00	1.348E+00	9.04
	911.07	1579	27.70*	8.742E-01	1.401E+00	1.401E+00	8.04
	969.11	1147	16.60	8.337E-01	1.782E+00	1.782E+00	9.40
RA-228DA	209.28	868	4.40	2.831E+00	1.497E+00	1.515E+00	12.68
	338.32	1388	11.40	1.940E+00	1.348E+00	1.364E+00	9.04
	911.07	1579	27.70*	8.742E-01	1.401E+00	1.418E+00	8.04
	964.60	------	5.20	8.359E-01	------ Line Not Found		------

Sample ID : J47491AA Acquisition date : 4-SEP-2007 17:01:06

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1147	16.60	8.337E-01	1.782E+00	1.803E+00	9.40
TH-228DA	238.63	7804	44.60	2.572E+00	1.462E+00	1.514E+00	6.43
	240.98	2194	3.95	2.547E+00	4.687E+00	4.855E+00	8.02
	583.14	2296	30.25*	1.240E+00	1.315E+00	1.362E+00	7.25
	860.37	232	4.48	9.139E-01	1.215E+00	1.259E+00	20.20
TH-232DA	238.63	7804	44.60	2.572E+00	1.462E+00	1.462E+00	6.43
	338.32	1388	12.40*	1.940E+00	1.240E+00	1.240E+00	9.04
	583.14	2296	30.25	1.240E+00	1.315E+00	1.315E+00	7.25
	911.07	1579	27.70	8.742E-01	1.401E+00	1.401E+00	8.04
	964.60	------	5.20	8.359E-01	------	Line Not Found	------
	969.11	1147	16.60	8.337E-01	1.782E+00	1.782E+00	9.40
U-234DA	241.98	2194	7.49	2.547E+00	2.472E+00	2.472E+00	8.02
	295.22	3701	19.20*	2.172E+00	1.907E+00	1.907E+00	6.87
	351.92	6009	37.20	1.878E+00	1.849E+00	1.849E+00	6.33
	609.31	4222	46.30	1.198E+00	1.636E+00	1.636E+00	6.35
U-238DA	241.98	2194	7.49	2.547E+00	2.472E+00	2.472E+00	8.02
	295.22	3701	19.20	2.172E+00	1.907E+00	1.907E+00	6.87
	351.92	6009	37.20*	1.878E+00	1.849E+00	1.849E+00	6.33
	609.31	4222	46.30	1.198E+00	1.636E+00	1.636E+00	6.35
U-238DHP	63.28	579	3.80*	2.146E+00	1.527E+00	1.527E+00	19.81
	92.59	1628	5.41	3.367E+00	1.920E+00	1.920E+00	10.43

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J47491AA

Acquisition date : 4-SEP-2007 17:01:06

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	72.77	355	3844	0.97	291.81	285	31	9.86E-03	36.3	2.69E+00	
4	74.71	3636	3575	0.99	299.62	285	31	1.01E-01	3.9	2.78E+00	
4	77.03	5145	3192	1.00	308.93	285	31	1.43E-01	2.7	2.89E+00	
9	84.35	1003	3449	1.48	338.28	331	25	2.79E-02	13.5	3.15E+00	
9	87.12	1865	2941	1.12	349.41	331	25	5.18E-02	6.5	3.23E+00	T
0	89.88	964	2328	0.97	360.45	356	10	2.68E-02	9.9	3.30E+00	
0	128.90	485	1987	1.00	517.03	512	11	1.35E-02	18.4	3.56E+00	
0	328.12	625	1112	1.48	1316.17	1306	20	1.73E-02	13.7	1.99E+00	T
0	409.79	201	855	1.53	1643.79	1634	17	5.58E-03	29.5	1.65E+00	
0	462.79	484	881	1.33	1856.38	1845	24	1.34E-02	14.5	1.50E+00	T
0	727.14	541	506	1.64	2916.63	2905	22	1.50E-02	9.1	1.04E+00	T
0	794.40	276	398	1.79	3186.37	3175	21	7.66E-03	15.0	9.73E-01	T
0	1377.44	266	192	2.40	5524.21	5506	32	7.40E-03	12.3	6.24E-01	
0	1729.55	149	70	4.28	6935.72	6918	32	4.14E-03	14.2	5.06E-01	
0	1848.51	99	75	1.45	7412.52	7391	32	2.74E-03	20.5	4.73E-01	

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : J47491AA

Acquisition date : 4-SEP-2007 17:01:06

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	8.617E-02	12.38	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.42	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.249E-01	10.30	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.58	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.031E+00	7.25	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.90	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.525E+01	6.35	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	7.829E-01	12.38	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	6.880E-01	15.66	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	4.864E-01	26.66	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.372E-02	16.41	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.14	328.77	20.50	7.596E+05	14.99	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.065E-01	9.34	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J47491AA Acquisition date : 4-SEP-2007 17:01:06

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	4.852E+01	16.95	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.696E+00	11.29	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	4.850E-01	15.90	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.253E-01	9.04	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:56:44

Configuration : $DISK1:[GER6.SAMPLE]J47491AA_040971701.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 : BRC SOIL
Sample date : 31-JUL-2007 11:45:00 Acquisition date : 4-SEP-2007 17:01:06
Sample ID : J47491AA Sample quantity : 349.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.91 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 ----

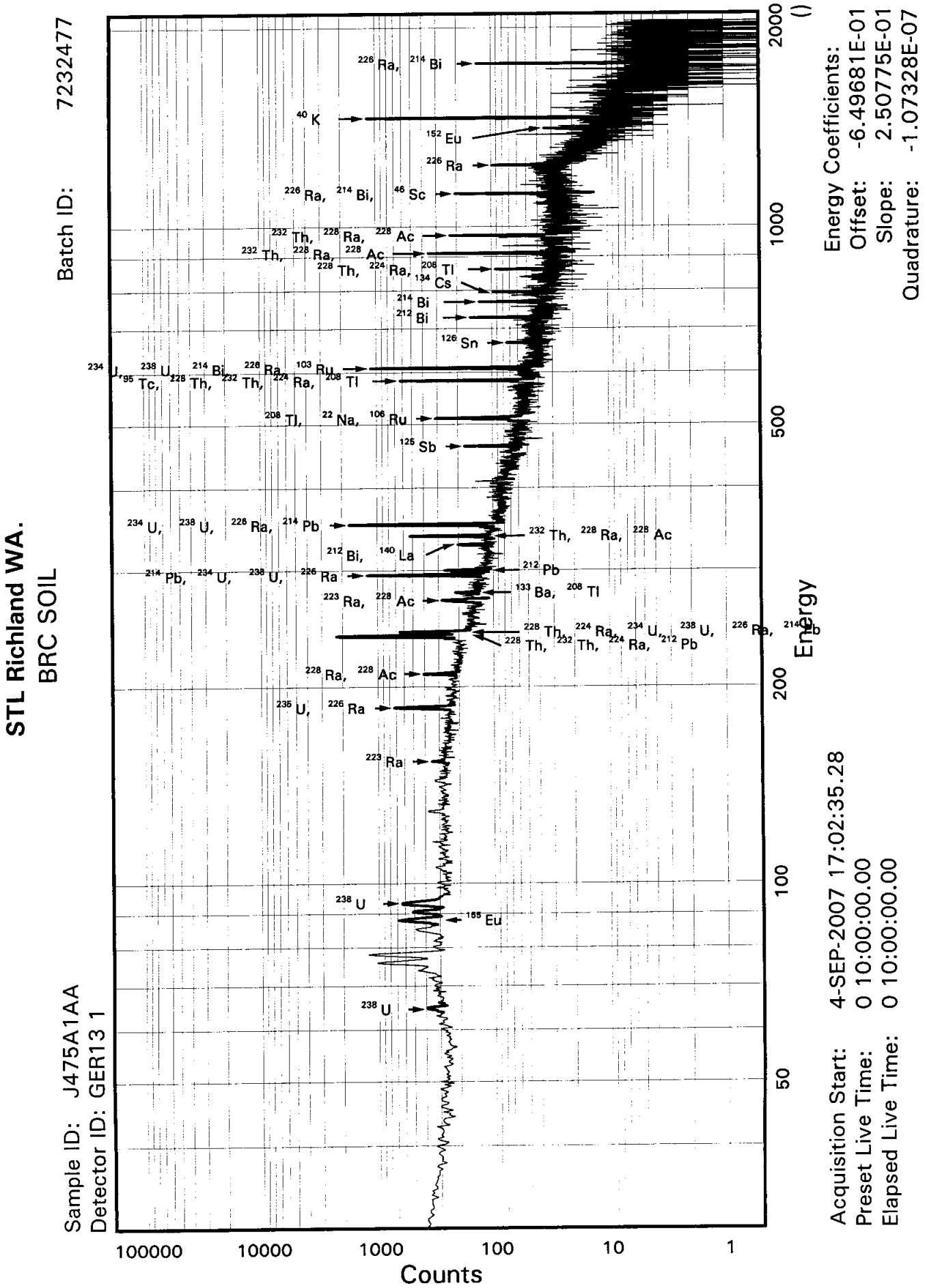
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.052E+01	1.729E+00	2.419E-01	1.597E-02	84.851
TL-208	4.725E-01	3.426E-02	2.594E-02	8.444E-04	18.217
PB-212	1.462E+00	9.399E-02	3.475E-02	1.290E-03	42.070
BI-214	1.636E+00	1.039E-01	4.902E-02	1.609E-03	33.385
PB-214	1.849E+00	1.171E-01	4.655E-02	1.599E-03	39.721
RA-224DA	1.514E+00	9.736E-02	3.600E-02	1.336E-03	42.070
RA-226DA	1.636E+00	1.039E-01	4.902E-02	1.609E-03	33.385
AC-228	1.401E+00	1.127E-01	9.179E-02	4.552E-03	15.265
RA-228DA	1.418E+00	1.140E-01	9.287E-02	4.605E-03	15.265
TH-228DA	1.362E+00	9.877E-02	7.478E-02	2.435E-03	18.217
TH-232DA	1.240E+00	1.120E-01	1.396E-01	4.838E-03	8.882
U-234DA	1.907E+00	1.311E-01	8.225E-02	2.971E-03	23.186
U-238DA	1.849E+00	1.171E-01	4.655E-02	1.599E-03	39.721
U-238DHP	1.527E+00	3.024E-01	5.584E-01	1.996E-02	2.734

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	4.164E-02		8.440E-02	2.867E-01	9.274E-03	0.145
NA-22	-1.766E-02		1.009E-02	3.289E-02	1.993E-03	-0.537
SC-46	3.249E-01	+	3.347E-02	6.764E-02	2.903E-03	4.803
CR-51	1.590E-01		1.222E-01	4.123E-01	1.440E-02	0.386
MN-54	1.562E-02		8.762E-03	3.008E-02	1.357E-03	0.519
CO-57	2.809E-02		3.912E-02	1.286E-01	4.820E-03	0.218
CO-58	-2.797E-02		1.041E-02	3.332E-02	1.445E-03	-0.839
FE-59	1.680E-02		2.741E-02	9.374E-02	4.107E-03	0.179
CO-60	1.411E-03		8.192E-03	2.789E-02	2.040E-03	0.051
ZN-65	1.342E-01		2.755E-02	8.139E-02	3.510E-03	1.649
SE-75	-8.266E-03		1.028E-02	3.142E-02	1.161E-03	-0.263
SR-85	6.055E-02		1.148E-02	3.378E-02	1.064E-03	1.792
Y-88	-3.748E-03		8.701E-03	2.742E-02	9.290E-04	-0.137
NB-94	-4.817E-03		7.310E-03	2.434E-02	1.163E-03	-0.198

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	1.323E-01		2.096E-02	6.081E-02	2.442E-03	2.176
TC-95M	1.379E-02		1.000E-02	3.359E-02	1.235E-03	0.411
ZR-95	7.579E-03		1.921E-02	6.474E-02	2.559E-03	0.117
ZRNB-95	1.939E-01		3.053E-02	8.852E-02	3.555E-03	2.190
RH-101	1.262E-03		6.367E-03	2.089E-02	7.658E-04	0.060
RH-102M	-5.189E-03		6.043E-03	2.017E-02	6.532E-04	-0.257
RU-103	-2.600E-02		1.205E-02	3.902E-02	1.246E-03	-0.666
RU-106DA	6.005E-02		6.737E-02	2.289E-01	7.533E-03	0.262
AG-108M	3.299E-03		6.210E-03	2.076E-02	6.825E-04	0.159
AG-110M	8.564E-03		1.144E-02	3.884E-02	1.896E-03	0.220
SN-113DA	-2.789E-02		1.043E-02	3.353E-02	1.101E-03	-0.832
SB-124	2.090E-02		1.211E-02	3.522E-02	1.154E-03	0.593
SB-125	4.253E-03		1.987E-02	6.628E-02	2.181E-03	0.064
SN-126DA	3.608E-02		7.239E-03	2.502E-02	8.359E-04	1.442
I-131	3.868E-02		1.282E-01	4.362E-01	1.481E-02	0.089
BA-133	-5.012E-04		9.751E-03	2.717E-02	9.299E-04	-0.018
CS-134	7.372E-02	+	1.210E-02	3.532E-02	1.493E-03	2.088
CS-137DA	-2.625E-02		8.394E-03	2.619E-02	8.671E-04	-1.002
LA-138	3.370E-03		1.124E-02	3.881E-02	2.622E-03	0.087
CE-139	-9.456E-03		6.012E-03	1.977E-02	7.119E-04	-0.478
BA-140	-1.141E-01		1.646E-01	5.428E-01	1.732E-02	-0.210
BALA-140	-3.236E-01		1.241E-01	3.923E-01	2.214E-02	-0.825
CE-141	6.720E-03		1.705E-02	5.805E-02	2.135E-03	0.116
CE-144	-7.134E-02		3.823E-02	1.225E-01	4.623E-03	-0.582
CEPR-144	-1.427E-01		7.645E-02	2.451E-01	9.245E-03	-0.582
PM-144	7.248E-03		6.859E-03	2.333E-02	7.673E-04	0.311
PM-146	-5.548E-03		8.488E-03	2.857E-02	9.343E-04	-0.194
EU-152	-2.494E-02		2.002E-02	6.517E-02	2.251E-03	-0.383
EU-154	-5.683E-02		2.805E-02	9.072E-02	5.496E-03	-0.626
EU-155	6.024E-02		1.830E-02	6.190E-02	2.522E-03	0.973
HF-181	3.623E-03		1.204E-02	4.076E-02	1.315E-03	0.089
BI-207	1.655E-02		6.383E-03	2.209E-02	7.156E-04	0.749
BI-210M	-2.566E-03		1.111E-02	3.101E-02	1.145E-03	-0.083
BI-212	1.696E+00	+	1.915E-01	4.905E-01	2.153E-02	3.457
RA-223	4.850E-01	+	7.710E-02	1.396E-01	5.146E-03	3.473
AC-227DA	2.135E-01		5.462E-02	1.578E-01	5.856E-03	1.353
TH-234DA	2.418E+00		1.264E+00	4.355E+00	2.060E-01	0.555
U-235HP	1.013E-01		3.730E-02	1.275E-01	4.705E-03	0.794
NP-237DA	-1.449E-03		1.345E-02	4.500E-02	1.591E-03	-0.032
AM-241HP	2.087E-02		1.844E-02	6.322E-02	2.195E-03	0.330


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J475A1AA
Detector ID: GER13 1
Energy Coefficients:
Offset: -6.49681E-01
Slope: 2.50775E-01
Quadrature: -1.07328E-07
Acquisition Start: 4-SEP-2007 17:02:35.28
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
100000
10000
1000
100
10
1
50
100
200
500
1000
2000
()
226 Ra, 214 Bi
40 K
152 Eu
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
126 Sn
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
212 Pb
214 Pb, 234 U, 238 U, 226 Ra
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
223 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J475A1AA

CONFIGURATION ID: GER13:J475A1AA_040971702
TITLE : BRC SOIL
SAMPLE ID : J475A1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 04-SEP-07 17:02:35
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 31-JUL-2007 11:45:00.00
CALIB DATE: 4-SEP-2007 05:28:33.83
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:25

SAMPLE QUANTITY: 3.7610E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6497E+00 keV
ENERGY SLOPE: 2.5077E-01 keV/C
ENERGY Q COEFF: -.1073E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.3106E-01 keV
FWHM SLOPE: 4.4809E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 10:55:40

Configuration : $DISK1:[GER13.SAMPLE]J475A1AA_040971702.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 31-JUL-2007 11:45:00 Acquisition date : 4-SEP-2007 17:02:35
Sample ID : J475A1AA Sample quantity : 376.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:25.29 0.1%
Start energy : 19.41 End energy : 2046.49
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	64.49	246	2643	0.67	259.77	257	9	6.82E-03	38.2	
2	2	75.87*	2489	3858	0.99	305.16	291	29	6.91E-02	5.6	5.97E+00
3	2	78.03	3650	3361	0.94	313.79	291	29	1.01E-01	3.6	
4	0	85.11*	691	3696	1.20	342.03	336	12	1.92E-02	19.0	
5	3	87.94	1550	3150	1.03	353.30	348	23	4.30E-02	7.2	1.19E+00
6	3	90.61	767	3130	0.81	363.97	348	23	2.13E-02	14.1	
7	0	93.46	1907	3868	1.34	375.32	370	13	5.30E-02	7.1	
8	0	129.36	463	2742	1.06	518.54	514	10	1.28E-02	21.7	
9	0	154.00	239	2408	0.70	616.84	613	9	6.65E-03	37.5	
10	0	185.97	2555	3474	1.16	744.42	737	15	7.10E-02	5.4	
11	0	209.28	837	2585	0.94	837.42	832	12	2.33E-02	12.7	
12	3	238.51*	9862	2885	1.11	954.05	945	29	2.74E-01	1.5	3.89E+00
13	3	241.65	2986	2545	1.50	966.60	945	29	8.30E-02	4.2	
14	0	270.01	1403	2185	1.88	1079.80	1071	18	3.90E-02	8.3	
15	0	277.39	437	1735	1.41	1109.26	1103	13	1.21E-02	20.2	
16	0	295.02*	5017	2243	1.08	1179.63	1171	17	1.39E-01	2.7	
17	0	299.93	761	1877	1.18	1199.23	1192	16	2.11E-02	13.2	
18	0	327.65	648	1515	1.59	1309.89	1302	15	1.80E-02	13.7	
19	0	338.00	2114	1778	1.12	1351.21	1341	17	5.87E-02	5.1	
20	0	351.70*	8804	1822	1.25	1405.90	1395	20	2.45E-01	1.7	
21	0	409.34	286	1051	0.93	1636.05	1630	14	7.96E-03	24.7	
22	0	462.78	721	1126	1.26	1849.45	1839	19	2.00E-02	11.8	
23	0	510.76*	923	1716	1.81	2041.12	2030	26	2.57E-02	15.1	
24	0	583.08*	3019	1416	1.40	2330.03	2320	24	8.39E-02	3.5	
25	0	609.24*	6514	1197	1.45	2434.56	2422	25	1.81E-01	1.8	
26	0	665.23	173	600	1.30	2658.32	2652	15	4.81E-03	27.5	
27	0	727.23	775	777	1.41	2906.13	2895	21	2.15E-02	8.4	
28	0	768.24	712	919	1.39	3070.08	3056	26	1.98E-02	10.5	
29	0	795.04	343	725	1.44	3177.23	3167	20	9.53E-03	17.2	
30	0	860.67	388	622	1.55	3439.69	3429	21	1.08E-02	14.5	
31	0	911.15*	2317	743	1.61	3641.60	3626	28	6.44E-02	3.7	
32	0	934.44	315	623	1.20	3734.77	3723	23	8.76E-03	18.3	
33	0	969.11*	1028	1454	1.45	3873.48	3855	31	2.85E-02	10.0	
34	0	1120.36*	1310	679	1.68	4478.79	4464	25	3.64E-02	5.7	
35	0	1238.20	720	763	2.16	4950.60	4938	29	2.00E-02	10.0	
36	0	1377.36	430	313	1.92	5507.98	5491	28	1.19E-02	10.0	
37	0	1407.67	172	219	2.15	5629.43	5620	19	4.77E-03	17.6	
38	0	1460.53*	10168	635	2.13	5841.25	5822	38	2.82E-01	1.2	
39	0	1729.16	266	116	2.07	6918.35	6901	34	7.39E-03	11.4	
40	0	1763.83*	1114	213	2.45	7057.44	7038	39	3.09E-02	4.8	
41	0	1846.17	186	91	2.36	7387.83	7370	33	5.17E-03	13.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:55:41

Configuration : $DISK1:[GER13.SAMPLE]J475A1AA_040971702.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 31-JUL-2007 11:45:00
Sample ID : J475A1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 4-SEP-2007 17:02:35
Sample quantity : 376.10 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:25.29 0.1%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	10168	10.67*	7.699E-01	2.471E+01	2.471E+01	6.56
TL-208	277.35	437	6.80	2.834E+00	4.527E-01	4.527E-01	21.22
	510.84	923	21.60	1.898E+00	4.497E-01	4.497E-01	16.25
	583.14	3019	84.20*	1.721E+00	4.159E-01	4.159E-01	6.92
	860.37	388	12.46	1.247E+00	4.989E-01	4.989E-01	16.27
PB-212	238.63	9862	44.60*	3.095E+00	1.426E+00	1.426E+00	6.56
	300.09	761	3.41	2.701E+00	1.649E+00	1.649E+00	14.69
BI-214	609.31	6514	46.30*	1.664E+00	1.687E+00	1.687E+00	6.26
	768.36	712	5.04	1.378E+00	2.048E+00	2.048E+00	12.42
	1120.29	1310	15.10	9.769E-01	1.772E+00	1.772E+00	8.63
	1764.49	1114	15.80	6.731E-01	2.091E+00	2.091E+00	7.71
PB-214	241.98	2986	7.49	3.072E+00	2.591E+00	2.591E+00	7.65
	295.21	5017	19.20	2.729E+00	1.911E+00	1.911E+00	6.91
	351.92	8804	37.20*	2.443E+00	1.934E+00	1.934E+00	6.40
	785.91	------	1.10	1.351E+00	------ Line Not Found		------
RA-223	154.21	239	5.58	3.678E+00	2.328E-01	2.335E-01	37.99
	269.46	1403	13.60*	2.880E+00	7.151E-01	7.173E-01	10.44
	323.87	------	3.88	2.575E+00	------ Line Not Found		------
RA-224DA	238.63	9862	44.60*	3.095E+00	1.426E+00	1.477E+00	6.56
	240.98	2986	3.95	3.072E+00	4.913E+00	5.089E+00	7.65
	583.14	3019	30.25	1.721E+00	1.158E+00	1.199E+00	6.92
	860.37	388	4.48	1.247E+00	1.387E+00	1.437E+00	16.27
RA-226DA	186.21	2555	3.50	3.492E+00	4.173E+00	4.173E+00	8.34
	241.98	2986	7.49	3.072E+00	2.591E+00	2.591E+00	7.65
	295.22	5017	19.20	2.729E+00	1.911E+00	1.911E+00	6.91
	351.92	8804	37.20	2.443E+00	1.934E+00	1.934E+00	6.40
	609.32	6514	46.30*	1.664E+00	1.687E+00	1.687E+00	6.26
	1120.28	1310	15.10	9.769E-01	1.772E+00	1.772E+00	8.63
	1238.11	720	5.94	8.901E-01	2.719E+00	2.719E+00	11.80
	1764.49	1114	15.80	6.731E-01	2.091E+00	2.091E+00	7.71
AC-228	209.28	837	4.40	3.315E+00	1.146E+00	1.146E+00	14.16
	270.23	1403	3.60	2.880E+00	2.701E+00	2.701E+00	10.44
	338.32	2114	11.40	2.506E+00	1.477E+00	1.477E+00	8.05
	911.07	2317	27.70*	1.184E+00	1.410E+00	1.410E+00	8.37
	969.11	1028	16.60	1.119E+00	1.104E+00	1.104E+00	12.38
RA-228DA	209.28	837	4.40	3.315E+00	1.146E+00	1.160E+00	14.16

Sample ID : J475A1AA Acquisition date : 4-SEP-2007 17:02:35

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	2114	11.40	2.506E+00	1.477E+00	1.494E+00	8.05
	911.07	2317	27.70*	1.184E+00	1.410E+00	1.427E+00	8.37
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	1028	16.60	1.119E+00	1.104E+00	1.117E+00	12.38
TH-228DA	238.63	9862	44.60	3.095E+00	1.426E+00	1.477E+00	6.56
	240.98	2986	3.95	3.072E+00	4.913E+00	5.089E+00	7.65
	583.14	3019	30.25*	1.721E+00	1.158E+00	1.199E+00	6.92
	860.37	388	4.48	1.247E+00	1.387E+00	1.437E+00	16.27
TH-232DA	238.63	9862	44.60	3.095E+00	1.426E+00	1.426E+00	6.56
	338.32	2114	12.40*	2.506E+00	1.358E+00	1.358E+00	8.05
	583.14	3019	30.25	1.721E+00	1.158E+00	1.158E+00	6.92
	911.07	2317	27.70	1.184E+00	1.410E+00	1.410E+00	8.37
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	1028	16.60	1.119E+00	1.104E+00	1.104E+00	12.38
U-234DA	241.98	2986	7.49	3.072E+00	2.591E+00	2.591E+00	7.65
	295.22	5017	19.20*	2.729E+00	1.911E+00	1.911E+00	6.91
	351.92	8804	37.20	2.443E+00	1.934E+00	1.934E+00	6.40
	609.31	6514	46.30	1.664E+00	1.687E+00	1.687E+00	6.26
U-238DA	241.98	2986	7.49	3.072E+00	2.591E+00	2.591E+00	7.65
	295.22	5017	19.20	2.729E+00	1.911E+00	1.911E+00	6.91
	351.92	8804	37.20*	2.443E+00	1.934E+00	1.934E+00	6.40
	609.31	6514	46.30	1.664E+00	1.687E+00	1.687E+00	6.26
U-238DHP	63.28	246	3.80*	9.647E-01	1.338E+00	1.338E+00	38.87
	92.59	1907	5.41	2.780E+00	2.531E+00	2.531E+00	9.71

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J475A1AA

Acquisition date : 4-SEP-2007 17:02:35

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	75.87	2489	3858	0.99	305.16	291	29	6.91E-02	5.6	1.75E+00	
2	78.03	3650	3361	0.94	313.79	291	29	1.01E-01	3.6	1.90E+00	
0	85.11	691	3696	1.20	342.03	336	12	1.92E-02	19.0	2.34E+00	
3	87.94	1550	3150	1.03	353.30	348	23	4.30E-02	7.2	2.50E+00	T
3	90.61	767	3130	0.81	363.97	348	23	2.13E-02	14.1	2.64E+00	
0	129.36	463	2742	1.06	518.54	514	10	1.28E-02	21.7	3.65E+00	
0	327.65	648	1515	1.59	1309.89	1302	15	1.80E-02	13.7	2.56E+00	T
0	409.34	286	1051	0.93	1636.05	1630	14	7.96E-03	24.7	2.21E+00	
0	462.78	721	1126	1.26	1849.45	1839	19	2.00E-02	11.8	2.03E+00	T
0	665.23	173	600	1.30	2658.32	2652	15	4.81E-03	27.5	1.55E+00	T
0	727.23	775	777	1.41	2906.13	2895	21	2.15E-02	8.4	1.44E+00	T
0	795.04	343	725	1.44	3177.23	3167	20	9.53E-03	17.2	1.34E+00	T
0	934.44	315	623	1.20	3734.77	3723	23	8.76E-03	18.3	1.16E+00	
0	1377.36	430	313	1.92	5507.98	5491	28	1.19E-02	10.0	8.09E-01	
0	1407.67	172	219	2.15	5629.43	5620	19	4.77E-03	17.6	7.94E-01	T
0	1729.16	266	116	2.07	6918.35	6901	34	7.39E-03	11.4	6.81E-01	
0	1846.17	186	91	2.36	7387.83	7370	33	5.17E-03	13.7	6.57E-01	

Flags: "T" = Tentatively associated

Sample ID : J475A1AA Acquisition date : 4-SEP-2007 17:02:35

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	5.548E-02	16.25	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.42	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.587E-01	8.63	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.58	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.787E+00	6.92	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.90	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.604E+01	6.26	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	5.040E-01	16.25	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	7.005E-01	13.17	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
SN-126DA	1.00E+05Y	0.00	414.70	97.66	--- Not Found ---		Abun.
			666.33*	99.95	2.227E-02	28.15	
			695.00	99.95	--- Not Found ---		
		% Abundances Found =		33.59			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	4.490E-01	21.22	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	6.193E-02	18.51	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.14	328.77	20.50	5.699E+05	15.06	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			

Sample ID : J475A1AA
Acquisition date : 4-SEP-2007 17:02:35

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	2.095E-01	18.78	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.058E-01	10.01	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.639E+01	17.01	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.629E+00	10.81	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.705E-01	8.34	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 10:55:43

Configuration : $DISK1:[GER13.SAMPLE]J475A1AA_040971702.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 : BRC SOIL
Sample date : 31-JUL-2007 11:45:00
Sample ID : J475A1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 4-SEP-2007 17:02:35
Sample quantity : 376.10 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:25.29 0.1%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.471E+01	1.620E+00	2.032E-01	8.238E-03	121.575
TL-208	4.159E-01	2.879E-02	2.068E-02	6.737E-04	20.106
PB-212	1.426E+00	9.356E-02	3.473E-02	1.375E-03	41.072
BI-214	1.687E+00	1.056E-01	3.741E-02	1.232E-03	45.104
PB-214	1.934E+00	1.237E-01	3.972E-02	1.439E-03	48.688
RA-223	7.173E-01	7.490E-02	1.074E-01	4.258E-03	6.681
RA-224DA	1.477E+00	9.692E-02	3.597E-02	1.424E-03	41.072
RA-226DA	1.687E+00	1.056E-01	3.741E-02	1.232E-03	45.103
AC-228	1.410E+00	1.181E-01	7.516E-02	4.237E-03	18.764
RA-228DA	1.427E+00	1.195E-01	7.605E-02	4.287E-03	18.764
TH-228DA	1.199E+00	8.300E-02	5.963E-02	1.942E-03	20.106
TH-232DA	1.358E+00	1.093E-01	1.244E-01	4.660E-03	10.916
U-234DA	1.911E+00	1.320E-01	7.620E-02	3.005E-03	25.079
U-238DA	1.934E+00	1.237E-01	3.972E-02	1.439E-03	48.688
U-238DHP	1.338E+00	5.198E-01	1.445E+00	7.018E-02	0.925

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	3.924E-02		7.008E-02	2.328E-01	7.412E-03	0.169
NA-22	-5.574E-03		7.736E-03	2.569E-02	1.011E-03	-0.217
SC-46	3.587E-01	+	3.095E-02	5.881E-02	2.408E-03	6.099
CR-51	-5.298E-02		1.107E-01	3.625E-01	1.412E-02	-0.146
MN-54	-6.996E-03		6.803E-03	2.229E-02	1.115E-03	-0.314
CO-57	-4.658E-02		4.379E-02	1.460E-01	5.327E-03	-0.319
CO-58	-2.165E-02		8.175E-03	2.588E-02	1.230E-03	-0.837
FE-59	-5.347E-02		2.256E-02	7.163E-02	3.076E-03	-0.746
CO-60	1.492E-03		6.780E-03	2.287E-02	9.501E-04	0.065
ZN-65	1.081E-03		1.918E-02	5.482E-02	2.270E-03	0.020
SE-75	-1.324E-02		9.236E-03	2.913E-02	1.156E-03	-0.455
SR-85	5.728E-02		9.120E-03	2.669E-02	8.384E-04	2.146
Y-88	5.678E-03		6.261E-03	2.097E-02	6.767E-04	0.271

Sample ID : J475A1AA Acquisition date : 4-SEP-2007 17:02:35

---- Non-Identified Nuclides ----

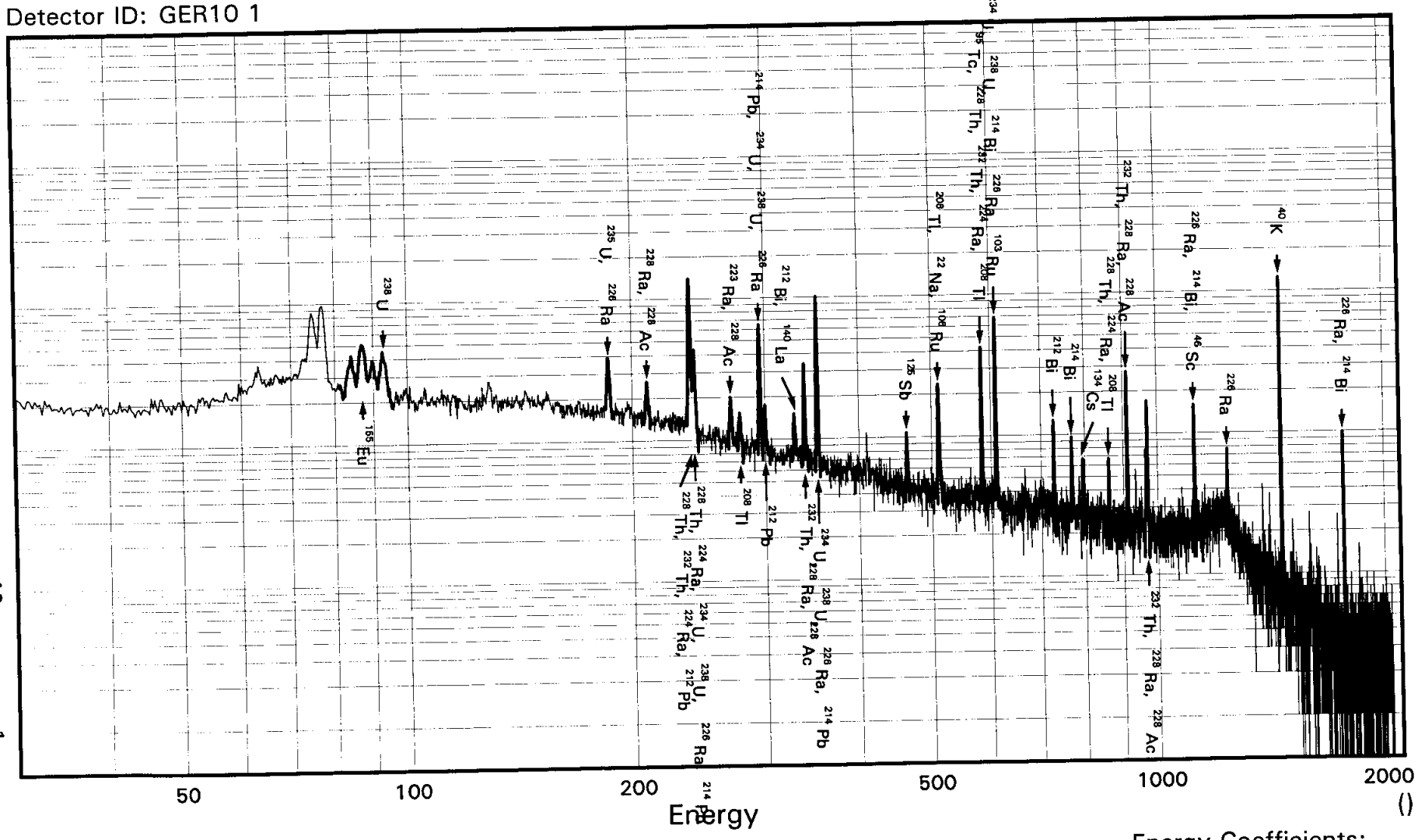
Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	4.599E-03		5.661E-03	1.902E-02	1.026E-03	0.242
NB-95	9.904E-02		1.576E-02	4.531E-02	1.948E-03	2.186
TC-95M	8.965E-03		1.035E-02	3.399E-02	1.334E-03	0.264
ZR-95	1.878E-02		1.471E-02	5.007E-02	2.109E-03	0.375
ZRNB-95	1.485E-01		2.308E-02	6.618E-02	2.846E-03	2.243
RH-101	6.260E-03		6.334E-03	2.085E-02	8.166E-04	0.300
RH-102M	-6.940E-03		4.938E-03	1.600E-02	5.098E-04	-0.434
RU-103	-3.125E-04		9.492E-03	3.218E-02	1.018E-03	-0.010
RU-106DA	2.964E-02		5.438E-02	1.822E-01	6.031E-03	0.163
AG-108M	4.087E-03		5.108E-03	1.711E-02	5.488E-04	0.239
AG-110M	-1.070E-02		8.727E-03	2.905E-02	1.612E-03	-0.368
SN-113DA	-6.817E-03		8.697E-03	2.891E-02	9.248E-04	-0.236
SB-124	1.112E-02		9.023E-03	2.732E-02	8.973E-04	0.407
SB-125	-3.605E-03		1.593E-02	5.294E-02	1.698E-03	-0.068
SN-126DA	2.227E-02	+	6.269E-03	1.878E-02	6.373E-04	1.186
I-131	3.140E-02		1.156E-01	3.905E-01	1.367E-02	0.080
BA-133	-1.704E-03		8.084E-03	2.318E-02	8.310E-04	-0.074
CS-134	6.193E-02	+	1.147E-02	2.805E-02	1.290E-03	2.208
CS-137DA	-5.635E-04		7.254E-03	2.020E-02	6.777E-04	-0.028
LA-138	-1.593E-03		8.751E-03	2.984E-02	1.218E-03	-0.053
CE-139	-8.543E-03		6.415E-03	2.103E-02	8.222E-04	-0.406
BA-140	-4.085E-03		1.287E-01	4.334E-01	1.380E-02	-0.009
BALA-140	-1.903E-01		8.658E-02	2.760E-01	1.061E-02	-0.690
CE-141	5.890E-03		1.911E-02	6.407E-02	2.394E-03	0.092
CE-144	-9.060E-03		4.284E-02	1.441E-01	5.226E-03	-0.063
CEPR-144	-1.663E-02		8.568E-02	2.882E-01	1.045E-02	-0.058
PM-144	3.147E-03		5.457E-03	1.829E-02	6.046E-04	0.172
PM-146	1.844E-02		7.314E-03	2.461E-02	7.877E-04	0.749
EU-152	-5.280E-02		1.719E-02	5.558E-02	2.053E-03	-0.950
EU-154	-1.376E-02		2.140E-02	7.117E-02	2.800E-03	-0.193
EU-155	9.366E-02		2.448E-02	7.970E-02	3.064E-03	1.175
HF-181	-1.155E-02		1.013E-02	3.293E-02	1.047E-03	-0.351
BI-207	5.752E-03		5.217E-03	1.766E-02	5.715E-04	0.326
BI-210M	-1.635E-02		1.024E-02	2.846E-02	1.129E-03	-0.575
BI-212	1.629E+00	+	1.761E-01	3.841E-01	1.747E-02	4.241
AC-227DA	3.754E-01		5.676E-02	1.574E-01	6.230E-03	2.385
TH-234DA	2.596E+00		1.002E+00	3.429E+00	1.746E-01	0.757
U-235HP	1.417E-01		4.243E-02	1.418E-01	5.272E-03	0.999
NP-237DA	-2.969E-03		1.220E-02	4.014E-02	1.570E-03	-0.074
AM-241HP	-4.908E-02		5.900E-02	1.984E-01	9.517E-03	-0.247

STL Richland WA.

