SECTION

5 OF 10

012369
5 of 10

SST

WASTE CHARACTERIZATION PROJECT

CORE 9 DATA REPORT

REV. 0

APPENDIX D

RADIOCHEMICAL

D1 - INTRODUCTION

Introduction to Radioanalytical Primary Data Package

This section of Core 9 Primary Data Package contains primary or "raw" data collected during preparation and analysis of Core 9 radiochemistry samples. Samples are transferred to the radiochemistry group for analysis with laboratory numbers (i.e., 89-XXXX or 90-XXXX). The radchem group assigns an additional number. The new number is used to track radchem samples with the laboratory sample number. However, data are reported according to the original laboratory sample number. Thus, tracking analytical information within this data package for a specific sample will require a knowledge of both numbers. The correlation between the two numbering systems are provided in Table D-1.

Primary analytical data are separated according to methodology. In each case instrument calibration, control, and sample analysis data are segregated. Much of the analytical information is listed on the Sample Traveler card. Assessment of this information will require in-depth knowledge of the methodology.

D2 - LABORATORY ANALYST

SIGNATURE LIST

RADIOCHEMICAL LABORATORY ANALYST SIGNATURE LIST

Analyst Name	Initials	Written Name	Initials
Nevada L. Abbey	NLA	N. L. Abbey	N.L.
Dale V. Archer	DVA	Dale V. Archer	DA
David L. Baldwin	DLB	DLB Baldwin	DLB
Virginia L. Dunn	VLD	Virginia L Dunn	VLD
Barbara M. Gillespie	BMG	Barbara M Gillespie	BMG
Frederick E. Holt	FEH	Fred E. Holt	FEH
James H. Kaye	JHK	James H. Kaye	J.H.K.
Lloyd S. Kellogg	LSK	L S Kellogg	LSK
Anne E. Kozelisky	AEK	Anne E Kozelisky	AEK
Tapas C. Maiti	TCM	Tapas Chandra Maiti	TCM
Patricia J. Raney	PJR	Patricia J Raney	PJR
Jean M. Ruggles	JMR	Jean Ruggles	JR
Shannon W. Thompson	SWT		

D3 - TABLE D1:

RADIOCHEMICAL SERIAL NO.

VS CUSTOMER NO.

TABLE D1: Radiochemical Serial No. VS Customer No.

Radiochemical Serial No.	Customer Number
107-90	90-0300-A-1
108-90	90-0300-A-2
109-90	90-0300-A-3
110-90	90-0301-A-1
111-90	90-0301-A-2
112-90	90-0301-A-3
113-90	90-0304-A-1
114-90	90-0304-A-2
115-90	90-0304-A-3
116-90	90-0305-A-1
117-90	90-0305-A-2
118-90	90-0305-A-3
188-90	90-1255-A-1
189-90	90-1255-A-2
190-90	90-1255-A-3
191-90	90-1256-A-1
192-90	90-1256-A-2
249-90	90-1257-C-1
250-90	90-1257-C-2
251-90	90-1257-C-5

D4 - GEA ANALYSIS

GEA

PRIMARY DATA PACKAGE

D04-001

SST

GEA DATA COVER SHEET

Sample Number: 90-0300-A-1/2/3 90-1255-A-1/2/3
90-0301-A-1/2/3 90-1256-A-1/2
90-0304-A-1/2/3 90-1257-C-1/2/5
90-0305-A-1/2/3

Procedure: HTA-4-9

Pipet Calibration LRB#: BNW 52920

Equipment (M&TE#): WB 37560

System Calibration LRB#: BNW 52327

Control Data LRB#: BNW 52327

GEA

SUMMARY DATA REPORTS

D04-003

SST DATA RESULTS FOR CORE 9 - GEA DATA

Cognizant Scientist [signature] Date of final review 11/5/90
Secondary review [signature] PNL Procedure Nos. HTA-4-9
Primary data location

Customer No.	Counting Time	Cs-137 uCi/g-wet 662 keV	+/- % error	Eu-155 uCi/g-wet 105 keV	+/- % error	Eu-154 uCi/g-wet 1274 keV	+/- % error	Additional Nuclides: Nuclide	Energy keV	uCi/g-wet	+/- % error
SEGMENT 3											
90-0300-A-1	100 min.	15.36	0.17	---		0.0165	14.1	Am-241	59.54	0.01646	29.94
								Co-60	1332.5	0.0014	44.79
								Gd-153	97.43	0.01665	27.06
90-0300-A-2	100 min.	15.22	0.16	---		0.01277	16.9	Am-241	59.54	0.01283	31.44
								Co-60	1332.5	0.002359	50.00
90-0300-A-3	15 hr.	0.1828	0.53	0.0008	36.7	0.0014	40	Co-60	1332.5	0.00154	11.78
								Ce-144	133.54	0.02723	3.97
								Cs-134	604.71	0.0013	16.19
90-0301-A-1	100 min.	15.28	0.16	---		0.01677	13.7	Co-60	1332.5	0.000743	51.06
								Gd-153	97.43	0.01579	27.91
90-0301-A-2	100 min.	15.49	0.16	---		0.01332	14.0	Am-241	59.54	0.01148	42.29
90-0301-A-3	15 hr.	0.04299	1.25	---		---		Co-60	1332.5	0.002186	8.49
								Cs-134	604.71	0.000811	18.69
SEGMENT 5											
90-0304-A-1	100 min.	11.97	0.19	---		0.02036	11.0	Am-241	59.54	0.009666	38.76
								Co-60	1332.5	0.001104	38.98
								Gd-153	97.43	0.01868	24.6
								Ce-144	133.54	0.03342	35.21
90-0304-A-2	100 min.	11.77	0.19	---		0.04069	7.59	Gd-153	97.43	0.05779	9.16
90-0304-A-3	13.8 hr.	0.01621	2.69	---		---		Co-60	1332.5	0.00095	16.67
								Cs-134	604.71	0.00036	38.85
90-0305-A-1	100 min.	12.18	0.19	---		0.01516	25.0	Co-60	1332.5	0.001782	27.6
								Gd-153	97.43	0.01465	45.00
90-0305-A-2	100 min.	11.91	0.19	---		0.01732	11.1	Co-60	1332.5	0.000645	72.27
								Gd-153	97.43	0.01925	20.31
90-0305-A-3	15 hr.	0.0361	1.45	---		---		Co-60	1332.5	0.001601	12.04
								Gd-153	103.18	0.001734	22.24
								Ce-144	133.54	0.003287	23.62
								Cs-134	604.71	0.000744	24.83

D04-004

Customer No.	Counting Time	Cs-137 uCi/g-wet 662 keV	+/- % error	Eu-155 uCi/g-wet 105 keV	+/- % error	Eu-154 uCi/g-wet 1274 keV	+/- % error	Additional Nuclides Nuclide	Energy keV	uCi/g-wet	+/- % error
COMPOSITE HOMOGENIZATOIN											
90-1255-A-1	100 min.	13.65	0.18	0.1964	6.27	0.1238	4.37	Am-241	59.54	0.05078	13.65
								Eu-152	1408.01	0.0375	10.74
90-1255-A-2	100 min.	13.58	0.18	0.1462	7.54	0.1018	4.73	Am-241	59.54	0.04752	14.34
90-1255-A-3	3.5 hr.	0.01898	4.71	---		---		Co-60	1332.5	0.00828	6.65
								Ce-144	133.54	0.005840	27.67
90-1256-A-1	100 min.	14.07	0.18	0.1509	7.7	0.1083	4.58	Am-241	59.54	0.0435	16.39
90-1256-A-2	100 min.	14.86	0.17	0.1929	6.31	0.1252	4.51	Am-241	59.54	0.034020	17.43
								Co-60	1332.5	0.005744	40.00
								Eu-152	1408.01	0.03197	20
COMPOSITE											
90-1257-C-1	100 min.	8.87	0.1	---		---		---			
90-1257-C-2	100 min.	8.73	0.10	---		---		---			
90-1257-C-5	15 hr.	0.01415	4.31	---		---		Co-60	1332.5	0.004952	2.23
								Cs-134	604.71	0.00034	13.92

D04-005

GEA

ANALYTICAL REPORT CARDS

AND/OR

SAMPLE PREP DATA SHEETS

D04–006

GEA ANALYSIS

A Nuclear Data 9900 Germanium detector system is used to do the Gamma Energy Analysis (GEA) for SST samples. In most cases, a radiochemistry ANALYTICAL REPORT card accompanies each sample. This card has a card serial number, the date the sample was received into the radiochemistry laboratory, work package number, a radiochemistry lab serial number, customer identification number, a 325A Hot Cell sample identification number, the constituent requested (i.e., GEA), and the results. The balance ID number and the BNW laboratory record book (LRB) number that holds the pipet calibration data are noted in the "Serial No." column. A copy of the pipet calibration is provided under separate cover. The M&TE number of the ND9900 system and the BNW laboratory record book (LRB) which holds the calibration data and the daily control data and plots are included in the "Constituent" column. The grams of material per aliquot is calculated from the SAMPLE PREP DATA SHEET provided from the 325B Hot Cells. This value is recorded on the ANALYTICAL REPORT card and/or on the SAMPLE PREP DATA SHEET.