BRC SOIL

Batch ID: 7232477

Sample ID: J475C1AA
Detector ID: GER10 1



Acquisition Start: 4-SEP-2007 17:03:06.01
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:
Offset: 1.46029E+01
Slope: 2.47312E-01
Quadrature: -5.81699E-10

SAMPLE IDENTIFICATION: J475C1AA

CONFIGURATION ID: GER10:J475C1AA_040971703
TITLE : BRC SOIL
SAMPLE ID : J475C1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 04-SEP-07 17:03:06
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 31-JUL-2007 10:45:00.00
CALIB DATE: 4-SEP-2007 05:41:49.29
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:18

SAMPLE QUANTITY: 3.7500E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.4603E+01 keV
ENERGY SLOPE: 2.4731E-01 keV/C
ENERGY Q COEFF: -.5817E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1182E+00 keV
FWHM SLOPE: 2.3177E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 11:39:55

Configuration : $DISK1:[GER10.SAMPLE]J475C1AA_040971703.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 31-JUL-2007 10:45:00 Acquisition date : 4-SEP-2007 17:03:06
Sample ID : J475C1AA Sample quantity : 375.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.83 0.1%
Start energy : 17.08 End energy : 2040.54
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.83*	3010	5232	1.45	243.53	230	33	8.36E-02	6.3	5.59E+00
2	1	76.99	4513	4878	1.45	252.24	230	33	1.25E-01	4.1	
3	2	84.24*	548	4483	1.37	281.59	269	41	1.52E-02	29.1	5.97E+00
4	2	87.14	1615	5254	1.61	293.31	269	41	4.49E-02	11.3	
5	0	93.07	1558	3993	1.70	317.30	310	18	4.33E-02	9.9	
6	0	186.05	1421	2791	1.54	693.24	685	17	3.95E-02	8.9	
7	0	209.39	742	2325	1.31	787.62	778	17	2.06E-02	15.3	
8	3	238.65	8478	2323	1.55	905.93	896	34	2.35E-01	1.8	1.47E+00
9	3	241.69	2630	2570	1.97	918.21	896	34	7.31E-02	6.3	
10	0	270.24	818	2032	1.76	1033.66	1024	22	2.27E-02	12.4	
11	0	277.93	481	1662	1.74	1064.78	1055	19	1.34E-02	17.9	
12	0	295.22	3632	1850	1.50	1134.68	1123	22	1.01E-01	3.0	
13	0	299.99	597	1623	1.15	1153.97	1145	21	1.66E-02	14.9	
14	0	327.95	459	1765	1.64	1267.01	1256	23	1.28E-02	20.6	
15	0	338.39	1744	1927	1.46	1309.25	1296	28	4.85E-02	6.5	
16	0	351.93*	6248	1479	1.56	1363.96	1351	24	1.74E-01	1.9	
17	0	462.95	546	915	1.75	1812.89	1802	23	1.52E-02	12.9	
18	0	510.91*	1130	1481	2.39	2006.82	1990	41	3.14E-02	11.1	
19	0	583.22	2856	992	1.64	2299.22	2286	28	7.93E-02	3.2	
20	0	609.32*	4590	1023	1.76	2404.75	2392	27	1.27E-01	2.3	
21	0	727.32	650	799	1.61	2881.90	2866	28	1.81E-02	11.1	
22	0	768.25	489	625	1.65	3047.38	3035	23	1.36E-02	12.1	
23	0	795.08	327	551	2.06	3155.87	3143	23	9.09E-03	16.7	
24	0	860.40	330	437	1.51	3419.98	3409	21	9.16E-03	14.5	
25	0	911.21	2024	483	1.79	3625.43	3613	25	5.62E-02	3.3	
26	0	968.06	1454	914	1.88	3855.32	3835	38	4.04E-02	6.2	
27	0	1120.08	1066	654	1.82	4470.03	4455	28	2.96E-02	6.5	
28	0	1237.99	375	605	1.85	4946.82	4934	23	1.04E-02	15.3	
29	0	1377.72	301	273	2.14	5511.82	5497	31	8.36E-03	14.8	
30	0	1460.78*	11570	293	2.20	5847.69	5830	41	3.21E-01	1.0	
31	0	1729.69	214	61	2.15	6935.03	6920	29	5.94E-03	10.4	
32	0	1764.40	919	87	2.06	7075.38	7059	30	2.55E-02	4.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 11:39:56

Configuration : $DISK1:[GER10.SAMPLE]J475C1AA_040971703.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 31-JUL-2007 10:45:00 Acquisition date : 4-SEP-2007 17:03:06
Sample ID : J475C1AA Sample quantity : 375.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.83 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	11570	10.67*	8.324E-01	2.608E+01	2.608E+01	6.33
TL-208	277.35	481	6.80	2.748E+00	5.155E-01	5.155E-01	19.02
	510.84	1130	21.60	1.867E+00	5.608E-01	5.608E-01	12.53
	583.14	2856	84.20*	1.704E+00	3.985E-01	3.985E-01	6.80
	860.37	330	12.46	1.273E+00	4.159E-01	4.159E-01	16.11
PB-212	238.63	8478	44.60*	3.006E+00	1.266E+00	1.266E+00	6.66
	300.09	597	3.41	2.624E+00	1.335E+00	1.335E+00	16.16
BI-214	609.31	4590	46.30*	1.652E+00	1.201E+00	1.201E+00	6.42
	768.36	489	5.04	1.391E+00	1.397E+00	1.397E+00	13.74
	1120.29	1066	15.10	1.028E+00	1.374E+00	1.374E+00	9.05
	1764.49	919	15.80	7.322E-01	1.590E+00	1.590E+00	7.20
PB-214	241.98	2630	7.49	2.984E+00	2.356E+00	2.356E+00	8.96
	295.21	3632	19.20	2.650E+00	1.429E+00	1.429E+00	7.00
	351.92	6248	37.20*	2.378E+00	1.414E+00	1.414E+00	6.39
	785.91	------	1.10	1.367E+00	------ Line Not Found		------
RA-224DA	238.63	8478	44.60*	3.006E+00	1.266E+00	1.311E+00	6.66
	240.98	2630	3.95	2.984E+00	4.467E+00	4.627E+00	8.96
	583.14	2856	30.25	1.704E+00	1.109E+00	1.149E+00	6.80
	860.37	330	4.48	1.273E+00	1.157E+00	1.198E+00	16.11
RA-226DA	186.21	1421	3.50	3.433E+00	2.367E+00	2.367E+00	11.01
	241.98	2630	7.49	2.984E+00	2.356E+00	2.356E+00	8.96
	295.22	3632	19.20	2.650E+00	1.429E+00	1.429E+00	7.00
	351.92	6248	37.20	2.378E+00	1.414E+00	1.414E+00	6.39
	609.32	4590	46.30*	1.652E+00	1.201E+00	1.201E+00	6.42
	1120.28	1066	15.10	1.028E+00	1.374E+00	1.374E+00	9.05
	1238.11	375	5.94	9.475E-01	1.332E+00	1.332E+00	16.53
	1764.49	919	15.80	7.322E-01	1.590E+00	1.590E+00	7.20
AC-228	209.28	742	4.40	3.232E+00	1.045E+00	1.045E+00	16.64
	270.23	818	3.60	2.795E+00	1.628E+00	1.628E+00	13.94
	338.32	1744	11.40	2.436E+00	1.257E+00	1.257E+00	8.92
	911.07	2024	27.70*	1.216E+00	1.203E+00	1.203E+00	7.85
	969.11	1454	16.60	1.158E+00	1.514E+00	1.514E+00	9.29
RA-228DA	209.28	742	4.40	3.232E+00	1.045E+00	1.057E+00	16.64
	338.32	1744	11.40	2.436E+00	1.257E+00	1.272E+00	8.92
	911.07	2024	27.70*	1.216E+00	1.203E+00	1.217E+00	7.85
	964.60	------	5.20	1.162E+00	------ Line Not Found		------

Sample ID : J475C1AA Acquisition date : 4-SEP-2007 17:03:06

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1454	16.60	1.158E+00	1.514E+00	1.532E+00	9.29
TH-228DA	238.63	8478	44.60	3.006E+00	1.266E+00	1.311E+00	6.66
	240.98	2630	3.95	2.984E+00	4.467E+00	4.627E+00	8.96
	583.14	2856	30.25*	1.704E+00	1.109E+00	1.149E+00	6.80
	860.37	330	4.48	1.273E+00	1.157E+00	1.198E+00	16.11
TH-232DA	238.63	8478	44.60	3.006E+00	1.266E+00	1.266E+00	6.66
	338.32	1744	12.40*	2.436E+00	1.156E+00	1.156E+00	8.92
	583.14	2856	30.25	1.704E+00	1.109E+00	1.109E+00	6.80
	911.07	2024	27.70	1.216E+00	1.203E+00	1.203E+00	7.85
	964.60	------	5.20	1.162E+00	------ Line Not Found		------
	969.11	1454	16.60	1.158E+00	1.514E+00	1.514E+00	9.29
U-234DA	241.98	2630	7.49	2.984E+00	2.356E+00	2.356E+00	8.96
	295.22	3632	19.20*	2.650E+00	1.429E+00	1.429E+00	7.00
	351.92	6248	37.20	2.378E+00	1.414E+00	1.414E+00	6.39
	609.31	4590	46.30	1.652E+00	1.201E+00	1.201E+00	6.42
U-238DA	241.98	2630	7.49	2.984E+00	2.356E+00	2.356E+00	8.96
	295.22	3632	19.20	2.650E+00	1.429E+00	1.429E+00	7.00
	351.92	6248	37.20*	2.378E+00	1.414E+00	1.414E+00	6.39
	609.31	4590	46.30	1.652E+00	1.201E+00	1.201E+00	6.42

Flag: "*" = Keyline

Sample ID : J475C1AA Acquisition date : 4-SEP-2007 17:03:06

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	74.83	3010	5232	1.45	243.53	230	33	8.36E-02	6.3	2.87E+00	
1	76.99	4513	4878	1.45	252.24	230	33	1.25E-01	4.1	2.99E+00	
2	84.24	548	4483	1.37	281.59	269	41	1.52E-02	29.1	3.32E+00	
2	87.14	1615	5254	1.61	293.31	269	41	4.49E-02	11.3	3.43E+00	T
0	93.07	1558	3993	1.70	317.30	310	18	4.33E-02	9.9	3.60E+00	T
0	327.95	459	1765	1.64	1267.01	1256	23	1.28E-02	20.6	2.48E+00	T
0	462.95	546	915	1.75	1812.89	1802	23	1.52E-02	12.9	1.99E+00	T
0	727.32	650	799	1.61	2881.90	2866	28	1.81E-02	11.1	1.45E+00	T
0	795.08	327	551	2.06	3155.87	3143	23	9.09E-03	16.7	1.35E+00	T
0	1377.72	301	273	2.14	5511.82	5497	31	8.36E-03	14.8	8.70E-01	
0	1729.69	214	61	2.15	6935.03	6920	29	5.94E-03	10.4	7.41E-01	

Flags: "T" = Tentatively associated

Sample ID : J475C1AA Acquisition date : 4-SEP-2007 17:03:06

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	6.919E-02	12.53	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.42	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.783E-01	9.05	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.58	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.714E+00	6.80	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.90	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.855E+01	6.42	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	6.286E-01	12.53	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	5.429E-01	14.20	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	5.850E-02	17.98	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.17	328.77	20.50	4.245E+05	21.54	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.095E-01	12.97	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	2.664E+01	22.95	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.363E+00	12.94	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		

Sample ID : J475C1AA Acquisition date : 4-SEP-2007 17:03:06

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	1078.62	0.56	--- Not Found ---		Abun.
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	4.323E-01	13.94	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.534E-01	11.01	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	1.602E+00	11.70	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 11:39:58

Configuration : $DISK1:[GER10.SAMPLE]J475C1AA_040971703.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 : BRC SOIL
Sample date : 31-JUL-2007 10:45:00 Acquisition date : 4-SEP-2007 17:03:06
Sample ID : J475C1AA Sample quantity : 375.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.83 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.608E+01	1.651E+00	1.511E-01	5.657E-03	172.580
TL-208	3.985E-01	2.708E-02	1.785E-02	5.845E-04	22.322
PB-212	1.266E+00	8.426E-02	3.339E-02	1.345E-03	37.913
BI-214	1.201E+00	7.711E-02	3.430E-02	1.140E-03	35.025
PB-214	1.414E+00	9.038E-02	3.752E-02	1.310E-03	37.692
RA-224DA	1.311E+00	8.728E-02	3.459E-02	1.393E-03	37.913
RA-226DA	1.201E+00	7.711E-02	3.430E-02	1.140E-03	35.024
AC-228	1.203E+00	9.435E-02	6.395E-02	3.231E-03	18.806
RA-228DA	1.217E+00	9.546E-02	6.470E-02	3.269E-03	18.806
TH-228DA	1.149E+00	7.808E-02	5.147E-02	1.685E-03	22.322
TH-232DA	1.156E+00	1.031E-01	1.160E-01	4.162E-03	9.965
U-234DA	1.429E+00	1.001E-01	7.472E-02	2.872E-03	19.126
U-238DA	1.414E+00	9.038E-02	3.752E-02	1.310E-03	37.692

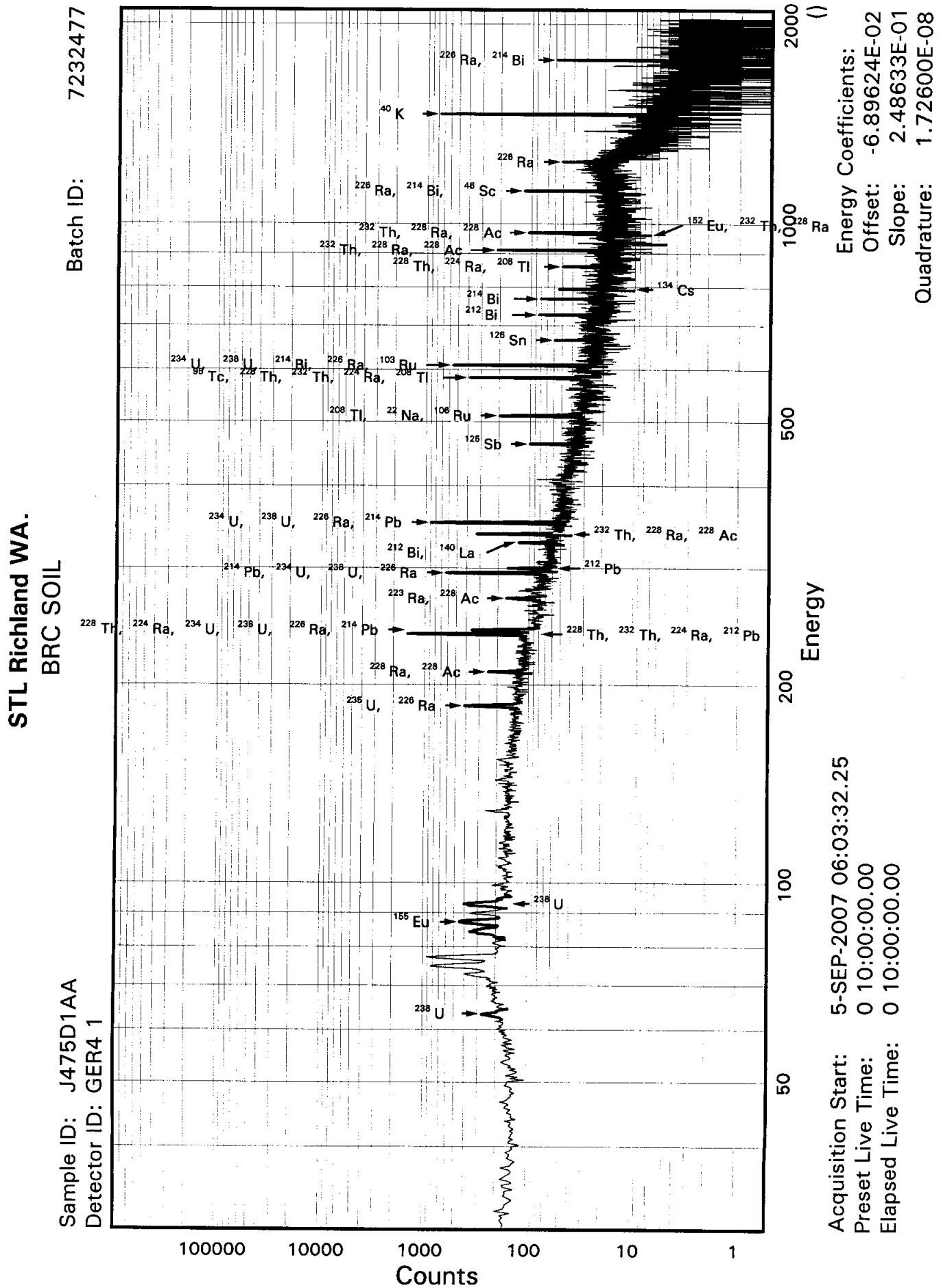
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	1.016E-01		6.391E-02	2.182E-01	6.894E-03	0.466
NA-22	-7.547E-03		6.645E-03	2.207E-02	8.086E-04	-0.342
SC-46	2.783E-01	+	2.519E-02	4.960E-02	1.891E-03	5.611
CR-51	1.385E-01		1.054E-01	3.521E-01	1.304E-02	0.393
MN-54	-6.535E-03		5.738E-03	1.902E-02	8.781E-04	-0.344
CO-57	2.712E-03		4.400E-02	1.443E-01	5.104E-03	0.019
CO-58	-2.138E-02		7.184E-03	2.277E-02	1.010E-03	-0.939
FE-59	-5.932E-03		1.829E-02	6.079E-02	2.414E-03	-0.098
CO-60	-5.562E-03		5.509E-03	1.835E-02	7.000E-04	-0.303
ZN-65	-1.306E-02		1.701E-02	4.657E-02	1.793E-03	-0.280
SE-75	-3.227E-04		9.781E-03	2.908E-02	1.153E-03	-0.011
SR-85	7.493E-02		8.506E-03	2.689E-02	8.416E-04	2.787
Y-88	1.153E-02		4.420E-03	1.682E-02	5.307E-04	0.685
NB-94	2.492E-03		5.020E-03	1.708E-02	8.360E-04	0.146
NB-95	8.430E-02		1.398E-02	4.113E-02	1.692E-03	2.049

Sample ID : J475C1AA Acquisition date : 4-SEP-2007 17:03:06

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	3.287E-03		1.131E-02	3.309E-02	1.342E-03	0.099
ZR-95	8.368E-03		1.315E-02	4.497E-02	1.821E-03	0.186
ZRNB-95	1.255E-01		2.043E-02	6.001E-02	2.468E-03	2.092
RH-101	9.511E-04		7.266E-03	2.150E-02	8.715E-04	0.044
RH-102M	-5.804E-03		4.526E-03	1.496E-02	4.730E-04	-0.388
RU-103	-3.235E-03		8.868E-03	2.968E-02	9.338E-04	-0.109
RU-106DA	-7.708E-03		4.811E-02	1.603E-01	5.362E-03	-0.048
AG-108M	-2.003E-03		4.562E-03	1.532E-02	4.854E-04	-0.131
AG-110M	-2.173E-03		7.627E-03	2.564E-02	1.282E-03	-0.085
SN-113DA	-1.940E-02		8.139E-03	2.659E-02	8.376E-04	-0.730
SB-124	-3.575E-03		8.425E-03	2.473E-02	8.187E-04	-0.145
SB-125	3.728E-03		1.462E-02	4.947E-02	1.567E-03	0.075
SN-126DA	1.719E-02		5.014E-03	1.706E-02	5.869E-04	1.008
I-131	-1.320E-03		1.092E-01	3.606E-01	1.223E-02	-0.004
BA-133	-1.249E-03		8.244E-03	2.288E-02	7.915E-04	-0.055
CS-134	5.850E-02	+	1.052E-02	2.457E-02	1.063E-03	2.381
CS-137DA	-1.338E-02		5.849E-03	1.867E-02	6.365E-04	-0.717
LA-138	-7.834E-03		7.042E-03	2.334E-02	8.784E-04	-0.336
CE-139	-6.477E-03		6.260E-03	2.086E-02	8.423E-04	-0.310
BA-140	-1.067E-01		1.168E-01	3.868E-01	1.231E-02	-0.276
BALA-140	-6.494E-02		6.542E-02	2.166E-01	7.785E-03	-0.300
CE-141	7.033E-02		1.986E-02	6.484E-02	2.414E-03	1.085
CE-144	-7.336E-02		4.362E-02	1.408E-01	4.901E-03	-0.521
CEPR-144	-1.812E-01		8.771E-02	2.816E-01	9.802E-03	-0.643
PM-144	1.915E-03		4.833E-03	1.622E-02	5.415E-04	0.118
PM-146	1.415E-02		6.480E-03	2.221E-02	7.035E-04	0.637
EU-152	2.147E-02		1.965E-02	5.369E-02	1.904E-03	0.400
EU-154	-1.735E-02		1.831E-02	6.106E-02	2.237E-03	-0.284
EU-155	5.125E-02		2.134E-02	7.069E-02	2.411E-03	0.725
HF-181	-1.794E-02		9.242E-03	3.017E-02	9.525E-04	-0.594
BI-207	-3.842E-03		4.655E-03	1.539E-02	4.999E-04	-0.250
BI-210M	4.539E-03		9.985E-03	2.821E-02	1.117E-03	0.161
BI-212	1.363E+00	+	1.764E-01	3.526E-01	1.576E-02	3.867
RA-223	4.323E-01	+	6.027E-02	1.233E-01	4.869E-03	3.507
AC-227DA	1.256E+00		9.806E-02	1.868E-01	7.532E-03	6.722
TH-234DA	1.395E+00		8.451E-01	2.896E+00	1.333E-01	0.482
U-235HP	7.455E-02		4.223E-02	1.389E-01	5.121E-03	0.537
NP-237DA	-1.131E-02		1.154E-02	3.783E-02	1.420E-03	-0.299
U-238DHP	8.460E-01		2.449E-01	8.106E-01	2.903E-02	1.044
AM-241HP	-1.330E-01		2.898E-02	9.007E-02	3.332E-03	-1.476


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J475D1AA
Detector ID: GER4 1
Energy Coefficients:
Offset: -6.89624E-02
Slope: 2.48633E-01
Quadrature: 1.72600E-08
Acquisition Start: 5-SEP-2007 06:03:32.25
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
100000
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
228 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
152 Eu, 232 Th, 228 Ra
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
126 Sn
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
99 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J475D1AA

CONFIGURATION ID: GER4:J475D1AA_050970603
TITLE : BRC SOIL
SAMPLE ID : J475D1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 05-SEP-07 06:03:32
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 31-JUL-2007 10:45:00.00
CALIB DATE: 5-SEP-2007 05:28:09.76
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:17

SAMPLE QUANTITY: 3.7840E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6896E-01 keV
ENERGY SLOPE: 2.4863E-01 keV/C
ENERGY Q COEFF: 1.7260E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.7813E-01 keV
FWHM SLOPE: 4.1121E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 30.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 11:41:10

Configuration : $DISK1:[GER4.SAMPLE]J475D1AA_050970603.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 31-JUL-2007 10:45:00 Acquisition date : 5-SEP-2007 06:03:32
Sample ID : J475D1AA Sample quantity : 378.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.72 0.0%
Start energy : 19.82 End energy : 2037.89
Sensitivity : 5.00 Gaussian : 30.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.51*	206	1720	0.67	255.70	250	10	5.73E-03	40.5	
2	5	72.74*	600	2796	1.17	292.84	285	32	1.67E-02	20.0	2.50E+00
3	5	74.92*	2069	2362	1.00	301.60	285	32	5.75E-02	5.6	
4	5	77.16	2746	2128	0.94	310.60	285	32	7.63E-02	3.8	
5	8	84.54*	648	2944	1.46	340.30	332	25	1.80E-02	19.9	1.32E+00
6	8	87.24*	1082	2043	1.05	351.14	332	25	3.01E-02	9.1	
7	0	89.98	761	1912	0.90	362.17	357	11	2.11E-02	11.7	
8	0	93.00*	1159	2683	1.26	374.30	368	17	3.22E-02	11.0	
9	0	129.21	394	1944	0.78	519.95	514	13	1.10E-02	23.6	
10	0	186.01*	1344	1970	1.20	748.38	741	16	3.73E-02	8.3	
11	0	209.29	584	1274	0.95	841.99	837	12	1.62E-02	12.9	
12	4	238.60*	5787	1180	0.99	959.87	952	29	1.61E-01	1.8	2.08E+00
13	4	241.74	1640	1535	1.49	972.47	952	29	4.55E-02	6.5	
14	0	270.08	617	1368	1.67	1086.46	1079	18	1.72E-02	14.6	
15	0	295.14	2602	1052	1.01	1187.24	1178	16	7.23E-02	3.4	
16	0	300.16	407	955	1.00	1207.41	1200	15	1.13E-02	17.3	
17	0	327.72	381	939	1.36	1318.25	1309	17	1.06E-02	19.1	
18	0	338.19	1222	780	0.92	1360.34	1354	14	3.39E-02	5.6	
19	0	351.87*	4105	922	1.21	1415.34	1407	17	1.14E-01	2.4	
20	0	409.23	116	563	0.67	1646.03	1641	12	3.23E-03	41.8	
21	0	462.76	483	690	1.22	1861.25	1849	24	1.34E-02	15.1	
22	0	510.80*	673	800	1.76	2054.43	2044	24	1.87E-02	13.8	
23	0	583.12*	1711	674	1.20	2345.19	2334	21	4.75E-02	4.7	
24	0	609.20*	3095	487	1.39	2450.05	2439	21	8.60E-02	2.7	
25	0	665.41	191	493	0.61	2676.06	2663	25	5.31E-03	32.1	
26	0	727.01	430	361	1.48	2923.71	2914	19	1.19E-02	11.6	
27	0	768.27	256	473	1.23	3089.60	3081	19	7.11E-03	18.5	
28	0	794.77	320	397	1.70	3196.13	3183	28	8.89E-03	15.8	
29	0	860.37	275	369	1.87	3459.84	3449	24	7.63E-03	16.7	
30	0	911.07*	1162	402	1.60	3663.67	3651	26	3.23E-02	5.2	
31	0	933.76	132	346	1.82	3754.88	3746	22	3.68E-03	31.6	
32	0	964.34	242	363	1.85	3877.79	3865	22	6.73E-03	18.3	
33	0	968.84*	668	303	2.11	3895.89	3887	20	1.86E-02	7.1	
34	0	1120.05	681	490	1.39	4503.69	4489	28	1.89E-02	8.6	
35	0	1238.04	341	407	2.62	4977.94	4966	25	9.46E-03	14.5	
36	0	1377.59	189	108	1.47	5538.80	5528	21	5.26E-03	13.7	
37	0	1460.67*	6745	191	2.24	5872.67	5855	40	1.87E-01	1.4	
38	0	1729.70	134	58	2.21	6953.76	6940	29	3.71E-03	15.0	
39	0	1764.38	561	73	2.74	7093.09	7075	28	1.56E-02	5.3	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 11:41:11

Configuration : $DISK1:[GER4.SAMPLE]J475D1AA_050970603.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 31-JUL-2007 10:45:00 Acquisition date : 5-SEP-2007 06:03:32
Sample ID : J475D1AA Sample quantity : 378.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.72 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	6745	10.67*	5.415E-01	2.316E+01	2.316E+01	6.43
TL-208	277.35	------	6.80	2.029E+00	------ Line Not Found		------
	510.84	673	21.60	1.302E+00	4.750E-01	4.750E-01	15.12
	583.14	1711	84.20*	1.176E+00	3.429E-01	3.429E-01	7.75
	860.37	275	12.46	8.556E-01	5.113E-01	5.113E-01	18.07
PB-212	238.63	5787	44.60*	2.244E+00	1.147E+00	1.147E+00	6.71
	300.09	407	3.41	1.920E+00	1.232E+00	1.232E+00	18.57
BI-214	609.31	3095	46.30*	1.136E+00	1.167E+00	1.167E+00	6.72
	768.36	256	5.04	9.414E-01	1.071E+00	1.071E+00	19.56
	1120.29	681	15.10	6.799E-01	1.316E+00	1.316E+00	10.66
	1764.49	561	15.80	4.701E-01	1.498E+00	1.498E+00	8.01
PB-214	241.98	1640	7.49	2.225E+00	1.952E+00	1.952E+00	9.15
	295.21	2602	19.20	1.943E+00	1.384E+00	1.384E+00	7.49
	351.92	4105	37.20*	1.714E+00	1.277E+00	1.277E+00	6.84
	785.91	------	1.10	9.238E-01	------ Line Not Found		------
RA-224DA	238.63	5787	44.60*	2.244E+00	1.147E+00	1.189E+00	6.71
	240.98	1640	3.95	2.225E+00	3.701E+00	3.836E+00	9.15
	583.14	1711	30.25	1.176E+00	9.544E-01	9.892E-01	7.75
	860.37	275	4.48	8.556E-01	1.422E+00	1.474E+00	18.07
RA-226DA	186.21	1344	3.50	2.594E+00	2.937E+00	2.937E+00	10.40
	241.98	1640	7.49	2.225E+00	1.952E+00	1.952E+00	9.15
	295.22	2602	19.20	1.943E+00	1.384E+00	1.384E+00	7.49
	351.92	4105	37.20	1.714E+00	1.277E+00	1.277E+00	6.84
	609.32	3095	46.30*	1.136E+00	1.167E+00	1.168E+00	6.72
	1120.28	681	15.10	6.799E-01	1.316E+00	1.316E+00	10.66
	1238.11	341	5.94	6.229E-01	1.826E+00	1.826E+00	15.78
	1764.49	561	15.80	4.701E-01	1.498E+00	1.498E+00	8.01
AC-228	209.28	584	4.40	2.433E+00	1.082E+00	1.082E+00	14.37
	270.23	617	3.60	2.066E+00	1.647E+00	1.647E+00	16.04
	338.32	1222	11.40	1.764E+00	1.205E+00	1.205E+00	8.65
	911.07	1162	27.70*	8.146E-01	1.022E+00	1.022E+00	8.69
	969.11	668	16.60	7.722E-01	1.034E+00	1.034E+00	9.84
RA-228DA	209.28	584	4.40	2.433E+00	1.082E+00	1.095E+00	14.37
	338.32	1222	11.40	1.764E+00	1.205E+00	1.220E+00	8.65
	911.07	1162	27.70*	8.146E-01	1.022E+00	1.034E+00	8.69
	964.60	242	5.20	7.754E-01	1.192E+00	1.206E+00	19.51

Sample ID : J475D1AA Acquisition date : 5-SEP-2007 06:03:32

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	668	16.60	7.722E-01	1.034E+00	1.046E+00	9.84
TH-228DA	238.63	5787	44.60	2.244E+00	1.147E+00	1.189E+00	6.71
	240.98	1640	3.95	2.225E+00	3.701E+00	3.836E+00	9.15
	583.14	1711	30.25*	1.176E+00	9.544E-01	9.892E-01	7.75
	860.37	275	4.48	8.556E-01	1.422E+00	1.474E+00	18.07
TH-232DA	238.63	5787	44.60	2.244E+00	1.147E+00	1.147E+00	6.71
	338.32	1222	12.40*	1.764E+00	1.108E+00	1.108E+00	8.65
	583.14	1711	30.25	1.176E+00	9.544E-01	9.544E-01	7.75
	911.07	1162	27.70	8.146E-01	1.022E+00	1.022E+00	8.69
	964.60	242	5.20	7.754E-01	1.192E+00	1.192E+00	19.51
	969.11	668	16.60	7.722E-01	1.034E+00	1.034E+00	9.84
U-234DA	241.98	1640	7.49	2.225E+00	1.952E+00	1.952E+00	9.15
	295.22	2602	19.20*	1.943E+00	1.384E+00	1.384E+00	7.49
	351.92	4105	37.20	1.714E+00	1.277E+00	1.277E+00	6.84
	609.31	3095	46.30	1.136E+00	1.167E+00	1.167E+00	6.72
U-238DA	241.98	1640	7.49	2.225E+00	1.952E+00	1.952E+00	9.15
	295.22	2602	19.20	1.943E+00	1.384E+00	1.384E+00	7.49
	351.92	4105	37.20*	1.714E+00	1.277E+00	1.277E+00	6.84
	609.31	3095	46.30	1.136E+00	1.167E+00	1.167E+00	6.72
U-238DHP	63.28	206	3.80*	1.043E+00	1.033E+00	1.033E+00	40.99
	92.59	1159	5.41	2.396E+00	1.773E+00	1.773E+00	12.95

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J475D1AA
Acquisition date : 5-SEP-2007 06:03:32

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	72.74	600	2796	1.17	292.84	285	32	1.67E-02	20.0	1.56E+00	
5	74.92	2069	2362	1.00	301.60	285	32	5.75E-02	5.6	1.67E+00	
5	77.16	2746	2128	0.94	310.60	285	32	7.63E-02	3.8	1.78E+00	
8	84.54	648	2944	1.46	340.30	332	25	1.80E-02	19.9	2.11E+00	
8	87.24	1082	2043	1.05	351.14	332	25	3.01E-02	9.1	2.21E+00	T
0	89.98	761	1912	0.90	362.17	357	11	2.11E-02	11.7	2.30E+00	
0	129.21	394	1944	0.78	519.95	514	13	1.10E-02	23.6	2.85E+00	
0	327.72	381	939	1.36	1318.25	1309	17	1.06E-02	19.1	1.80E+00	T
0	409.23	116	563	0.67	1646.03	1641	12	3.23E-03	41.8	1.54E+00	
0	462.76	483	690	1.22	1861.25	1849	24	1.34E-02	15.1	1.40E+00	T
0	665.41	191	493	0.61	2676.06	2663	25	5.31E-03	32.1	1.06E+00	T
0	727.01	430	361	1.48	2923.71	2914	19	1.19E-02	11.6	9.85E-01	T
0	794.77	320	397	1.70	3196.13	3183	28	8.89E-03	15.8	9.15E-01	T
0	933.76	132	346	1.82	3754.88	3746	22	3.68E-03	31.6	7.97E-01	
0	1377.59	189	108	1.47	5538.80	5528	21	5.26E-03	13.7	5.68E-01	
0	1729.70	134	58	2.21	6953.76	6940	29	3.71E-03	15.0	4.76E-01	

Flags: "T" = Tentatively associated

Sample ID : J475D1AA Acquisition date : 5-SEP-2007 06:03:32

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	5.862E-02	15.12	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.43	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.676E-01	10.66	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.59	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.484E+00	7.75	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.92	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.820E+01	6.72	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	5.330E-01	15.12	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	6.767E-01	16.27	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
SN-126DA	1.00E+05Y	0.00	414.70	97.66	--- Not Found ---		Abun.
			666.33*	99.95	3.586E-02	32.69	
			695.00	99.95	--- Not Found ---		
		% Abundances Found =		33.59			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	8.396E-02	17.15	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.49	328.77	20.50	6.006E+05	20.28	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	4.326E-01	19.51	
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		

Sample ID : J475D1AA Acquisition date : 5-SEP-2007 06:03:32

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1407.95	20.70	--- Not Found ---		Abun.
		% Abundances Found =		10.78			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.190E-01	11.43	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.012E+01	21.77	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.316E+00	13.46	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	4.373E-01	16.04	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.904E-01	10.40	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 11:41:13

Configuration : $DISK1:[GER4.SAMPLE]J475D1AA_050970603.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 : BRC SOIL
Sample date : 31-JUL-2007 10:45:00 Acquisition date : 5-SEP-2007 06:03:32
Sample ID : J475D1AA Sample quantity : 378.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.72 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.316E+01	1.490E+00	1.882E-01	7.139E-03	123.092
TL-208	3.429E-01	2.656E-02	2.133E-02	7.704E-04	16.077
PB-212	1.147E+00	7.697E-02	3.310E-02	1.352E-03	34.654
BI-214	1.167E+00	7.851E-02	3.861E-02	1.395E-03	30.238
PB-214	1.277E+00	8.742E-02	4.129E-02	1.663E-03	30.931
RA-224DA	1.189E+00	7.978E-02	3.431E-02	1.401E-03	34.654
RA-226DA	1.168E+00	7.851E-02	3.861E-02	1.396E-03	30.238
AC-228	1.022E+00	8.878E-02	7.444E-02	3.568E-03	13.723
RA-228DA	1.034E+00	8.984E-02	7.533E-02	3.610E-03	13.723
TH-228DA	9.892E-01	7.662E-02	6.153E-02	2.222E-03	16.077
TH-232DA	1.108E+00	9.581E-02	1.204E-01	5.134E-03	9.205
U-234DA	1.384E+00	1.037E-01	7.692E-02	3.404E-03	17.992
U-238DA	1.277E+00	8.742E-02	4.129E-02	1.663E-03	30.931
U-238DHP	1.033E+00	4.235E-01	9.270E-01	3.934E-02	1.114