Each printout contains a peak search, a nuclide identification (NID) report, and a list of unidentified energy lines. The reported nuclides and activities are taken from the nuclide identification report. The nuclide ID algorithm parameters are conservatively adjusted, such that nuclides having a borderline occurrence probability should be accepted. Using this format, occasionally the NID algorithm lists false positive IDs which may be eliminated after review by cognizant scientist.

VAX/VMS Peak Search Report V1.7 Generated 23-MAY-1990 15:59:27

Configuration : DUB0:[USER]T8337.CNF;1
Analused by : PEAK V16.0.ENBACK V1.3
Sample title : T8337 250-90 110D-C9-AN 90-1257-C-2 (2.0215/199.0698)2(5.049
Deposition Date : 23-MAY-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 23-MAY-1990 00:00:00 Acquisition date : 23-MAY-1990 13:53:58
Sample ID : T8337 250-90 Sample quantity : 0.10233 G
Sample type : H2O LEACH Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:41:13.83 1.2%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	185.27*	505	51809	1.72	247.43	245	5	8.42E-02	67.4	
2	0	188.49	774	55987	1.80	251.73	250	5	1.29E-01	45.9	
3	0	474.69	1707	38735	3.27	633.38	631	6	2.85E-01	18.4	
4	0	661.57*	949800	8472	1.90	882.52	876	14	1.58E+02	0.1	
5	0	692.91	129	208	2.60	924.30	918	14	2.15E-02	25.7	
6	0	1173.06*	10	0	1.76	1564.18	1560	9	1.69E-03	52.0	
7	0	1274.31	21	13	1.75	1699.07	1694	11	3.51E-03	42.3	
8	0	1323.31	36	9	2.51	1764.34	1759	10	6.02E-03	18.6	
9	0	1332.42*	3	5	1.42	1776.48	1773	7	4.60E-04	158.5	

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	185.27*	505	51809	1.72	247.43	245	5	67.4		
0	188.49	774	55987	1.80	251.73	250	5	45.9		
0	474.69	1707	38735	3.27	633.38	631	6	18.4		
0	661.57*	949800	8472	1.90	882.52	876	14	0.1		CS-137
0	692.91	129	208	2.60	924.30	918	14	25.7		
0	1173.06*	10	0	1.76	1564.18	1560	9	52.0		CO-60
0	1274.31	21	13	1.75	1699.07	1694	11	42.3		
0	1323.31	36	9	2.51	1764.34	1759	10	18.6		
0	1332.42*	3	5	1.42	1776.48	1773		7158.5		CO-60

Sample ID : T9337 250-90 Acquisition date : 23-MAY-1990 13:53:58

Total number of lines in spectrum	9	
Number of unidentified lines	3	
Number of lines tentatively identified by NID	6	66.67%

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CO-60	5.27Y	1.000	4.142E-05	4.143E-05	6.567E-05	158.50	
			---	---			
	Total Activity :		4.142E-05	4.143E-05			

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CS-137	30.00Y	1.000	8.730E+00	8.730E+00	0.009E+00	0.10	
			---	---			
	Total Activity :		8.730E+00	8.730E+00			

Grand Total Activity :	8.730E+00	8.730E+00

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Nuclide Identification Report V2.5 Generated 23-MAY-1990 15:59:36

Configuration : DUB0:[USER]T8337.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8337 250-90 110B-C9-AN 90-1257-C-2 (2.0215/199.0698)2(5.049
Deposition Date : 23-MAY-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 23-MAY-1990 00:00:00 Acquisition date : 23-MAY-1990 13:53:58
Sample ID : T8337 250-90 Sample quantity : 0.10233 G
Sample type : H2O LEACH Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:41:13.83 1.2%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-60	1173.24	10	99.90	3.290E-01	1.361E-04	1.361E-04	52.00
	1332.50	3	99.98*	2.931E-01	4.142E-05	4.143E-05	158.50

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CS-137	661.66	949800	85.20*	5.621E-01	8.730E+00	8.730E+00	0.10

VAX/VMS Peak Search Report V1.7 Generated 24-MAY-1990 06:51:23

Configuration : DUB0:[USER]T8338.CNF;1
Analyses by : PEAK V16.0.ENBACK V1.3
Sample title : T8338 SST 251-90 SYSTEM-BLANK 90-1257-C-5
Deposition Date : 23-MAY-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 23-MAY-1990 00:00:00 Acquisition date : 23-MAY-1990 15:41:59
Sample ID : T8338 SST 251-90 Sample quantity : 0.10312 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 15:00:00.00 Elapsed real time: 0 15:00:05.12 0.0%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	32.19*	154	3034	1.05	43.24	42	5	2.85E-03	53.3	
2	0	34.88*	16	2678	3.12	46.83	46	5	2.90E-04	540.5	
3	8	74.67*	4	2583	1.48	99.91	94	16	7.18E-05	*****	9.01E-01
4	0	185.92*	50	2638	1.20	248.30	246	6	9.30E-04	178.9	
5	0	511.43*	115	1814	2.96	682.37	675	16	2.13E-03	89.5	
6	0	604.59	424	660	1.72	806.57	802	9	7.86E-03	12.0	
7	0	661.69*	13954	778	1.87	882.68	876	14	2.58E-01	1.0	
8	0	795.89	322	657	2.39	1061.57	1057	14	5.97E-03	17.3	
9	0	1173.59*	3339	209	2.16	1564.89	1559	13	6.18E-02	2.0	
10	0	1333.04*	2987	114	2.33	1777.30	1771	15	5.53E-02	2.1	

Post-NID Peak Search Report
Sample ID : T8338 SST 251-90

Acquisition date : 23-MAY-1990 15:41:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	32.19*	154	3034	1.05	43.24	42	5	53.3		
0	34.08*	16	2678	3.12	46.83	46	5	540.5		
0	74.67*	4	2583	1.48	99.91	94	16	*****	9.01E-01	
0	185.92*	50	2638	1.20	248.30	246	6	178.9		
0	511.43*	115	1814	2.96	682.37	675	16	89.5		
0	604.59	424	660	1.72	806.57	802	9	12.0		CS-134
0	661.69*	13954	778	1.87	882.68	876	14	1.0		CS-137
0	795.89	322	657	2.39	1061.57	1057	14	17.3		CS-134
0	1173.59*	3339	209	2.16	1564.09	1559	13	2.0		CO-60
0	1333.04*	2987	114	2.33	1777.30	1771	15	2.1		CO-60

Summary of Nuclide Activity
Sample ID : T8338 SST 251-90

Acquisition date : 23-MAY-1990 15:41:59

Total number of lines in spectrum	10	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	9	90.00%

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CO-60	5.27Y	1.000	4.950E-03	4.952E-03	0.110E-03	2.23	
			---	---			
Total Activity :			4.950E-03	4.952E-03			

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CS-134	2.06Y	1.001	3.435E-04	3.438E-04	0.479E-04	13.92	
CS-137	30.00Y	1.000	1.414E-02	1.415E-02	0.061E-02	4.31	
			---	---			
Total Activity :			1.449E-02	1.449E-02			

Grand Total Activity :	1.944E-02	1.944E-02

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Nuclide Identification Report V2.5 Generated 24-MAY-1990 06:51:34

Configuration : DUB0:[USER]T8338.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8338 SST 251-90 SYSTEM BLANK
Deposition Date : 23-MAY-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 23-MAY-1990 00:00:00 Acquisition date : 23-MAY-1990 15:41:59
Sample ID : T8338 SST 251-90 Sample quantity : 0.10312 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 15:00:00.00 Elapsed real time: 0 15:00:05.12 0.0%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-60	1173.24	3339	99.90	3.289E-01	4.933E-03	4.934E-03	2.19
	1332.50	2987	99.98*	2.930E-01	4.950E-03	4.952E-03	2.23

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CS-134	563.24	------	8.38	6.598E-01	------	Line Not Found	------
	569.32	------	15.40	6.527E-01	------	Line Not Found	------
	604.71	424	97.60*	6.145E-01	3.435E-04	3.438E-04	13.92
	795.87	322	85.40	4.704E-01	3.892E-04	3.896E-04	17.83
	801.95	------	8.73	4.670E-01	------	Line Not Found	------
CS-137	661.66	13954	85.20*	5.620E-01	1.414E-02	1.415E-02	4.31