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	6.071E-02		7.344E-02	2.524E-01	8.778E-03	0.241
NA-22	-1.465E-02		8.437E-03	2.741E-02	1.011E-03	-0.534
SC-46	2.676E-01	+	2.853E-02	5.965E-02	2.239E-03	4.486
CR-51	5.289E-02		1.102E-01	3.751E-01	1.707E-02	0.141
MN-54	1.527E-02		7.185E-03	2.464E-02	1.107E-03	0.620
CO-57	1.161E-02		4.097E-02	1.358E-01	5.419E-03	0.086
CO-58	-1.039E-03		8.520E-03	2.854E-02	1.245E-03	-0.036
FE-59	1.437E-02		2.454E-02	8.477E-02	3.298E-03	0.170
CO-60	2.176E-03		6.600E-03	2.265E-02	8.744E-04	0.096
ZN-65	2.391E-02		2.061E-02	6.102E-02	2.311E-03	0.392
SE-75	-1.032E-03		9.003E-03	2.971E-02	1.262E-03	-0.035
SR-85	3.089E-02		8.989E-03	2.711E-02	9.666E-04	1.140
Y-88	9.629E-03		6.019E-03	2.262E-02	7.219E-04	0.426
NB-94	-3.100E-03		6.113E-03	2.073E-02	9.718E-04	-0.150

Sample ID : J475D1AA Acquisition date : 5-SEP-2007 06:03:32

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	4.490E-02		1.599E-02	4.761E-02	1.965E-03	0.943
TC-95M	-6.701E-03		9.728E-03	3.248E-02	1.251E-03	-0.206
ZR-95	1.171E-02		1.594E-02	5.438E-02	2.218E-03	0.215
ZRNB-95	8.197E-02		2.301E-02	6.907E-02	2.850E-03	1.187
RH-101	7.966E-03		5.918E-03	2.011E-02	7.666E-04	0.396
RH-102M	-8.167E-03		5.060E-03	1.673E-02	5.810E-04	-0.488
RU-103	3.486E-03		9.828E-03	3.354E-02	1.183E-03	0.104
RU-106DA	-5.057E-02		5.716E-02	1.873E-01	6.765E-03	-0.270
AG-108M	-2.554E-04		5.075E-03	1.682E-02	5.644E-04	-0.015
AG-110M	1.292E-02		9.266E-03	3.237E-02	1.541E-03	0.399
SN-113DA	-2.164E-02		9.263E-03	2.964E-02	9.539E-04	-0.730
SB-124	-2.195E-03		9.117E-03	2.921E-02	1.056E-03	-0.075
SB-125	3.083E-02		1.641E-02	5.560E-02	1.856E-03	0.555
SN-126DA	3.586E-02	+	1.172E-02	2.008E-02	7.262E-04	1.786
I-131	-6.719E-02		1.192E-01	3.972E-01	1.506E-02	-0.169
BA-133	1.550E-02		8.164E-03	2.414E-02	9.546E-04	0.642
CS-134	8.396E-02	+	1.440E-02	2.972E-02	1.273E-03	2.825
CS-137DA	-4.562E-03		7.403E-03	2.107E-02	7.573E-04	-0.216
LA-138	-9.622E-03		8.800E-03	2.955E-02	1.127E-03	-0.326
CE-139	-3.484E-03		6.161E-03	1.997E-02	7.241E-04	-0.174
BA-140	1.792E-02		1.373E-01	4.642E-01	1.665E-02	0.039
BALA-140	-1.787E-01		9.073E-02	2.908E-01	1.060E-02	-0.615
CE-141	-9.770E-03		1.834E-02	6.002E-02	2.294E-03	-0.163
CE-144	-2.357E-02		3.981E-02	1.311E-01	5.312E-03	-0.180
CEPR-144	-4.535E-03		7.917E-02	2.621E-01	1.062E-02	-0.017
PM-144	6.995E-03		5.608E-03	1.905E-02	6.884E-04	0.367
PM-146	4.990E-03		7.193E-03	2.478E-02	8.461E-04	0.201
EU-152	-5.681E-03		1.652E-02	5.546E-02	2.310E-03	-0.102
EU-154	-3.699E-02		2.321E-02	7.570E-02	2.792E-03	-0.489
EU-155	7.931E-02		2.095E-02	7.050E-02	3.069E-03	1.125
HF-181	1.963E-03		1.057E-02	3.600E-02	1.256E-03	0.055
BI-207	-1.636E-03		5.267E-03	1.758E-02	6.341E-04	-0.093
BI-210M	-2.050E-02		1.047E-02	2.835E-02	1.207E-03	-0.723
BI-212	1.316E+00	+	1.771E-01	4.039E-01	1.834E-02	3.258
RA-223	4.373E-01	+	7.016E-02	1.309E-01	5.599E-03	3.342
AC-227DA	7.110E-03		4.788E-02	1.369E-01	5.565E-03	0.052
TH-234DA	3.270E+00		1.112E+00	3.880E+00	1.718E-01	0.843
U-235HP	1.109E-01		3.989E-02	1.325E-01	5.103E-03	0.837
NP-237DA	2.241E-03		1.189E-02	4.047E-02	1.826E-03	0.055
AM-241HP	5.275E-02		3.626E-02	1.208E-01	4.980E-03	0.437

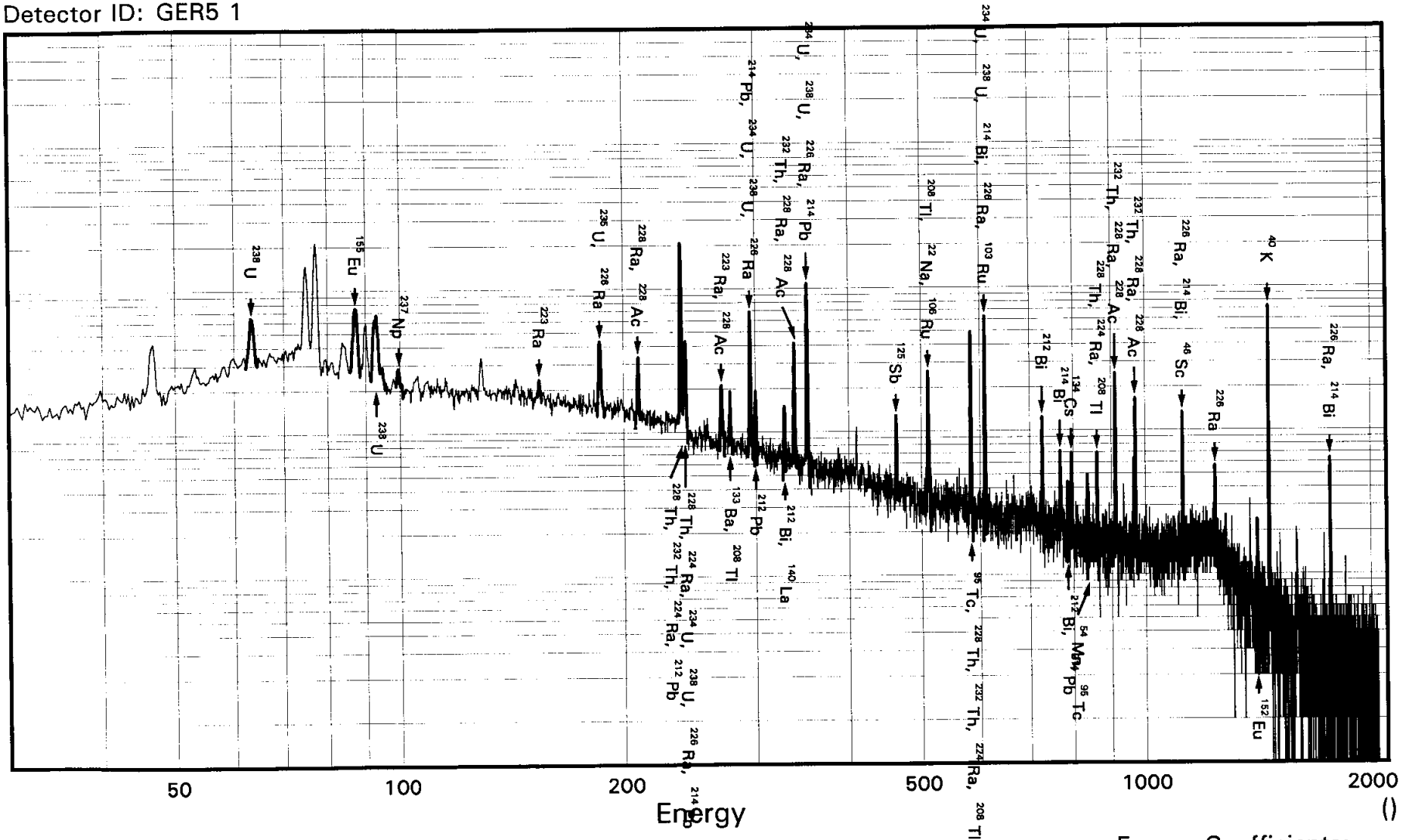
STL Richland WA.

BRC SOIL

Sample ID: J475E1AA

Detector ID: GER5 1

Batch ID: 7232477



Acquisition Start: 5-SEP-2007 06:03:53.56

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: -3.78043E-01

Slope: 2.49328E-01

Quadrature: -3.76308E-09

SAMPLE IDENTIFICATION: J475E1AA

CONFIGURATION ID: GER5:J475E1AA_050970603
TITLE : BRC SOIL
SAMPLE ID : J475E1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 05-SEP-07 06:03:53
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 30-JUL-2007 15:30:00.00
CALIB DATE: 5-SEP-2007 05:28:09.98
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 3.1050E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE: disk

ENERGY OFFSET: -.3780E+00 keV
ENERGY SLOPE: 2.4933E-01 keV/C
ENERGY Q COEFF: -.3763E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 7.3545E-01 keV
FWHM SLOPE: 2.8062E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 60.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 11:43:54

Configuration : RDND06$DKA100:[GER5.SAMPLE]J475E1AA_050970603.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 30-JUL-2007 15:30:00 Acquisition date : 5-SEP-2007 06:03:53
Sample ID : J475E1AA Sample quantity : 310.50 GRAMS
Sample type : disk Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.15 0.0%
Start energy : 19.57 End energy : 2041.87
Sensitivity : 5.00 Gaussian : 60.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.54*	572	2493	0.90	188.20	181	14	1.59E-02	20.2	
2	0	63.34*	690	3208	0.81	255.58	251	10	1.92E-02	16.7	
3	1	74.87*	4104	4180	0.88	301.81	296	21	1.14E-01	3.4	1.33E+00
4	1	77.14*	6812	3518	0.91	310.90	296	21	1.89E-01	2.2	
5	0	84.18	948	3180	1.33	339.16	334	12	2.63E-02	12.3	
6	0	87.20	2398	3134	1.12	351.25	345	12	6.66E-02	5.1	
7	0	89.94	1568	2656	0.95	362.26	357	11	4.35E-02	6.9	
8	0	93.05*	2251	4024	1.55	374.72	368	18	6.25E-02	7.2	
9	0	99.75	301	2011	0.78	401.60	397	10	8.36E-03	28.6	
10	0	129.10	537	2613	1.06	519.31	512	13	1.49E-02	20.1	
11	0	154.20	211	1572	0.77	619.98	616	9	5.87E-03	34.5	
12	0	186.00*	1380	2875	1.32	747.55	738	20	3.83E-02	10.3	
13	0	209.15	873	1628	1.05	840.40	833	13	2.43E-02	10.1	
14	4	238.61*	8632	1275	1.03	958.54	950	29	2.40E-01	1.4	3.48E+00
15	4	241.64	2399	1567	1.72	970.68	950	29	6.66E-02	4.5	
16	0	270.21	856	1369	1.40	1085.27	1078	17	2.38E-02	10.5	
17	0	277.36	467	1235	0.60	1113.94	1107	16	1.30E-02	17.5	
18	0	295.17	3131	1547	1.14	1185.39	1173	23	8.70E-02	3.7	
19	0	299.98	556	891	1.16	1204.70	1198	13	1.54E-02	11.8	
20	0	328.10	452	939	1.22	1317.47	1308	15	1.26E-02	15.5	
21	0	338.31	1710	1047	1.11	1358.44	1350	17	4.75E-02	5.0	
22	0	351.89	5166	995	1.17	1412.91	1403	19	1.43E-01	2.0	
23	0	409.42	298	675	1.23	1643.65	1638	15	8.27E-03	19.9	
24	0	462.89	580	670	1.31	1858.13	1848	20	1.61E-02	11.7	
25	0	510.86*	1091	774	1.55	2050.51	2037	27	3.03E-02	8.8	
26	0	583.22	2651	628	1.29	2340.77	2330	21	7.36E-02	3.1	
27	0	609.30*	3561	630	1.42	2445.39	2431	24	9.89E-02	2.7	
28	0	727.18	590	473	1.38	2918.21	2907	22	1.64E-02	10.3	
29	0	768.33	297	394	1.45	3083.27	3075	18	8.24E-03	14.6	
30	0	772.27	137	229	1.29	3099.08	3093	13	3.81E-03	21.6	
31	0	785.98	158	330	1.36	3154.06	3145	18	4.38E-03	24.4	
32	0	795.22	256	409	1.51	3191.13	3180	20	7.11E-03	17.6	
33	0	835.48	154	271	1.01	3352.60	3345	17	4.28E-03	22.3	
34	0	860.69	320	341	1.53	3453.72	3444	19	8.89E-03	13.0	
35	0	911.17*	1635	462	1.81	3656.21	3642	27	4.54E-02	4.1	
36	0	933.87	187	305	1.33	3747.27	3737	22	5.19E-03	21.5	
37	0	968.06	1373	513	1.66	3884.42	3866	34	3.81E-02	5.0	
38	0	1120.29	777	399	1.54	4495.06	4482	26	2.16E-02	6.9	
39	0	1237.94	283	365	1.69	4967.01	4957	21	7.87E-03	15.5	
40	0	1377.74	146	195	1.10	5527.79	5517	23	4.07E-03	22.5	
41	0	1407.91	127	83	1.61	5648.82	5635	23	3.54E-03	18.1	
42	0	1460.72*	5926	181	1.85	5860.67	5845	31	1.65E-01	1.5	
43	0	1509.68	73	106	1.02	6057.05	6040	25	2.02E-03	34.6	

Sample ID : J475E1AA Acquisition date : 5-SEP-2007 06:03:53

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
44	0	1589.89	269	147	6.11	6378.81	6358	42	7.47E-03	14.1	
45	0	1729.40	159	48	2.47	6938.47	6924	32	4.40E-03	13.6	
46	0	1764.35	622	54	2.44	7078.68	7063	28	1.73E-02	4.9	
47	0	1847.60	125	50	2.73	7412.67	7395	33	3.48E-03	16.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 7-SEP-2007 11:43:55

Configuration : RDND06$DKA100:[GER5.SAMPLE]J475E1AA_050970603.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BRC SOIL
Sample date : 30-JUL-2007 15:30:00
Sample ID : J475E1AA
Sample type : disk
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 5-SEP-2007 06:03:53
Sample quantity : 310.50 GRAMS
Sample geometry : ES200
Elapsed real time: 0 10:00:14.15 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	5926	10.67*	5.413E-01	2.481E+01	2.481E+01	6.23
TL-208	277.35	467	6.80	2.161E+00	7.684E-01	7.684E-01	18.49
	510.84	1091	21.60	1.323E+00	9.234E-01	9.234E-01	10.65
	583.14	2651	84.20*	1.185E+00	6.427E-01	6.427E-01	6.70
	860.37	320	12.46	8.520E-01	7.291E-01	7.291E-01	14.50
PB-212	238.63	8632	44.60*	2.420E+00	1.934E+00	1.934E+00	6.32
	300.09	556	3.41	2.034E+00	1.939E+00	1.939E+00	13.29
BI-214	609.31	3561	46.30*	1.142E+00	1.628E+00	1.628E+00	6.53
	768.36	297	5.04	9.387E-01	1.516E+00	1.516E+00	15.82
	1120.29	777	15.10	6.795E-01	1.832E+00	1.832E+00	9.21
	1764.49	622	15.80	4.621E-01	2.060E+00	2.060E+00	7.68
PB-214	241.98	2399	7.49	2.398E+00	3.230E+00	3.230E+00	7.62
	295.21	3131	19.20	2.060E+00	1.914E+00	1.914E+00	7.09
	351.92	5166	37.20*	1.793E+00	1.873E+00	1.873E+00	6.29
	785.91	158	1.10	9.207E-01	3.765E+00	3.765E+00	25.15
RA-223	154.21	211	5.58	3.231E+00	2.836E-01	2.845E-01	35.07
	269.46	856	13.60*	2.205E+00	6.899E-01	6.921E-01	12.13
	323.87	------	3.88	1.915E+00	------	Line Not Found	------
RA-224DA	238.63	8632	44.60*	2.420E+00	1.934E+00	2.006E+00	6.32
	240.98	2399	3.95	2.398E+00	6.124E+00	6.352E+00	7.62
	583.14	2651	30.25	1.185E+00	1.789E+00	1.856E+00	6.70
	860.37	320	4.48	8.520E-01	2.028E+00	2.103E+00	14.50
RA-226DA	186.21	1380	3.50	2.881E+00	3.310E+00	3.310E+00	11.97
	241.98	2399	7.49	2.398E+00	3.230E+00	3.230E+00	7.62
	295.22	3131	19.20	2.060E+00	1.914E+00	1.914E+00	7.09
	351.92	5166	37.20	1.793E+00	1.873E+00	1.873E+00	6.29
	609.32	3561	46.30*	1.142E+00	1.628E+00	1.628E+00	6.53
	1120.28	777	15.10	6.795E-01	1.832E+00	1.832E+00	9.21
	1238.11	283	5.94	6.236E-01	1.849E+00	1.849E+00	16.60
	1764.49	622	15.80	4.621E-01	2.060E+00	2.060E+00	7.68
AC-228	209.28	873	4.40	2.660E+00	1.803E+00	1.803E+00	11.84
	270.23	856	3.60	2.205E+00	2.606E+00	2.606E+00	12.13
	338.32	1710	11.40	1.850E+00	1.961E+00	1.961E+00	7.75
	911.07	1635	27.70*	8.115E-01	1.758E+00	1.758E+00	7.59
	969.11	1373	16.60	7.704E-01	2.597E+00	2.597E+00	8.08
RA-228DA	209.28	873	4.40	2.660E+00	1.803E+00	1.825E+00	11.84

Sample ID : J475E1AA Acquisition date : 5-SEP-2007 06:03:53

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	1710	11.40	1.850E+00	1.961E+00	1.985E+00	7.75
	911.07	1635	27.70*	8.115E-01	1.758E+00	1.780E+00	7.59
	964.60	------	5.20	7.727E-01	------ Line Not Found		------
	969.11	1373	16.60	7.704E-01	2.597E+00	2.628E+00	8.08
TH-228DA	238.63	8632	44.60	2.420E+00	1.934E+00	2.006E+00	6.32
	240.98	2399	3.95	2.398E+00	6.124E+00	6.352E+00	7.62
	583.14	2651	30.25*	1.185E+00	1.789E+00	1.856E+00	6.70
	860.37	320	4.48	8.520E-01	2.028E+00	2.103E+00	14.50
TH-232DA	238.63	8632	44.60	2.420E+00	1.934E+00	1.934E+00	6.32
	338.32	1710	12.40*	1.850E+00	1.803E+00	1.803E+00	7.75
	583.14	2651	30.25	1.185E+00	1.789E+00	1.789E+00	6.70
	911.07	1635	27.70	8.115E-01	1.758E+00	1.758E+00	7.59
	964.60	------	5.20	7.727E-01	------ Line Not Found		------
	969.11	1373	16.60	7.704E-01	2.597E+00	2.597E+00	8.08
U-234DA	241.98	2399	7.49	2.398E+00	3.230E+00	3.230E+00	7.62
	295.22	3131	19.20*	2.060E+00	1.914E+00	1.914E+00	7.09
	351.92	5166	37.20	1.793E+00	1.873E+00	1.873E+00	6.29
	609.31	3561	46.30	1.142E+00	1.628E+00	1.628E+00	6.53
U-238DA	241.98	2399	7.49	2.398E+00	3.230E+00	3.230E+00	7.62
	295.22	3131	19.20	2.060E+00	1.914E+00	1.914E+00	7.09
	351.92	5166	37.20*	1.793E+00	1.873E+00	1.873E+00	6.29
	609.31	3561	46.30	1.142E+00	1.628E+00	1.628E+00	6.53
U-238DHP	63.28	690	3.80*	3.563E+00	1.233E+00	1.233E+00	17.67
	92.59	2251	5.41	3.876E+00	2.596E+00	2.596E+00	9.38

Nuclide Type: AP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
MN-54	834.83	154	99.98*	8.740E-01	4.267E-02	4.630E-02	23.21

Flag: "*" = Keyline

Sample ID : J475E1AA Acquisition date : 5-SEP-2007 06:03:53

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.54	572	2493	0.90	188.20	181	14	1.59E-02	20.2	2.63E+00	
1	74.87	4104	4180	0.88	301.81	296	21	1.14E-01	3.4	3.82E+00	
1	77.14	6812	3518	0.91	310.90	296	21	1.89E-01	2.2	3.84E+00	
0	84.18	948	3180	1.33	339.16	334	12	2.63E-02	12.3	3.88E+00	
0	87.20	2398	3134	1.12	351.25	345	12	6.66E-02	5.1	3.89E+00	T
0	89.94	1568	2656	0.95	362.26	357	11	4.35E-02	6.9	3.89E+00	
0	99.75	301	2011	0.78	401.60	397	10	8.36E-03	28.6	3.84E+00	T
0	129.10	537	2613	1.06	519.31	512	13	1.49E-02	20.1	3.53E+00	
0	328.10	452	939	1.22	1317.47	1308	15	1.26E-02	15.5	1.90E+00	T
0	409.42	298	675	1.23	1643.65	1638	15	8.27E-03	19.9	1.59E+00	
0	462.89	580	670	1.31	1858.13	1848	20	1.61E-02	11.7	1.43E+00	T
0	727.18	590	473	1.38	2918.21	2907	22	1.64E-02	10.3	9.84E-01	T
0	772.27	137	229	1.29	3099.08	3093	13	3.81E-03	21.6	9.35E-01	
0	795.22	256	409	1.51	3191.13	3180	20	7.11E-03	17.6	9.12E-01	T
0	933.87	187	305	1.33	3747.27	3737	22	5.19E-03	21.5	7.95E-01	
0	1377.74	146	195	1.10	5527.79	5517	23	4.07E-03	22.5	5.69E-01	
0	1407.91	127	83	1.61	5648.82	5635	23	3.54E-03	18.1	5.59E-01	T
0	1509.68	73	106	1.02	6057.05	6040	25	2.02E-03	34.6	5.26E-01	
0	1589.89	269	147	6.11	6378.81	6358	42	7.47E-03	14.1	5.04E-01	
0	1729.40	159	48	2.47	6938.47	6924	32	4.40E-03	13.6	4.70E-01	
0	1847.60	125	50	2.73	7412.67	7395	33	3.48E-03	16.9	4.45E-01	

Flags: "T" = Tentatively associated

Sample ID : J475E1AA Acquisition date : 5-SEP-2007 06:03:53

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	1.140E-01	10.65	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.44	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.750E-01	9.21	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.806E+00	6.70	
			835.13	26.10	2.484E-01	23.21	
		% Abundances Found =		45.56			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.575E+01	6.53	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	1.038E+00	10.65	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	9.681E-01	13.13	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	7.623E-01	18.49	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	8.220E-02	18.68	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.97	328.77	20.50	1.153E+06	16.59	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		

Sample ID : J475E1AA Acquisition date : 5-SEP-2007 06:03:53

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	2.677E-01	19.12	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.895E-01	7.87	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	4.151E+01	18.38	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.206E+00	12.13	
			785.37	1.10	3.765E+00	25.30	
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		68.47			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.145E-01	11.97	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
NP-237DA	2.14E+06Y	0.00	98.44	17.60	1.078E-01	29.20	Abun.
			311.98*	36.00	--- Not Found ---		
		% Abundances Found =		32.84			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 7-SEP-2007 11:43:56

Configuration : RDND06$DKA100:[GER5.SAMPLE]J475E1AA_050970603.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 : BRC SOIL
Sample date : 30-JUL-2007 15:30:00 Acquisition date : 5-SEP-2007 06:03:53
Sample ID : J475E1AA Sample quantity : 310.50 GRAMS
Sample type : disk Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.15 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.481E+01	1.545E+00	2.143E-01	7.305E-03	115.732
MN-54	4.630E-02	1.075E-02	2.884E-02	1.095E-03	1.605
TL-208	6.427E-01	4.308E-02	2.561E-02	8.318E-04	25.095
PB-212	1.934E+00	1.222E-01	4.129E-02	1.484E-03	46.837
BI-214	1.628E+00	1.064E-01	4.816E-02	1.563E-03	33.812
PB-214	1.873E+00	1.177E-01	5.039E-02	1.629E-03	37.168
RA-223	6.921E-01	8.395E-02	1.298E-01	4.551E-03	5.334
RA-224DA	2.006E+00	1.267E-01	4.282E-02	1.540E-03	46.837
RA-226DA	1.628E+00	1.064E-01	4.816E-02	1.563E-03	33.812
AC-228	1.758E+00	1.335E-01	8.786E-02	3.494E-03	20.015
RA-228DA	1.780E+00	1.352E-01	8.893E-02	3.537E-03	20.015
TH-228DA	1.856E+00	1.244E-01	7.395E-02	2.402E-03	25.095
TH-232DA	1.803E+00	1.397E-01	1.526E-01	4.919E-03	11.813
U-234DA	1.914E+00	1.357E-01	9.577E-02	3.234E-03	19.989
U-238DA	1.873E+00	1.177E-01	5.039E-02	1.629E-03	37.168
U-238DHP	1.233E+00	2.179E-01	5.061E-01	1.588E-02	2.436

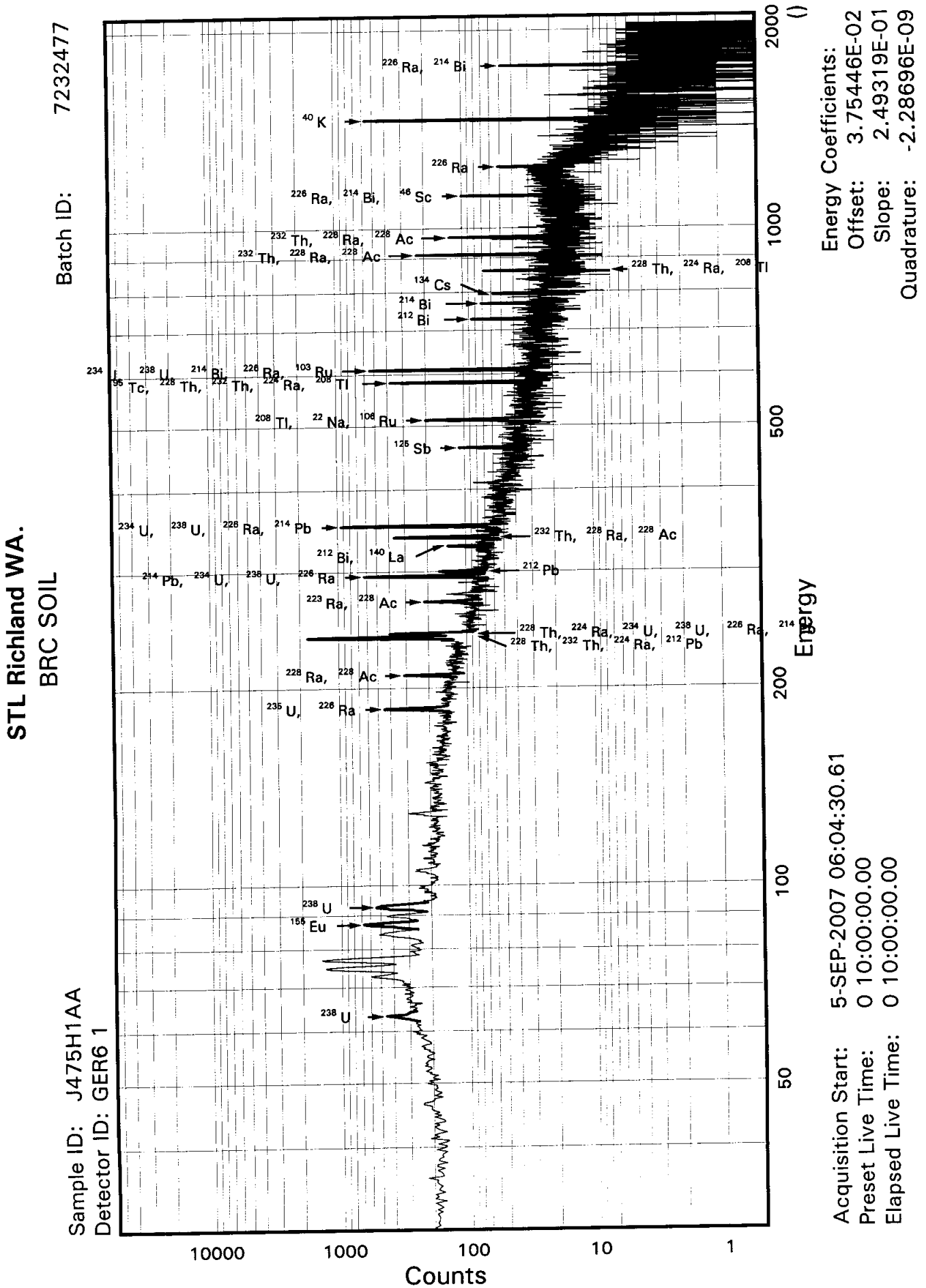
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-9.252E-02		9.475E-02	3.127E-01	1.016E-02	-0.296
NA-22	2.023E-02		9.602E-03	3.352E-02	1.124E-03	0.604
NA-24	8.086E+07		3.903E+09	Half-Life too short		
SC-46	3.750E-01	+	3.455E-02	7.540E-02	2.593E-03	4.974
CR-51	-1.668E-01		1.466E-01	4.759E-01	1.523E-02	-0.350
CO-57	-2.601E-02		5.187E-02	1.690E-01	5.664E-03	-0.154
CO-58	-6.694E-04		1.051E-02	3.534E-02	1.315E-03	-0.019
FE-59	-2.646E-02		2.680E-02	8.906E-02	3.130E-03	-0.297
CO-60	7.117E-03		7.288E-03	2.593E-02	8.852E-04	0.275
ZN-65	1.715E-02		2.250E-02	6.571E-02	2.272E-03	0.261
SE-75	-2.821E-03		1.100E-02	3.647E-02	1.286E-03	-0.077
SR-85	5.244E-02		1.164E-02	3.482E-02	1.117E-03	1.506

Sample ID : J475E1AA Acquisition date : 5-SEP-2007 06:03:53

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
Y-88	2.083E-03		7.567E-03	2.723E-02	8.488E-04	0.077
NB-94	-7.495E-03		7.346E-03	2.411E-02	9.431E-04	-0.311
NB-95	1.738E-02		1.913E-02	5.553E-02	1.984E-03	0.313
TC-95M	2.234E-02		1.311E-02	4.264E-02	1.539E-03	0.524
ZR-95	5.957E-02		2.044E-02	7.112E-02	2.519E-03	0.838
ZRNB-95	2.781E-02		2.751E-02	8.003E-02	2.859E-03	0.348
MO-99	-9.666E-05		6.030E-05	Half-Life too short		
RH-101	2.261E-02		7.877E-03	2.658E-02	9.575E-04	0.851
RH-102M	-1.097E-02		6.390E-03	2.080E-02	6.760E-04	-0.528
RU-103	-2.032E-02		1.267E-02	4.121E-02	1.331E-03	-0.493
RU-106DA	-7.368E-02		7.004E-02	2.346E-01	7.605E-03	-0.314
AG-108M	3.053E-03		6.349E-03	2.152E-02	7.015E-04	0.142
AG-110M	8.299E-03		1.136E-02	3.860E-02	1.527E-03	0.215
SN-113DA	-1.189E-02		1.139E-02	3.794E-02	1.224E-03	-0.313
SB-124	-3.501E-04		1.173E-02	3.497E-02	1.136E-03	-0.010
SB-125	7.757E-03		2.085E-02	7.054E-02	2.298E-03	0.110
SN-126DA	2.320E-02		7.292E-03	2.547E-02	8.230E-04	0.911
I-131	-1.883E-01		1.627E-01	5.432E-01	1.758E-02	-0.347
BA-133	8.210E-04		1.038E-02	3.007E-02	9.728E-04	0.027
CS-134	8.220E-02	+	1.535E-02	3.856E-02	1.416E-03	2.132
CS-137DA	-2.448E-02		8.540E-03	2.729E-02	8.773E-04	-0.897
LA-138	-1.040E-02		9.730E-03	3.267E-02	1.115E-03	-0.318
CE-139	-1.146E-03		7.622E-03	2.572E-02	9.090E-04	-0.045
BA-140	1.812E-01		1.844E-01	6.233E-01	2.012E-02	0.291
BALA-140	-6.541E-02		1.250E-01	3.535E-01	1.184E-02	-0.185
LA-140	-3.057E-02		3.452E-02	Half-Life too short		
CE-141	2.037E-02		2.352E-02	7.715E-02	2.634E-03	0.264
CE-144	-4.235E-02		4.977E-02	1.618E-01	5.388E-03	-0.262
CEPR-144	-8.379E-02		9.954E-02	3.236E-01	1.078E-02	-0.259
PM-144	6.851E-03		7.022E-03	2.428E-02	7.875E-04	0.282
PM-146	3.839E-03		9.281E-03	3.136E-02	1.022E-03	0.122
EU-152	-3.310E-02		2.085E-02	6.930E-02	2.237E-03	-0.478
EU-154	5.793E-02		2.658E-02	9.286E-02	3.115E-03	0.624
EU-155	9.299E-02		2.326E-02	7.677E-02	2.496E-03	1.211
HF-181	4.748E-03		1.360E-02	4.578E-02	1.486E-03	0.104
BI-207	-2.495E-02		8.662E-03	2.175E-02	7.057E-04	-1.147
BI-210M	-2.334E-03		1.258E-02	3.547E-02	1.249E-03	-0.066
BI-212	2.206E+00	+	2.676E-01	5.524E-01	2.281E-02	3.993
AC-227DA	1.738E-01		6.251E-02	1.809E-01	6.511E-03	0.961
TH-234DA	1.304E+00		1.305E+00	4.520E+00	1.718E-01	0.288
U-235HP	1.490E-01		5.019E-02	1.648E-01	5.607E-03	0.904
NP-237DA	-8.580E-04		1.536E-02	5.066E-02	1.653E-03	-0.017
AM-241HP	2.993E-02		1.697E-02	5.473E-02	1.746E-03	0.547


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J475H1AA
Detector ID: GER6 1
Energy Coefficients:
Offset: 3.75446E-02
Slope: 2.49319E-01
Quadrature: -2.28696E-09
Acquisition Start: 5-SEP-2007 06:04:30.61
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
212 Pb
214 Pb, 234 U, 238 U, 226 Ra
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J475H1AA

CONFIGURATION ID: GER6:J475H1AA_050970604
TITLE : BRC SOIL
SAMPLE ID : J475H1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 05-SEP-07 06:04:30
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 30-JUL-2007 15:30:00.00
CALIB DATE: 5-SEP-2007 05:56:33.04
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:16

SAMPLE QUANTITY: 3.6530E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 3.7545E-02 keV
ENERGY SLOPE: 2.4932E-01 keV/C
ENERGY Q COEFF: -.2287E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.6605E-01 keV
FWHM SLOPE: 6.3426E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 40.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 11:45:23

Configuration : $DISK1:[GER6.SAMPLE]J475H1AA_050970604.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 30-JUL-2007 15:30:00 Acquisition date : 5-SEP-2007 06:04:30
Sample ID : J475H1AA Sample quantity : 365.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.00 0.0%
Start energy : 19.98 End energy : 2042.30
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.24*	503	2680	0.60	253.52	249	10	1.40E-02	20.4	
2	3	72.79*	720	4092	1.07	291.81	284	32	2.00E-02	19.2	1.08E+00
3	3	74.79*	3924	3891	1.04	299.83	284	32	1.09E-01	3.9	
4	3	77.02	4772	3373	0.99	308.76	284	32	1.33E-01	2.9	
5	0	84.33*	819	3971	1.40	338.09	330	15	2.28E-02	17.9	
6	0	87.15*	1496	2969	0.98	349.41	344	11	4.16E-02	7.8	
7	0	89.84	1005	2625	1.07	360.21	355	11	2.79E-02	10.4	
8	0	92.76*	1677	3106	1.57	371.90	366	14	4.66E-02	7.7	
9	0	128.98	513	2140	0.94	517.17	511	12	1.43E-02	18.5	
10	0	185.96*	1561	2381	1.21	745.74	738	17	4.34E-02	7.8	
11	0	209.16	863	1525	0.98	838.77	832	13	2.40E-02	9.9	
12	4	238.65*	8007	1714	1.15	957.08	948	32	2.22E-01	1.6	1.83E+00
13	4	241.68	2146	2100	1.71	969.24	948	32	5.96E-02	6.4	
14	0	270.17	711	1650	1.16	1083.48	1073	20	1.97E-02	14.5	
15	0	295.21	2893	1323	1.23	1183.94	1175	18	8.04E-02	3.5	
16	0	300.22	449	1215	1.22	1204.04	1197	16	1.25E-02	18.0	
17	0	327.86	420	1066	1.25	1314.89	1307	16	1.17E-02	18.0	
18	0	338.25	1755	1111	1.27	1356.58	1347	19	4.87E-02	5.1	
19	0	351.89	4976	1162	1.28	1411.27	1399	21	1.38E-01	2.2	
20	0	408.88	310	1084	3.11	1639.85	1630	24	8.61E-03	24.4	
21	0	462.69	502	847	1.74	1855.72	1844	23	1.39E-02	13.5	
22	0	510.65*	1013	1004	2.26	2048.08	2032	34	2.81E-02	10.0	
23	0	583.03	2558	783	1.66	2338.40	2324	26	7.10E-02	3.2	
24	0	609.27	3585	753	1.65	2443.63	2431	25	9.96E-02	2.4	
25	0	727.07	605	475	1.97	2916.14	2904	23	1.68E-02	8.9	
26	0	768.28	249	457	1.66	3081.44	3073	18	6.91E-03	16.8	
27	0	794.67	234	423	1.50	3187.32	3177	21	6.50E-03	18.0	
28	0	860.16	431	361	2.00	3450.00	3436	25	1.20E-02	10.2	
29	0	910.99	1655	546	1.84	3653.87	3637	30	4.60E-02	3.9	
30	0	967.69	1259	692	2.23	3881.31	3858	41	3.50E-02	5.9	
31	0	1119.83	817	572	2.49	4491.59	4472	36	2.27E-02	7.7	
32	0	1238.02	169	560	1.85	4965.67	4951	24	4.68E-03	27.0	
33	0	1460.36*	7070	241	3.23	5857.55	5833	48	1.96E-01	1.4	
34	0	1763.89	568	150	3.62	7075.16	7052	48	1.58E-02	6.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 11:45:24

Configuration : $DISK1:[GER6.SAMPLE]J475H1AA_050970604.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 30-JUL-2007 15:30:00 Acquisition date : 5-SEP-2007 06:04:30
Sample ID : J475H1AA Sample quantity : 365.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.00 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	7070	10.67*	5.925E-01	2.298E+01	2.298E+01	8.40
TL-208	277.35	------	6.80	2.285E+00	------ Line Not Found		------
	510.84	1013	21.60	1.380E+00	6.986E-01	6.986E-01	11.64
	583.14	2558	84.20*	1.240E+00	5.034E-01	5.034E-01	6.78
	860.37	431	12.46	9.142E-01	7.776E-01	7.776E-01	12.28
PB-212	238.63	8007	44.60*	2.572E+00	1.435E+00	1.435E+00	6.43
	300.09	449	3.41	2.142E+00	1.264E+00	1.264E+00	19.01
BI-214	609.31	3585	46.30*	1.197E+00	1.329E+00	1.329E+00	6.45
	768.36	249	5.04	9.982E-01	1.016E+00	1.016E+00	17.98
	1120.29	817	15.10	7.422E-01	1.498E+00	1.498E+00	10.15
	1764.49	568	15.80	4.958E-01	1.491E+00	1.491E+00	9.30
PB-214	241.98	2146	7.49	2.547E+00	2.311E+00	2.311E+00	8.95
	295.21	2893	19.20	2.172E+00	1.426E+00	1.426E+00	7.09
	351.92	4976	37.20*	1.878E+00	1.464E+00	1.464E+00	6.46
	785.91	------	1.10	9.808E-01	------ Line Not Found		------
RA-224DA	238.63	8007	44.60*	2.572E+00	1.435E+00	1.488E+00	6.43
	240.98	2146	3.95	2.547E+00	4.383E+00	4.546E+00	8.95
	583.14	2558	30.25	1.240E+00	1.401E+00	1.453E+00	6.78
	860.37	431	4.48	9.142E-01	2.163E+00	2.243E+00	12.28
RA-226DA	186.21	1561	3.50	3.058E+00	2.998E+00	2.998E+00	9.95
	241.98	2146	7.49	2.547E+00	2.311E+00	2.312E+00	8.95
	295.22	2893	19.20	2.172E+00	1.426E+00	1.426E+00	7.09
	351.92	4976	37.20	1.878E+00	1.464E+00	1.464E+00	6.46
	609.32	3585	46.30*	1.197E+00	1.329E+00	1.329E+00	6.45
	1120.28	817	15.10	7.422E-01	1.498E+00	1.498E+00	10.15
	1238.11	169	5.94	6.834E-01	8.537E-01	8.537E-01	27.99
	1764.49	568	15.80	4.958E-01	1.491E+00	1.491E+00	9.30
AC-228	209.28	863	4.40	2.832E+00	1.424E+00	1.424E+00	11.72
	270.23	711	3.60	2.334E+00	1.739E+00	1.739E+00	15.77
	338.32	1755	11.40	1.941E+00	1.630E+00	1.630E+00	7.97
	911.07	1655	27.70*	8.742E-01	1.405E+00	1.405E+00	8.07
	969.11	1259	16.60	8.338E-01	1.869E+00	1.869E+00	9.11
RA-228DA	209.28	863	4.40	2.832E+00	1.424E+00	1.441E+00	11.72
	338.32	1755	11.40	1.941E+00	1.630E+00	1.650E+00	7.97
	911.07	1655	27.70*	8.742E-01	1.405E+00	1.422E+00	8.07
	964.60	------	5.20	8.359E-01	------ Line Not Found		------

Sample ID : J475H1AA Acquisition date : 5-SEP-2007 06:04:30

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1259	16.60	8.338E-01	1.869E+00	1.892E+00	9.11
TH-228DA	238.63	8007	44.60	2.572E+00	1.435E+00	1.488E+00	6.43
	240.98	2146	3.95	2.547E+00	4.383E+00	4.546E+00	8.95
	583.14	2558	30.25*	1.240E+00	1.401E+00	1.453E+00	6.78
	860.37	431	4.48	9.142E-01	2.163E+00	2.243E+00	12.28
TH-232DA	238.63	8007	44.60	2.572E+00	1.435E+00	1.435E+00	6.43
	338.32	1755	12.40*	1.941E+00	1.499E+00	1.499E+00	7.97
	583.14	2558	30.25	1.240E+00	1.401E+00	1.401E+00	6.78
	911.07	1655	27.70	8.742E-01	1.405E+00	1.405E+00	8.07
	964.60	------	5.20	8.359E-01	------ Line Not Found		------
	969.11	1259	16.60	8.338E-01	1.869E+00	1.869E+00	9.11
U-234DA	241.98	2146	7.49	2.547E+00	2.311E+00	2.311E+00	8.95
	295.22	2893	19.20*	2.172E+00	1.426E+00	1.426E+00	7.09
	351.92	4976	37.20	1.878E+00	1.464E+00	1.464E+00	6.46
	609.31	3585	46.30	1.197E+00	1.329E+00	1.329E+00	6.45
U-238DA	241.98	2146	7.49	2.547E+00	2.311E+00	2.311E+00	8.95
	295.22	2893	19.20	2.172E+00	1.426E+00	1.426E+00	7.09
	351.92	4976	37.20*	1.878E+00	1.464E+00	1.464E+00	6.46
	609.31	3585	46.30	1.197E+00	1.329E+00	1.329E+00	6.45
U-238DHP	63.28	503	3.80*	2.148E+00	1.266E+00	1.266E+00	21.29
	92.59	1677	5.41	3.367E+00	1.892E+00	1.892E+00	10.19

Flag: "*" = Keyline

Unidentified Energy Lines

Sample ID : J475H1AA
Acquisition date : 5-SEP-2007 06:04:30

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	72.79	720	4092	1.07	291.81	284	32	2.00E-02	19.2	2.69E+00	
3	74.79	3924	3891	1.04	299.83	284	32	1.09E-01	3.9	2.79E+00	
3	77.02	4772	3373	0.99	308.76	284	32	1.33E-01	2.9	2.89E+00	
0	84.33	819	3971	1.40	338.09	330	15	2.28E-02	17.9	3.15E+00	
0	87.15	1496	2969	0.98	349.41	344	11	4.16E-02	7.8	3.24E+00	T
0	89.84	1005	2625	1.07	360.21	355	11	2.79E-02	10.4	3.30E+00	
0	128.98	513	2140	0.94	517.17	511	12	1.43E-02	18.5	3.56E+00	
0	327.86	420	1066	1.25	1314.89	1307	16	1.17E-02	18.0	1.99E+00	T
0	408.88	310	1084	3.11	1639.85	1630	24	8.61E-03	24.4	1.66E+00	
0	462.69	502	847	1.74	1855.72	1844	23	1.39E-02	13.5	1.50E+00	T
0	727.07	605	475	1.97	2916.14	2904	23	1.68E-02	8.9	1.04E+00	T
0	794.67	234	423	1.50	3187.32	3177	21	6.50E-03	18.0	9.72E-01	T

Flags: "T" = Tentatively associated

Sample ID : J475H1AA Acquisition date : 5-SEP-2007 06:04:30

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	8.626E-02	11.64	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.44	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.066E-01	10.15	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.198E+00	6.78	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.101E+01	6.45	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	7.850E-01	11.64	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	6.831E-01	14.77	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	5.994E-02	19.11	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.97	328.77	20.50	8.670E+05	19.03	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.119E-01	10.28	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.120E+01	20.61	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.812E+00	11.12	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		

Sample ID : J475H1AA
Acquisition date : 5-SEP-2007 06:04:30

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	1078.62	0.56	--- Not Found ---		Abun.
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	4.617E-01	15.77	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.943E-01	9.95	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 11:45:27

Configuration : $DISK1:[GER6.SAMPLE]J475H1AA_050970604.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 : BRC SOIL
Sample date : 30-JUL-2007 15:30:00
Sample ID : J475H1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 5-SEP-2007 06:04:30
Sample quantity : 365.30 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:16.00 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.298E+01	1.929E+00	2.071E-01	1.367E-02	110.996
TL-208	5.034E-01	3.411E-02	2.446E-02	7.963E-04	20.583
PB-212	1.435E+00	9.219E-02	3.467E-02	1.287E-03	41.374
BI-214	1.329E+00	8.570E-02	4.489E-02	1.473E-03	29.603
PB-214	1.464E+00	9.458E-02	4.384E-02	1.506E-03	33.398
RA-224DA	1.488E+00	9.563E-02	3.597E-02	1.335E-03	41.374
RA-226DA	1.329E+00	8.570E-02	4.489E-02	1.473E-03	29.602
AC-228	1.405E+00	1.133E-01	8.635E-02	4.282E-03	16.269
RA-228DA	1.422E+00	1.147E-01	8.740E-02	4.334E-03	16.269
TH-228DA	1.453E+00	9.847E-02	7.061E-02	2.299E-03	20.583
TH-232DA	1.499E+00	1.194E-01	1.340E-01	4.645E-03	11.182
U-234DA	1.426E+00	1.010E-01	8.246E-02	2.978E-03	17.287
U-238DA	1.464E+00	9.458E-02	4.384E-02	1.506E-03	33.398
U-238DHP	1.266E+00	2.695E-01	5.931E-01	2.120E-02	2.134

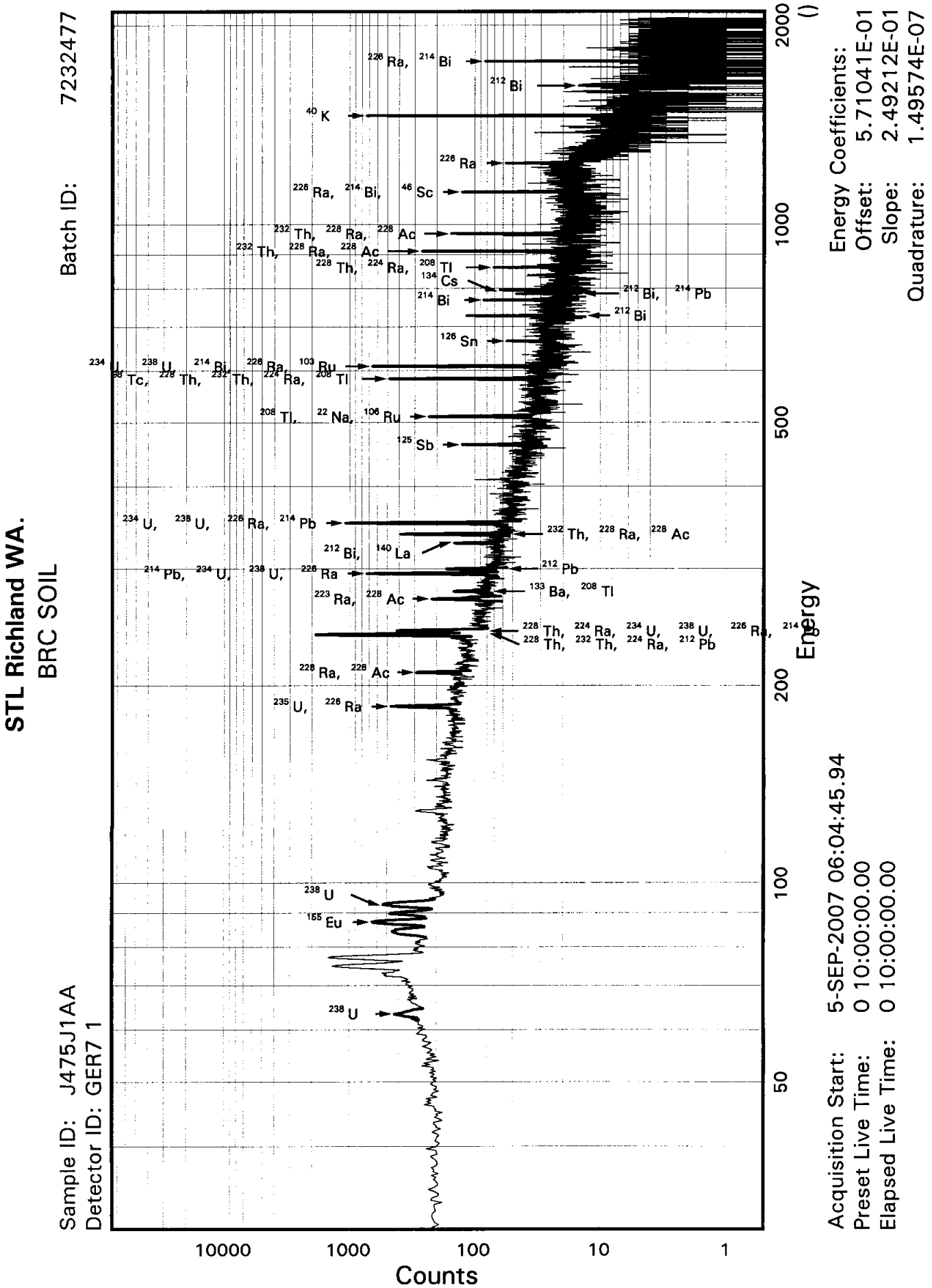
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	1.225E-01		8.418E-02	2.872E-01	9.290E-03	0.426
NA-22	-1.410E-02		9.460E-03	3.083E-02	1.868E-03	-0.457
SC-46	3.066E-01	+	3.114E-02	6.308E-02	2.707E-03	4.862
CR-51	-1.917E-01		1.267E-01	4.098E-01	1.431E-02	-0.468
MN-54	-6.191E-03		8.304E-03	2.783E-02	1.255E-03	-0.223
CO-57	7.660E-03		3.954E-02	1.315E-01	4.927E-03	0.058
CO-58	-4.459E-02		1.044E-02	3.104E-02	1.346E-03	-1.436
FE-59	-3.008E-02		2.665E-02	8.767E-02	3.840E-03	-0.343
CO-60	6.068E-04		8.099E-03	2.774E-02	2.030E-03	0.022
ZN-65	7.347E-02		2.519E-02	7.351E-02	3.170E-03	0.999
SE-75	1.334E-02		1.011E-02	3.110E-02	1.149E-03	0.429
SR-85	9.631E-02		1.194E-02	3.429E-02	1.079E-03	2.809
Y-88	-3.162E-03		7.718E-03	2.650E-02	8.979E-04	-0.119
NB-94	1.787E-02		7.015E-03	2.432E-02	1.162E-03	0.735

Sample ID : J475H1AA Acquisition date : 5-SEP-2007 06:04:30

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	9.390E-02		1.988E-02	5.830E-02	2.341E-03	1.611
TC-95M	3.873E-03		1.057E-02	3.387E-02	1.245E-03	0.114
ZR-95	2.759E-02		1.921E-02	6.556E-02	2.591E-03	0.421
ZRNB-95	1.372E-01		2.861E-02	8.389E-02	3.369E-03	1.636
RH-101	1.393E-02		6.221E-03	2.090E-02	7.661E-04	0.667
RH-102M	-2.807E-03		5.826E-03	1.948E-02	6.308E-04	-0.144
RU-103	-1.246E-02		1.235E-02	4.074E-02	1.301E-03	-0.306
RU-106DA	1.321E-01		6.658E-02	2.282E-01	7.511E-03	0.579
AG-108M	-2.826E-03		5.776E-03	1.948E-02	6.403E-04	-0.145
AG-110M	1.260E-02		1.084E-02	3.718E-02	1.815E-03	0.339
SN-113DA	-4.413E-03		1.029E-02	3.414E-02	1.121E-03	-0.129
SB-124	4.750E-03		1.112E-02	3.251E-02	1.065E-03	0.146
SB-125	-1.611E-02		1.867E-02	6.103E-02	2.008E-03	-0.264
SN-126DA	2.770E-02		6.818E-03	2.329E-02	7.781E-04	1.190
I-131	-1.663E-01		1.439E-01	4.762E-01	1.617E-02	-0.349
BA-133	4.125E-03		9.295E-03	2.669E-02	9.135E-04	0.155
CS-134	5.994E-02	+	1.145E-02	3.316E-02	1.402E-03	1.808
CS-137DA	-1.764E-02		8.059E-03	2.579E-02	8.539E-04	-0.684
LA-138	-5.191E-03		1.020E-02	3.444E-02	2.327E-03	-0.151
CE-139	-3.344E-03		5.934E-03	2.002E-02	7.207E-04	-0.167
BA-140	-2.925E-02		1.665E-01	5.526E-01	1.763E-02	-0.053
BALA-140	-4.429E-01		1.243E-01	3.735E-01	2.108E-02	-1.186
CE-141	-1.183E-03		1.833E-02	6.047E-02	2.224E-03	-0.020
CE-144	-5.014E-02		3.876E-02	1.273E-01	4.803E-03	-0.394
CEPR-144	-9.887E-02		7.753E-02	2.547E-01	9.609E-03	-0.388
PM-144	-4.234E-03		6.558E-03	2.181E-02	7.173E-04	-0.194
PM-146	6.603E-03		8.420E-03	2.868E-02	9.378E-04	0.230
EU-152	-1.028E-02		1.981E-02	6.340E-02	2.190E-03	-0.162
EU-154	-4.022E-02		2.612E-02	8.502E-02	5.150E-03	-0.473
EU-155	1.248E-01		2.049E-02	6.686E-02	2.724E-03	1.866
HF-181	-5.922E-04		1.215E-02	4.079E-02	1.316E-03	-0.015
BI-207	-1.344E-03		6.126E-03	2.067E-02	6.695E-04	-0.065
BI-210M	-2.589E-03		1.053E-02	2.993E-02	1.105E-03	-0.086
BI-212	1.812E+00	+	2.015E-01	4.718E-01	2.070E-02	3.841
RA-223	4.617E-01	+	7.279E-02	1.363E-01	5.022E-03	3.388
AC-227DA	4.084E-01		5.927E-02	1.621E-01	6.015E-03	2.520
TH-234DA	6.087E+00		1.290E+00	4.442E+00	2.101E-01	1.370
U-235HP	8.184E-02		3.893E-02	1.295E-01	4.779E-03	0.632
NP-237DA	4.460E-04		1.338E-02	4.430E-02	1.567E-03	0.010
AM-241HP	2.867E-02		1.978E-02	6.778E-02	2.353E-03	0.423


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J475J1AA
Detector ID: GER7 1
Energy Coefficients:
Offset: 5.71041E-01
Slope: 2.49212E-01
Quadrature: 1.49574E-07
Acquisition Start: 5-SEP-2007 06:04:45.94
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
212 Bi
40 K
226 Ra
228 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi, 214 Pb
212 Bi
126 Sn
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
99 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J475J1AA

CONFIGURATION ID: GER7:J475J1AA_050970604
TITLE : BRC SOIL
SAMPLE ID : J475J1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 05-SEP-07 06:04:45
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 30-JUL-2007 15:00:00.00
CALIB DATE: 5-SEP-2007 05:28:46.22
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 3.2580E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 5.7104E-01 keV
ENERGY SLOPE: 2.4921E-01 keV/C
ENERGY Q COEFF: 1.4957E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.9903E-01 keV
FWHM SLOPE: 3.5544E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 11:47:40

Configuration : $DISK1:[GER7.SAMPLE]J475J1AA_050970604.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 30-JUL-2007 15:00:00 Acquisition date : 5-SEP-2007 06:04:45
Sample ID : J475J1AA Sample quantity : 325.80 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.08 0.0%
Start energy : 20.51 End energy : 2052.16
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.46*	540	2993	1.01	252.31	247	11	1.50E-02	21.0	
2	1	72.95*	294	4162	0.99	290.36	284	30	8.15E-03	45.5	5.03E+00
3	1	74.90*	3536	3887	1.00	298.22	284	30	9.82E-02	4.1	
4	1	77.18	4951	3499	1.00	307.37	284	30	1.38E-01	2.9	
5	6	84.49*	1010	3412	1.52	336.65	330	23	2.80E-02	13.3	1.95E+00
6	6	87.24*	1811	2765	1.10	347.68	330	23	5.03E-02	6.3	
7	4	89.98	926	2233	0.89	358.68	354	24	2.57E-02	9.6	1.42E+00
8	4	92.92*	1661	3151	1.31	370.49	354	24	4.61E-02	7.9	
9	0	129.09	630	2027	1.16	515.56	510	12	1.75E-02	14.9	
10	0	185.98*	1566	2214	1.28	743.65	735	16	4.35E-02	7.4	
11	0	209.32	735	1481	0.96	837.20	831	12	2.04E-02	11.1	
12	4	238.60*	8206	1421	1.08	954.56	942	34	2.28E-01	1.5	2.25E+00
13	4	241.61	2323	1816	1.69	966.63	942	34	6.45E-02	5.7	
14	0	270.32	1043	1382	1.27	1081.72	1072	20	2.90E-02	9.3	
15	0	277.27	343	1003	0.82	1109.56	1104	13	9.53E-03	19.7	
16	0	295.18	3078	1399	1.14	1181.34	1172	18	8.55E-02	3.4	
17	0	300.05	519	907	1.12	1200.85	1194	14	1.44E-02	13.1	
18	0	327.86	369	878	1.31	1312.26	1306	13	1.02E-02	17.4	
19	0	338.22	1681	933	1.07	1353.78	1345	16	4.67E-02	4.7	
20	0	351.82*	5210	1041	1.16	1408.25	1398	20	1.45E-01	2.1	
21	0	409.37	176	657	0.84	1638.73	1632	13	4.88E-03	31.0	
22	0	462.75	572	683	1.13	1852.48	1841	21	1.59E-02	12.2	
23	0	510.70*	684	892	1.70	2044.47	2033	24	1.90E-02	14.2	
24	0	583.04*	2699	593	1.38	2333.97	2323	21	7.50E-02	3.1	
25	0	609.19*	3787	549	1.42	2438.60	2428	22	1.05E-01	2.3	
26	0	665.26	129	478	1.89	2662.89	2654	18	3.59E-03	35.0	
27	0	727.15	629	476	1.50	2910.40	2898	24	1.75E-02	8.7	
28	0	768.08	406	323	1.27	3074.09	3065	17	1.13E-02	10.0	
29	0	785.26	172	309	1.25	3142.74	3134	17	4.78E-03	21.4	
30	0	794.83	317	477	1.64	3181.02	3168	27	8.81E-03	17.1	
31	0	860.39	343	352	1.40	3443.04	3432	24	9.53E-03	13.4	
32	0	911.06*	1696	460	1.68	3645.48	3633	24	4.71E-02	3.8	
33	0	934.37	245	315	1.70	3738.61	3728	24	6.81E-03	17.5	
34	0	968.06	1424	534	1.93	3873.18	3853	37	3.95E-02	5.1	
35	0	1120.24	807	407	1.72	4480.78	4470	23	2.24E-02	6.5	
36	0	1155.03	153	322	1.15	4619.63	4609	22	4.24E-03	26.7	
37	0	1237.67	272	453	1.81	4949.32	4938	24	7.56E-03	18.5	
38	0	1377.65	233	159	1.75	5507.51	5493	29	6.48E-03	14.6	
39	0	1460.61*	6157	192	2.07	5838.16	5820	36	1.71E-01	1.5	
40	0	1620.20	80	77	2.76	6473.85	6462	22	2.22E-03	24.0	
41	0	1764.37	636	77	1.66	7047.70	7032	29	1.77E-02	4.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 11:47:41

Configuration : $DISK1:[GER7.SAMPLE]J475J1AA_050970604.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 30-JUL-2007 15:00:00 Acquisition date : 5-SEP-2007 06:04:45
Sample ID : J475J1AA Sample quantity : 325.80 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.08 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	6157	10.67*	5.447E-01	2.441E+01	2.441E+01	8.19
TL-208	277.35	343	6.80	1.993E+00	5.832E-01	5.832E-01	20.88
	510.84	684	21.60	1.252E+00	5.831E-01	5.831E-01	15.41
	583.14	2699	84.20*	1.132E+00	6.527E-01	6.527E-01	6.77
	860.37	343	12.46	8.376E-01	7.574E-01	7.574E-01	15.08
PB-212	238.63	8206	44.60*	2.224E+00	1.906E+00	1.906E+00	7.33
	300.09	519	3.41	1.879E+00	1.867E+00	1.867E+00	14.63
BI-214	609.31	3787	46.30*	1.094E+00	1.722E+00	1.722E+00	6.49
	768.36	406	5.04	9.154E-01	2.028E+00	2.028E+00	11.93
	1120.29	807	15.10	6.780E-01	1.816E+00	1.816E+00	9.23
	1764.49	636	15.80	4.658E-01	1.992E+00	1.992E+00	8.11
PB-214	241.98	2323	7.49	2.204E+00	3.242E+00	3.242E+00	9.12
	295.21	3078	19.20	1.902E+00	1.942E+00	1.942E+00	7.36
	351.92	5210	37.20*	1.665E+00	1.939E+00	1.939E+00	6.55
	785.91	172	1.10	8.997E-01	4.003E+00	4.003E+00	22.41
RA-224DA	238.63	8206	44.60*	2.224E+00	1.906E+00	1.977E+00	7.33
	240.98	2323	3.95	2.204E+00	6.148E+00	6.378E+00	9.12
	583.14	2699	30.25	1.132E+00	1.817E+00	1.884E+00	6.77
	860.37	343	4.48	8.376E-01	2.106E+00	2.185E+00	15.08
RA-226DA	186.21	1566	3.50	2.621E+00	3.935E+00	3.935E+00	10.51
	241.98	2323	7.49	2.204E+00	3.242E+00	3.243E+00	9.12
	295.22	3078	19.20	1.902E+00	1.942E+00	1.942E+00	7.36
	351.92	5210	37.20	1.665E+00	1.939E+00	1.939E+00	6.55
	609.32	3787	46.30*	1.094E+00	1.722E+00	1.722E+00	6.49
	1120.28	807	15.10	6.780E-01	1.816E+00	1.816E+00	9.23
	1238.11	272	5.94	6.248E-01	1.689E+00	1.689E+00	19.82
	1764.49	636	15.80	4.658E-01	1.992E+00	1.992E+00	8.11
AC-228	209.28	735	4.40	2.433E+00	1.582E+00	1.582E+00	13.36
	270.23	1043	3.60	2.031E+00	3.288E+00	3.288E+00	11.53
	338.32	1681	11.40	1.716E+00	1.981E+00	1.981E+00	7.80
	911.07	1696	27.70*	8.005E-01	1.763E+00	1.763E+00	8.10
	969.11	1424	16.60	7.628E-01	2.591E+00	2.591E+00	8.65
RA-228DA	209.28	735	4.40	2.433E+00	1.582E+00	1.601E+00	13.36
	338.32	1681	11.40	1.716E+00	1.981E+00	2.005E+00	7.80
	911.07	1696	27.70*	8.005E-01	1.763E+00	1.784E+00	8.10
	964.60	------	5.20	7.650E-01	------ Line Not Found		------

Sample ID : J475J1AA Acquisition date : 5-SEP-2007 06:04:45

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1424	16.60	7.628E-01	2.591E+00	2.623E+00	8.65
TH-228DA	238.63	8206	44.60	2.224E+00	1.906E+00	1.977E+00	7.33
	240.98	2323	3.95	2.204E+00	6.148E+00	6.378E+00	9.12
	583.14	2699	30.25*	1.132E+00	1.817E+00	1.884E+00	6.77
	860.37	343	4.48	8.376E-01	2.106E+00	2.185E+00	15.08
TH-232DA	238.63	8206	44.60	2.224E+00	1.906E+00	1.906E+00	7.33
	338.32	1681	12.40*	1.716E+00	1.821E+00	1.821E+00	7.80
	583.14	2699	30.25	1.132E+00	1.817E+00	1.817E+00	6.77
	911.07	1696	27.70	8.005E-01	1.763E+00	1.763E+00	8.10
	964.60	------	5.20	7.650E-01	------ Line Not Found		------
	969.11	1424	16.60	7.628E-01	2.591E+00	2.591E+00	8.65
U-234DA	241.98	2323	7.49	2.204E+00	3.242E+00	3.242E+00	9.12
	295.22	3078	19.20*	1.902E+00	1.942E+00	1.942E+00	7.36
	351.92	5210	37.20	1.665E+00	1.939E+00	1.939E+00	6.55
	609.31	3787	46.30	1.094E+00	1.722E+00	1.722E+00	6.49
U-238DA	241.98	2323	7.49	2.204E+00	3.242E+00	3.242E+00	9.12
	295.22	3078	19.20	1.902E+00	1.942E+00	1.942E+00	7.36
	351.92	5210	37.20*	1.665E+00	1.939E+00	1.939E+00	6.55
	609.31	3787	46.30	1.094E+00	1.722E+00	1.722E+00	6.49
U-238DHP	63.28	540	3.80*	1.824E+00	1.797E+00	1.797E+00	21.91
	92.59	1661	5.41	2.916E+00	2.426E+00	2.426E+00	10.05

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
BI-212	288.07	------	0.31	1.937E+00	------ Line Not Found		------
	327.96	369	0.14	1.757E+00	3.479E+01	3.479E+01	20.06
	452.83	------	0.31	1.373E+00	------ Line Not Found		------
	727.33	629	6.58*	9.551E-01	2.306E+00	2.306E+00	11.03
	785.37	172	1.10	8.997E-01	4.003E+00	4.003E+00	22.58
	893.41	------	0.38	8.130E-01	------ Line Not Found		------
	952.12	------	0.17	7.730E-01	------ Line Not Found		------
	1078.62	------	0.56	6.992E-01	------ Line Not Found		------
	1512.70	------	0.29	5.291E-01	------ Line Not Found		------
	1620.50	80	1.49	4.998E-01	2.478E+00	2.478E+00	25.28
	1806.00	------	0.09	4.570E-01	------ Line Not Found		------

Flag: "*" = Keyline

Sample ID : J475J1AA Acquisition date : 5-SEP-2007 06:04:45

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	72.95	294	4162	0.99	290.36	284	30	8.15E-03	45.5	2.32E+00	
1	74.90	3536	3887	1.00	298.22	284	30	9.82E-02	4.1	2.40E+00	
1	77.18	4951	3499	1.00	307.37	284	30	1.38E-01	2.9	2.49E+00	
6	84.49	1010	3412	1.52	336.65	330	23	2.80E-02	13.3	2.73E+00	
6	87.24	1811	2765	1.10	347.68	330	23	5.03E-02	6.3	2.80E+00	T
4	89.98	926	2233	0.89	358.68	354	24	2.57E-02	9.6	2.86E+00	
0	129.09	630	2027	1.16	515.56	510	12	1.75E-02	14.9	3.05E+00	
0	409.37	176	657	0.84	1638.73	1632	13	4.88E-03	31.0	1.48E+00	
0	462.75	572	683	1.13	1852.48	1841	21	1.59E-02	12.2	1.35E+00	T
0	665.26	129	478	1.89	2662.89	2654	18	3.59E-03	35.0	1.02E+00	T
0	794.83	317	477	1.64	3181.02	3168	27	8.81E-03	17.1	8.91E-01	T
0	934.37	245	315	1.70	3738.61	3728	24	6.81E-03	17.5	7.85E-01	
0	1155.03	153	322	1.15	4619.63	4609	22	4.24E-03	26.7	6.61E-01	
0	1377.65	233	159	1.75	5507.51	5493	29	6.48E-03	14.6	5.72E-01	

Flags: "T" = Tentatively associated

Sample ID : J475J1AA Acquisition date : 5-SEP-2007 06:04:45

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	7.201E-02	15.41	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.44	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.719E-01	9.23	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.851E+00	6.77	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.725E+01	6.49	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	6.553E-01	15.41	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	9.679E-01	13.58	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
SN-126DA	1.00E+05Y	0.00	414.70	97.66	--- Not Found ---		Abun.
			666.33*	99.95	2.910E-02	35.49	
			695.00	99.95	--- Not Found ---		
		% Abundances Found =		33.59			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	5.786E-01	20.88	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	9.928E-02	18.35	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.98	328.77	20.50	9.754E+05	18.44	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			

Sample ID : J475J1AA Acquisition date : 5-SEP-2007 06:04:45

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.890E-01	8.83	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	8.731E-01	11.53	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.550E-01	10.51	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 11:47:43

Configuration : $DISK1:[GER7.SAMPLE]J475J1AA_050970604.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 : BRC SOIL
Sample date : 30-JUL-2007 15:00:00 Acquisition date : 5-SEP-2007 06:04:45
Sample ID : J475J1AA Sample quantity : 325.80 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.08 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.441E+01	1.999E+00	2.337E-01	1.477E-02	104.440
TL-208	6.527E-01	4.418E-02	2.667E-02	8.962E-04	24.476
BI-212	2.306E+00	2.543E-01	3.567E-01	1.617E-02	6.466
PB-212	1.906E+00	1.397E-01	4.116E-02	2.118E-03	46.311
BI-214	1.722E+00	1.118E-01	4.934E-02	1.682E-03	34.911
PB-214	1.939E+00	1.270E-01	5.242E-02	1.911E-03	36.977
RA-224DA	1.977E+00	1.449E-01	4.270E-02	2.197E-03	46.311
RA-226DA	1.722E+00	1.118E-01	4.934E-02	1.682E-03	34.910
AC-228	1.763E+00	1.428E-01	9.743E-02	4.965E-03	18.093
RA-228DA	1.784E+00	1.445E-01	9.862E-02	5.026E-03	18.093
TH-228DA	1.884E+00	1.275E-01	7.699E-02	2.587E-03	24.476
TH-232DA	1.821E+00	1.420E-01	1.581E-01	5.774E-03	11.520
U-234DA	1.942E+00	1.430E-01	9.862E-02	4.163E-03	19.692
U-238DA	1.939E+00	1.270E-01	5.242E-02	1.911E-03	36.977
U-238DHP	1.797E+00	3.936E-01	8.544E-01	2.994E-02	2.103

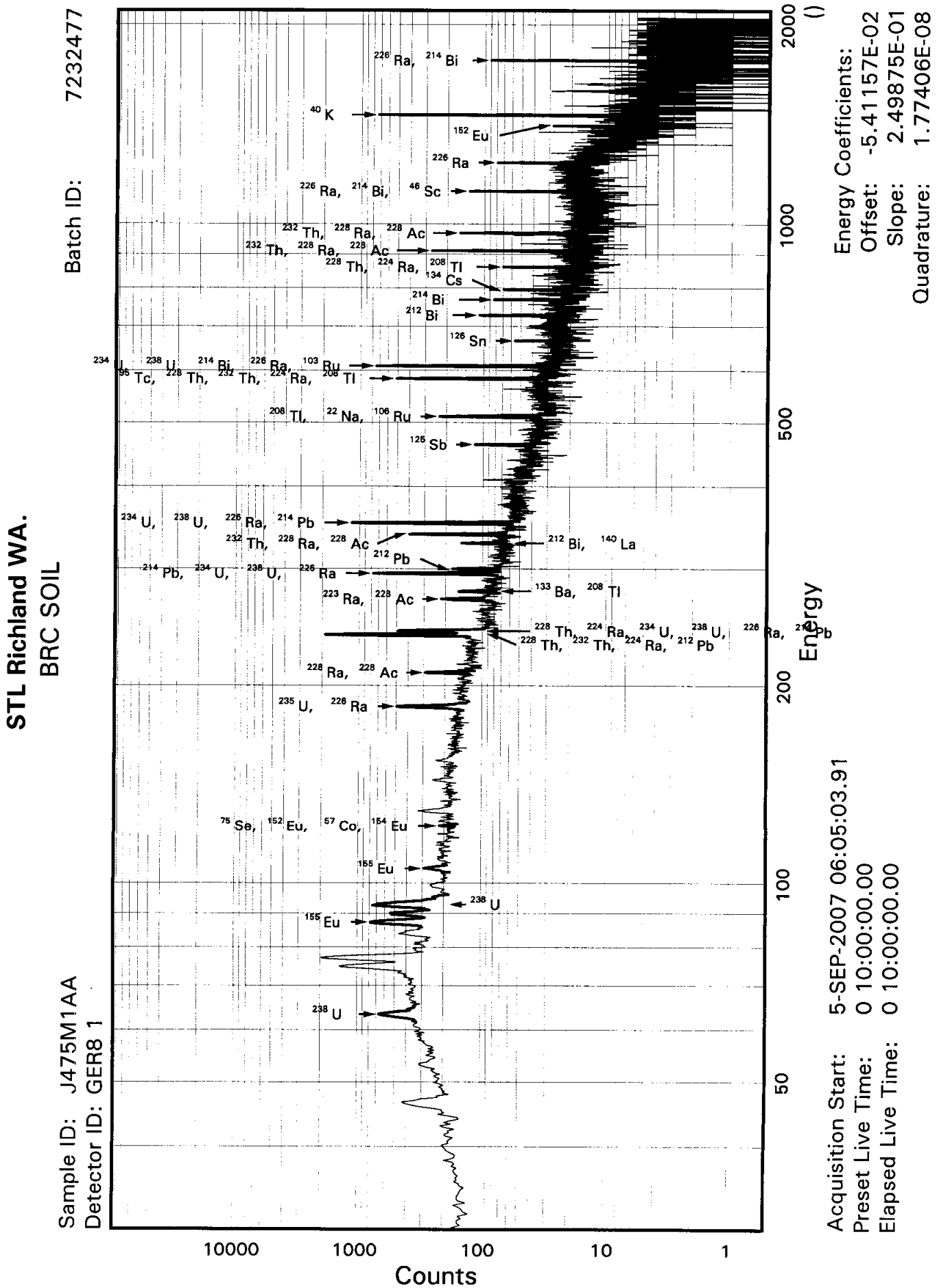
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.244E-01		9.972E-02	3.257E-01	1.098E-02	-0.382
NA-22	4.358E-03		9.455E-03	3.225E-02	1.861E-03	0.135
SC-46	3.719E-01	+	3.432E-02	7.520E-02	3.132E-03	4.945
CR-51	-1.123E-01		1.492E-01	4.873E-01	1.779E-02	-0.231
MN-54	6.704E-03		8.685E-03	2.982E-02	1.392E-03	0.225
CO-57	2.277E-02		5.173E-02	1.720E-01	7.764E-03	0.132
CO-58	-1.648E-02		1.059E-02	3.494E-02	1.571E-03	-0.472
FE-59	-6.085E-02		2.854E-02	9.269E-02	3.973E-03	-0.657
CO-60	5.912E-03		7.767E-03	2.683E-02	1.871E-03	0.220
ZN-65	-2.475E-02		2.374E-02	6.597E-02	2.767E-03	-0.375
SE-75	1.968E-02		1.162E-02	3.767E-02	1.803E-03	0.522
SR-85	5.049E-02		1.164E-02	3.462E-02	1.111E-03	1.458
Y-88	1.118E-02		8.018E-03	2.960E-02	9.953E-04	0.378