VAX/VMS Peak Search Report V1.7 Generated 23-MAY-1990 15:59:01

Configuration : DUB0:[USER]T8336.CNF;1
Analyses by : PEAK V16.0.ENBACK V1.3
Sample title : T8336 249-90 110D-C9-AN 90-1257-C-1 (2.0799/202.0588)2(5.049
Deposition Date : 23-MAY-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 23-MAY-1990 00:00:00 Acquisition date : 23-MAY-1990 12:02:02
Sample ID : T8336 249-90 Sample quantity : 0.10363 G
Sample type : H2O LEACH Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:41:15.61 1.2%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	31.73*	26394	0	1.58	42.63	42	11	4.40E+00	0.0	9.94E+02
2	4	35.76*	30809	101143	2.42	48.00	42	11	5.13E+00	2.0	
3	0	74.45*	685	34659	1.34	99.62	98	5	1.14E-01	40.9	
4	10	187.29	7827	80445	4.38	250.12	246	27	1.30E+00	6.4	9.15E+00
5	10	191.10	7916	182429	4.38	255.21	246	27	1.32E+00	12.7	
6	10	195.57	6072	184123	4.38	261.16	246	27	1.01E+00	16.6	
7	0	473.93	1267	41879	2.33	632.37	630	6	2.11E-01	25.6	
8	0	661.57*	977235	8650	1.90	882.52	876	14	1.63E+02	0.1	
9	3	693.14	119	125	2.68	924.61	918	17	1.99E-02	22.3	1.20E+00
10	3	696.26	66	114	2.94	928.77	918	17	1.09E-02	42.4	
11	0	795.72	48	28	1.87	1061.34	1057	10	7.98E-03	29.1	
12	0	1173.46*	5	5	1.02	1564.71	1560	8	7.61E-04	109.1	
13	0	1274.52	15	7	1.05	1699.35	1694	10	2.44E-03	43.5	
14	0	1323.31	53	11	2.09	1764.34	1760	9	8.79E-03	18.4	
15	0	1460.97*	11	3	2.14	1947.70	1944	9	1.86E-03	53.0	

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
4	31.73*	26394	0	1.58	42.63	42	11	0.0	9.94E+02	
4	35.76*	30899	101143	2.42	48.00	42	11	2.0		
0	74.45*	685	34659	1.34	99.62	98	5	40.9		
10	187.29	7827	80445	4.38	250.12	246	27	6.4	9.15E+00	
10	191.10	7916	182429	4.38	255.21	246	27	12.7		
10	195.57	6072	184123	4.38	261.16	246	27	16.6		
0	473.93	1267	41879	2.33	632.37	630	6	25.6		
0	661.57*	977235	8650	1.90	882.52	876	14	0.1		CS-137
3	693.14	119	125	2.68	924.61	918	17	22.3	1.20E+00	
3	696.26	66	114	2.94	928.77	918	17	42.4		
0	795.72	48	28	1.07	1061.34	1057	10	29.1		
0	1173.46*	5	5	1.02	1564.71	1560	8	109.1		
0	1274.52	15	7	1.05	1699.35	1694	10	43.5		
0	1323.31	53	11	2.09	1764.34	1760	9	18.4		
0	1460.97*	11	3	2.14	1947.70	1944	9	53.0		K-40

Sample ID : T8336 249-90 Acquisition date : 23-MAY-1990 12:02:02

Total number of lines in spectrum	15	
Number of unidentified lines	5	
Number of lines tentatively identified by NID	10	66.67%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
K-40	1.28E+09Y	1.000	1.683E-03	1.683E-03	0.893E-03	53.04	
	Total Activity :		1.683E-03	1.683E-03			

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CS-137	30.00Y	1.000	8.870E+00	8.870E+00	0.009E+00	0.10	
	Total Activity :		8.870E+00	8.870E+00			

Grand Total Activity : 8.871E+00 8.872E+00

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Nuclide Identification Report V2.5 Generated 23-MAY-1990 15:59:11

Configuration : DUB0:[USER]T8336.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8336 249-90 1108-C9-AN 90-1257-C-1 (2.0799/202.0588)2(5.049
Deposition Date : 23-MAY-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 23-MAY-1990 00:00:00 Acquisition date : 23-MAY-1990 12:02:02
Sample ID : T8336 249-90 Sample quantity : 0.10363 G
Sample type : H2O LEACH Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:41:15.61 1.2%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
K-40	1460.83	11	10.67*	2.694E-01	1.683E-03	1.683E-03	53.04

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CS-137	661.66	977235	85.20*	5.621E-01	8.870E+00	8.870E+00	0.10

VAX/VMS Peak Search Report V1.7 Generated 29-MAR-1990 15:26:09

Configuration : DUB0:[USER]T8276.CNF;1
Analyses by : PEAK V16.0,ENBACK V1.3
Sample title : T8276 SST 192-90 110B-C9-B 90-1256-A-2 TK110B-C9 Seg COM Ni
Deposition Date : 29-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 29-MAR-1990 00:00:00 Acquisition date : 29-MAR-1990 13:40:04
Sample ID : T8276 SST 192-90 Sample quantity : 2.39827E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:37.31 0.6%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	6	32.19	9680	22783	1.25	43.25	42	10	1.61E+00	2.3	1.64E+01
2	6	34.21	15146	44341	1.61	45.94	42	10	2.52E+00	2.4	
3	6	36.24	11866	50418	2.24	48.64	42	10	1.98E+00	3.4	
4	0	41.78*	9258	48729	2.88	56.04	53	7	1.54E+00	4.1	
5	0	48.06	2424	41154	3.06	64.42	62	6	4.04E-01	13.3	
6	0	59.40	1505	29941	1.33	79.54	78	5	2.51E-01	17.4	
7	0	86.34	6373	39557	1.62	115.48	112	8	1.06E+00	5.5	
8	0	97.20	3456	31876	1.64	129.97	127	7	5.76E-01	8.8	
9	0	104.38	6366	44232	3.42	139.54	135	10	1.06E+00	6.3	
10	0	122.75*	7819	39692	1.73	164.04	160	9	1.30E+00	4.7	
11	0	247.47	576	21554	1.92	330.38	328	7	9.60E-02	42.8	
12	0	661.56*	378898	4041	1.89	882.51	876	14	6.31E+01	0.2	
13	0	723.40*	639	543	2.07	964.94	960	11	1.07E-01	8.0	
14	0	757.08	148	474	1.46	1009.83	1005	11	2.46E-02	28.9	
15	0	777.82	244	388	2.24	1037.48	1031	13	4.07E-02	19.3	
16	0	873.55*	281	415	1.89	1165.06	1159	13	4.68E-02	17.8	
17	0	963.42	113	221	1.67	1284.84	1280	12	1.89E-02	28.2	
18	0	996.08	246	163	1.96	1328.37	1325	9	4.11E-02	11.4	
19	0	1004.47	419	174	2.15	1339.54	1336	9	6.99E-02	7.6	
20	0	1085.30	123	90	1.76	1447.25	1441	12	2.05E-02	19.4	
21	0	1112.75*	78	160	2.27	1483.83	1476	16	1.30E-02	38.5	
22	0	1173.11	62	43	2.19	1564.24	1559	9	1.03E-02	26.1	
23	0	1274.27	700	43	2.37	1699.02	1690	17	1.17E-01	4.5	
24	0	1332.48	90	17	1.77	1776.56	1771	12	1.49E-02	14.9	
25	0	1408.19	99	12	1.94	1877.41	1871	13	1.65E-02	14.1	
26	0	1459.92	14	2	2.10	1946.31	1942	8	2.37E-03	39.8	
27	0	1597.30	26	5	2.57	2129.28	2123	13	4.27E-03	28.2	

Summary of Nuclide Activity
Sample ID : T8276 SST 192-90

Acquisition date : 29-MAR-1990 13:40:04

Total number of lines in spectrum	27	
Number of unidentified lines	4	
Number of lines tentatively identified by NID	23	85.19%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
K-40	1.28E+09Y	1.000	9.285E-03	9.285E-03	3.694E-03	39.78	
	Total Activity :		9.285E-03	9.285E-03			

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CO-57	271.77D	1.002	6.355E-02	6.364E-02	0.301E-02	4.73	
CS-137	30.00Y	1.000	1.486E+01	1.486E+01	0.002E+01	0.17	
EU-154	8.59Y	1.000	1.252E-01	1.252E-01	0.056E-01	4.51	
EU-155	4.68Y	1.000	1.928E-01	1.929E-01	0.122E-01	6.31	
AM-241	432.20Y	1.000	3.402E-02	3.402E-02	0.593E-02	17.43	
	Total Activity :		1.528E+01	1.528E+01			