Sample ID : J475J1AA Acquisition date : 5-SEP-2007 06:04:45

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	6.085E-03		7.413E-03	2.550E-02	1.258E-03	0.239
NB-95	8.435E-02		2.015E-02	6.121E-02	2.559E-03	1.378
TC-95M	1.440E-02		1.251E-02	4.245E-02	2.320E-03	0.339
ZR-95	4.361E-02		2.023E-02	6.925E-02	2.852E-03	0.630
ZRNB-95	1.182E-01		2.910E-02	8.831E-02	3.692E-03	1.338
RH-101	1.715E-02		7.733E-03	2.623E-02	1.444E-03	0.654
RH-102M	6.144E-03		6.732E-03	2.271E-02	7.676E-04	0.271
RU-103	2.174E-03		1.286E-02	4.294E-02	1.412E-03	0.051
RU-106DA	-3.813E-02		7.131E-02	2.390E-01	8.196E-03	-0.160
AG-108M	3.302E-03		6.551E-03	2.213E-02	7.764E-04	0.149
AG-110M	-1.728E-03		1.150E-02	3.890E-02	1.958E-03	-0.044
SN-113DA	-2.910E-02		1.162E-02	3.751E-02	1.343E-03	-0.776
SB-124	1.242E-03		1.140E-02	3.617E-02	1.229E-03	0.034
SB-125	6.508E-03		2.090E-02	7.044E-02	2.481E-03	0.092
SN-126DA	2.910E-02	+	1.033E-02	2.675E-02	9.408E-04	1.088
I-131	1.092E-01		1.681E-01	5.733E-01	2.082E-02	0.191
BA-133	-5.238E-03		1.048E-02	2.998E-02	1.092E-03	-0.175
CS-134	9.928E-02	+	1.822E-02	3.774E-02	1.657E-03	2.631
CS-137DA	1.225E-02		9.445E-03	2.763E-02	9.636E-04	0.443
LA-138	1.147E-03		1.115E-02	3.868E-02	2.499E-03	0.030
CE-139	-1.487E-02		7.896E-03	2.525E-02	1.432E-03	-0.589
BA-140	3.268E-02		1.820E-01	6.226E-01	2.032E-02	0.052
BALA-140	-3.511E-01		1.253E-01	3.858E-01	2.094E-02	-0.910
CE-141	-1.355E-02		2.351E-02	7.725E-02	3.832E-03	-0.175
CE-144	-9.543E-02		5.196E-02	1.648E-01	7.212E-03	-0.579
CEPR-144	-1.896E-01		1.039E-01	3.297E-01	1.443E-02	-0.575
PM-144	1.014E-03		7.083E-03	2.402E-02	8.221E-04	0.042
PM-146	3.062E-02		9.601E-03	3.291E-02	1.136E-03	0.931
EU-152	-4.076E-02		2.171E-02	7.171E-02	2.618E-03	-0.568
EU-154	1.880E-02		2.601E-02	8.910E-02	5.141E-03	0.211
EU-155	8.676E-02		2.502E-02	8.411E-02	3.073E-03	1.032
HF-181	1.802E-02		1.382E-02	4.677E-02	1.568E-03	0.385
BI-207	1.153E-02		6.756E-03	2.339E-02	7.798E-04	0.493
BI-210M	-1.058E-02		1.281E-02	3.584E-02	1.706E-03	-0.295
RA-223	8.731E-01	+	1.007E-01	1.711E-01	8.052E-03	5.103
AC-227DA	2.948E-01		6.666E-02	1.906E-01	9.861E-03	1.547
TH-234DA	4.617E+00		1.317E+00	4.573E+00	2.180E-01	1.010
U-235HP	1.722E-01		5.068E-02	1.670E-01	8.141E-03	1.031
NP-237DA	-6.072E-03		1.555E-02	5.113E-02	1.967E-03	-0.119
AM-241HP	8.381E-03		3.117E-02	9.971E-02	3.620E-03	0.084


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J475M1AA
Detector ID: GER8 1
Energy Coefficients:
Offset: -5.41157E-02
Slope: 2.49875E-01
Quadrature: 1.77406E-08
Acquisition Start: 5-SEP-2007 06:05:03.91
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
152 Eu
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
126 Sn
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Pb
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
75 Se, 152 Eu, 57 Co, 154 Eu
155 Eu
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J475M1AA

CONFIGURATION ID: GER8:J475M1AA_050970605
TITLE : BRC SOIL
SAMPLE ID : J475M1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 05-SEP-07 06:05:03
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 30-JUL-2007 15:00:00.00
CALIB DATE: 5-SEP-2007 05:45:41.68
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.0970E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.5412E-01 keV
ENERGY SLOPE: 2.4987E-01 keV/C
ENERGY Q COEFF: 1.7741E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.6033E-01 keV
FWHM SLOPE: 2.4193E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 13:03:40

Configuration : $DISK1:[GER8.SAMPLE]J475M1AA_050970605.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 30-JUL-2007 15:00:00 Acquisition date : 5-SEP-2007 06:05:03
Sample ID : J475M1AA Sample quantity : 309.70 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.15 0.0%
Start energy : 19.94 End energy : 2048.11
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.28*	1055	2710	1.26	185.42	177	16	2.93E-02	12.1	
2	0	53.10	418	2729	0.97	212.73	207	12	1.16E-02	25.4	
3	0	63.34*	1284	4987	1.06	253.69	247	15	3.57E-02	12.6	
4	1	74.84*	5325	5154	1.29	299.74	287	46	1.48E-01	3.3	3.65E+00
5	1	77.11*	7892	4441	1.14	308.80	287	46	2.19E-01	2.2	
6	0	84.12	989	3335	1.44	336.85	332	12	2.75E-02	12.1	
7	0	87.26	2476	3514	1.24	349.44	344	12	6.88E-02	5.2	
8	3	89.97	1288	2461	1.04	360.26	356	30	3.58E-02	7.2	3.26E+00
9	3	92.95*	2986	4344	1.59	372.18	356	30	8.30E-02	5.9	
10	0	105.34	414	2549	1.08	421.76	416	13	1.15E-02	25.6	
11	0	122.26	75	1923	0.59	489.48	483	11	2.09E-03	113.5	
12	0	129.37	789	2939	1.46	517.95	510	16	2.19E-02	15.8	
13	0	186.08*	1936	2945	1.37	744.86	735	20	5.38E-02	7.4	
14	0	209.26	828	1742	1.14	837.65	831	14	2.30E-02	11.2	
15	3	238.69*	8901	1684	1.18	955.38	947	29	2.47E-01	1.5	3.08E+00
16	3	241.77	2577	1647	1.65	967.73	947	29	7.16E-02	4.2	
17	0	270.15	719	1364	1.45	1081.28	1074	15	2.00E-02	11.8	
18	0	277.57	444	1464	1.01	1110.97	1101	19	1.23E-02	21.2	
19	0	295.24	3641	1313	1.24	1181.69	1174	17	1.01E-01	2.8	
20	0	300.12	474	968	1.25	1201.18	1195	13	1.32E-02	14.3	
21	0	327.87	415	1001	1.09	1312.25	1305	16	1.15E-02	17.7	
22	0	338.32	1786	1054	1.22	1354.03	1346	17	4.96E-02	4.8	
23	0	351.94*	6135	1028	1.28	1408.55	1400	17	1.70E-01	1.8	
24	0	409.52	202	836	1.14	1638.93	1630	16	5.61E-03	32.8	
25	0	463.16	534	791	1.45	1853.54	1842	21	1.48E-02	13.9	
26	0	510.85*	941	857	1.96	2044.33	2030	26	2.61E-02	9.3	
27	0	583.19	2764	754	1.35	2333.77	2322	23	7.68E-02	2.9	
28	0	609.35*	4507	659	1.46	2438.43	2427	27	1.25E-01	2.1	
29	0	665.60	175	329	1.11	2663.43	2655	15	4.86E-03	20.8	
30	0	727.27	686	514	1.72	2910.17	2898	25	1.90E-02	8.4	
31	0	768.20	397	454	1.28	3073.87	3062	22	1.10E-02	12.6	
32	0	794.83	298	300	1.54	3180.42	3172	18	8.28E-03	13.0	
33	0	860.63	340	303	1.38	3443.61	3434	20	9.46E-03	12.0	
34	0	911.20	1764	412	1.58	3645.89	3635	25	4.90E-02	3.5	
35	0	933.91	192	292	1.38	3736.73	3729	19	5.35E-03	19.4	
36	0	968.57	982	818	1.57	3875.37	3857	33	2.73E-02	8.1	
37	0	1120.20	962	390	1.64	4481.84	4466	30	2.67E-02	6.0	
38	0	1238.35	455	338	1.54	4954.35	4944	24	1.26E-02	10.2	
39	0	1377.88	246	157	1.62	5512.33	5499	28	6.83E-03	13.8	
40	0	1408.37	150	133	1.89	5634.28	5621	24	4.16E-03	19.2	
41	0	1460.80*	6132	179	1.93	5843.94	5827	36	1.70E-01	1.4	
42	0	1509.46	113	116	1.93	6038.49	6027	20	3.13E-03	22.0	
43	0	1588.20	115	88	1.26	6353.36	6344	19	3.19E-03	19.2	

Sample ID : J475M1AA Acquisition date : 5-SEP-2007 06:05:03

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
44	0	1593.23	75	130	1.92	6373.44	6363	24	2.09E-03	35.5	
45	0	1631.16	97	55	0.99	6525.11	6513	24	2.68E-03	20.1	
46	0	1729.40	119	71	1.71	6917.89	6906	20	3.32E-03	15.6	
47	0	1764.56	749	66	2.00	7058.45	7042	33	2.08E-02	4.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 13:03:41

Configuration : $DISK1:[GER8.SAMPLE]J475M1AA_050970605.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 30-JUL-2007 15:00:00 Acquisition date : 5-SEP-2007 06:05:03
Sample ID : J475M1AA Sample quantity : 309.70 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.15 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	6132	10.67*	5.801E-01	2.402E+01	2.402E+01	6.28
TL-208	277.35	444	6.80	2.334E+00	6.778E-01	6.778E-01	22.14
	510.84	941	21.60	1.413E+00	7.475E-01	7.475E-01	11.00
	583.14	2764	84.20*	1.263E+00	6.300E-01	6.300E-01	6.71
	860.37	340	12.46	9.071E-01	7.302E-01	7.302E-01	13.68
PB-212	238.63	8901	44.60*	2.617E+00	1.849E+00	1.849E+00	6.47
	300.09	474	3.41	2.195E+00	1.535E+00	1.535E+00	15.58
BI-214	609.31	4507	46.30*	1.217E+00	1.939E+00	1.939E+00	6.44
	768.36	397	5.04	9.990E-01	1.911E+00	1.911E+00	14.18
	1120.29	962	15.10	7.256E-01	2.129E+00	2.129E+00	8.55
	1764.49	749	15.80	4.950E-01	2.322E+00	2.322E+00	7.51
PB-214	241.98	2577	7.49	2.592E+00	3.217E+00	3.217E+00	7.58
	295.21	3641	19.20	2.224E+00	2.067E+00	2.067E+00	6.83
	351.92	6135	37.20*	1.930E+00	2.071E+00	2.071E+00	6.32
	785.91	------	1.10	9.798E-01	------	Line Not Found	------
RA-224DA	238.63	8901	44.60*	2.617E+00	1.849E+00	1.918E+00	6.47
	240.98	2577	3.95	2.592E+00	6.100E+00	6.328E+00	7.58
	583.14	2764	30.25	1.263E+00	1.754E+00	1.819E+00	6.71
	860.37	340	4.48	9.071E-01	2.031E+00	2.107E+00	13.68
RA-226DA	186.21	1936	3.50	3.107E+00	4.315E+00	4.315E+00	9.72
	241.98	2577	7.49	2.592E+00	3.217E+00	3.217E+00	7.58
	295.22	3641	19.20	2.224E+00	2.067E+00	2.067E+00	6.83
	351.92	6135	37.20	1.930E+00	2.071E+00	2.071E+00	6.32
	609.32	4507	46.30*	1.217E+00	1.939E+00	1.940E+00	6.44
	1120.28	962	15.10	7.256E-01	2.129E+00	2.129E+00	8.55
	1238.11	455	5.94	6.667E-01	2.784E+00	2.784E+00	11.88
	1764.49	749	15.80	4.950E-01	2.322E+00	2.322E+00	7.51
AC-228	209.28	828	4.40	2.874E+00	1.587E+00	1.587E+00	12.88
	270.23	719	3.60	2.384E+00	2.031E+00	2.031E+00	13.36
	338.32	1786	11.40	1.994E+00	1.905E+00	1.905E+00	7.75
	911.07	1764	27.70*	8.642E-01	1.786E+00	1.786E+00	7.52
	969.11	982	16.60	8.206E-01	1.748E+00	1.748E+00	10.40
RA-228DA	209.28	828	4.40	2.874E+00	1.587E+00	1.606E+00	12.88
	338.32	1786	11.40	1.994E+00	1.905E+00	1.928E+00	7.75
	911.07	1764	27.70*	8.642E-01	1.786E+00	1.808E+00	7.52
	964.60	------	5.20	8.234E-01	------	Line Not Found	------

Sample ID : J475M1AA Acquisition date : 5-SEP-2007 06:05:03

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	982	16.60	8.206E-01	1.748E+00	1.770E+00	10.40
TH-228DA	238.63	8901	44.60	2.617E+00	1.849E+00	1.918E+00	6.47
	240.98	2577	3.95	2.592E+00	6.100E+00	6.328E+00	7.58
	583.14	2764	30.25*	1.263E+00	1.754E+00	1.819E+00	6.71
	860.37	340	4.48	9.071E-01	2.031E+00	2.107E+00	13.68
TH-232DA	238.63	8901	44.60	2.617E+00	1.849E+00	1.849E+00	6.47
	338.32	1786	12.40*	1.994E+00	1.751E+00	1.751E+00	7.75
	583.14	2764	30.25	1.263E+00	1.754E+00	1.754E+00	6.71
	911.07	1764	27.70	8.642E-01	1.786E+00	1.786E+00	7.52
	964.60	------	5.20	8.234E-01	------ Line Not Found		------
	969.11	982	16.60	8.206E-01	1.748E+00	1.748E+00	10.40
U-234DA	241.98	2577	7.49	2.592E+00	3.217E+00	3.217E+00	7.58
	295.22	3641	19.20*	2.224E+00	2.067E+00	2.067E+00	6.83
	351.92	6135	37.20	1.930E+00	2.071E+00	2.071E+00	6.32
	609.31	4507	46.30	1.217E+00	1.939E+00	1.939E+00	6.44
U-238DA	241.98	2577	7.49	2.592E+00	3.217E+00	3.217E+00	7.58
	295.22	3641	19.20	2.224E+00	2.067E+00	2.067E+00	6.83
	351.92	6135	37.20*	1.930E+00	2.071E+00	2.071E+00	6.32
	609.31	4507	46.30	1.217E+00	1.939E+00	1.939E+00	6.44
U-238DHP	63.28	1284	3.80*	3.726E+00	2.197E+00	2.197E+00	13.96
	92.59	2986	5.41	4.071E+00	3.287E+00	3.287E+00	8.41

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J475M1AA
Acquisition date : 5-SEP-2007 06:05:03

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.28	1055	2710	1.26	185.42	177	16	2.93E-02	12.1	2.82E+00	
0	53.10	418	2729	0.97	212.73	207	12	1.16E-02	25.4	3.27E+00	
1	74.84	5325	5154	1.29	299.74	287	46	1.48E-01	3.3	3.99E+00	
1	77.11	7892	4441	1.14	308.80	287	46	2.19E-01	2.2	4.01E+00	
0	84.12	989	3335	1.44	336.85	332	12	2.75E-02	12.1	4.07E+00	
0	87.26	2476	3514	1.24	349.44	344	12	6.88E-02	5.2	4.07E+00	T
3	89.97	1288	2461	1.04	360.26	356	30	3.58E-02	7.2	4.08E+00	
0	105.34	414	2549	1.08	421.76	416	13	1.15E-02	25.6	4.01E+00	T
0	122.26	75	1923	0.59	489.48	483	11	2.09E-03	****	3.84E+00	T
0	129.37	789	2939	1.46	517.95	510	16	2.19E-02	15.8	3.76E+00	
0	327.87	415	1001	1.09	1312.25	1305	16	1.15E-02	17.7	2.05E+00	T
0	409.52	202	836	1.14	1638.93	1630	16	5.61E-03	32.8	1.70E+00	
0	463.16	534	791	1.45	1853.54	1842	21	1.48E-02	13.9	1.54E+00	T
0	665.60	175	329	1.11	2663.43	2655	15	4.86E-03	20.8	1.13E+00	T
0	727.27	686	514	1.72	2910.17	2898	25	1.90E-02	8.4	1.05E+00	T
0	794.83	298	300	1.54	3180.42	3172	18	8.28E-03	13.0	9.70E-01	T
0	933.91	192	292	1.38	3736.73	3729	19	5.35E-03	19.4	8.46E-01	
0	1377.88	246	157	1.62	5512.33	5499	28	6.83E-03	13.8	6.09E-01	
0	1408.37	150	133	1.89	5634.28	5621	24	4.16E-03	19.2	5.98E-01	T
0	1509.46	113	116	1.93	6038.49	6027	20	3.13E-03	22.0	5.64E-01	
0	1588.20	115	88	1.26	6353.36	6344	19	3.19E-03	19.2	5.41E-01	
0	1593.23	75	130	1.92	6373.44	6363	24	2.09E-03	35.5	5.39E-01	
0	1631.16	97	55	0.99	6525.11	6513	24	2.68E-03	20.1	5.29E-01	
0	1729.40	119	71	1.71	6917.89	6906	20	3.32E-03	15.6	5.03E-01	

Flags: "T" = Tentatively associated

Sample ID : J475M1AA Acquisition date : 5-SEP-2007 06:05:03

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	9.231E-02	11.00	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.44	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	4.360E-01	8.55	
		% Abundances Found =		50.00			
CO-57	270.90D	0.14	122.06	85.51	6.101E-03	113.68	Abun.
			136.48*	10.60	--- Not Found ---		
		% Abundances Found =		88.97	(Abn. Limit = 90.00%)		
SE-75	119.78D	0.31	121.12	16.70	3.519E-02	113.68	Abun.
			136.00	59.20	--- Not Found ---		
			264.65*	59.80	--- Not Found ---		
			279.53	25.20	--- Not Found ---		
			400.65	11.40	--- Not Found ---		
		% Abundances Found =		9.69			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.752E+00	6.71	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	3.068E+01	6.44	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	8.401E-01	11.00	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	8.356E-01	15.12	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
SN-126DA	1.00E+05Y	0.00	414.70	97.66	--- Not Found ---		Abun.
			666.33*	99.95	3.759E-02	21.75	
			695.00	99.95	--- Not Found ---		
		% Abundances Found =		33.59			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	6.725E-01	22.14	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.

Sample ID : J475M1AA Acquisition date : 5-SEP-2007 06:05:03

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
CS-134	2.06Y	0.05	604.70	97.60	--- Not Found ---		Abun.
			795.84*	85.40	9.017E-02	14.51	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.98	328.77	20.50	9.928E+05	18.73	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	1.680E-02	113.68	Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	2.946E-01	20.16	
		% Abundances Found =		36.77			
EU-154	8.80Y	0.01	43.00	13.10	--- Not Found ---		Abun.
			123.07	40.46	1.183E-02	113.68	
			247.94	6.60	--- Not Found ---		
			723.30	19.70	--- Not Found ---		
			873.19	11.50	--- Not Found ---		
			996.32	10.30	--- Not Found ---		
			1004.76	17.90	--- Not Found ---		
			1274.45*	35.50	--- Not Found ---		
		% Abundances Found =		26.09			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.836E-01	7.97	
			105.31*	20.70	1.227E-01	26.29	
		% Abundances Found =		70.92			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.541E+01	20.33	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.414E+00	10.80	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	5.393E-01	13.36	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			

Sample ID : J475M1AA Acquisition date : 5-SEP-2007 06:05:03

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.797E-01	9.72	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 13:03:43

Configuration : $DISK1:[GER8.SAMPLE]J475M1AA_050970605.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 : BRC SOIL
Sample date : 30-JUL-2007 15:00:00 Acquisition date : 5-SEP-2007 06:05:03
Sample ID : J475M1AA Sample quantity : 309.70 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.15 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.402E+01	1.509E+00	2.078E-01	7.334E-03	115.570
TL-208	6.300E-01	4.229E-02	2.637E-02	9.003E-04	23.894
PB-212	1.849E+00	1.197E-01	4.120E-02	1.584E-03	44.876
BI-214	1.939E+00	1.250E-01	4.785E-02	1.675E-03	40.535
PB-214	2.071E+00	1.308E-01	5.078E-02	1.736E-03	40.785
RA-224DA	1.918E+00	1.241E-01	4.273E-02	1.643E-03	44.876
RA-226DA	1.940E+00	1.250E-01	4.785E-02	1.675E-03	40.535
AC-228	1.786E+00	1.344E-01	8.917E-02	3.897E-03	20.035
RA-228DA	1.808E+00	1.361E-01	9.026E-02	3.945E-03	20.035
TH-228DA	1.819E+00	1.221E-01	7.613E-02	2.599E-03	23.894
TH-232DA	1.751E+00	1.357E-01	1.560E-01	5.444E-03	11.225
U-234DA	2.067E+00	1.412E-01	9.543E-02	3.533E-03	21.662
U-238DA	2.071E+00	1.308E-01	5.078E-02	1.736E-03	40.785
U-238DHP	2.197E+00	3.068E-01	5.482E-01	1.747E-02	4.009

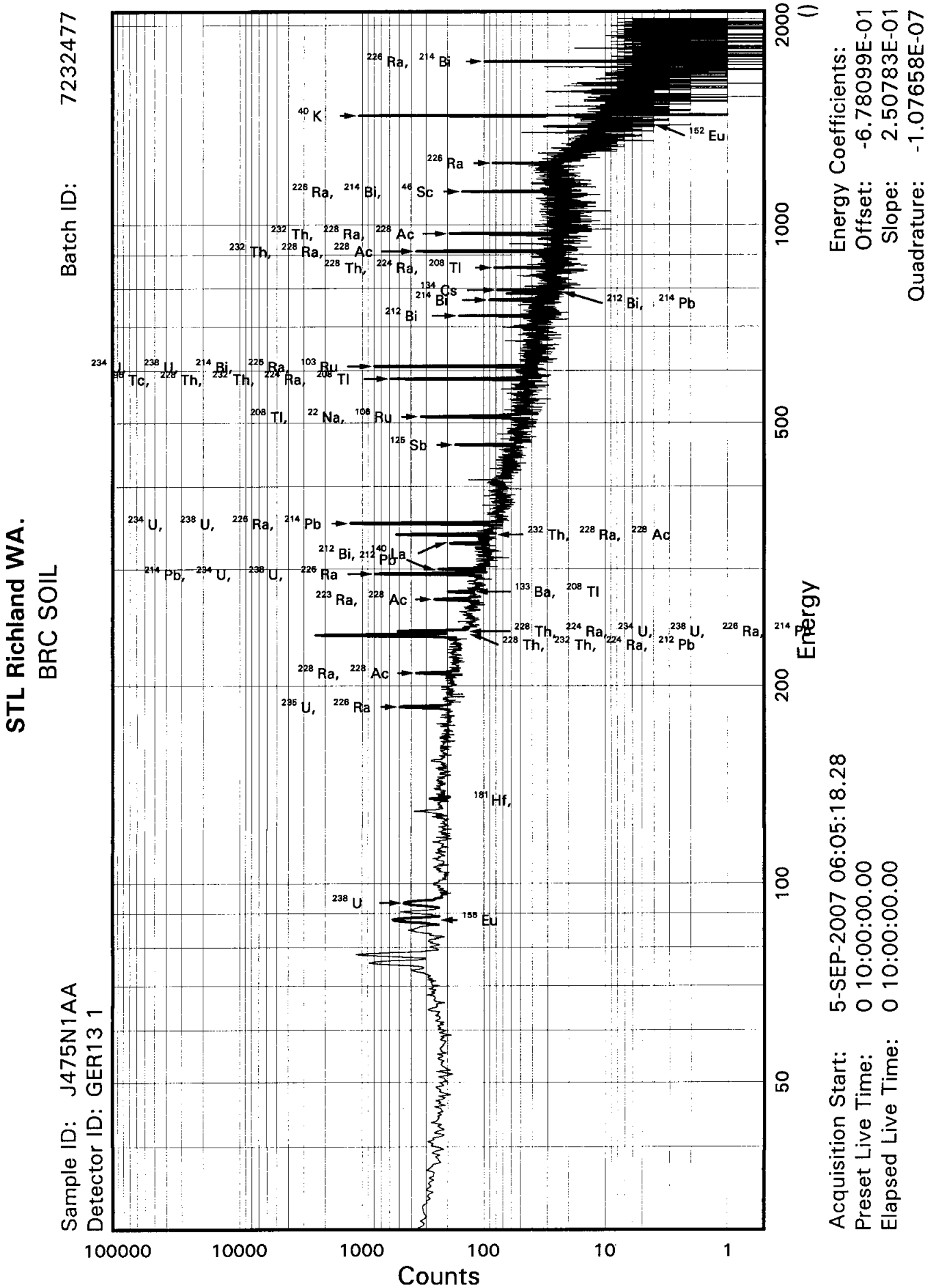
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	3.005E-02		8.898E-02	3.012E-01	9.634E-03	0.100
NA-22	-8.295E-03		9.517E-03	3.177E-02	1.093E-03	-0.261
SC-46	4.360E-01	+	3.726E-02	7.465E-02	2.625E-03	5.841
CR-51	1.081E-01		1.426E-01	4.751E-01	1.693E-02	0.227
MN-54	2.293E-03		8.688E-03	2.948E-02	1.245E-03	0.078
CO-57	-4.131E-02		5.093E-02	1.654E-01	5.656E-03	-0.250
CO-58	-3.931E-02		1.055E-02	3.234E-02	1.343E-03	-1.216
FE-59	-5.687E-02		2.635E-02	8.581E-02	3.114E-03	-0.663
CO-60	3.140E-03		8.298E-03	2.854E-02	1.018E-03	0.110
ZN-65	1.134E-02		2.265E-02	6.611E-02	2.343E-03	0.171
SE-75	-1.089E-02		1.123E-02	3.563E-02	1.357E-03	-0.305
SR-85	9.082E-02		1.237E-02	3.647E-02	1.156E-03	2.491
Y-88	-9.671E-03		7.483E-03	2.487E-02	7.765E-04	-0.389
NB-94	5.896E-03		6.973E-03	2.397E-02	1.038E-03	0.246

Sample ID : J475M1AA Acquisition date : 5-SEP-2007 06:05:03

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	7.504E-02		1.969E-02	5.930E-02	2.379E-03	1.265
TC-95M	8.461E-03		1.317E-02	4.195E-02	1.604E-03	0.202
ZR-95	2.393E-02		1.991E-02	6.865E-02	2.735E-03	0.349
ZRNB-95	1.132E-01		2.837E-02	8.551E-02	3.431E-03	1.324
RH-101	-6.190E-04		7.608E-03	2.546E-02	9.706E-04	-0.024
RH-102M	-6.134E-03		6.260E-03	2.078E-02	6.649E-04	-0.295
RU-103	3.884E-03		1.232E-02	4.167E-02	1.328E-03	0.093
RU-106DA	-2.699E-02		7.131E-02	2.365E-01	8.370E-03	-0.114
AG-108M	4.138E-03		6.341E-03	2.158E-02	6.895E-04	0.192
AG-110M	-4.795E-03		1.107E-02	3.715E-02	1.623E-03	-0.129
SN-113DA	3.397E-03		1.117E-02	3.795E-02	1.195E-03	0.090
SB-124	-1.087E-02		1.111E-02	3.399E-02	1.182E-03	-0.320
SB-125	4.508E-02		2.048E-02	7.040E-02	2.246E-03	0.640
SN-126DA	3.759E-02	+	8.174E-03	2.492E-02	9.159E-04	1.508
I-131	3.382E-02		1.595E-01	5.427E-01	1.815E-02	0.062
BA-133	1.013E-03		1.037E-02	2.994E-02	1.017E-03	0.034
CS-134	9.017E-02	+	1.308E-02	3.611E-02	1.483E-03	2.497
CS-137DA	-7.428E-03		9.311E-03	2.637E-02	9.647E-04	-0.282
LA-138	-4.855E-03		1.050E-02	3.547E-02	1.256E-03	-0.137
CE-139	3.775E-03		7.611E-03	2.568E-02	9.570E-04	0.147
BA-140	3.074E-02		1.791E-01	6.026E-01	1.962E-02	0.051
BALA-140	-1.011E-01		1.330E-01	3.760E-01	1.290E-02	-0.269
CE-141	6.053E-02		2.336E-02	7.908E-02	2.789E-03	0.765
CE-144	3.743E-02		5.746E-02	1.607E-01	5.440E-03	0.233
CEPR-144	7.560E-02		1.149E-01	3.215E-01	1.088E-02	0.235
PM-144	3.802E-03		7.153E-03	2.405E-02	8.484E-04	0.158
PM-146	9.500E-03		9.265E-03	3.158E-02	1.011E-03	0.301
EU-152	-1.890E-02		2.240E-02	7.051E-02	2.440E-03	-0.268
EU-154	-1.986E-02		2.634E-02	8.816E-02	3.032E-03	-0.225
EU-155	1.227E-01	+	3.225E-02	7.959E-02	2.621E-03	1.542
HF-181	-3.301E-03		1.274E-02	4.276E-02	1.367E-03	-0.077
BI-207	3.087E-03		6.681E-03	2.249E-02	7.577E-04	0.137
BI-210M	2.533E-03		1.235E-02	3.492E-02	1.329E-03	0.073
BI-212	2.414E+00	+	2.607E-01	5.437E-01	2.450E-02	4.440
RA-223	5.393E-01	+	7.205E-02	1.645E-01	6.246E-03	3.278
AC-227DA	6.041E-01		7.463E-02	1.993E-01	7.665E-03	3.031
TH-234DA	1.476E+00		1.259E+00	4.309E+00	1.755E-01	0.342
U-235HP	1.377E-01		4.908E-02	1.661E-01	5.823E-03	0.829
NP-237DA	-3.588E-03		1.551E-02	5.121E-02	1.851E-03	-0.070
AM-241HP	1.100E-01		2.068E-02	5.832E-02	1.881E-03	1.886


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J475N1AA
Detector ID: GER13 1
Energy Coefficients:
Offset: -6.78099E-01
Slope: 2.50783E-01
Quadrature: -1.07658E-07
Acquisition Start: 5-SEP-2007 06:05:18.28
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
100000
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
152 Eu
226 Ra
228 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
212 Bi, 214 Pb
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
99 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 212 Pb, 140 La
214 Pb, 234 U, 238 U, 226 Ra
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
181 Hf,
238 U
155 Eu

SAMPLE IDENTIFICATION: J475N1AA

CONFIGURATION ID: GER13:J475N1AA_050970605
TITLE : BRC SOIL
SAMPLE ID : J475N1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 05-SEP-07 06:05:18
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 30-JUL-2007 14:15:00.00
CALIB DATE: 5-SEP-2007 05:29:40.18
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:21

SAMPLE QUANTITY: 3.0720E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6781E+00 keV
ENERGY SLOPE: 2.5078E-01 keV/C
ENERGY Q COEFF: -.1077E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.3144E-01 keV
FWHM SLOPE: 4.2197E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 60.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 13:05:26

Configuration : $DISK1:[GER13.SAMPLE]J475N1AA_050970605.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 30-JUL-2007 14:15:00 Acquisition date : 5-SEP-2007 06:05:18
Sample ID : J475N1AA Sample quantity : 307.20 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:21.78 0.1%
Start energy : 19.38 End energy : 2046.52
Sensitivity : 5.00 Gaussian : 60.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	75.83*	2116	3262	0.97	305.10	291	30	5.88E-02	6.1	4.20E+00
2	2	78.02	3249	2828	0.91	313.83	291	30	9.02E-02	3.7	
3	0	84.96*	905	3307	1.60	341.53	335	14	2.51E-02	14.6	
4	0	87.98	1584	2689	1.29	353.56	348	11	4.40E-02	6.8	
5	0	90.49	927	2382	0.92	363.60	359	10	2.58E-02	10.4	
6	0	93.57	1491	3462	1.66	375.88	369	15	4.14E-02	9.0	
7	0	129.31	544	2716	0.79	518.44	513	12	1.51E-02	19.7	
8	0	134.24	92	1709	0.68	538.10	537	8	2.56E-03	78.3	
9	0	185.93	1662	2892	1.29	744.34	737	15	4.62E-02	7.5	
10	0	209.11	1024	2081	1.10	836.82	831	13	2.85E-02	9.7	
11	4	238.47*	10209	2077	1.12	953.98	946	28	2.84E-01	1.4	4.64E+00
12	4	241.52	2544	2122	1.59	966.15	946	28	7.07E-02	4.6	
13	0	270.06	1002	1920	1.74	1080.06	1073	17	2.78E-02	10.5	
14	0	277.24	279	1374	1.04	1108.73	1103	11	7.76E-03	26.4	
15	0	294.98*	3596	1680	1.29	1179.52	1172	16	9.99E-02	3.2	
16	0	299.80	585	1523	1.14	1198.77	1192	14	1.62E-02	14.7	
17	0	327.74	505	1271	1.35	1310.29	1303	13	1.40E-02	15.2	
18	0	338.00	2226	1574	1.23	1351.28	1341	18	6.18E-02	4.7	
19	0	351.68*	6260	1583	1.29	1405.88	1396	19	1.74E-01	2.1	
20	0	409.43	270	970	0.79	1636.45	1630	14	7.51E-03	25.2	
21	0	462.75	600	770	1.09	1849.38	1842	14	1.67E-02	10.6	
22	0	510.83*	1271	1496	1.69	2041.42	2027	32	3.53E-02	11.3	
23	0	583.07*	3231	900	1.48	2330.03	2319	21	8.97E-02	3.1	
24	0	609.17*	4611	1030	1.48	2434.33	2422	24	1.28E-01	2.5	
25	0	727.36	966	834	1.48	2906.69	2893	29	2.68E-02	7.9	
26	0	768.35	479	633	1.65	3070.55	3059	21	1.33E-02	12.1	
27	0	785.79	268	500	1.97	3140.27	3131	19	7.45E-03	18.1	
28	0	795.05	349	630	1.89	3177.31	3168	22	9.70E-03	16.5	
29	0	860.57	364	577	1.68	3439.30	3429	21	1.01E-02	15.0	
30	0	911.22*	2434	671	1.66	3641.88	3625	33	6.76E-02	3.5	
31	0	934.12	215	399	1.29	3733.51	3725	17	5.99E-03	19.4	
32	0	968.07*	1611	894	1.91	3869.32	3849	36	4.48E-02	5.7	
33	0	1120.41*	972	599	2.01	4478.97	4466	28	2.70E-02	7.4	
34	0	1238.34	345	559	1.35	4951.12	4940	20	9.59E-03	15.2	
35	0	1408.31	130	209	1.98	5631.97	5618	21	3.60E-03	23.0	
36	0	1460.54*	8653	508	2.14	5841.27	5823	32	2.40E-01	1.3	
37	0	1509.11	131	140	1.68	6035.95	6024	22	3.64E-03	19.5	
38	0	1587.92	173	144	2.38	6351.88	6340	21	4.81E-03	15.2	
39	0	1729.19	159	111	0.95	6918.38	6904	25	4.41E-03	15.7	
40	0	1763.76*	863	119	2.21	7057.07	7037	36	2.40E-02	5.1	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 13:05:27