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CO-60	5.27Y	1.000	5.743E-03	5.744E-03	0.858E-03	14.93	
ZR-95	64.02D	1.007	1.032E-02	1.039E-02	0.300E-02	28.92	
EU-152	13.54Y	1.000	3.196E-02	3.197E-02	0.452E-02	14.13	
	Total Activity :		4.802E-02	4.810E-02			

Grand Total Activity : 1.533E+01 1.533E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

Sample ID : T8276 SST 192-90 Acquisition date : 29-MAR-1990 13:40:04

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
	344.28	------	26.58	1.102E+00	------	Line Not Found	------
	778.90	------	12.96	4.801E-01	------	Line Not Found	------
	964.13	113	14.47	3.936E-01	3.741E-02	3.741E-02	28.25
	1085.91	123	9.91	3.531E-01	6.611E-02	6.611E-02	19.44
	1112.12	78	13.54	3.451E-01	3.125E-02	3.126E-02	38.49
	1408.01	99	20.87*	2.787E-01	3.196E-02	3.197E-02	14.13

Post-NID Peak Search Report
Sample ID : T8276 SST 192-90

Acquisition date : 29-MAR-1990 13:40:04

't	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
6	32.19	9680	22783	1.25	43.25	42	10	2.3	1.64E+01	
6	34.21	15146	44341	1.61	45.94	42	10	2.4		
6	36.24	11866	50418	2.24	48.64	42	10	3.4		
0	41.78*	9258	48729	2.88	56.04	53	7	4.1		
0	48.06	2424	41154	3.06	64.42	62	6	13.3		
0	59.40	1505	29941	1.33	79.54	78	5	17.4		AM-241
0	86.34	6373	39557	1.62	115.48	112	8	5.5		EU-155
0	97.20	3456	31876	1.64	129.97	127	7	8.8		
0	104.38	6366	44232	3.42	139.54	135	10	6.3		EU-155
0	122.75*	7819	39692	1.73	164.04	160	9	4.7		EU-152
										CO-57
										EU-154
0	247.47	576	21554	1.92	330.38	328	7	42.8		EU-154
0	661.56*	378898	4041	1.89	882.51	876	14	0.2		CS-137
0	723.40*	639	543	2.07	964.94	960	11	8.0		EU-154
										ZR-95
0	757.08	148	474	1.46	1009.83	1005	11	28.9		ZR-95
										EU-154
0	777.82	244	388	2.24	1037.48	1031	13	19.3		
0	873.55*	281	415	1.89	1165.06	1159	13	17.8		EU-154
0	963.42	113	221	1.67	1284.84	1280	12	28.2		EU-152
0	996.08	246	163	1.96	1328.37	1325	9	11.4		EU-154
0	1004.47	419	174	2.15	1339.54	1336	9	7.6		EU-154
0	1085.30	123	90	1.76	1447.25	1441	12	19.4		EU-152
0	1112.75*	78	160	2.27	1483.83	1476	16	38.5		EU-152
0	1173.11	62	43	2.19	1564.24	1559	9	26.1		CO-60
0	1274.27	700	43	2.37	1699.02	1690	17	4.5		EU-154
0	1332.48	90	17	1.77	1776.56	1771	12	14.9		CO-60
0	1408.19	99	12	1.94	1877.41	1871	13	14.1		EU-152
0	1459.92	14	2	2.10	1946.31	1942	8	39.8		K-40
0	1597.30	26	5	2.57	2129.28	2123	13	28.2		EU-154

VAX/VMS Nuclide Identification Report V2.5 Generated 29-MAR-1990 15:26:19

Configuration : DUB0:[USER]T8276.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8276 SST 192-90 110B-C9-B 90-1256-A-2 TK110B-C9 Seg COM Ni
Deposition Date : 29-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 29-MAR-1990 00:00:00 Acquisition date : 29-MAR-1990 13:40:04
Sample ID : T8276 SST 192-90 Sample quantity : 2.39827E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:37.31 0.6%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 60.00

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
K-40	1460.83	14	10.67*	2.696E-01	9.285E-03	9.285E-03	39.78

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-57	122.06	7819	85.95*	2.689E+00	6.355E-02	6.364E-02	4.73
	136.47	------	10.33	2.545E+00	------ Line Not Found		------
CS-137	661.66	378898	85.20*	5.621E-01	1.486E+01	1.486E+01	0.17
EU-154	123.07	7819	40.42	2.689E+00	1.351E-01	1.351E-01	4.73
	247.93	576	6.84	1.551E+00	1.019E-01	1.019E-01	42.80
	591.70	------	4.83	6.279E-01	------ Line Not Found		------
	692.40	------	1.69	5.376E-01	------ Line Not Found		------
	723.30	639	19.98	5.153E-01	1.166E-01	1.167E-01	8.04
	756.90	148	4.33	4.933E-01	1.299E-01	1.299E-01	28.92
	873.20	281	12.09	4.310E-01	1.012E-01	1.013E-01	17.75
	996.30	246	10.34	3.818E-01	1.172E-01	1.172E-01	11.43
	1004.76	419	17.90	3.789E-01	1.161E-01	1.162E-01	7.63
	1274.51	700	34.40*	3.052E-01	1.252E-01	1.252E-01	4.51
	1596.50	26	1.83	2.480E-01	1.061E-01	1.062E-01	28.15
EU-155	86.54	6373	32.80	2.863E+00	1.275E-01	1.275E-01	5.54
	105.31	6366	21.84*	2.839E+00	1.928E-01	1.929E-01	6.31
AM-241	59.54	1505	35.90*	2.315E+00	3.402E-02	3.402E-02	17.43

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-60	1173.24	62	99.90	3.290E-01	3.548E-03	3.549E-03	26.07
	1332.50	90	99.98*	2.931E-01	5.743E-03	5.744E-03	14.93
ZR-95	724.20	639	44.10	5.153E-01	5.284E-02	5.319E-02	8.04
	756.73	148	54.50*	4.933E-01	1.032E-02	1.039E-02	28.92
EU-152	121.78	7819	28.42	2.689E+00	1.922E-01	1.922E-01	4.73
	244.70	------	7.49	1.569E+00	------ Line Not Found		------

VAX/VMS Peak Search Report V1.7 Generated 29-MAR-1990 11:56:20

Configuration : DUB0:[USER]T8274.CNF;1
Analyses by : PEAK V16.0,ENBACK V1.3
Sample title : T8274 SST 191-90 110B-C9-B 90-1256-A-1 TK110B-C9 SEG COM NI
Deposition Date : 29-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 29-MAR-1990 00:00:00 Acquisition date : 29-MAR-1990 10:11:52
Sample ID : T8274 SST 191-90 Sample quantity : 2.12690E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:31.51 0.5%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	32.21	8693	19000	1.25	43.27	42	11	1.45E+00	2.4	4.76E-01
2	3	34.27	14102	42623	1.64	46.02	42	11	2.35E+00	2.7	
3	3	36.38	9199	41577	1.87	48.84	42	11	1.53E+00	4.1	
4	0	42.12	5925	47231	2.69	56.49	53	8	9.87E-01	6.5	
5	0	48.42	1241	29648	2.15	64.90	63	5	2.07E-01	21.0	
6	0	59.41	1707	30588	1.45	79.55	78	6	2.84E-01	16.4	
7	0	86.40	5750	33929	1.55	115.55	112	8	9.58E-01	5.7	
8	0	97.26	2087	23408	1.62	130.04	128	6	3.48E-01	11.8	
9	0	104.73	4415	34597	1.76	140.01	136	9	7.36E-01	7.7	
10	0	122.70*	5903	29809	1.72	163.98	160	8	9.84E-01	5.3	
11	0	247.90	631	15466	1.58	330.96	329	6	1.05E-01	31.3	
12	0	661.59*	318229	3399	1.88	882.55	876	14	5.30E+01	0.2	
13	0	723.25*	565	307	1.90	964.75	960	10	9.41E-02	7.3	
14	0	756.93	116	334	1.91	1009.64	1005	10	1.94E-02	31.3	
15	0	873.49*	329	192	2.13	1164.99	1160	12	5.49E-02	10.5	
16	3	996.03	192	109	2.05	1328.30	1324	22	3.20E-02	12.0	9.07E-01
17	3	1004.64	369	74	1.96	1339.77	1324	22	6.16E-02	7.1	
18	0	1111.49*	46	53	2.09	1482.14	1478	9	7.74E-03	33.6	
19	0	1174.18*	38	53	2.11	1565.67	1559	15	6.26E-03	50.9	
20	0	1226.54	63	22	11.30	1635.42	1624	23	1.05E-02	29.8	
21	0	1274.28	537	14	1.96	1699.03	1694	13	8.95E-02	4.6	
22	0	1407.90	70	12	1.64	1877.01	1871	12	1.17E-02	14.9	
23	0	1596.92	20	9	2.38	2128.77	2124	10	3.28E-03	37.3	

Sample ID : T8274 SST 191-90
Acquisition date : 29-MAR-1990 10:11:52

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
3	32.21	8693	19000	1.25	43.27	42	11	2.4	4.76E-01	
3	34.27	14102	42623	1.64	46.02	42	11	2.7		
3	36.38	9199	41577	1.87	48.84	42	11	4.1		
0	42.12	5925	47231	2.69	56.49	53	8	6.5		
0	48.42	1241	29648	2.15	64.90	63	5	21.0		
0	59.41	1707	30588	1.45	79.55	78	6	16.4		AM-241
0	86.40	5750	33929	1.55	115.55	112	8	5.7		EU-155
0	97.26	2087	23408	1.62	130.04	128	6	11.8		
0	104.73	4415	34597	1.76	140.01	136	9	7.7		EU-155
0	122.70*	5903	29809	1.72	163.98	160	8	5.3		CO-57
										EU-154
0	247.90	631	15466	1.58	330.96	329	6	31.3		EU-154
0	661.59*	318229	3399	1.88	882.55	876	14	0.2		CS-137
0	723.25*	565	307	1.90	964.75	960	10	7.3		EU-154
										ZR-95
0	756.93	116	334	1.91	1009.64	1005	10	31.3		ZR-95
										EU-154
0	873.49*	329	192	2.13	1164.99	1160	12	10.5		EU-154
3	996.03	192	109	2.05	1328.30	1324	22	12.0	9.07E-01	EU-154
3	1004.64	369	74	1.96	1339.77	1324	22	7.1		EU-154
0	1111.49*	46	53	2.09	1482.14	1478	9	33.6		
0	1174.18*	38	53	2.11	1565.67	1559	15	50.9		
0	1226.54	63	22	11.30	1635.42	1624	23	29.8		
0	1274.28	537	14	1.96	1699.03	1694	13	4.6		EU-154
0	1407.90	70	12	1.64	1877.01	1871	12	14.9		
0	1596.92	20	9	2.38	2128.77	2124	10	37.3		EU-154

Summary of Nuclide Activity
Sample ID : T8274 SST 191-90 Acquisition date : 29-MAR-1990 10:11:52

Total number of lines in spectrum	23	
Number of unidentified lines	4	
Number of lines tentatively identified by NID	19	82.61%

Nuclide Type : fission

JG 9A 4/3/90

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CO-57~~	~~271.77D~~	~~1.001~~	~~5.408E-02~~	~~5.415E-02~~	~~0.284E-02~~	~~5.25~~	
CS-137	30.00Y	1.000	1.407E+01	1.407E+01	0.003E+01	0.18	
EU-154	8.59Y	1.000	1.083E-01	1.083E-01	0.050E-01	4.58	
EU-155	4.68Y	1.000	1.509E-01	1.509E-01	0.116E-01	7.70	
AM-241	432.20Y	1.000	4.350E-02	4.350E-02	0.713E-02	16.39	
	Total Activity :		1.443E+01	1.443E+01			

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~ZR-95~~	~~64.02D~~	~~1.005~~	~~9.166E-03~~	~~9.211E-03~~	~~2.881E-03~~	~~31.28~~	
	Total Activity :		9.166E-03	9.211E-03			

Grand Total Activity : 1.444E+01 1.444E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Nuclide Identification Report V2.5 Generated 29-MAR-1990 11:56:30

Configuration : DUB0:[USER]T8274.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8274 SST 191-90 110B-C9-B 90-1256-A-1 TK110B-C9 SEG COM NI
Deposition Date : 29-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 29-MAR-1990 00:00:00 Acquisition date : 29-MAR-1990 10:11:52
Sample ID : T8274 SST 191-90 Sample quantity : 2.12690E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:31.51 0.5%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 60.00

Nuclide Line Activity Report

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-57~~	~~122.06~~	~~5903~~	~~85.95*~~	~~2.689E+00~~	~~5.408E-02~~	~~5.415E-02~~	~~5.25~~
	136.47	------	10.33	2.545E+00	------ Line Not Found		------
CS-137	661.66	318229	85.20*	5.621E-01	1.407E+01	1.407E+01	0.18
EU-154	123.07	5903	40.42	2.689E+00	1.150E-01	1.150E-01	5.25
	247.93	631	6.84	1.549E+00	1.261E-01	1.261E-01	31.33
	591.70	------	4.83	6.279E-01	------ Line Not Found		------
	692.40	------	1.69	5.376E-01	------ Line Not Found		------
	723.30	565	19.98	5.154E-01	1.162E-01	1.162E-01	7.35
	756.90	116	4.33	4.934E-01	1.154E-01	1.154E-01	31.28
	873.20	329	12.09	4.310E-01	1.338E-01	1.338E-01	10.53
	996.30	192	10.34	3.818E-01	1.031E-01	1.031E-01	12.03
	1004.76	369	17.90	3.788E-01	1.154E-01	1.154E-01	7.12
	1274.51	537	34.40*	3.052E-01	1.083E-01	1.083E-01	4.58
	1596.50	20	1.83	2.480E-01	9.187E-02	9.188E-02	37.32
EU-155	86.54	5750	32.80	2.864E+00	1.297E-01	1.297E-01	5.70
	105.31	4415	21.84*	2.837E+00	1.509E-01	1.509E-01	7.70
AM-241	59.54	1707	35.90*	2.315E+00	4.350E-02	4.350E-02	16.39

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~ZR-95~~	~~724.20~~	~~565~~	~~44.10~~	~~5.154E-01~~	~~5.263E-02~~	~~5.290E-02~~	~~7.35~~
	~~756.73~~	~~116~~	~~54.50*~~	~~4.934E-01~~	~~9.166E-03~~	~~9.211E-03~~	~~31.20~~

VAX/VMS Peak Search Report V1.7 Generated 30-MAR-1990 14:59:33

Configuration : DUB0:[USER]T8279.CNF;1
Analyses by : PEAK V16.0,ENBACK V1.3
Sample title : T8279 SST 190-90 110B-C9-T 90-1255-A-3 TK110B-C9 Seg COM Ni
Deposition Date : 30-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 30-MAR-1990 00:00:00 Acquisition date : 30-MAR-1990 11:29:00
Sample ID : T8279 SST 190-90 Sample quantity : 2.28994E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 03:30:00.00 Elapsed real time: 0 03:30:00.88 0.0%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	34.15	281	602	2.01	45.85	42	10	2.23E-02	17.2	
2	0	74.52*	85	719	2.68	99.72	95	10	6.77E-03	62.1	
3	0	132.92	179	666	2.14	177.61	173	9	1.42E-02	27.7	
4	0	510.51	98	159	3.51	681.14	678	9	7.75E-03	25.4	
5	0	661.66*	970	94	1.96	882.64	877	14	7.70E-02	4.7	
6	0	796.62	28	60	1.71	1062.54	1056	11	2.23E-03	57.7	
7	0	1173.18	293	9	2.31	1564.33	1560	12	2.33E-02	6.7	
8	0	1332.41	259	0	2.38	1776.46	1771	11	2.06E-02	6.7	
9	0	1460.48	34	10	3.01	1947.05	1941	13	2.71E-03	34.6	

Post-NID Peak Search Report
Sample ID : T8279 SST 190-90

Acquisition date : 30-MAR-1990 11:29:00

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	34.15	281	602	2.01	45.85	42	10	17.2		
0	74.52*	85	719	2.68	99.72	95	10	62.1		
0	132.92	179	666	2.14	177.61	173	9	27.7		CE-144
0	510.51	98	159	3.51	681.14	678	9	25.4		NA-22
0	661.66*	970	94	1.96	882.64	877	14	4.7		CS-137
0	796.62	28	60	1.71	1062.54	1056	11	57.7		
0	1173.18	293	9	2.31	1564.33	1560	12	6.7		CO-60
0	1332.41	259	0	2.38	1776.46	1771	11	6.7		CO-60
0	1460.48	34	10	3.01	1947.05	1941	13	34.6		K-40

Sample ID : T8279 SST 190-90 Acquisition date : 30-MAR-1990 11:29:00

Total number of lines in spectrum	9	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	9	100.00%