Configuration : $DISK1:[GER13.SAMPLE]J475N1AA_050970605.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 30-JUL-2007 14:15:00 Acquisition date : 5-SEP-2007 06:05:18
Sample ID : J475N1AA Sample quantity : 307.20 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:21.78 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	8653	10.67*	7.699E-01	2.574E+01	2.574E+01	6.57
TL-208	277.35	279	6.80	2.835E+00	3.542E-01	3.542E-01	27.16
	510.84	1271	21.60	1.898E+00	7.576E-01	7.576E-01	12.71
	583.14	3231	84.20*	1.721E+00	5.448E-01	5.448E-01	6.71
	860.37	364	12.46	1.247E+00	5.724E-01	5.724E-01	16.63
PB-212	238.63	10209	44.60*	3.095E+00	1.808E+00	1.808E+00	6.53
	300.09	585	3.41	2.702E+00	1.551E+00	1.551E+00	16.05
BI-214	609.31	4611	46.30*	1.665E+00	1.462E+00	1.462E+00	6.49
	768.36	479	5.04	1.377E+00	1.685E+00	1.685E+00	13.75
	1120.29	972	15.10	9.769E-01	1.610E+00	1.610E+00	9.84
	1764.49	863	15.80	6.731E-01	1.983E+00	1.983E+00	7.92
PB-214	241.98	2544	7.49	3.073E+00	2.701E+00	2.701E+00	7.85
	295.21	3596	19.20	2.729E+00	1.677E+00	1.677E+00	7.13
	351.92	6260	37.20*	2.443E+00	1.684E+00	1.684E+00	6.52
	785.91	268	1.10	1.351E+00	4.410E+00	4.410E+00	19.33
RA-224DA	238.63	10209	44.60*	3.095E+00	1.808E+00	1.875E+00	6.53
	240.98	2544	3.95	3.073E+00	5.122E+00	5.314E+00	7.85
	583.14	3231	30.25	1.721E+00	1.516E+00	1.573E+00	6.71
	860.37	364	4.48	1.247E+00	1.592E+00	1.651E+00	16.63
RA-226DA	186.21	1662	3.50	3.493E+00	3.322E+00	3.323E+00	9.80
	241.98	2544	7.49	3.073E+00	2.701E+00	2.702E+00	7.85
	295.22	3596	19.20	2.729E+00	1.677E+00	1.677E+00	7.13
	351.92	6260	37.20	2.443E+00	1.684E+00	1.684E+00	6.52
	609.32	4611	46.30*	1.665E+00	1.462E+00	1.462E+00	6.49
	1120.28	972	15.10	9.769E-01	1.610E+00	1.610E+00	9.84
	1238.11	345	5.94	8.900E-01	1.597E+00	1.597E+00	16.48
	1764.49	863	15.80	6.731E-01	1.983E+00	1.983E+00	7.92
AC-228	209.28	1024	4.40	3.316E+00	1.716E+00	1.716E+00	11.59
	270.23	1002	3.60	2.880E+00	2.362E+00	2.362E+00	12.30
	338.32	2226	11.40	2.506E+00	1.905E+00	1.905E+00	7.81
	911.07	2434	27.70*	1.184E+00	1.814E+00	1.814E+00	8.33
	969.11	1611	16.60	1.120E+00	2.118E+00	2.118E+00	9.24
RA-228DA	209.28	1024	4.40	3.316E+00	1.716E+00	1.737E+00	11.59
	338.32	2226	11.40	2.506E+00	1.905E+00	1.928E+00	7.81
	911.07	2434	27.70*	1.184E+00	1.814E+00	1.836E+00	8.33
	964.60	------	5.20	1.124E+00	------ Line Not Found		------

Sample ID : J475N1AA Acquisition date : 5-SEP-2007 06:05:18

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1611	16.60	1.120E+00	2.118E+00	2.144E+00	9.24
TH-228DA	238.63	10209	44.60	3.095E+00	1.808E+00	1.875E+00	6.53
	240.98	2544	3.95	3.073E+00	5.122E+00	5.314E+00	7.85
	583.14	3231	30.25*	1.721E+00	1.516E+00	1.573E+00	6.71
	860.37	364	4.48	1.247E+00	1.592E+00	1.651E+00	16.63
TH-232DA	238.63	10209	44.60	3.095E+00	1.808E+00	1.808E+00	6.53
	338.32	2226	12.40*	2.506E+00	1.751E+00	1.751E+00	7.81
	583.14	3231	30.25	1.721E+00	1.516E+00	1.516E+00	6.71
	911.07	2434	27.70	1.184E+00	1.814E+00	1.814E+00	8.33
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	1611	16.60	1.120E+00	2.118E+00	2.118E+00	9.24
U-234DA	241.98	2544	7.49	3.073E+00	2.701E+00	2.701E+00	7.85
	295.22	3596	19.20*	2.729E+00	1.677E+00	1.677E+00	7.13
	351.92	6260	37.20	2.443E+00	1.684E+00	1.684E+00	6.52
	609.31	4611	46.30	1.665E+00	1.462E+00	1.462E+00	6.49
U-238DA	241.98	2544	7.49	3.073E+00	2.701E+00	2.701E+00	7.85
	295.22	3596	19.20	2.729E+00	1.677E+00	1.677E+00	7.13
	351.92	6260	37.20*	2.443E+00	1.684E+00	1.684E+00	6.52
	609.31	4611	46.30	1.665E+00	1.462E+00	1.462E+00	6.49

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CE-144	133.54	92	10.80*	3.676E+00	5.679E-02	6.213E-02	78.50
CEPR-144	133.53	92	5.40*	3.676E+00	1.136E-01	1.243E-01	78.50
	696.49	------	0.74	1.496E+00	------ Line Not Found		------

Flag: "*" = Keyline

Sample ID : J475N1AA Acquisition date : 5-SEP-2007 06:05:18

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	75.83	2116	3262	0.97	305.10	291	30	5.88E-02	6.1	1.75E+00	
2	78.02	3249	2828	0.91	313.83	291	30	9.02E-02	3.7	1.90E+00	
0	84.96	905	3307	1.60	341.53	335	14	2.51E-02	14.6	2.33E+00	
0	87.98	1584	2689	1.29	353.56	348	11	4.40E-02	6.8	2.50E+00	T
0	90.49	927	2382	0.92	363.60	359	10	2.58E-02	10.4	2.64E+00	
0	93.57	1491	3462	1.66	375.88	369	15	4.14E-02	9.0	2.79E+00	T
0	129.31	544	2716	0.79	518.44	513	12	1.51E-02	19.7	3.65E+00	
0	327.74	505	1271	1.35	1310.29	1303	13	1.40E-02	15.2	2.56E+00	T
0	409.43	270	970	0.79	1636.45	1630	14	7.51E-03	25.2	2.21E+00	
0	462.75	600	770	1.09	1849.38	1842	14	1.67E-02	10.6	2.03E+00	T
0	727.36	966	834	1.48	2906.69	2893	29	2.68E-02	7.9	1.44E+00	T
0	795.05	349	630	1.89	3177.31	3168	22	9.70E-03	16.5	1.34E+00	T
0	934.12	215	399	1.29	3733.51	3725	17	5.99E-03	19.4	1.16E+00	
0	1408.31	130	209	1.98	5631.97	5618	21	3.60E-03	23.0	7.94E-01	T
0	1509.11	131	140	1.68	6035.95	6024	22	3.64E-03	19.5	7.50E-01	
0	1587.92	173	144	2.38	6351.88	6340	21	4.81E-03	15.2	7.21E-01	
0	1729.19	159	111	0.95	6918.38	6904	25	4.41E-03	15.7	6.81E-01	

Flags: "T" = Tentatively associated

Sample ID : J475N1AA
Acquisition date : 5-SEP-2007 06:05:18

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	9.356E-02	12.71	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.44	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.298E-01	9.84	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.380E+00	6.71	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.314E+01	6.49	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	8.515E-01	12.71	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	7.142E-01	12.17	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	3.514E-01	27.16	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.734E-02	17.86	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	22.00	328.77	20.50	9.867E+05	16.47	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		

Sample ID : J475N1AA Acquisition date : 5-SEP-2007 06:05:18

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	1.939E-01	23.90	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	5.077E-01	9.72	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
HF-181	42.39D	0.87	133.02	41.70	2.688E-02	78.50	Abun.
			345.85	17.20	--- Not Found ---		
			482.03*	82.80	--- Not Found ---		
		% Abundances Found =		29.43			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.474E+01	18.28	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.485E+00	10.41	
			785.37	1.10	4.410E+00	19.52	
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		68.47			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	6.271E-01	12.30	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.153E-01	9.80	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	2.418E+00	11.17	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 13:05:30

Configuration : $DISK1:[GER13.SAMPLE]J475N1AA_050970605.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 : BRC SOIL
Sample date : 30-JUL-2007 14:15:00
Sample ID : J475N1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 5-SEP-2007 06:05:18
Sample quantity : 307.20 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:21.78 0.1%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.574E+01	1.692E+00	1.949E-01	7.902E-03	132.059
CE-144	6.213E-02	4.878E-02	1.564E-01	5.675E-03	0.397
CEPR-144	1.243E-01	9.756E-02	3.129E-01	1.135E-02	0.397
TL-208	5.448E-01	3.657E-02	2.241E-02	7.298E-04	24.312
PB-212	1.808E+00	1.180E-01	3.774E-02	1.494E-03	47.900
BI-214	1.462E+00	9.489E-02	4.050E-02	1.334E-03	36.107
PB-214	1.684E+00	1.098E-01	4.509E-02	1.634E-03	37.340
RA-224DA	1.875E+00	1.224E-01	3.914E-02	1.550E-03	47.900
RA-226DA	1.462E+00	9.489E-02	4.050E-02	1.334E-03	36.106
AC-228	1.814E+00	1.510E-01	8.354E-02	4.709E-03	21.713
RA-228DA	1.836E+00	1.529E-01	8.456E-02	4.767E-03	21.713
TH-228DA	1.573E+00	1.056E-01	6.470E-02	2.107E-03	24.312
TH-232DA	1.751E+00	1.368E-01	1.356E-01	5.082E-03	12.910
U-234DA	1.677E+00	1.195E-01	8.642E-02	3.407E-03	19.405
U-238DA	1.684E+00	1.098E-01	4.509E-02	1.634E-03	37.340

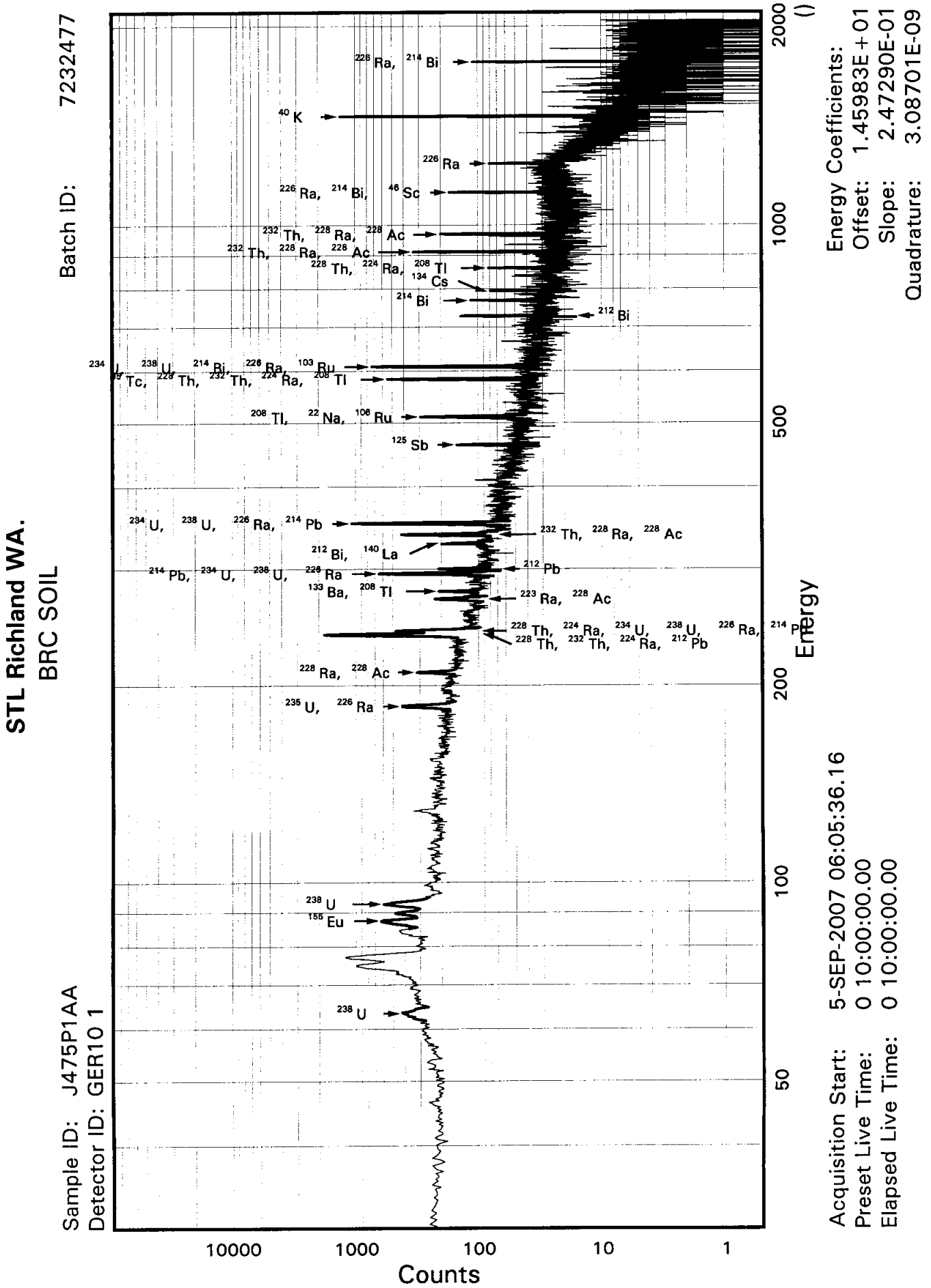
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.248E-01		7.923E-02	2.587E-01	8.237E-03	-0.482
NA-22	1.441E-03		8.495E-03	2.903E-02	1.143E-03	0.050
SC-46	3.298E-01	+	3.245E-02	6.340E-02	2.595E-03	5.202
CR-51	-1.845E-01		1.281E-01	4.188E-01	1.631E-02	-0.441
MN-54	6.397E-03		7.491E-03	2.551E-02	1.276E-03	0.251
CO-57	-7.174E-02		5.512E-02	1.589E-01	5.796E-03	-0.452
CO-58	-2.739E-02		9.061E-03	2.866E-02	1.362E-03	-0.956
FE-59	-7.006E-02		2.521E-02	8.002E-02	3.436E-03	-0.876
CO-60	5.913E-03		7.273E-03	2.518E-02	1.046E-03	0.235
ZN-65	2.704E-02		2.173E-02	6.299E-02	2.609E-03	0.429
SE-75	-5.254E-04		9.881E-03	3.331E-02	1.322E-03	-0.016
SR-85	5.955E-02		1.048E-02	3.055E-02	9.597E-04	1.949
Y-88	8.756E-03		6.560E-03	2.366E-02	7.635E-04	0.370

Sample ID : J475N1AA Acquisition date : 5-SEP-2007 06:05:18

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	1.632E-03		6.387E-03	2.160E-02	1.166E-03	0.076
NB-95	6.637E-02		1.678E-02	5.004E-02	2.152E-03	1.327
TC-95M	1.318E-03		1.151E-02	3.805E-02	1.493E-03	0.035
ZR-95	1.509E-02		1.665E-02	5.728E-02	2.413E-03	0.263
ZRNB-95	9.840E-02		2.416E-02	7.205E-02	3.099E-03	1.366
RH-101	1.450E-02		7.003E-03	2.332E-02	9.134E-04	0.622
RH-102M	-1.805E-03		5.438E-03	1.811E-02	5.771E-04	-0.100
RU-103	-9.214E-03		1.087E-02	3.582E-02	1.133E-03	-0.257
RU-106DA	3.796E-02		5.958E-02	2.025E-01	6.703E-03	0.187
AG-108M	-1.012E-02		5.655E-03	1.855E-02	5.950E-04	-0.546
AG-110M	-8.509E-03		9.907E-03	3.283E-02	1.822E-03	-0.259
SN-113DA	-1.609E-02		9.762E-03	3.239E-02	1.036E-03	-0.497
SB-124	-1.876E-02		9.931E-03	2.965E-02	9.738E-04	-0.633
SB-125	-1.952E-02		1.763E-02	5.856E-02	1.878E-03	-0.333
SN-126DA	1.386E-02		6.094E-03	2.081E-02	7.063E-04	0.666
I-131	1.759E-01		1.467E-01	4.888E-01	1.711E-02	0.360
BA-133	-2.631E-03		9.120E-03	2.550E-02	9.142E-04	-0.103
CS-134	7.734E-02	+	1.381E-02	3.125E-02	1.437E-03	2.475
CS-137DA	-1.221E-02		7.206E-03	2.350E-02	7.882E-04	-0.520
LA-138	-6.153E-03		9.419E-03	3.161E-02	1.290E-03	-0.195
CE-139	-3.096E-03		6.956E-03	2.323E-02	9.081E-04	-0.133
BA-140	2.006E-01		1.559E-01	5.235E-01	1.667E-02	0.383
BALA-140	-1.487E-01		1.087E-01	3.529E-01	1.357E-02	-0.421
CE-141	-1.564E-02		2.082E-02	6.993E-02	2.613E-03	-0.224
PM-144	-1.511E-03		6.032E-03	2.028E-02	6.702E-04	-0.074
PM-146	1.594E-02		8.030E-03	2.735E-02	8.752E-04	0.583
EU-152	-3.814E-03		1.918E-02	6.335E-02	2.340E-03	-0.060
EU-154	8.477E-03		2.339E-02	8.018E-02	3.155E-03	0.106
EU-155	1.181E-01		2.655E-02	8.694E-02	3.343E-03	1.359
HF-181	8.543E-03		1.139E-02	3.834E-02	1.219E-03	0.223
BI-207	-3.384E-03		5.621E-03	1.892E-02	6.126E-04	-0.179
BI-210M	-2.241E-02		1.134E-02	3.164E-02	1.255E-03	-0.708
BI-212	2.485E+00	+	2.587E-01	4.623E-01	2.102E-02	5.376
RA-223	6.271E-01	+	7.711E-02	1.459E-01	5.786E-03	4.299
AC-227DA	3.695E-01		6.219E-02	1.715E-01	6.788E-03	2.155
TH-234DA	2.900E+00		1.096E+00	3.813E+00	1.941E-01	0.761
U-235HP	7.249E-02		4.426E-02	1.505E-01	5.595E-03	0.482
NP-237DA	-2.106E-02		1.348E-02	4.405E-02	1.724E-03	-0.478
U-238DHP	1.947E-01		4.739E-01	1.615E+00	7.841E-02	0.121
AM-241HP	-5.048E-02		6.442E-02	2.182E-01	1.047E-02	-0.231


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J475P1AA
Detector ID: GER10 1
Energy Coefficients:
Offset: 1.45983E+01
Slope: 2.47290E-01
Quadrature: 3.08701E-09
Acquisition Start: 5-SEP-2007 06:05:36.16
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
99 Tc, 229 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J475P1AA

CONFIGURATION ID: GER10:J475P1AA_050970605
TITLE : BRC SOIL
SAMPLE ID : J475P1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 05-SEP-07 06:05:36
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 30-JUL-2007 14:15:00.00
CALIB DATE: 5-SEP-2007 05:47:13.76
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:20

SAMPLE QUANTITY: 3.4430E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.4598E+01 keV
ENERGY SLOPE: 2.4729E-01 keV/C
ENERGY Q COEFF: 3.0870E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1259E+00 keV
FWHM SLOPE: 2.5254E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 40.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 13:07:26

Configuration : $DISK1:[GER10.SAMPLE]J475P1AA_050970605.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 30-JUL-2007 14:15:00 Acquisition date : 5-SEP-2007 06:05:36
Sample ID : J475P1AA Sample quantity : 344.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:20.42 0.1%
Start energy : 17.07 End energy : 2040.60
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.36	795	3945	1.24	197.20	190	14	2.21E-02	17.1	
2	1	74.88*	3887	5761	1.48	243.75	229	34	1.08E-01	5.1	8.74E+00
3	1	77.00	5843	5376	1.48	252.34	229	34	1.62E-01	3.4	
4	0	87.43	1079	5532	1.14	294.53	285	15	3.00E-02	15.4	
5	4	89.79	689	3529	1.03	304.08	299	25	1.91E-02	16.8	5.08E-01
6	4	92.86	1764	4323	1.40	316.47	299	25	4.90E-02	8.6	
7	0	129.01	593	3074	1.21	462.64	457	14	1.65E-02	20.2	
8	0	185.87	2046	4418	1.82	692.57	680	26	5.68E-02	9.2	
9	0	209.32	1037	3008	1.31	787.40	778	20	2.88E-02	11.4	
10	3	238.64	10799	2505	1.50	905.98	895	36	3.00E-01	1.3	1.14E+00
11	3	241.69	2656	2556	1.85	918.31	895	36	7.38E-02	5.4	
12	0	270.10	920	2329	1.51	1033.19	1022	23	2.56E-02	12.0	
13	0	277.50	415	1767	0.84	1063.11	1054	17	1.15E-02	20.4	
14	0	295.22	3862	1916	1.51	1134.77	1124	23	1.07E-01	3.0	
15	0	300.02	692	1458	1.23	1154.19	1147	17	1.92E-02	11.4	
16	0	327.74	676	1991	1.23	1266.29	1255	24	1.88E-02	15.2	
17	0	338.33	2265	2296	1.63	1309.11	1297	28	6.29E-02	5.5	
18	0	351.91*	6623	1495	1.51	1364.03	1353	23	1.84E-01	1.8	
19	0	409.55	346	983	1.37	1597.10	1588	18	9.62E-03	18.9	
20	0	463.11	622	1035	1.65	1813.68	1802	21	1.73E-02	11.7	
21	0	510.71*	1333	1375	2.22	2006.15	1990	32	3.70E-02	8.5	
22	0	583.20	3720	1018	1.72	2299.26	2286	26	1.03E-01	2.6	
23	0	609.30*	5083	884	1.65	2404.80	2393	25	1.41E-01	2.0	
24	0	727.23	876	697	1.86	2881.65	2870	25	2.43E-02	7.6	
25	0	767.93	574	675	1.25	3046.26	3032	25	1.59E-02	11.1	
26	0	794.92	405	587	1.94	3155.39	3142	24	1.12E-02	14.3	
27	0	860.64	537	597	1.63	3421.11	3408	30	1.49E-02	12.0	
28	0	911.17	2616	574	1.89	3625.42	3611	29	7.27E-02	3.0	
29	0	933.97	228	356	1.85	3717.64	3709	17	6.34E-03	17.5	
30	0	967.97	1953	821	1.98	3855.09	3834	38	5.42E-02	4.6	
31	0	1120.28	1148	541	1.72	4470.96	4457	26	3.19E-02	5.5	
32	0	1238.18	273	784	1.61	4947.66	4935	25	7.58E-03	21.7	
33	0	1377.63	262	218	1.69	5511.51	5502	22	7.28E-03	12.5	
34	0	1460.80*	11566	277	2.06	5847.80	5830	35	3.21E-01	1.0	
35	0	1509.16	120	175	1.55	6043.30	6027	26	3.34E-03	24.8	
36	0	1590.61	328	266	6.29	6372.64	6348	48	9.11E-03	14.3	
37	0	1729.52	221	74	1.93	6934.25	6922	27	6.13E-03	10.6	
38	0	1764.47	992	89	2.24	7075.56	7058	34	2.76E-02	3.9	
39	0	1848.12	119	151	1.31	7413.78	7396	41	3.32E-03	26.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 13:07:27

Configuration : $DISK1:[GER10.SAMPLE]J475P1AA_050970605.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 30-JUL-2007 14:15:00 Acquisition date : 5-SEP-2007 06:05:36
Sample ID : J475P1AA Sample quantity : 344.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:20.42 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	11566	10.67*	8.323E-01	2.840E+01	2.840E+01	6.33
TL-208	277.35	415	6.80	2.751E+00	4.843E-01	4.843E-01	21.39
	510.84	1333	21.60	1.868E+00	7.204E-01	7.204E-01	10.34
	583.14	3720	84.20*	1.704E+00	5.653E-01	5.653E-01	6.51
	860.37	537	12.46	1.273E+00	7.377E-01	7.377E-01	13.85
PB-212	238.63	10799	44.60*	3.006E+00	1.756E+00	1.756E+00	6.56
	300.09	692	3.41	2.624E+00	1.687E+00	1.687E+00	13.05
BI-214	609.31	5083	46.30*	1.652E+00	1.449E+00	1.449E+00	6.33
	768.36	574	5.04	1.392E+00	1.783E+00	1.783E+00	12.88
	1120.29	1148	15.10	1.028E+00	1.613E+00	1.613E+00	8.38
	1764.49	992	15.80	7.321E-01	1.870E+00	1.870E+00	7.13
PB-214	241.98	2656	7.49	2.984E+00	2.591E+00	2.591E+00	8.39
	295.21	3862	19.20	2.650E+00	1.655E+00	1.655E+00	6.97
	351.92	6623	37.20*	2.378E+00	1.633E+00	1.633E+00	6.36
	785.91	------	1.10	1.367E+00	------ Line Not Found		------
RA-224DA	238.63	10799	44.60*	3.006E+00	1.756E+00	1.822E+00	6.56
	240.98	2656	3.95	2.984E+00	4.914E+00	5.097E+00	8.39
	583.14	3720	30.25	1.704E+00	1.573E+00	1.632E+00	6.51
	860.37	537	4.48	1.273E+00	2.052E+00	2.128E+00	13.85
RA-226DA	186.21	2046	3.50	3.434E+00	3.711E+00	3.711E+00	11.20
	241.98	2656	7.49	2.984E+00	2.591E+00	2.591E+00	8.39
	295.22	3862	19.20	2.650E+00	1.655E+00	1.655E+00	6.97
	351.92	6623	37.20	2.378E+00	1.633E+00	1.633E+00	6.36
	609.32	5083	46.30*	1.652E+00	1.449E+00	1.449E+00	6.33
	1120.28	1148	15.10	1.028E+00	1.613E+00	1.613E+00	8.38
	1238.11	273	5.94	9.474E-01	1.057E+00	1.058E+00	22.56
	1764.49	992	15.80	7.321E-01	1.870E+00	1.870E+00	7.13
AC-228	209.28	1037	4.40	3.233E+00	1.590E+00	1.590E+00	13.13
	270.23	920	3.60	2.796E+00	1.994E+00	1.994E+00	13.57
	338.32	2265	11.40	2.437E+00	1.778E+00	1.778E+00	8.22
	911.07	2616	27.70*	1.216E+00	1.693E+00	1.693E+00	7.70
	969.11	1953	16.60	1.158E+00	2.215E+00	2.215E+00	8.29
RA-228DA	209.28	1037	4.40	3.233E+00	1.590E+00	1.610E+00	13.13
	338.32	2265	11.40	2.437E+00	1.778E+00	1.800E+00	8.22
	911.07	2616	27.70*	1.216E+00	1.693E+00	1.713E+00	7.70
	964.60	------	5.20	1.162E+00	------ Line Not Found		------

Sample ID : J475P1AA Acquisition date : 5-SEP-2007 06:05:36

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1953	16.60	1.158E+00	2.215E+00	2.242E+00	8.29
TH-228DA	238.63	10799	44.60	3.006E+00	1.756E+00	1.822E+00	6.56
	240.98	2656	3.95	2.984E+00	4.914E+00	5.097E+00	8.39
	583.14	3720	30.25*	1.704E+00	1.573E+00	1.632E+00	6.51
	860.37	537	4.48	1.273E+00	2.052E+00	2.128E+00	13.85
TH-232DA	238.63	10799	44.60	3.006E+00	1.756E+00	1.756E+00	6.56
	338.32	2265	12.40*	2.437E+00	1.635E+00	1.635E+00	8.22
	583.14	3720	30.25	1.704E+00	1.573E+00	1.573E+00	6.51
	911.07	2616	27.70	1.216E+00	1.693E+00	1.693E+00	7.70
	964.60	------	5.20	1.162E+00	------ Line Not Found		------
	969.11	1953	16.60	1.158E+00	2.215E+00	2.215E+00	8.29
U-234DA	241.98	2656	7.49	2.984E+00	2.591E+00	2.591E+00	8.39
	295.22	3862	19.20*	2.650E+00	1.655E+00	1.655E+00	6.97
	351.92	6623	37.20	2.378E+00	1.633E+00	1.633E+00	6.36
	609.31	5083	46.30	1.652E+00	1.449E+00	1.449E+00	6.33
U-238DA	241.98	2656	7.49	2.984E+00	2.591E+00	2.591E+00	8.39
	295.22	3862	19.20	2.650E+00	1.655E+00	1.655E+00	6.97
	351.92	6623	37.20*	2.378E+00	1.633E+00	1.633E+00	6.36
	609.31	5083	46.30	1.652E+00	1.449E+00	1.449E+00	6.33
U-238DHP	63.28	795	3.80*	2.089E+00	2.184E+00	2.184E+00	18.20
	92.59	1764	5.41	3.594E+00	1.978E+00	1.978E+00	10.62

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J475P1AA

Acquisition date : 5-SEP-2007 06:05:36

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	74.88	3887	5761	1.48	243.75	229	34	1.08E-01	5.1	2.87E+00	
1	77.00	5843	5376	1.48	252.34	229	34	1.62E-01	3.4	2.99E+00	
0	87.43	1079	5532	1.14	294.53	285	15	3.00E-02	15.4	3.44E+00	T
4	89.79	689	3529	1.03	304.08	299	25	1.91E-02	16.8	3.51E+00	
0	129.01	593	3074	1.21	462.64	457	14	1.65E-02	20.2	3.87E+00	
0	327.74	676	1991	1.23	1266.29	1255	24	1.88E-02	15.2	2.49E+00	T
0	409.55	346	983	1.37	1597.10	1588	18	9.62E-03	18.9	2.16E+00	
0	463.11	622	1035	1.65	1813.68	1802	21	1.73E-02	11.7	1.99E+00	T
0	727.23	876	697	1.86	2881.65	2870	25	2.43E-02	7.6	1.45E+00	T
0	794.92	405	587	1.94	3155.39	3142	24	1.12E-02	14.3	1.36E+00	T
0	933.97	228	356	1.85	3717.64	3709	17	6.34E-03	17.5	1.19E+00	
0	1377.63	262	218	1.69	5511.51	5502	22	7.28E-03	12.5	8.70E-01	
0	1509.16	120	175	1.55	6043.30	6027	26	3.34E-03	24.8	8.13E-01	
0	1590.61	328	266	6.29	6372.64	6348	48	9.11E-03	14.3	7.83E-01	
0	1729.52	221	74	1.93	6934.25	6922	27	6.13E-03	10.6	7.41E-01	
0	1848.12	119	151	1.31	7413.78	7396	41	3.32E-03	26.9	7.13E-01	

Flags: "T" = Tentatively associated

Sample ID : J475P1AA
Acquisition date : 5-SEP-2007 06:05:36

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	8.897E-02	10.34	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.44	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.304E-01	8.38	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.470E+00	6.51	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.294E+01	6.33	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	8.097E-01	10.34	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	6.737E-01	13.11	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	4.804E-01	21.39	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.886E-02	15.75	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	22.00	328.77	20.50	1.213E+06	16.45	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	2.246E-01	16.59	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J475P1AA Acquisition date : 5-SEP-2007 06:05:36

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	4.269E+01	18.25	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.001E+00	10.16	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	5.295E-01	13.57	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.405E-01	11.20	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 13:07:29

Configuration : $DISK1:[GER10.SAMPLE]J475P1AA_050970605.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 : BRC SOIL
Sample date : 30-JUL-2007 14:15:00 Acquisition date : 5-SEP-2007 06:05:36
Sample ID : J475P1AA Sample quantity : 344.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:20.42 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.840E+01	1.796E+00	1.653E-01	6.189E-03	171.763
TL-208	5.653E-01	3.678E-02	2.052E-02	6.718E-04	27.552
PB-212	1.756E+00	1.152E-01	3.794E-02	1.528E-03	46.298
BI-214	1.449E+00	9.168E-02	3.884E-02	1.290E-03	37.309
PB-214	1.633E+00	1.039E-01	4.358E-02	1.521E-03	37.468
RA-224DA	1.822E+00	1.195E-01	3.935E-02	1.585E-03	46.298
RA-226DA	1.449E+00	9.169E-02	3.884E-02	1.291E-03	37.308
AC-228	1.693E+00	1.303E-01	7.230E-02	3.653E-03	23.412
RA-228DA	1.713E+00	1.319E-01	7.319E-02	3.697E-03	23.412
TH-228DA	1.632E+00	1.062E-01	5.924E-02	1.940E-03	27.552
TH-232DA	1.635E+00	1.344E-01	1.315E-01	4.718E-03	12.430
U-234DA	1.655E+00	1.153E-01	8.281E-02	3.182E-03	19.987
U-238DA	1.633E+00	1.039E-01	4.358E-02	1.521E-03	37.468
U-238DHP	2.184E+00	3.976E-01	8.925E-01	3.196E-02	2.447

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-2.769E-02		7.663E-02	2.544E-01	8.039E-03	-0.109
NA-22	-4.724E-03		7.370E-03	2.446E-02	8.960E-04	-0.193
SC-46	3.304E-01	+	2.768E-02	5.517E-02	2.104E-03	5.989
CR-51	-1.349E-01		1.267E-01	4.171E-01	1.544E-02	-0.323
MN-54	1.373E-03		7.025E-03	2.351E-02	1.086E-03	0.058
CO-57	5.643E-02		5.010E-02	1.688E-01	5.969E-03	0.334
CO-58	-3.802E-02		8.629E-03	2.576E-02	1.143E-03	-1.476
FE-59	-1.507E-02		2.148E-02	7.172E-02	2.848E-03	-0.210
CO-60	1.376E-02		6.374E-03	2.214E-02	8.449E-04	0.621
ZN-65	-2.051E-02		1.883E-02	5.182E-02	1.995E-03	-0.396
SE-75	8.759E-03		1.175E-02	3.297E-02	1.308E-03	0.266
SR-85	1.060E-01		1.177E-02	3.226E-02	1.010E-03	3.285
Y-88	6.703E-03		5.454E-03	1.960E-02	6.183E-04	0.342
NB-94	-3.027E-03		5.734E-03	1.901E-02	9.303E-04	-0.159

Sample ID : J475P1AA Acquisition date : 5-SEP-2007 06:05:36

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	1.034E-01		1.663E-02	4.811E-02	1.979E-03	2.149
TC-95M	1.400E-03		1.370E-02	3.965E-02	1.607E-03	0.035
ZR-95	3.777E-02		1.582E-02	5.413E-02	2.192E-03	0.698
ZRNB-95	1.522E-01		2.400E-02	6.933E-02	2.852E-03	2.196
RH-101	-7.927E-03		8.375E-03	2.475E-02	1.003E-03	-0.320
RH-102M	-4.493E-03		5.278E-03	1.741E-02	5.504E-04	-0.258
RU-103	-5.211E-03		1.026E-02	3.397E-02	1.069E-03	-0.153
RU-106DA	-8.263E-02		5.652E-02	1.871E-01	6.258E-03	-0.442
AG-108M	2.113E-03		5.424E-03	1.821E-02	5.771E-04	0.116
AG-110M	-4.365E-03		9.025E-03	2.990E-02	1.495E-03	-0.146
SN-113DA	-1.476E-02		9.606E-03	3.160E-02	9.955E-04	-0.467
SB-124	-1.189E-02		9.623E-03	2.813E-02	9.314E-04	-0.422
SB-125	3.994E-03		1.708E-02	5.726E-02	1.814E-03	0.070
SN-126DA	2.562E-02		5.897E-03	2.018E-02	6.941E-04	1.270
I-131	1.146E-01		1.392E-01	4.710E-01	1.598E-02	0.243
BA-133	1.102E-02		8.967E-03	2.585E-02	8.944E-04	0.426
CS-134	7.886E-02	+	1.242E-02	2.843E-02	1.231E-03	2.774
CS-137DA	-2.864E-02		6.811E-03	2.102E-02	7.169E-04	-1.362
LA-138	1.042E-02		7.987E-03	2.821E-02	1.062E-03	0.369
CE-139	5.553E-03		7.340E-03	2.460E-02	9.930E-04	0.226
BA-140	8.600E-02		1.477E-01	4.940E-01	1.572E-02	0.174
BALA-140	2.530E-01		9.734E-02	3.038E-01	1.092E-02	0.833
CE-141	3.420E-02		2.224E-02	7.480E-02	2.784E-03	0.457
CE-144	-2.735E-02		5.760E-02	1.632E-01	5.682E-03	-0.168
CEPR-144	-5.451E-02		1.152E-01	3.265E-01	1.136E-02	-0.167
PM-144	5.027E-03		5.563E-03	1.902E-02	6.347E-04	0.264
PM-146	-2.707E-03		7.765E-03	2.582E-02	8.181E-04	-0.105
EU-152	-2.782E-02		2.234E-02	6.027E-02	2.137E-03	-0.462
EU-154	-1.208E-02		2.037E-02	6.766E-02	2.479E-03	-0.178
EU-155	3.682E-02		2.505E-02	8.250E-02	2.814E-03	0.446
HF-181	-3.824E-03		1.102E-02	3.657E-02	1.155E-03	-0.105
BI-207	1.281E-02		5.382E-03	1.818E-02	5.904E-04	0.705
BI-210M	1.112E-02		1.140E-02	3.207E-02	1.270E-03	0.347
BI-212	2.001E+00	+	2.034E-01	4.172E-01	1.865E-02	4.798
RA-223	5.295E-01	+	7.187E-02	1.429E-01	5.647E-03	3.705
AC-227DA	2.015E+00		1.453E-01	2.282E-01	9.200E-03	8.829
TH-234DA	2.666E+00		1.010E+00	3.496E+00	1.610E-01	0.762
U-235HP	6.019E-02		4.641E-02	1.562E-01	5.756E-03	0.385
NP-237DA	-1.356E-02		1.336E-02	4.460E-02	1.674E-03	-0.304
AM-241HP	1.371E-01		3.764E-02	1.063E-01	3.932E-03	1.290

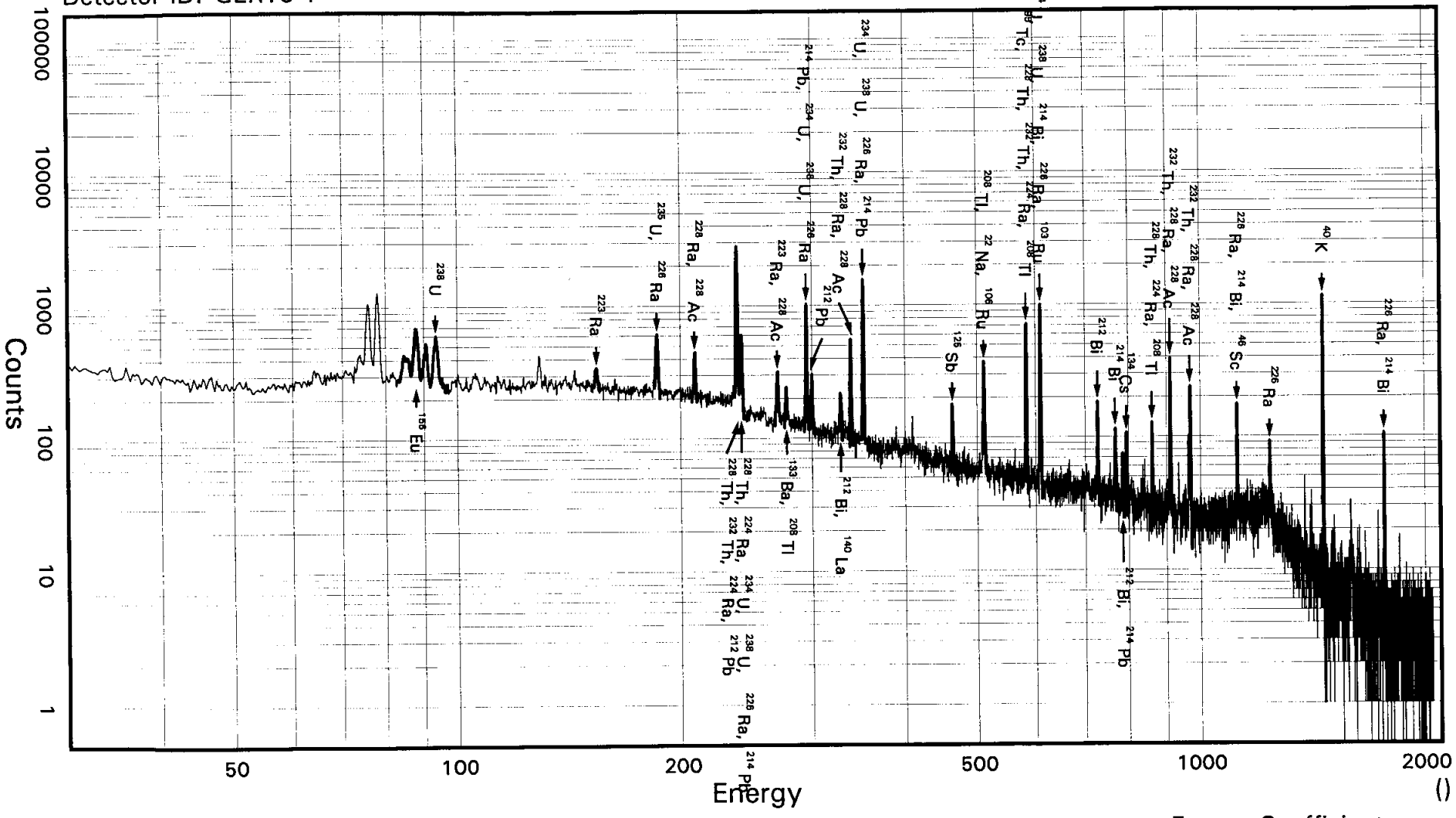
STL Richland WA.