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~NA-22~~	~~2.60Y~~	~~1.000~~	~~6.963E-04~~	~~6.966E-04~~	~~1.772E-04~~	~~25.44~~	~~K~~
CO-60	5.27Y	1.000	8.279E-03	8.281E-03	0.551E-03	6.65	
		Total Activity :	8.976E-03	8.977E-03			

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~K-40~~	~~1.28E+09Y~~	~~1.000~~	~~1.112E-02~~	~~1.112E-02~~	~~0.384E-02~~	~~34.56~~	
		Total Activity :	1.112E-02	1.112E-02			

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CS-137	30.00Y	1.000	1.898E-02	1.898E-02	0.089E-02	4.71	
CE-144	284.90D	1.001	5.832E-03	5.840E-03	1.616E-03	27.67	
		Total Activity :	2.481E-02	2.482E-02			

Grand Total Activity : 4.491E-02 4.492E-02

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Nuclide Identification Report V2.5 Generated 30-MAR-1990 14:59:44

Configuration : DUB0:[USER]T8279.CNF;1
^nalyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
ample title : T8279 SST 190-90 110B-C9-T 90-1255-A-3 TK110B-C9 Seg COM Ni
Deposition Date : 30-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 30-MAR-1990 00:00:00 Acquisition date : 30-MAR-1990 11:29:00
Sample ID : T8279 SST 190-90 Sample quantity : 2.28994E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 03:30:00.00 Elapsed real time: 0 03:30:00.88 0.0%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 60.00

Nuclide Line Activity Report

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
NA-22	511.00	98	180.00	7.293E-01	6.963E-04	6.966E-04	25.44
	1274.53	------	99.94*	3.052E-01	------	Line Not Found	------
CO-60	1173.24	293	99.90	3.290E-01	8.365E-03	8.367E-03	6.67
	1332.50	259	99.98*	2.931E-01	8.279E-03	8.281E-03	6.65

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
K-40	1460.83	34	10.67*	2.695E-01	1.112E-02	1.112E-02	34.56

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CS-137	661.66	970	85.20*	5.620E-01	1.898E-02	1.898E-02	4.71
CE-144	40.72	------	1.24	1.230E+00	------	Line Not Found	------
	80.10	------	1.13	2.818E+00	------	Line Not Found	------
	133.54	179	11.10*	2.583E+00	5.832E-03	5.840E-03	27.67
	696.50	------	1.34	5.346E-01	------	Line Not Found	------

VAX/VMS Peak Search Report V1.7 Generated 29-MAR-1990 10:10:58

Configuration : DUB0:[USER]T8273.CNF;1
Analyses by : PEAK V16.0,ENBACK V1.3
Sample title : T8273 SST 189-90 110B-C9-T 90-1255-A-2 TK110B-C9 Seg COM Ni
Deposition Date : 29-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 29-MAR-1990 00:00:00 Acquisition date : 29-MAR-1990 08:21:06
Sample ID : T8273 SST 189-90 Sample quantity : 2.32821E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:33.49 0.6%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	6	32.21	9081	20668	1.28	43.27	42	10	1.51E+00	2.3	1.23E+01
2	6	34.18	12962	40069	1.47	45.90	42	10	2.16E+00	2.7	
3	6	36.16	11609	45392	2.30	48.55	42	10	1.93E+00	3.3	
4	0	41.86*	6089	44888	2.60	56.15	53	7	1.01E+00	5.9	
5	0	48.05	1562	37873	2.18	64.40	62	6	2.60E-01	19.9	
6	0	59.35	2039	33211	1.51	79.48	77	6	3.40E-01	14.3	
7	0	86.33	5428	36744	1.62	115.46	112	8	9.05E-01	6.3	
8	0	97.18	2229	29637	1.48	129.93	127	7	3.71E-01	13.0	
9	0	104.47	4685	36471	2.71	139.66	136	9	7.81E-01	7.5	
10	0	122.84*	6112	36114	1.69	164.16	160	9	1.02E+00	5.8	
11	0	185.80*	566	29648	2.27	248.13	246	7	9.43E-02	50.4	
12	0	661.56*	336083	3624	1.88	882.51	876	14	5.60E+01	0.2	
13	0	723.24*	497	507	1.77	964.73	959	12	8.29E-02	10.4	
14	0	756.62	115	425	1.86	1009.22	1005	11	1.92E-02	34.8	
15	0	872.88	214	189	1.98	1164.18	1161	8	3.56E-02	13.5	
16	0	963.69*	76	121	1.86	1285.20	1282	10	1.26E-02	30.5	
17	0	996.20	175	149	1.92	1328.52	1325	9	2.91E-02	15.5	
18	0	1004.54	320	142	2.14	1339.64	1336	9	5.34E-02	9.0	
19	0	1085.52	33	53	1.54	1447.53	1445	8	5.53E-03	45.7	
20	0	1111.79*	86	98	1.98	1482.54	1476	15	1.43E-02	27.4	
21	0	1274.19	552	39	2.20	1698.90	1693	11	9.21E-02	4.7	
22	0	1332.22	25	18	2.20	1776.21	1769	15	4.24E-03	39.2	
23	0	1407.88	60	12	1.61	1876.99	1871	12	1.00E-02	16.5	
24	0	1596.18	21	5	2.00	2127.78	2122	10	3.46E-03	24.6	

Post-NID Peak Search Report
Sample ID : T8273 SST 189-90

Acquisition date : 29-MAR-1990 08:21:06

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
6	32.21	9081	20668	1.28	43.27	42	10	2.3	1.23E+01	
6	34.18	12962	40069	1.47	45.90	42	10	2.7		
6	36.16	11609	45392	2.30	48.55	42	10	3.3		
0	41.86*	6089	44888	2.60	56.15	53	7	5.9		
0	48.05	1562	37873	2.18	64.40	62	6	19.9		
0	59.35	2039	33211	1.51	79.48	77	6	14.3		AM-241
0	86.33	5428	36744	1.62	115.46	112	8	6.3		EU-155
0	97.18	2229	29637	1.48	129.93	127	7	13.0		
0	104.47	4685	36471	2.71	139.66	136	9	7.5		EU-155
0	122.84*	6112	36114	1.69	164.16	160	9	5.8		CO-57
										EU-154
0	185.80*	566	29648	2.27	248.13	246	7	50.4		
0	661.56*	336083	3624	1.88	882.51	876	14	0.2		CS-137
0	723.24*	497	507	1.77	964.73	959	12	10.4		EU-154
										ZR-95
0	756.62	115	425	1.86	1009.22	1005	11	34.8		ZR-95
										EU-154
0	872.88	214	189	1.98	1164.18	1161	8	13.5		EU-154
0	963.69*	76	121	1.86	1285.20	1282	10	30.5		
0	996.20	175	149	1.92	1328.52	1325	9	15.5		EU-154
0	1004.54	320	142	2.14	1339.64	1336	9	9.0		EU-154
0	1085.52	33	53	1.54	1447.53	1445	8	45.7		
0	1111.79*	86	98	1.98	1482.54	1476	15	27.4		
0	1274.19	552	39	2.20	1698.90	1693	11	4.7		EU-154
0	1332.22	25	18	2.20	1776.21	1769	15	39.2		
0	1407.88	60	12	1.61	1876.99	1871	12	16.5		
0	1596.18	21	5	2.00	2127.78	2122	10	24.6		EU-154

Summary of Nuclide Activity
Sample ID : T8273 SST 189-90 Acquisition date : 29-MAR-1990 08:21:06

Total number of lines in spectrum	24	
Number of unidentified lines	3	
Number of lines tentatively identified by NID	21	87.50%

Nuclide Type : fission

JG 4/3/90

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CO-57~~	~~271.77D~~	~~1.001~~	~~5.119E-02~~	~~5.124E-02~~	~~0.295E-02~~	~~5.75~~	
CS-137	30.00Y	1.000	1.358E+01	1.358E+01	0.002E+01	0.18	
EU-154	8.59Y	1.000	1.018E-01	1.018E-01	0.048E-01	4.73	
EU-155	4.68Y	1.000	1.462E-01	1.462E-01	0.110E-01	7.54	
AM-241	432.20Y	1.000	4.752E-02	4.752E-02	0.682E-02	14.34	
			---	---			
	Total Activity :		1.392E+01	1.392E+01			

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~ZR-95~~	~~64.02D~~	~~1.004~~	~~8.299E-03~~	~~8.334E-03~~	~~2.901E-03~~	~~34.82~~	
			---	---			
	Total Activity :		8.299E-03	8.334E-03			

Grand Total Activity : 1.393E+01 1.393E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Nuclide Identification Report V2.5 Generated 29-MAR-1990 10:11:09

Configuration : DUB0:[USER]T8273.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
amp? title : T8273 SST 189-90 110B-C9-T 90-1255-A-2 TK110B-C9 Seg COM Ni
Deposition Date : 29-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 29-MAR-1990 00:00:00 Acquisition date : 29-MAR-1990 08:21:06
Sample ID : T8273 SST 189-90 Sample quantity : 2.32821E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:33.49 0.6%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 60.00

Nuclide Line Activity Report

JE 4/3/90

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-57~~	~~122.06~~	~~6112~~	~~85.95*~~	~~2.688E+00~~	~~5.119E-02~~	~~5.124E-02~~	~~5.75~~
	136.47	------	10.33	2.545E+00	------	Line Not Found	------
CS-137	661.66	336083	85.20*	5.621E-01	1.358E+01	1.358E+01	0.18
EU-154	123.07	6112	40.42	2.688E+00	1.089E-01	1.089E-01	5.75
	247.93	------	6.84	1.549E+00	------	Line Not Found	------
	591.70	------	4.83	6.279E-01	------	Line Not Found	------
	692.40	------	1.69	5.376E-01	------	Line Not Found	------
	723.30	497	19.98	5.154E-01	9.339E-02	9.340E-02	10.37
	756.90	115	4.33	4.936E-01	1.045E-01	1.045E-01	34.82
	873.20	214	12.09	4.313E-01	7.930E-02	7.931E-02	13.46
	996.30	175	10.34	3.817E-01	8.565E-02	8.566E-02	15.45
	1004.76	320	17.90	3.788E-01	9.141E-02	9.142E-02	8.97
	1274.51	552	34.40*	3.052E-01	1.018E-01	1.018E-01	4.73
	1596.50	21	1.83	2.481E-01	8.849E-02	8.850E-02	24.55
EU-155	86.54	5428	32.80	2.863E+00	1.118E-01	1.118E-01	6.26
	105.31	4685	21.84*	2.839E+00	1.462E-01	1.462E-01	7.54
AM-241	59.54	2039	35.90*	2.313E+00	4.752E-02	4.752E-02	14.34

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~ZR-95~~	~~724.20~~	~~497~~	~~44.10~~	~~5.154E-01~~	~~4.231E-02~~	~~4.249E-02~~	~~10.37~~
	~~756.73~~	~~115~~	~~54.50*~~	~~4.936E-01~~	~~8.299E-03~~	~~8.334E-03~~	~~34.82~~

VAX/VMS Peak Search Report V1.7 Generated 28-MAR-1990 15:44:30

Configuration : DUB0:[USER]T8271.CNF;1
Analyses by : PEAK V16.0,ENBACK V1.3
Sample title : T8271 SST 188-90 110B-C9-T 90-1255-A-1 TK110B-C9 Seg 3 Ni FU
Deposition Date : 28-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 28-MAR-1990 00:00:00 Acquisition date : 28-MAR-1990 13:11:01
Sample ID : T8271 SST 188-90 Sample quantity : 2.25167E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:33.01 0.5%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	32.25	8418	19811	1.24	43.32	42	10	1.40E+00	2.5	5.21E-01
2	3	34.35	15684	46110	1.81	46.12	42	10	2.61E+00	2.5	
3	3	36.48	7515	46039	1.74	48.97	42	10	1.25E+00	5.1	
4	0	41.88*	8460	44951	2.67	56.17	53	7	1.41E+00	4.3	
5	0	47.94	2283	37347	2.77	64.26	62	6	3.81E-01	13.5	
6	0	59.64	2119	32309	1.42	79.87	78	6	3.53E-01	13.6	
7	0	86.51	6386	36064	1.59	115.71	112	8	1.06E+00	5.3	
8	0	97.35	2693	24725	1.42	130.16	128	6	4.49E-01	9.5	
9	0	104.51	6084	40239	2.90	139.71	135	10	1.01E+00	6.3	
10	4	120.82	633	11724	1.25	161.46	160	9	1.05E-01	23.1	8.42E-01
11	4	122.90*	7243	27197	1.68	164.24	160	9	1.21E+00	4.0	
12	0	247.51	464	16129	1.27	330.44	328	6	7.74E-02	43.7	
13	0	591.81	181	2344	2.06	789.52	787	7	3.01E-02	44.8	
14	5	658.67	974	3089	3.31	878.66	875	16	1.62E-01	24.0	8.42E+00
15	5	661.59*	326662	1760	1.82	882.55	875	16	5.44E+01	0.2	
16	0	723.22*	609	528	1.86	964.70	959	12	1.02E-01	8.6	
17	0	756.65	85	249	1.69	1009.26	1007	7	1.41E-02	34.9	
18	0	778.73	136	254	2.52	1038.70	1036	7	2.26E-02	21.7	
19	0	873.30*	330	248	1.96	1164.73	1160	10	5.50E-02	10.6	
20	0	963.90*	82	143	2.48	1285.48	1282	9	1.37E-02	29.8	
21	0	995.74	262	174	2.08	1327.90	1321	12	4.37E-02	12.1	
22	0	1004.58	386	149	2.07	1339.69	1334	10	6.44E-02	7.9	
23	0	1085.86*	67	93	2.77	1447.99	1442	10	1.12E-02	32.3	
24	0	1112.12*	81	41	3.39	1482.98	1480	8	1.34E-02	19.5	
25	0	1173.91*	69	36	6.40	1565.31	1558	18	1.15E-02	30.3	
26	0	1274.32	650	28	2.45	1699.08	1692	15	1.08E-01	4.4	
27	0	1408.24	109	0	2.26	1877.48	1871	15	1.82E-02	10.7	
28	0	1461.13	28	4	1.68	1947.92	1943	11	4.69E-03	24.4	
29	0	1493.55	12	5	1.01	1991.10	1987	10	1.98E-03	45.7	
30	0	1596.70	28	7	2.29	2128.47	2124	9	4.60E-03	25.7	

Post-NID Peak Search Report
Sample ID : T8271 SST 188-90

Acquisition date : 28-MAR-1990 13:11:01

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
3	32.25	8418	19811	1.24	43.32	42	10	2.5	5.21E-01	
3	34.35	15684	46110	1.81	46.12	42	10	2.5		
3	36.48	7515	46039	1.74	48.97	42	10	5.1		
0	41.88*	8460	44951	2.67	56.17	53	7	4.3		
0	47.94	2283	37347	2.77	64.26	62	6	13.5		
0	59.64	2119	32309	1.42	79.87	78	6	13.6		AM-241
0	86.51	6386	36064	1.59	115.71	112	8	5.3		EU-155
0	97.35	2693	24725	1.42	130.16	128	6	9.5		
0	104.51	6084	40239	2.90	139.71	135	10	6.3		EU-155
4	120.82	633	11724	1.25	161.46	160	9	23.1	8.42E-01	EU-152
4	122.90*	7243	27197	1.68	164.24	160	9	4.0		CO-57
										EU-154
0	247.51	464	16129	1.27	330.44	328	6	43.7		EU-154
0	591.81	181	2344	2.06	789.52	787	7	44.8		EU-154
5	658.67	974	3089	3.31	878.66	875	16	24.0	8.42E+00	
5	661.59*	326662	1760	1.82	882.55	875	16	0.2		CS-137
0	723.22*	609	528	1.86	964.70	959	12	8.6		EU-154
										ZR-95
0	756.65	85	249	1.69	1009.26	1007	7	34.9		ZR-95
										EU-154
0	778.73	136	254	2.52	1038.70	1036	7	21.7		EU-152
0	873.30*	330	248	1.96	1164.73	1160	10	10.6		EU-154
0	963.90*	82	143	2.48	1285.48	1282	9	29.8		EU-152
0	995.74	262	174	2.08	1327.90	1321	12	12.1		EU-154
0	1004.58	386	149	2.07	1339.69	1334	10	7.9		EU-154
0	1085.86*	67	93	2.77	1447.99	1442	10	32.3		EU-152
0	1112.12*	81	41	3.39	1482.98	1480	8	19.5		EU-152
0	1173.91*	69	36	6.40	1565.31	1558	18	30.3		
0	1274.32	650	28	2.45	1699.08	1692	15	4.4		EU-154
0	1408.24	109	0	2.26	1877.48	1871	15	10.7		EU-152
0	1461.13	28	4	1.68	1947.92	1943	11	24.4		K-40
0	1493.55	12	5	1.01	1991.10	1987	10	45.7		
0	1596.70	28	7	2.29	2128.47	2124	9	25.7		EU-154

Summary of Nuclide Activity

Sample ID : T8271 SST 188-90 Acquisition date : 28-MAR-1990 13:11:01

Total number of lines in spectrum	30	
Number of unidentified lines	4	
Number of lines tentatively identified by NID	26	86.67%