BRC SOIL

Sample ID: J475Q1AA

Detector ID: GER13 1

Batch ID: 7232477



Acquisition Start: 5-SEP-2007 18:38:25.80

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: -6.78099E-01

Slope: 2.50783E-01

Quadrature: -1.07658E-07

SAMPLE IDENTIFICATION: J475Q1AA

CONFIGURATION ID: GER13:J475Q1AA_050971838
TITLE : BRC SOIL
SAMPLE ID : J475Q1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 05-SEP-07 18:38:25
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 30-JUL-2007 13:45:00.00
CALIB DATE: 5-SEP-2007 05:29:40.18
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:24

SAMPLE QUANTITY: 3.2710E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6781E+00 keV
ENERGY SLOPE: 2.5078E-01 keV/C
ENERGY Q COEFF: -.1077E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.3144E-01 keV
FWHM SLOPE: 4.2197E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 60.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 13:10:15

Configuration : $DISK1:[GER13.SAMPLE]J475Q1AA_050971838.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 30-JUL-2007 13:45:00 Acquisition date : 5-SEP-2007 18:38:25
Sample ID : J475Q1AA Sample quantity : 327.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:24.67 0.1%
Start energy : 19.38 End energy : 2046.52
Sensitivity : 5.00 Gaussian : 60.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	75.83*	2669	3580	0.97	305.10	291	29	7.41E-02	5.1	7.29E+00
2	2	78.01	3879	3128	0.93	313.80	291	29	1.08E-01	3.3	
3	4	87.89	2108	3647	1.21	353.23	334	36	5.86E-02	6.5	1.43E+01
4	4	90.52	1273	3356	1.11	363.72	334	36	3.54E-02	9.8	
5	0	93.53	1805	5077	1.30	375.73	370	20	5.01E-02	10.0	
6	0	129.25	633	2890	0.85	518.20	513	11	1.76E-02	16.9	
7	0	154.23	620	3041	1.31	617.86	612	13	1.72E-02	18.8	
8	0	185.98	1960	3224	1.26	744.55	738	14	5.44E-02	6.6	
9	0	209.07	1187	2927	1.08	836.67	829	15	3.30E-02	10.3	
10	4	238.48*	12045	2582	1.10	954.03	946	28	3.35E-01	1.3	4.36E+00
11	4	241.49	3100	2451	1.59	966.03	946	28	8.61E-02	4.1	
12	0	269.92	1198	2762	1.26	1079.52	1069	21	3.33E-02	11.3	
13	0	277.37	318	1799	0.87	1109.24	1102	12	8.83E-03	27.3	
14	0	294.99*	4260	2177	1.15	1179.58	1170	18	1.18E-01	3.1	
15	0	299.85	814	1854	0.85	1198.96	1191	16	2.26E-02	12.3	
16	0	327.66	470	1639	1.13	1309.99	1304	14	1.31E-02	18.8	
17	0	338.17	2412	1722	1.23	1351.94	1344	17	6.70E-02	4.4	
18	0	351.68*	7295	1831	1.22	1405.88	1396	19	2.03E-01	1.9	
19	0	409.41	316	1008	1.08	1636.37	1630	13	8.79E-03	21.5	
20	0	462.99	768	1087	1.50	1850.34	1841	19	2.13E-02	10.9	
21	0	510.76*	1088	1589	1.51	2041.13	2030	25	3.02E-02	12.5	
22	0	583.05*	4158	1110	1.40	2329.96	2316	25	1.16E-01	2.8	
23	0	609.22*	5571	989	1.41	2434.53	2424	21	1.55E-01	2.1	
24	0	727.18	918	931	1.46	2905.96	2895	24	2.55E-02	8.1	
25	0	768.14	478	807	1.82	3069.70	3058	22	1.33E-02	13.6	
26	0	785.77	221	534	1.06	3140.21	3132	17	6.13E-03	21.6	
27	0	794.88	439	570	1.26	3176.61	3167	18	1.22E-02	11.9	
28	0	860.32	616	626	0.87	3438.32	3426	26	1.71E-02	10.2	
29	0	911.17*	2544	915	1.69	3641.70	3626	29	7.07E-02	3.6	
30	0	933.71	268	617	1.83	3731.84	3718	25	7.44E-03	22.0	
31	0	968.09*	2171	958	1.79	3869.38	3850	36	6.03E-02	4.5	
32	0	1120.22*	1100	764	1.90	4478.20	4462	30	3.05E-02	7.4	
33	0	1238.47	307	712	1.47	4951.63	4941	20	8.52E-03	19.0	
34	0	1377.67	280	209	1.73	5509.21	5500	18	7.77E-03	12.0	
35	0	1401.34	66	198	0.92	5604.04	5597	17	1.84E-03	39.7	
36	0	1460.53*	9738	519	2.21	5841.21	5822	36	2.70E-01	1.2	
37	0	1508.53	155	139	2.93	6033.61	6020	26	4.30E-03	17.7	
38	0	1588.15	170	223	1.91	6352.79	6341	21	4.73E-03	18.4	
39	0	1729.00	185	117	1.50	6917.65	6903	29	5.13E-03	14.7	
40	0	1763.74*	907	180	2.47	7057.02	7038	38	2.52E-02	5.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 13:10:16

Configuration : $DISK1:[GER13.SAMPLE]J475Q1AA_050971838.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 30-JUL-2007 13:45:00 Acquisition date : 5-SEP-2007 18:38:25
Sample ID : J475Q1AA Sample quantity : 327.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:24.67 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	9738	10.67*	7.699E-01	2.721E+01	2.721E+01	6.56
TL-208	277.35	318	6.80	2.834E+00	3.788E-01	3.788E-01	28.00
	510.84	1088	21.60	1.898E+00	6.090E-01	6.090E-01	13.81
	583.14	4158	84.20*	1.721E+00	6.585E-01	6.585E-01	6.57
	860.37	616	12.46	1.247E+00	9.104E-01	9.104E-01	12.52
PB-212	238.63	12045	44.60*	3.095E+00	2.003E+00	2.003E+00	6.51
	300.09	814	3.41	2.702E+00	2.027E+00	2.027E+00	13.88
BI-214	609.31	5571	46.30*	1.664E+00	1.659E+00	1.659E+00	6.33
	768.36	478	5.04	1.378E+00	1.581E+00	1.581E+00	15.14
	1120.29	1100	15.10	9.770E-01	1.711E+00	1.711E+00	9.79
	1764.49	907	15.80	6.731E-01	1.958E+00	1.958E+00	8.09
PB-214	241.98	3100	7.49	3.073E+00	3.091E+00	3.091E+00	7.59
	295.21	4260	19.20	2.729E+00	1.866E+00	1.866E+00	7.08
	351.92	7295	37.20*	2.443E+00	1.843E+00	1.843E+00	6.47
	785.91	221	1.10	1.351E+00	3.409E+00	3.409E+00	22.62
RA-223	154.21	620	5.58	3.677E+00	6.935E-01	6.958E-01	19.82
	269.46	1198	13.60*	2.881E+00	7.018E-01	7.041E-01	13.01
	323.87	------	3.88	2.575E+00	------	Line Not Found	------
RA-224DA	238.63	12045	44.60*	3.095E+00	2.003E+00	2.079E+00	6.51
	240.98	3100	3.95	3.073E+00	5.861E+00	6.083E+00	7.59
	583.14	4158	30.25	1.721E+00	1.833E+00	1.902E+00	6.57
	860.37	616	4.48	1.247E+00	2.532E+00	2.628E+00	12.52
RA-226DA	186.21	1960	3.50	3.492E+00	3.680E+00	3.680E+00	9.12
	241.98	3100	7.49	3.073E+00	3.091E+00	3.091E+00	7.59
	295.22	4260	19.20	2.729E+00	1.866E+00	1.866E+00	7.08
	351.92	7295	37.20	2.443E+00	1.843E+00	1.843E+00	6.47
	609.32	5571	46.30*	1.664E+00	1.659E+00	1.659E+00	6.33
	1120.28	1100	15.10	9.770E-01	1.711E+00	1.711E+00	9.79
	1238.11	307	5.94	8.900E-01	1.332E+00	1.332E+00	20.04
	1764.49	907	15.80	6.731E-01	1.958E+00	1.958E+00	8.09
AC-228	209.28	1187	4.40	3.316E+00	1.867E+00	1.867E+00	12.15
	270.23	1198	3.60	2.881E+00	2.651E+00	2.651E+00	13.01
	338.32	2412	11.40	2.505E+00	1.939E+00	1.939E+00	7.67
	911.07	2544	27.70*	1.184E+00	1.780E+00	1.780E+00	8.36
	969.11	2171	16.60	1.120E+00	2.680E+00	2.680E+00	8.55
RA-228DA	209.28	1187	4.40	3.316E+00	1.867E+00	1.890E+00	12.15

Sample ID : J475Q1AA Acquisition date : 5-SEP-2007 18:38:25

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	2412	11.40	2.505E+00	1.939E+00	1.963E+00	7.67
	911.07	2544	27.70*	1.184E+00	1.780E+00	1.802E+00	8.36
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	2171	16.60	1.120E+00	2.680E+00	2.713E+00	8.55
TH-228DA	238.63	12045	44.60	3.095E+00	2.003E+00	2.079E+00	6.51
	240.98	3100	3.95	3.073E+00	5.861E+00	6.083E+00	7.59
	583.14	4158	30.25*	1.721E+00	1.833E+00	1.902E+00	6.57
	860.37	616	4.48	1.247E+00	2.532E+00	2.628E+00	12.52
TH-232DA	238.63	12045	44.60	3.095E+00	2.003E+00	2.003E+00	6.51
	338.32	2412	12.40*	2.505E+00	1.782E+00	1.782E+00	7.67
	583.14	4158	30.25	1.721E+00	1.833E+00	1.833E+00	6.57
	911.07	2544	27.70	1.184E+00	1.780E+00	1.780E+00	8.36
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	2171	16.60	1.120E+00	2.680E+00	2.680E+00	8.55
U-234DA	241.98	3100	7.49	3.073E+00	3.091E+00	3.091E+00	7.59
	295.22	4260	19.20*	2.729E+00	1.866E+00	1.866E+00	7.08
	351.92	7295	37.20	2.443E+00	1.843E+00	1.843E+00	6.47
	609.31	5571	46.30	1.664E+00	1.659E+00	1.659E+00	6.33
U-238DA	241.98	3100	7.49	3.073E+00	3.091E+00	3.091E+00	7.59
	295.22	4260	19.20	2.729E+00	1.866E+00	1.866E+00	7.08
	351.92	7295	37.20*	2.443E+00	1.843E+00	1.843E+00	6.47
	609.31	5571	46.30	1.664E+00	1.659E+00	1.659E+00	6.33

Flag: "*" = Keyline

Sample ID : J475Q1AA
Acquisition date : 5-SEP-2007 18:38:25

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	75.83	2669	3580	0.97	305.10	291	29	7.41E-02	5.1	1.75E+00	
2	78.01	3879	3128	0.93	313.80	291	29	1.08E-01	3.3	1.89E+00	
4	87.89	2108	3647	1.21	353.23	334	36	5.86E-02	6.5	2.50E+00	T
4	90.52	1273	3356	1.11	363.72	334	36	3.54E-02	9.8	2.64E+00	
0	93.53	1805	5077	1.30	375.73	370	20	5.01E-02	10.0	2.78E+00	T
0	129.25	633	2890	0.85	518.20	513	11	1.76E-02	16.9	3.65E+00	
0	327.66	470	1639	1.13	1309.99	1304	14	1.31E-02	18.8	2.56E+00	T
0	409.41	316	1008	1.08	1636.37	1630	13	8.79E-03	21.5	2.21E+00	
0	462.99	768	1087	1.50	1850.34	1841	19	2.13E-02	10.9	2.03E+00	T
0	727.18	918	931	1.46	2905.96	2895	24	2.55E-02	8.1	1.44E+00	T
0	794.88	439	570	1.26	3176.61	3167	18	1.22E-02	11.9	1.34E+00	T
0	933.71	268	617	1.83	3731.84	3718	25	7.44E-03	22.0	1.16E+00	
0	1377.67	280	209	1.73	5509.21	5500	18	7.77E-03	12.0	8.09E-01	
0	1401.34	66	198	0.92	5604.04	5597	17	1.84E-03	39.7	7.97E-01	
0	1508.53	155	139	2.93	6033.61	6020	26	4.30E-03	17.7	7.50E-01	
0	1588.15	170	223	1.91	6352.79	6341	21	4.73E-03	18.4	7.21E-01	
0	1729.00	185	117	1.50	6917.65	6903	29	5.13E-03	14.7	6.81E-01	

Flags: "T" = Tentatively associated

Sample ID : J475Q1AA Acquisition date : 5-SEP-2007 18:38:25

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	7.523E-02	13.81	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.45	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.520E-01	9.79	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.61	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.895E+00	6.57	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.95	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.652E+01	6.33	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	6.851E-01	13.81	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	8.591E-01	12.44	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	3.758E-01	28.00	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	9.136E-02	13.67	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	22.32	328.77	20.50	1.081E+06	19.86	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	6.357E-01	9.50	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Rejected Report (continued)
Sample ID : J475Q1AA

Acquisition date : 5-SEP-2007 18:38:25

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.039E+01	21.38	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.219E+00	10.57	
			785.37	1.10	3.409E+00	22.78	
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		68.47			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.385E-01	9.12	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	2.752E+00	11.96	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 13:10:20

Configuration : $DISK1:[GER13.SAMPLE]J475Q1AA_050971838.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 : BRC SOIL
Sample date : 30-JUL-2007 13:45:00 Acquisition date : 5-SEP-2007 18:38:25
Sample ID : J475Q1AA Sample quantity : 327.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:24.67 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.721E+01	1.784E+00	2.227E-01	9.027E-03	122.182
TL-208	6.585E-01	4.330E-02	2.167E-02	7.058E-04	30.391
PB-212	2.003E+00	1.303E-01	3.819E-02	1.512E-03	52.440
BI-214	1.659E+00	1.051E-01	3.993E-02	1.315E-03	41.556
PB-214	1.843E+00	1.192E-01	4.454E-02	1.614E-03	41.371
RA-223	7.041E-01	9.163E-02	1.154E-01	4.577E-03	6.101
RA-224DA	2.079E+00	1.352E-01	3.964E-02	1.570E-03	52.440
RA-226DA	1.659E+00	1.051E-01	3.993E-02	1.315E-03	41.556
AC-228	1.780E+00	1.489E-01	8.095E-02	4.563E-03	21.989
RA-228DA	1.802E+00	1.507E-01	8.196E-02	4.620E-03	21.989
TH-228DA	1.902E+00	1.251E-01	6.260E-02	2.039E-03	30.391
TH-232DA	1.782E+00	1.367E-01	1.358E-01	5.088E-03	13.125
U-234DA	1.866E+00	1.321E-01	8.510E-02	3.355E-03	21.924
U-238DA	1.843E+00	1.192E-01	4.454E-02	1.614E-03	41.371

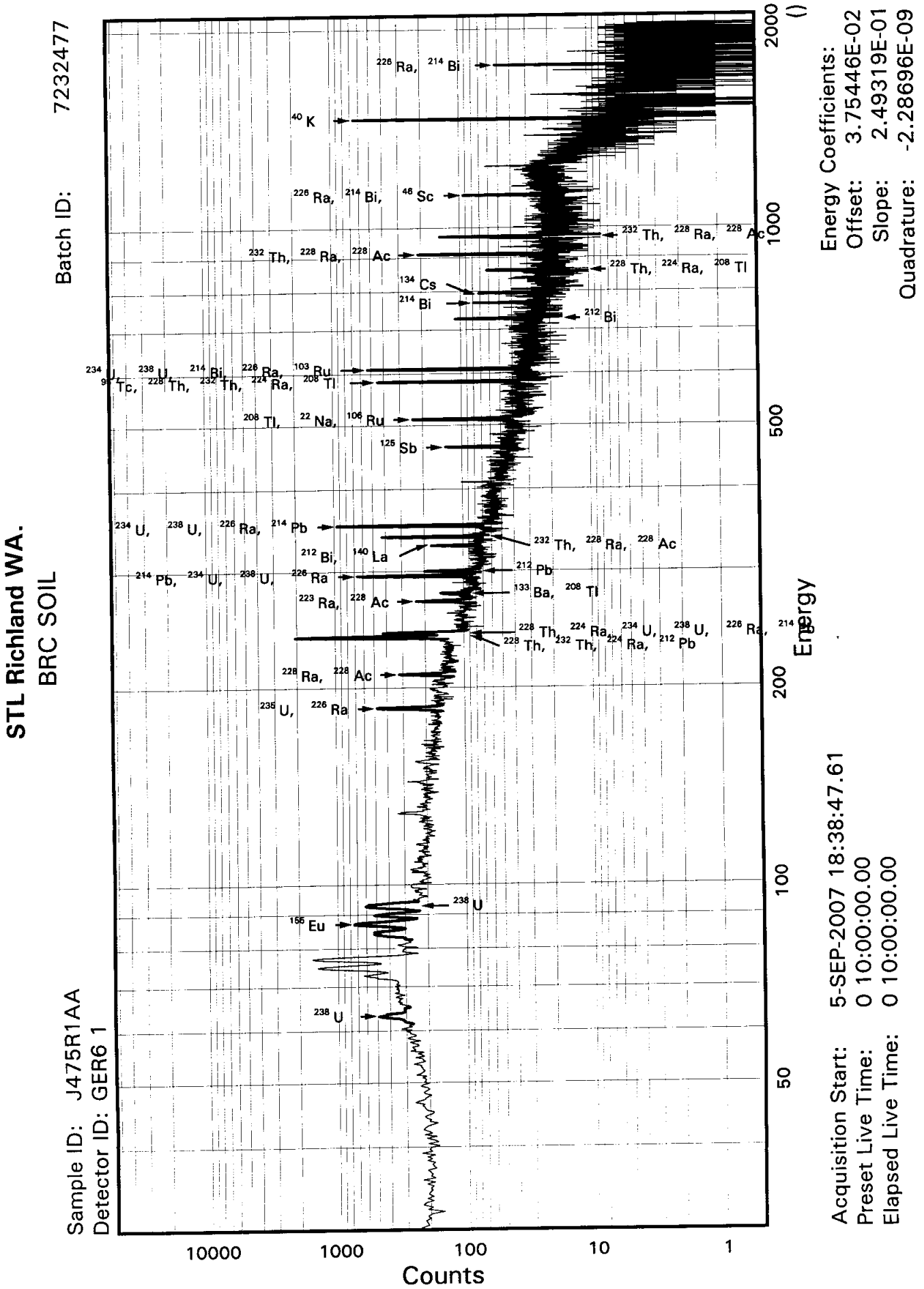
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-7.228E-02		8.061E-02	2.660E-01	8.470E-03	-0.272
NA-22	-8.741E-03		8.516E-03	2.847E-02	1.120E-03	-0.307
SC-46	3.520E-01	+	3.445E-02	6.392E-02	2.617E-03	5.506
CR-51	-1.628E-01		1.280E-01	4.195E-01	1.634E-02	-0.388
MN-54	-3.032E-04		7.582E-03	2.552E-02	1.277E-03	-0.012
CO-57	-7.755E-02		4.821E-02	1.610E-01	5.875E-03	-0.482
CO-58	-1.745E-02		8.967E-03	2.926E-02	1.390E-03	-0.596
FE-59	-7.099E-02		2.545E-02	8.087E-02	3.473E-03	-0.878
CO-60	1.057E-02		7.099E-03	2.476E-02	1.028E-03	0.427
ZN-65	9.275E-03		2.123E-02	6.057E-02	2.508E-03	0.153
SE-75	-3.552E-03		1.046E-02	3.214E-02	1.275E-03	-0.110
SR-85	4.756E-02		1.009E-02	2.939E-02	9.235E-04	1.618
Y-88	7.927E-03		6.752E-03	2.405E-02	7.762E-04	0.330
NB-94	-2.320E-03		6.265E-03	2.097E-02	1.132E-03	-0.111

Sample ID : J475Q1AA Acquisition date : 5-SEP-2007 18:38:25

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	8.451E-02		1.737E-02	5.134E-02	2.208E-03	1.646
TC-95M	-7.484E-03		1.188E-02	3.812E-02	1.496E-03	-0.196
ZR-95	3.635E-02		1.725E-02	5.956E-02	2.509E-03	0.610
ZRNB-95	1.237E-01		2.489E-02	7.354E-02	3.163E-03	1.682
RH-101	1.433E-02		7.035E-03	2.339E-02	9.160E-04	0.613
RH-102M	-7.134E-03		5.439E-03	1.785E-02	5.687E-04	-0.400
RU-103	3.856E-03		1.111E-02	3.715E-02	1.175E-03	0.104
RU-106DA	5.656E-02		5.989E-02	2.038E-01	6.744E-03	0.278
AG-108M	1.966E-04		5.458E-03	1.837E-02	5.890E-04	0.011
AG-110M	-6.920E-03		9.694E-03	3.219E-02	1.787E-03	-0.215
SN-113DA	-4.776E-03		9.554E-03	3.220E-02	1.030E-03	-0.148
SB-124	4.887E-03		9.197E-03	2.981E-02	9.790E-04	0.164
SB-125	2.904E-02		1.771E-02	6.030E-02	1.934E-03	0.482
SN-126DA	1.592E-02		6.196E-03	2.110E-02	7.161E-04	0.755
I-131	-3.105E-02		1.493E-01	4.911E-01	1.719E-02	-0.063
BA-133	3.296E-04		9.350E-03	2.625E-02	9.409E-04	0.013
CS-134	9.136E-02	+	1.249E-02	3.207E-02	1.475E-03	2.849
CS-137DA	-1.310E-02		7.113E-03	2.313E-02	7.758E-04	-0.566
LA-138	-1.381E-02		9.815E-03	3.218E-02	1.313E-03	-0.429
CE-139	-5.146E-03		6.969E-03	2.320E-02	9.070E-04	-0.222
BA-140	1.645E-01		1.648E-01	5.507E-01	1.753E-02	0.299
BALA-140	-3.911E-01		1.096E-01	3.216E-01	1.236E-02	-1.216
CE-141	2.656E-02		2.170E-02	7.359E-02	2.749E-03	0.361
CE-144	-2.684E-02		4.923E-02	1.590E-01	5.767E-03	-0.169
CEPR-144	-5.358E-02		9.846E-02	3.180E-01	1.153E-02	-0.168
PM-144	1.724E-03		5.825E-03	1.971E-02	6.513E-04	0.087
PM-146	2.137E-02		8.026E-03	2.731E-02	8.741E-04	0.782
EU-152	-6.156E-03		1.904E-02	6.277E-02	2.319E-03	-0.098
EU-154	-1.861E-02		2.340E-02	7.858E-02	3.092E-03	-0.237
EU-155	1.445E-01		2.764E-02	8.922E-02	3.430E-03	1.619
HF-181	-5.928E-03		1.149E-02	3.811E-02	1.212E-03	-0.156
BI-207	-5.653E-04		5.521E-03	1.870E-02	6.052E-04	-0.030
BI-210M	-1.365E-02		1.093E-02	3.094E-02	1.227E-03	-0.441
BI-212	2.219E+00	+	2.347E-01	4.631E-01	2.106E-02	4.793
AC-227DA	3.945E-01		6.377E-02	1.741E-01	6.891E-03	2.266
TH-234DA	2.027E+00		1.075E+00	3.722E+00	1.894E-01	0.545
U-235HP	1.190E-01		4.563E-02	1.545E-01	5.745E-03	0.770
NP-237DA	-3.668E-03		1.350E-02	4.485E-02	1.755E-03	-0.082
U-238DHP	8.852E-02		4.849E-01	1.649E+00	8.004E-02	0.054
AM-241HP	-5.000E-02		6.579E-02	2.228E-01	1.069E-02	-0.224


STL Richland WA.
BRC SOIL
Batch ID: 7232477
Sample ID: J475R1AA
Detector ID: GER6 1
Energy Coefficients:
Offset: 3.75446E-02
Slope: 2.49319E-01
Quadrature: -2.28696E-09
Acquisition Start: 5-SEP-2007 18:38:47.61
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
99 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
212 Bi, 140 La
232 Th, 228 Ra, 228 Ac
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J475R1AA

CONFIGURATION ID: GER6:J475R1AA_050971838
TITLE : BRC SOIL
SAMPLE ID : J475R1AA

REPORT DATE: 07-SEP-07
ACQUIRE DATE: 05-SEP-07 18:38:47
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 30-JUL-2007 13:45:00.00
CALIB DATE: 5-SEP-2007 05:56:33.04
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:17

SAMPLE QUANTITY: 3.6760E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 3.7545E-02 keV
ENERGY SLOPE: 2.4932E-01 keV/C
ENERGY Q COEFF: -.2287E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.6605E-01 keV
FWHM SLOPE: 6.3426E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 40.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 7-SEP-2007 13:11:27

Configuration : $DISK1:[GER6.SAMPLE]J475R1AA_050971838.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 30-JUL-2007 13:45:00 Acquisition date : 5-SEP-2007 18:38:47
Sample ID : J475R1AA Sample quantity : 367.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.60 0.0%
Start energy : 19.98 End energy : 2042.30
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.25*	832	4509	0.98	253.54	246	16	2.31E-02	18.6	
2	6	72.70*	837	4053	1.01	291.45	284	32	2.32E-02	15.8	2.32E+00
3	6	74.81*	4523	4073	1.12	299.89	284	32	1.26E-01	3.4	
4	6	77.06	5958	3631	1.07	308.93	284	32	1.66E-01	2.6	
5	8	84.45*	1275	4030	1.58	338.56	331	25	3.54E-02	11.6	1.06E+00
6	8	87.16*	2240	3600	1.18	349.44	331	25	6.22E-02	6.3	
7	5	89.87	1208	1998	1.03	360.31	356	24	3.36E-02	7.0	1.81E+00
8	5	92.90*	1968	3734	1.38	372.46	356	24	5.47E-02	7.3	
9	0	129.03	675	2755	1.05	517.38	511	14	1.88E-02	16.9	
10	0	186.00*	1666	2631	1.27	745.87	738	17	4.63E-02	7.7	
11	0	209.37	1032	2126	1.12	839.63	832	17	2.87E-02	10.7	
12	4	238.67*	9447	1762	1.18	957.15	949	30	2.62E-01	1.4	1.88E+00
13	4	241.72	2514	1949	1.78	969.38	949	30	6.98E-02	5.1	
14	0	270.28	793	1753	1.33	1083.94	1074	19	2.20E-02	13.1	
15	0	277.53	252	1364	1.68	1113.00	1106	14	7.01E-03	31.7	
16	0	295.22	3133	1392	1.18	1183.98	1176	17	8.70E-02	3.3	
17	0	300.15	674	1412	1.41	1203.76	1197	18	1.87E-02	13.6	
18	0	328.03	482	1055	1.12	1315.59	1309	14	1.34E-02	15.0	
19	0	338.34	1901	1069	1.30	1356.94	1349	15	5.28E-02	4.4	
20	0	351.87	5381	1334	1.37	1411.18	1397	24	1.49E-01	2.3	
21	0	409.24	300	856	1.11	1641.29	1633	18	8.35E-03	20.3	
22	0	462.89	631	934	1.38	1856.51	1846	23	1.75E-02	11.4	
23	0	510.81*	1038	1090	1.82	2048.73	2035	28	2.88E-02	9.6	
24	0	583.15	3029	732	1.74	2338.86	2326	22	8.42E-02	2.6	
25	0	609.20	3829	882	1.78	2443.34	2427	29	1.06E-01	2.5	
26	0	727.23	697	572	1.95	2916.79	2905	25	1.94E-02	8.7	
27	0	768.03	356	470	1.39	3080.45	3069	20	9.89E-03	12.6	
28	0	794.78	295	464	1.03	3187.76	3177	22	8.19E-03	15.3	
29	0	860.16	327	520	1.90	3450.00	3434	28	9.07E-03	15.9	
30	0	911.03	1891	606	2.60	3654.05	3639	30	5.25E-02	3.7	
31	0	934.06	190	364	1.65	3746.41	3737	20	5.29E-03	20.1	
32	0	967.80	1604	695	2.17	3881.76	3860	43	4.46E-02	4.9	
33	0	1119.79	775	671	2.60	4491.44	4474	34	2.15E-02	8.5	
34	0	1377.89	214	263	3.04	5526.73	5506	34	5.96E-03	17.2	
35	0	1460.39*	8185	195	3.09	5857.68	5834	41	2.27E-01	1.2	
36	0	1764.08	674	98	3.35	7075.92	7054	38	1.87E-02	5.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 13:11:27

Configuration : $DISK1:[GER6.SAMPLE]J475R1AA_050971838.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 30-JUL-2007 13:45:00 Acquisition date : 5-SEP-2007 18:38:47
Sample ID : J475R1AA Sample quantity : 367.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.60 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	8185	10.67*	5.925E-01	2.644E+01	2.644E+01	8.37
TL-208	277.35	252	6.80	2.284E+00	3.318E-01	3.318E-01	32.29
	510.84	1038	21.60	1.379E+00	7.112E-01	7.112E-01	11.24
	583.14	3029	84.20*	1.240E+00	5.926E-01	5.926E-01	6.52
	860.37	327	12.46	9.142E-01	5.854E-01	5.854E-01	17.32
PB-212	238.63	9447	44.60*	2.572E+00	1.682E+00	1.682E+00	6.39
	300.09	674	3.41	2.143E+00	1.883E+00	1.883E+00	14.94
BI-214	609.31	3829	46.30*	1.198E+00	1.410E+00	1.410E+00	6.47
	768.36	356	5.04	9.985E-01	1.446E+00	1.446E+00	14.11
	1120.29	775	15.10	7.422E-01	1.413E+00	1.413E+00	10.72
	1764.49	674	15.80	4.957E-01	1.757E+00	1.757E+00	8.19
PB-214	241.98	2514	7.49	2.547E+00	2.691E+00	2.691E+00	8.04
	295.21	3133	19.20	2.172E+00	1.534E+00	1.534E+00	6.98
	351.92	5381	37.20*	1.878E+00	1.573E+00	1.573E+00	6.47
	785.91	------	1.10	9.808E-01	------ Line Not Found		------
RA-224DA	238.63	9447	44.60*	2.572E+00	1.682E+00	1.746E+00	6.39
	240.98	2514	3.95	2.547E+00	5.103E+00	5.296E+00	8.04
	583.14	3029	30.25	1.240E+00	1.650E+00	1.712E+00	6.52
	860.37	327	4.48	9.142E-01	1.628E+00	1.690E+00	17.32
RA-226DA	186.21	1666	3.50	3.057E+00	3.180E+00	3.180E+00	9.84
	241.98	2514	7.49	2.547E+00	2.691E+00	2.691E+00	8.04
	295.22	3133	19.20	2.172E+00	1.534E+00	1.534E+00	6.98
	351.92	5381	37.20	1.878E+00	1.573E+00	1.573E+00	6.47
	609.32	3829	46.30*	1.198E+00	1.410E+00	1.410E+00	6.47
	1120.28	775	15.10	7.422E-01	1.413E+00	1.413E+00	10.72
	1238.11	------	5.94	6.834E-01	------ Line Not Found		------
	1764.49	674	15.80	4.957E-01	1.757E+00	1.758E+00	8.19
AC-228	209.28	1032	4.40	2.830E+00	1.692E+00	1.692E+00	12.38
	270.23	793	3.60	2.333E+00	1.928E+00	1.928E+00	14.54
	338.32	1901	11.40	1.940E+00	1.755E+00	1.755E+00	7.50
	911.07	1891	27.70*	8.742E-01	1.595E+00	1.595E+00	7.93
	969.11	1604	16.60	8.337E-01	2.367E+00	2.367E+00	8.51
RA-228DA	209.28	1032	4.40	2.830E+00	1.692E+00	1.713E+00	12.38
	338.32	1901	11.40	1.940E+00	1.755E+00	1.777E+00	7.50
	911.07	1891	27.70*	8.742E-01	1.595E+00	1.615E+00	7.93
	964.60	------	5.20	8.359E-01	------ Line Not Found		------

Sample ID : J475R1AA Acquisition date : 5-SEP-2007 18:38:47

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1604	16.60	8.337E-01	2.367E+00	2.397E+00	8.51
TH-228DA	238.63	9447	44.60	2.572E+00	1.682E+00	1.746E+00	6.39
	240.98	2514	3.95	2.547E+00	5.103E+00	5.296E+00	8.04
	583.14	3029	30.25*	1.240E+00	1.650E+00	1.712E+00	6.52
	860.37	327	4.48	9.142E-01	1.628E+00	1.690E+00	17.32
TH-232DA	238.63	9447	44.60	2.572E+00	1.682E+00	1.682E+00	6.39
	338.32	1901	12.40*	1.940E+00	1.614E+00	1.614E+00	7.50
	583.14	3029	30.25	1.240E+00	1.650E+00	1.650E+00	6.52
	911.07	1891	27.70	8.742E-01	1.595E+00	1.595E+00	7.93
	964.60	------	5.20	8.359E-01	------	Line Not Found	------
	969.11	1604	16.60	8.337E-01	2.367E+00	2.367E+00	8.51
U-234DA	241.98	2514	7.49	2.547E+00	2.691E+00	2.691E+00	8.04
	295.22	3133	19.20*	2.172E+00	1.534E+00	1.534E+00	6.98
	351.92	5381	37.20	1.878E+00	1.573E+00	1.573E+00	6.47
	609.31	3829	46.30	1.198E+00	1.410E+00	1.410E+00	6.47
U-238DA	241.98	2514	7.49	2.547E+00	2.691E+00	2.691E+00	8.04
	295.22	3133	19.20	2.172E+00	1.534E+00	1.534E+00	6.98
	351.92	5381	37.20*	1.878E+00	1.573E+00	1.573E+00	6.47
	609.31	3829	46.30	1.198E+00	1.410E+00	1.410E+00	6.47
U-238DHP	63.28	832	3.80*	2.148E+00	2.081E+00	2.081E+00	19.61
	92.59	1968	5.41	3.370E+00	2.204E+00	2.204E+00	9.90

Flag: "*" = Keyline

Sample ID : J475R1AA Acquisition date : 5-SEP-2007 18:38:47

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
6	72.70	837	4053	1.01	291.45	284	32	2.32E-02	15.8	2.69E+00	
6	74.81	4523	4073	1.12	299.89	284	32	1.26E-01	3.4	2.79E+00	
6	77.06	5958	3631	1.07	308.93	284	32	1.66E-01	2.6	2.89E+00	
8	84.45	1275	4030	1.58	338.56	331	25	3.54E-02	11.6	3.16E+00	
8	87.16	2240	3600	1.18	349.44	331	25	6.22E-02	6.3	3.24E+00	T
5	89.87	1208	1998	1.03	360.31	356	24	3.36E-02	7.0	3.30E+00	
0	129.03	675	2755	1.05	517.38	511	14	1.88E-02	16.9	3.56E+00	
0	328.03	482	1055	1.12	1315.59	1309	14	1.34E-02	15.0	1.99E+00	T
0	409.24	300	856	1.11	1641.29	1633	18	8.35E-03	20.3	1.66E+00	
0	462.89	631	934	1.38	1856.51	1846	23	1.75E-02	11.4	1.50E+00	T
0	727.23	697	572	1.95	2916.79	2905	25	1.94E-02	8.7	1.04E+00	T
0	794.78	295	464	1.03	3187.76	3177	22	8.19E-03	15.3	9.72E-01	T
0	934.06	190	364	1.65	3746.41	3737	20	5.29E-03	20.1	8.57E-01	
0	1377.89	214	263	3.04	5526.73	5506	34	5.96E-03	17.2	6.24E-01	

Flags: "T" = Tentatively associated

Sample ID : J475R1AA Acquisition date : 5-SEP-2007 18:38:47

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	8.787E-02	11.24	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.45	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.907E-01	10.72	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.61	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.605E+00	6.52	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.95	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.254E+01	6.47	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	8.002E-01	11.24	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	8.542E-01	12.83	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	3.292E-01	32.29	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.507E-02	16.65	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	22.32	328.77	20.50	1.264E+06	16.20	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.642E-01	9.22	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J475R1AA
Acquisition date : 5-SEP-2007 18:38:47

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.554E+01	18.03	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.076E+00	10.98	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	5.121E-01	14.54	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.061E-01	9.84	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 7-SEP-2007 13:11:29

Configuration : $DISK1:[GER6.SAMPLE]J475R1AA_050971838.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 : BRC SOIL
Sample date : 30-JUL-2007 13:45:00 Acquisition date : 5-SEP-2007 18:38:47
Sample ID : J475R1AA Sample quantity : 367.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.60 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.644E+01	2.214E+00	2.043E-01	1.349E-02	129.407
TL-208	5.926E-01	3.866E-02	2.344E-02	7.632E-04	25.281
PB-212	1.682E+00	1.074E-01	3.617E-02	1.343E-03	46.500
BI-214	1.410E+00	9.129E-02	4.636E-02	1.521E-03	30.422
PB-214	1.573E+00	1.018E-01	4.578E-02	1.572E-03	34.365
RA-224DA	1.746E+00	1.115E-01	3.754E-02	1.394E-03	46.500
RA-226DA	1.410E+00	9.129E-02	4.636E-02	1.522E-03	30.421
AC-228	1.595E+00	1.266E-01	9.392E-02	4.657E-03	16.985
RA-228DA	1.615E+00	1.281E-01	9.509E-02	4.715E-03	16.985
TH-228DA	1.712E+00	1.117E-01	6.772E-02	2.205E-03	25.281
TH-232DA	1.614E+00	1.211E-01	1.444E-01	5.004E-03	11.177
U-234DA	1.534E+00	1.070E-01	8.516E-02	3.076E-03	18.014
U-238DA	1.573E+00	1.018E-01	4.578E-02	1.572E-03	34.365
U-238DHP	2.081E+00	4.081E-01	6.275E-01	2.243E-02	3.316

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	9.229E-02		9.061E-02	3.074E-01	9.941E-03	0.300
NA-22	-1.063E-02		9.741E-03	3.206E-02	1.943E-03	-0.331
SC-46	2.907E-01	+	3.117E-02	6.486E-02	2.783E-03	4.482
CR-51	-1.160E-02		1.346E-01	4.433E-01	1.548E-02	-0.026
MN-54	-4.828E-03		8.509E-03	2.859E-02	1.289E-03	-0.169
CO-57	2.551E-02		4.172E-02	1.390E-01	5.208E-03	0.184
CO-58	-3.851E-02		1.059E-02	3.228E-02	1.399E-03	-1.193
FE-59	-4.500E-02		2.772E-02	9.017E-02	3.950E-03	-0.499
CO-60	1.292E-02		8.106E-03	2.827E-02	2.069E-03	0.457
ZN-65	6.882E-02		2.653E-02	7.686E-02	3.315E-03	0.895
SE-75	-8.865E-03		1.053E-02	3.242E-02	1.198E-03	-0.273
SR-85	1.080E-01		1.293E-02	3.657E-02	1.151E-03	2.952
Y-88	-7.650E-03		7.939E-03	2.668E-02	9.037E-04	-0.287
NB-94	6.579E-03		7.273E-03	2.487E-02	1.189E-03	0.265

Sample ID : J475R1AA Acquisition date : 5-SEP-2007 18:38:47

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	1.102E-01		2.067E-02	6.039E-02	2.425E-03	1.825
TC-95M	2.709E-02		1.116E-02	3.596E-02	1.322E-03	0.753
ZR-95	2.010E-02		1.965E-02	6.676E-02	2.639E-03	0.301
ZRNB-95	1.591E-01		2.958E-02	8.636E-02	3.468E-03	1.843
RH-101	2.812E-02		6.655E-03	2.209E-02	8.096E-04	1.273
RH-102M	-4.480E-03		6.218E-03	2.070E-02	6.703E-04	-0.216
RU-103	3.856E-03		1.241E-02	4.171E-02	1.332E-03	0.092
RU-106DA	2.481E-02		6.938E-02	2.337E-01	7.693E-03	0.106
AG-108M	1.836E-03		6.093E-03	2.072E-02	6.811E-04	0.089
AG-110M	-2.546E-02		1.150E-02	3.704E-02	1.808E-03	-0.687
SN-113DA	-9.697E-03		1.082E-02	3.566E-02	1.171E-03	-0.272
SB-124	1.059E-02		1.213E-02	3.480E-02	1.140E-03	0.304
SB-125	-3.182E-03		1.968E-02	6.492E-02	2.136E-03	-0.049
SN-126DA	1.674E-02		6.896E-03	2.345E-02	7.834E-04	0.714
I-131	-4.312E-01		1.585E-01	5.092E-01	1.729E-02	-0.847
BA-133	-2.410E-04		9.659E-03	2.750E-02	9.415E-04	-0.009
CS-134	7.507E-02	+	1.250E-02	3.452E-02	1.460E-03	2.175
CS-137DA	-1.472E-02		8.069E-03	2.603E-02	8.618E-04	-0.566
LA-138	3.208E-03		1.059E-02	3.641E-02	2.460E-03	0.088
CE-139	-8.341E-03		6.262E-03	2.094E-02	7.540E-04	-0.398
BA-140	-2.758E-01		1.847E-01	5.988E-01	1.911E-02	-0.461
BALA-140	-6.585E-01		1.445E-01	4.135E-01	2.334E-02	-1.592
CE-141	5.172E-04		1.923E-02	6.344E-02	2.333E-03	0.008
CE-144	5.095E-02		4.300E-02	1.373E-01	5.179E-03	0.371
CEPR-144	1.036E-01		8.603E-02	2.746E-01	1.036E-02	0.377
PM-144	-1.024E-02		6.988E-03	2.289E-02	7.527E-04	-0.448
PM-146	2.229E-02		8.778E-03	3.014E-02	9.856E-04	0.740
EU-152	-2.737E-02		2.054E-02	6.492E-02	2.242E-03	-0.422
EU-154	-2.432E-02		2.695E-02	8.909E-02	5.397E-03	-0.273
EU-155	9.619E-02		2.046E-02	6.832E-02	2.784E-03	1.408
HF-181	7.236E-03		1.298E-02	4.381E-02	1.413E-03	0.165
BI-207	8.834E-03		6.230E-03	2.137E-02	6.923E-04	0.413
BI-210M	-8.507E-03		1.108E-02	3.125E-02	1.154E-03	-0.272
BI-212	2.076E+00	+	2.278E-01	4.956E-01	2.175E-02	4.189
RA-223	5.121E-01	+	7.446E-02	1.429E-01	5.267E-03	3.584
AC-227DA	4.301E-01		6.215E-02	1.691E-01	6.275E-03	2.544
TH-234DA	3.070E+00		1.245E+00	4.315E+00	2.041E-01	0.712
U-235HP	1.114E-01		4.062E-02	1.348E-01	4.972E-03	0.827
NP-237DA	3.216E-03		1.370E-02	4.540E-02	1.606E-03	0.071
AM-241HP	5.306E-02		2.285E-02	7.156E-02	2.484E-03	0.741

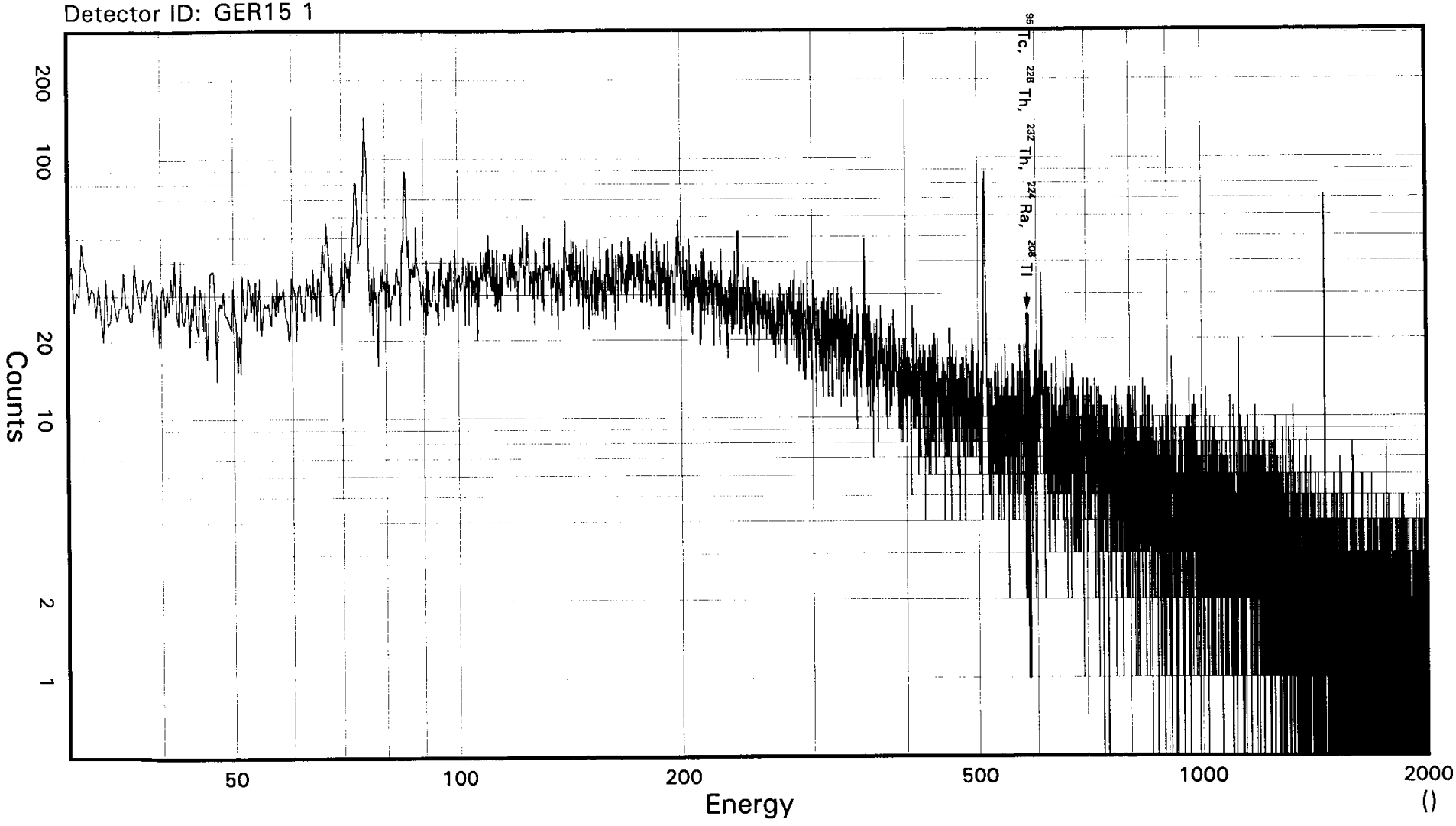
STL Richland WA.

BRC SOIL

Sample ID: J48HV1AA

Detector ID: GER15 1

Batch ID: 7232477



Acquisition Start: 5-SEP-2007 06:05:43.76

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 1.17828E+01

Slope: 2.41315E-01

Quadrature: 1.34866E-08

SAMPLE IDENTIFICATION: J48HV1AA

CONFIGURATION ID: GER15:J48HV1AA_050970605
TITLE : BRC SOIL
SAMPLE ID : J48HV1AA

REPORT DATE: 05-SEP-07
ACQUIRE DATE: 05-SEP-07 06:05:43
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 31-JUL-2007 14:15:00.00
CALIB DATE: 5-SEP-2007 05:47:19.68
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:13

SAMPLE QUANTITY: 2.0012E+02
SAMPLE GEOMETRY: 200ML

UNITS: GRAMS
SAMPLE TYPE: disk

ENERGY OFFSET: 1.1783E+01 keV
ENERGY SLOPE: 2.4132E-01 keV/C
ENERGY Q COEFF: 1.3487E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 6.4199E-01 keV
FWHM SLOPE: 3.2544E-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: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 5-SEP-2007 16:06:12

```
Configuration     : RDND06$DKA100:[GER15.SAMPLE]J48HV1AA_050970605.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BRC SOIL
Sample date       : 31-JUL-2007 14:15:00 Acquisition date : 5-SEP-2007 06:05:43
Sample ID         : J48HV1AA             Sample quantity  : 200.12 GRAMS
Sample type       : disk                 Sample geometry  : 200ML
Elapsed live time: 0 10:00:00.00         Elapsed real time: 0 10:00:13.61   0.0%
Start energy      :    12.02             End energy       :  1989.54
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	583.32*	98	77	2.65	2368.09	2357	22	2.73E-03	34.9	0.00E+00

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 5-SEP-2007 16:06:13

Configuration	: RDND06$DKA100:[GER15.SAMPLE]J48HV1AA_050970605.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4		
Sample title	: BRC SOIL		
Sample date	: 31-JUL-2007 14:15:00	Acquisition date	: 5-SEP-2007 06:05:43
Sample ID	: J48HV1AA	Sample quantity	: 200.12 GRAMS
Sample type	: disk	Sample geometry	: 200ML
Elapsed live time	: 0 10:00:00.00	Elapsed real time	: 0 10:00:13.61 0.0%
Energy tolerance	: 2.00	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 5.00 %
Efficiency type	: Empirical	Efficiencies at	: Peak Energy
Abundance limit	: 80.00		

Nuclide Line Activity Report

Flag: "*" = Keyline

Unidentified Energy Lines
Page : 2
Sample ID : J48HV1AA
Acquisition date : 5-SEP-2007 06:05:43

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	583.32	98	77	2.65	2368.09	2357	22	2.73E-03	34.9	1.18E+00	T

Flags: "T" = Tentatively associated

Sample ID : J48HV1AA Acquisition date : 5-SEP-2007 06:05:43

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
TC-95M	61.00D	0.59	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.597E-01	35.51	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
TL-208	1.41E+10Y	0.00	277.35	6.80	--- Not Found ---		Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	3.698E-02	35.51	
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		67.33			
RA-224DA	1.91Y	0.05	238.63*	44.60	--- Not Found ---		Abun.
			240.98	3.95	--- Not Found ---		
			583.14	30.25	1.067E-01	35.51	
			860.37	4.48	--- Not Found ---		
		% Abundances Found =		36.32			
TH-228DA	1.91Y	0.05	238.63	44.60	--- Not Found ---		Abun.
			240.98	3.95	--- Not Found ---		
			583.14*	30.25	1.067E-01	35.51	
			860.37	4.48	--- Not Found ---		
		% Abundances Found =		36.32			
TH-232DA	1.41E+10Y	0.00	238.63	44.60	--- Not Found ---		Abun.
			338.32*	12.40	--- Not Found ---		
			583.14	30.25	1.029E-01	35.51	
			911.07	27.70	--- Not Found ---		
			964.60	5.20	--- Not Found ---		
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		22.12			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 5-SEP-2007 16:06:14

Configuration : RDND06$DKA100:[GER15.SAMPLE]J48HV1AA_050970605.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 : BRC SOIL
Sample date : 31-JUL-2007 14:15:00 Acquisition date : 5-SEP-2007 06:05:43
Sample ID : J48HV1AA Sample quantity : 200.12 GRAMS
Sample type : disk Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.61 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	3.356E-02		8.130E-02	2.780E-01	1.129E-02	0.121
NA-22	4.192E-03		7.018E-03	2.521E-02	8.094E-04	0.166
NA-24	-6.726E+08		1.300E+09	Half-Life too short		
K-40	-6.477E-01		2.164E-01	7.125E-01	2.324E-02	-0.909
SC-46	-1.004E-02		1.465E-02	4.071E-02	1.292E-03	-0.247
CR-51	-1.192E-01		1.249E-01	4.211E-01	1.578E-02	-0.283
MN-54	-5.652E-03		7.318E-03	2.479E-02	8.074E-04	-0.228
CO-57	-3.884E-02		3.693E-02	1.205E-01	4.622E-03	-0.322
CO-58	-9.736E-03		9.405E-03	3.165E-02	1.029E-03	-0.308
FE-59	1.257E-02		2.067E-02	7.439E-02	2.375E-03	0.169
CO-60	-7.711E-03		6.964E-03	2.315E-02	7.531E-04	-0.333
ZN-65	-4.639E-02		1.708E-02	5.343E-02	1.698E-03	-0.868
SE-75	6.807E-03		9.700E-03	3.296E-02	1.406E-03	0.207
SR-85	-1.181E-01		1.595E-02	4.152E-02	1.744E-03	-2.843
Y-88	2.548E-03		8.927E-03	3.275E-02	9.988E-04	0.078
NB-94	-6.293E-03		6.176E-03	2.073E-02	6.750E-04	-0.304
NB-95	7.916E-03		1.237E-02	4.404E-02	1.424E-03	0.180
TC-95M	-8.695E-03		1.033E-02	3.449E-02	1.553E-03	-0.252
ZR-95	2.563E-02		1.561E-02	5.712E-02	1.844E-03	0.449
ZRNB-95	1.569E-02		1.777E-02	6.372E-02	2.060E-03	0.246
MO-99	4.862E-05		3.563E-05	Half-Life too short		
RH-101	3.095E-02		6.923E-03	2.388E-02	1.077E-03	1.296
RH-102M	1.651E-03		5.797E-03	1.975E-02	8.002E-04	0.084
RU-103	-1.112E-02		1.113E-02	3.770E-02	1.560E-03	-0.295
RU-106DA	-6.600E-02		6.297E-02	2.099E-01	7.340E-03	-0.314
AG-108M	-4.519E-03		5.725E-03	1.907E-02	7.395E-04	-0.237
AG-110M	7.409E-03		9.576E-03	3.412E-02	1.110E-03	0.217
SN-113DA	-1.370E-02		9.387E-03	3.085E-02	1.137E-03	-0.444
SB-124	-1.198E-03		1.023E-02	3.495E-02	1.276E-03	-0.034
SB-125	-1.858E-03		1.819E-02	6.168E-02	2.376E-03	-0.030
SN-126DA	-3.438E-05		6.194E-03	2.120E-02	6.668E-04	-0.002
I-131	2.978E-01		1.354E-01	4.804E-01	1.792E-02	0.620
BA-133	-1.262E-02		8.784E-03	2.906E-02	1.087E-03	-0.434

Sample ID : J48HV1AA Acquisition date : 5-SEP-2007 06:05:43

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
CS-134	-8.079E-04		7.517E-03	2.615E-02	8.492E-04	-0.031
CS-137DA	4.965E-03		7.045E-03	2.462E-02	7.731E-04	0.202
LA-138	1.223E-02		9.444E-03	3.585E-02	1.170E-03	0.341
CE-139	9.586E-03		5.956E-03	2.078E-02	9.334E-04	0.461
BA-140	1.901E-01		1.479E-01	5.285E-01	2.157E-02	0.360
BALA-140	-1.284E-01		9.327E-02	3.086E-01	9.952E-03	-0.416
LA-140	-4.403E-02		1.922E-02	Half-Life too short		
CE-141	-1.652E-02		1.692E-02	5.510E-02	2.250E-03	-0.300
CE-144	2.389E-02		3.647E-02	1.228E-01	4.613E-03	0.195
CEPR-144	4.768E-02		7.294E-02	2.455E-01	9.226E-03	0.194
PM-144	8.185E-03		6.435E-03	2.279E-02	8.043E-04	0.359
PM-146	-7.089E-03		8.064E-03	2.671E-02	1.059E-03	-0.265
EU-152	2.794E-02		1.865E-02	6.565E-02	2.461E-03	0.426
EU-154	1.285E-02		1.945E-02	7.004E-02	2.248E-03	0.183
EU-155	-5.789E-03		1.519E-02	5.091E-02	1.689E-03	-0.114
HF-181	-4.493E-03		1.181E-02	3.952E-02	1.612E-03	-0.114
BI-207	8.622E-03		6.201E-03	2.198E-02	8.543E-04	0.392
TL-208	3.698E-02	+	1.313E-02	2.805E-02	1.064E-03	1.318
BI-210M	-4.530E-03		9.398E-03	3.124E-02	1.329E-03	-0.145
BI-212	6.634E-02		9.408E-02	3.276E-01	1.289E-02	0.202
PB-212	-3.460E-02		1.688E-02	3.890E-02	1.715E-03	-0.889
BI-214	-3.772E-02		2.319E-02	6.230E-02	2.242E-03	-0.605
PB-214	-1.946E-02		2.191E-02	5.461E-02	2.044E-03	-0.356
RA-223	-1.754E-02		3.534E-02	1.173E-01	4.964E-03	-0.150
RA-224DA	-3.585E-02		1.749E-02	4.031E-02	1.777E-03	-0.889
RA-226DA	-3.784E-02		2.319E-02	6.229E-02	2.242E-03	-0.607
AC-227DA	-1.131E-01		4.428E-02	1.405E-01	6.211E-03	-0.805
AC-228	-1.799E-02		3.851E-02	1.008E-01	3.279E-03	-0.178
RA-228DA	-1.820E-02		3.897E-02	1.020E-01	3.318E-03	-0.178
TH-228DA	1.067E-01	+	3.787E-02	8.091E-02	3.070E-03	1.318
TH-232DA	1.183E-01		4.162E-02	1.481E-01	5.554E-03	0.799
TH-234DA	1.195E+00		1.030E+00	3.695E+00	1.200E-01	0.323
U-234DA	-5.642E-02		3.955E-02	9.055E-02	3.637E-03	-0.623
U-235HP	3.917E-02		3.649E-02	1.230E-01	4.963E-03	0.318
NP-237DA	5.173E-03		1.373E-02	4.758E-02	1.828E-03	0.109
U-238DA	-1.946E-02		2.191E-02	5.461E-02	2.044E-03	-0.356
U-238DHP	-7.355E-02		7.525E-02	2.546E-01	7.940E-03	-0.289
AM-241HP	-6.139E-03		7.710E-03	2.627E-02	8.317E-04	-0.234

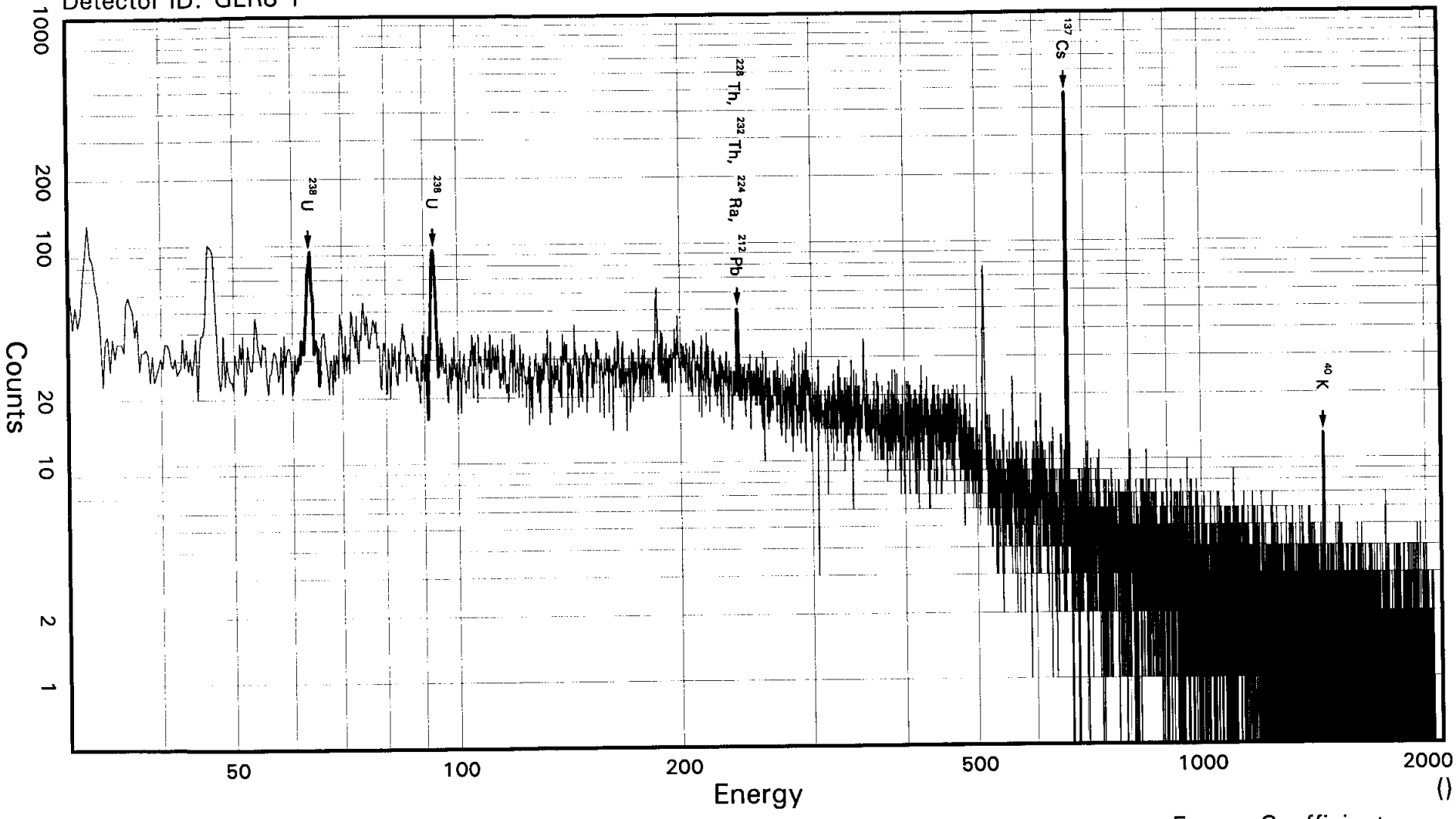
STL Richland WA.

BRC SOIL

Sample ID: J48HV1AC

Detector ID: GER8 1

Batch ID: 7232477



Acquisition Start: 5-SEP-2007 18:39:39.97

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: -5.41157E-02

Slope: 2.49875E-01

Quadrature: 1.77406E-08

SAMPLE IDENTIFICATION: J48HV1AC

CONFIGURATION ID: GER8:J48HV1AC_050971839
TITLE : BRC SOIL
SAMPLE ID : J48HV1AC

REPORT DATE: 06-SEP-07
ACQUIRE DATE: 05-SEP-07 18:39:39
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 5-SEP-2007 12:00:00.00
CALIB DATE: 5-SEP-2007 05:45:41.68
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:03

SAMPLE QUANTITY: 2.0011E+02
SAMPLE GEOMETRY: E200ML

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.5412E-01 keV
ENERGY SLOPE: 2.4987E-01 keV/C
ENERGY Q COEFF: 1.7741E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.6033E-01 keV
FWHM SLOPE: 2.4193E-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: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 6-SEP-2007 04:40:00

Configuration : $DISK1:[GER8.SAMPLE]J48HV1AC_050971839.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 5-SEP-2007 12:00:00 Acquisition date : 5-SEP-2007 18:39:39
Sample ID : J48HV1AC Sample quantity : 200.11 GRAMS
Sample type : Sample geometry : E200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:03.29 0.0%
Start energy : 19.94 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	32.17	325	515	0.93	128.95	122	13	9.02E-03	15.6	
2	0	46.50*	11	363	1.20	186.30	179	14	3.06E-04	518.5	
3	0	63.18*	59	491	0.98	253.06	244	18	1.65E-03	107.1	
4	0	92.89*	49	429	1.30	371.94	363	15	1.37E-03	120.2	
5	0	238.84*	6	283	1.15	955.98	950	13	1.78E-04	669.3	
6	0	661.69	3052	149	1.57	2647.79	2636	29	8.48E-02	2.1	
7	0	1460.41*	20	12	1.48	5842.36	5830	25	5.59E-04	79.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 6-SEP-2007 04:40:01

Configuration : $DISK1:[GER8.SAMPLE]J48HV1AC_050971839.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 5-SEP-2007 12:00:00 Acquisition date : 5-SEP-2007 18:39:39
Sample ID : J48HV1AC Sample quantity : 200.11 GRAMS
Sample type : Sample geometry : E200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:03.29 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	20	10.67*	5.522E-01	1.281E-01	1.281E-01	80.00
PB-212	238.63	6	44.60*	2.512E+00	2.143E-03	2.143E-03	669.34
	300.09	------	3.41	2.111E+00	------	Line Not Found	------
U-238DHP	63.28	59	3.80*	3.980E+00	1.470E-01	1.470E-01	107.27
	92.59	49	5.41	4.152E+00	8.235E-02	8.235E-02	120.37

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CS-137DA	661.65	3052	85.10*	1.101E+00	1.223E+00	1.223E+00	6.31

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J48HV1AC Acquisition date : 5-SEP-2007 18:39:39

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	32.17	325	515	0.93	128.95	122	13	9.02E-03	15.6	1.56E+00	
0	46.50	11	363	1.20	186.30	179	14	3.06E-04	****	3.10E+00	

Flags: "T" = Tentatively associated

Sample ID : J48HV1AC
Acquisition date : 5-SEP-2007 18:39:39

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
RA-224DA	1.91Y	0.00	238.63*	44.60	2.144E-03	669.34	Abun.
			240.98	3.95	--- Not Found ---		
			583.14	30.25	--- Not Found ---		
			860.37	4.48	--- Not Found ---		
		% Abundances Found =		53.55			
TH-228DA	1.91Y	0.00	238.63	44.60	2.144E-03	669.34	Abun.
			240.98	3.95	--- Not Found ---		
			583.14*	30.25	--- Not Found ---		
			860.37	4.48	--- Not Found ---		
		% Abundances Found =		53.55			
TH-232DA	1.41E+10Y	0.00	238.63	44.60	2.143E-03	669.34	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 6-SEP-2007 04:40:03

Configuration : $DISK1:[GER8.SAMPLE]J48HV1AC_050971839.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 : BRC SOIL
Sample date : 5-SEP-2007 12:00:00 Acquisition date : 5-SEP-2007 18:39:39
Sample ID : J48HV1AC Sample quantity : 200.11 GRAMS
Sample type : Sample geometry : E200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:03.29 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.281E-01	1.025E-01	1.991E-01	6.645E-03	0.643
CS-137DA	1.223E+00	7.714E-02	2.064E-02	6.718E-04	59.245
PB-212	2.143E-03	1.435E-02	3.049E-02	1.174E-03	0.070
U-238DHP	1.470E-01	1.577E-01	2.444E-01	7.682E-03	0.601

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	1.578E-02		5.147E-02	1.775E-01	5.685E-03	0.089
NA-22	3.449E-03		5.647E-03	2.081E-02	6.882E-04	0.166
NA-24	-9.134E-03		1.034E-02	3.514E-02	1.175E-03	-0.260
SC-46	2.974E-03		5.782E-03	2.107E-02	7.198E-04	0.141
CR-51	6.476E-02		4.683E-02	1.614E-01	5.626E-03	0.401
MN-54	-1.672E-03		5.491E-03	1.899E-02	7.103E-04	-0.088
CO-57	-5.233E-02		2.848E-02	9.105E-02	3.073E-03	-0.575
CO-58	3.235E-04		4.663E-03	1.653E-02	6.081E-04	0.020
FE-59	2.648E-03		1.028E-02	3.706E-02	1.291E-03	0.071
CO-60	-5.108E-03		5.647E-03	1.925E-02	6.424E-04	-0.265
ZN-65	-6.862E-03		1.156E-02	4.017E-02	1.379E-03	-0.171
SE-75	-8.308E-03		7.136E-03	2.351E-02	8.916E-04	-0.353
SR-85	-5.559E-02		9.565E-03	2.722E-02	8.727E-04	-2.042
Y-88	3.318E-04		6.000E-03	2.205E-02	6.757E-04	0.015
NB-94	-6.969E-03		5.302E-03	1.755E-02	6.723E-04	-0.397
NB-95	-3.263E-04		5.035E-03	1.766E-02	6.286E-04	-0.018
TC-95M	5.899E-03		5.977E-03	2.058E-02	7.913E-04	0.287
ZR-95	1.984E-02		9.286E-03	3.467E-02	1.225E-03	0.572
ZRNB-95	8.463E-04		9.967E-03	3.516E-02	1.251E-03	0.024
MO-99	8.635E-03		3.855E-03	1.321E-02	4.532E-04	0.654
RH-101	1.168E-02		5.515E-03	1.917E-02	7.349E-04	0.609
RH-102M	-4.736E-03		5.930E-03	1.989E-02	6.368E-04	-0.238
RU-103	-7.426E-03		5.909E-03	1.955E-02	6.272E-04	-0.380
RU-106DA	-5.320E-02		5.051E-02	1.669E-01	5.459E-03	-0.319

Sample ID : J48HV1AC Acquisition date : 5-SEP-2007 18:39:39

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
AG-108M	-1.283E-03		5.765E-03	1.969E-02	6.234E-04	-0.065
AG-110M	-7.072E-03		6.751E-03	2.266E-02	8.753E-04	-0.312
SN-113DA	8.328E-03		7.586E-03	2.665E-02	8.254E-04	0.312
SB-124	2.341E-03		5.727E-03	1.975E-02	6.459E-04	0.119
SB-125	4.455E-02		1.824E-02	6.503E-02	2.054E-03	0.685
SN-126DA	2.232E-03		5.398E-03	1.646E-02	5.381E-04	0.136
I-131	5.698E-03		6.202E-03	2.173E-02	7.129E-04	0.262
BA-133	-1.475E-02		7.997E-03	2.641E-02	8.791E-04	-0.559
CS-134	-6.305E-03		5.845E-03	1.967E-02	7.159E-04	-0.321
LA-138	5.676E-03		8.525E-03	3.165E-02	1.058E-03	0.179
CE-139	8.137E-03		4.142E-03	1.451E-02	5.427E-04	0.561
BA-140	2.409E-02		1.932E-02	6.869E-02	2.221E-03	0.351
BALA-140	-1.653E-02		1.239E-02	4.170E-02	1.370E-03	-0.396
LA-140	-5.172E-03		7.308E-03	2.567E-02	8.435E-04	-0.201
CE-141	-8.260E-04		6.342E-03	2.173E-02	7.618E-04	-0.038
CE-144	1.774E-02		2.733E-02	9.202E-02	3.067E-03	0.193
CEPR-144	3.556E-02		5.465E-02	1.841E-01	6.134E-03	0.193
PM-144	-1.087E-03		5.089E-03	1.732E-02	5.665E-04	-0.063
PM-146	-1.982E-03		8.855E-03	3.012E-02	9.601E-04	-0.066
EU-152	1.451E-02		1.804E-02	6.144E-02	2.082E-03	0.236
EU-154	1.093E-02		1.596E-02	5.897E-02	1.950E-03	0.185
EU-155	2.315E-02		1.306E-02	4.487E-02	1.451E-03	0.516
HF-181	1.916E-03		6.326E-03	2.184E-02	6.999E-04	0.088
BI-207	-4.985E-03		5.323E-03	1.770E-02	5.769E-04	-0.282
TL-208	1.133E-02		5.983E-03	2.152E-02	7.025E-04	0.527
BI-210M	2.901E-03		8.511E-03	2.892E-02	1.095E-03	0.100
BI-212	2.781E-02		7.861E-02	2.788E-01	1.153E-02	0.100
BI-214	-4.180E-02		1.909E-02	4.516E-02	1.477E-03	-0.926
PB-214	-2.840E-02		1.794E-02	4.825E-02	1.617E-03	-0.588
RA-223	6.185E-02		3.161E-02	1.098E-01	4.146E-03	0.563
RA-224DA	2.144E-03	+	1.435E-02	3.438E-02	1.324E-03	0.062
RA-226DA	-4.183E-02		1.909E-02	4.515E-02	1.477E-03	-0.926
AC-227DA	-2.947E-02		4.140E-02	1.166E-01	4.492E-03	-0.253
AC-228	6.913E-02		2.003E-02	7.736E-02	3.001E-03	0.894
RA-228DA	6.914E-02		2.004E-02	7.737E-02	3.001E-03	0.894
TH-228DA	3.156E-02		1.666E-02	5.992E-02	1.956E-03	0.527
TH-232DA	-4.790E-02		3.863E-02	1.258E-01	4.298E-03	-0.381
TH-234DA	7.637E-01		8.173E-01	2.978E+00	1.112E-01	0.256
U-234DA	4.472E-02		2.472E-02	8.535E-02	3.119E-03	0.524
U-235HP	1.606E-02		2.846E-02	9.864E-02	3.433E-03	0.163
NP-237DA	-3.779E-03		1.229E-02	4.112E-02	1.458E-03	-0.092
U-238DA	-2.840E-02		1.794E-02	4.825E-02	1.617E-03	-0.588
AM-241HP	4.451E-03		8.879E-03	2.608E-02	8.307E-04	0.171