Nuclide Type : natural

4/3/90

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~K-40~~	~~1.28E+09Y~~	~~1.000~~	~~1.959E-02~~	~~1.959E-02~~	~~0.478E-02~~	~~24.39~~	
			---	---			
	Total Activity :		1.959E-02	1.959E-02			

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CO-57~~	~~271.77D~~	~~1.001~~	~~6.274E-02~~	~~6.283E-02~~	~~0.250E-02~~	~~3.98~~	
CS-137	30.00Y	1.000	1.365E+01	1.365E+01	0.002E+01	0.18	
EU-154	8.59Y	1.000	1.238E-01	1.238E-01	0.054E-01	4.37	
EU-155	4.68Y	1.000	1.963E-01	1.964E-01	0.123E-01	6.27	
AM-241	432.20Y	1.000	5.078E-02	5.078E-02	0.693E-02	13.65	
			---	---			
	Total Activity :		1.408E+01	1.408E+01			

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~ZR-95~~	~~64.02D~~	~~1.006~~	~~6.307E-03~~	~~6.347E-03~~	~~2.215E-03~~	~~34.90~~	
EU-152	13.54Y	1.000	3.750E-02	3.750E-02	0.403E-02	10.74	
			---	---			
	Total Activity :		4.380E-02	4.385E-02			

Grand Total Activity : 1.414E+01 1.414E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

Sample ID : T8271 SST 188-90 Acquisition date : 28-MAR-1990 13:11:01

uclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
	964.13	82	14.47	3.935E-01	2.882E-02	2.882E-02	29.76
	1085.91	67	9.91	3.529E-01	3.850E-02	3.851E-02	32.35
	1112.12	81	13.54	3.453E-01	3.451E-02	3.451E-02	19.51
	1408.01	109	20.87*	2.786E-01	3.750E-02	3.750E-02	10.74

VAX/VMS Nuclide Identification Report V2.5 Generated 28-MAR-1990 15:44:41

Configuration : DUB0:[USER]T8271.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8271 SST 188-90 110B-C9-T 90-1255-A-1 TK110B-C9 Seg 3 Ni FU
Deposition Date : 28-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 28-MAR-1990 00:00:00 Acquisition date : 28-MAR-1990 13:11:01
Sample ID : T8271 SST 188-90 Sample quantity : 2.25167E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:33.01 0.5%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 60.00

Nuclide Line Activity Report

4/3/90 [illegible]

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
K-40	1460.83	28	10.67*	2.694E-01	1.959E-02	1.959E-02	24.39

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-57~~	~~122.06~~	~~7243~~	~~05.95*~~	~~2.687E+00~~	~~6.274E-02~~	~~6.283E-02~~	~~3.98~~
	136.47	------	10.33	2.545E+00	------ Line Not Found		------
CS-137	661.66	326662	85.20*	5.621E-01	1.365E+01	1.365E+01	0.18
EU-154	123.07	7243	40.42	2.687E+00	1.334E-01	1.334E-01	3.98
	247.93	464	6.84	1.551E+00	8.754E-02	8.755E-02	43.68
	591.70	181	4.83	6.278E-01	1.192E-01	1.192E-01	44.84
	692.40	------	1.69	5.376E-01	------ Line Not Found		------
	723.30	609	19.98	5.155E-01	1.184E-01	1.184E-01	8.62
	756.90	85	4.33	4.936E-01	7.939E-02	7.940E-02	34.90
	873.20	330	12.09	4.311E-01	1.266E-01	1.266E-01	10.57
	996.30	262	10.34	3.819E-01	1.327E-01	1.327E-01	12.14
	1004.76	386	17.90	3.788E-01	1.139E-01	1.139E-01	7.89
	1274.51	650	34.40*	3.052E-01	1.238E-01	1.238E-01	4.37
	1596.50	28	1.83	2.481E-01	1.215E-01	1.215E-01	25.69
EU-155	86.54	6386	32.80	2.864E+00	1.360E-01	1.360E-01	5.29
	105.31	6084	21.84*	2.838E+00	1.963E-01	1.964E-01	6.27
AM-241	59.54	2119	35.90*	2.325E+00	5.078E-02	5.078E-02	13.65

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~ZR-95~~	~~724.20~~	~~609~~	~~44.10~~	~~5.155E-01~~	~~5.363E-02~~	~~5.397E-02~~	~~0.62~~
	~~756.73~~	~~85~~	~~54.50*~~	~~4.936E-01~~	~~6.307E-03~~	~~6.347E-03~~	~~34.90~~
EU-152	121.78	633	28.42	2.708E+00	1.645E-02	1.645E-02	23.08
	244.70	------	7.49	1.569E+00	------ Line Not Found		------
	344.28	------	26.58	1.102E+00	------ Line Not Found		------
	778.90	136	12.96	4.802E-01	4.364E-02	4.364E-02	21.66

VAX/VMS Peak Search Report V1.7 Generated 19-MAR-1990 16:23:54

Configuration : DUB0:[USER]T8230.CNF;1
Analyses by : PEAK V16.0.ENBACK V1.3
Sample title : T8230 SSTBACK (60 HR)
Deposition Date : 16-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 16-MAR-1990 00:00:00 Acquisition date : 16-MAR-1990 17:46:05
Sample ID : BACKGROUND c SST holder Sample quantity : 1.0000 sa
Sample type : SST Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 2 12:00:00.00 Elapsed real time: 2 12:00:12.32 0.0%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	33.96	2868	6588	4.38	45.61	41	12	1.33E-02	6.0	
2	0	45.92*	18	5428	1.88	61.56	58	7	8.40E-05	882.3	
3	0	62.82	544	5022	1.50	84.11	82	6	2.52E-03	21.3	
4	8	72.46	1113	4756	1.36	96.96	94	13	5.15E-03	9.8	2.41E+00
5	8	74.69	2205	5555	1.54	99.93	94	13	1.02E-02	5.9	
6	5	84.32	1193	5467	1.59	112.79	108	21	5.52E-03	10.4	4.58E-01
7	5	86.83	553	7352	2.09	116.12	108	21	2.56E-03	28.0	
8	5	92.30	1251	6562	1.85	123.42	108	21	5.79E-03	11.1	
9	0	185.26	824	7433	2.08	247.41	244	8	3.81E-03	18.5	
10	0	238.26	301	3653	1.63	318.10	316	5	1.39E-03	30.7	
11	0	510.97	2161	2987	2.83	681.62	675	14	1.00E-02	5.8	
12	0	608.83	205	1091	2.22	812.22	808	8	9.50E-04	29.6	
13	0	661.60	8070	1191	1.83	882.56	877	11	3.74E-02	1.4	
14	0	802.51	112	450	2.09	1070.39	1066	8	5.19E-04	34.9	
15	0	962.55	137	346	1.41	1283.69	1279	10	6.35E-04	27.3	
16	0	1173.23	382	235	2.37	1564.40	1559	11	1.77E-03	9.6	
17	0	1274.57	50	143	1.36	1699.42	1695	7	2.30E-04	42.6	
18	0	1333.02*	143	277	2.47	1777.28	1770	15	6.64E-04	35.7	
19	0	1461.36	321	146	2.01	1948.23	1944	10	1.49E-03	9.1	

Post-NID Peak Search Report
Sample ID : BACKGROUND Acquisition date : 16-MAR-1990 17:46:05

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	33.96	2868	6588	4.38	45.61	41	12	6.0		
0	45.92*	18	5428	1.88	61.56	58	7	882.3		
0	62.82	544	5022	1.50	84.11	82	6	21.3		
8	72.46	1113	4756	1.36	96.96	94	13	9.8	2.41E+00	
8	74.69	2205	5555	1.54	99.93	94	13	5.9		
5	84.32	1193	5467	1.59	112.79	108	21	10.4	4.58E-01	
5	86.83	553	7352	2.09	116.12	108	21	28.0		
5	92.30	1251	6562	1.85	123.42	108	21	11.1		
0	185.26	824	7433	2.08	247.41	244	8	18.5		
0	238.26	301	3653	1.63	318.10	316	5	30.7		
0	510.87	2161	2987	2.83	681.62	675	14	5.8		NA-22
0	608.83	205	1091	2.22	812.22	808	8	29.6		
0	661.60	8070	1191	1.83	882.56	877	11	1.4		CS-137
0	802.51	112	450	2.09	1070.39	1066	8	34.9		
0	962.55	137	346	1.41	1283.69	1279	10	27.3		
0	1173.23	382	235	2.37	1564.40	1559	11	9.6		CO-60
0	1274.57	50	143	1.36	1699.42	1695	7	42.6		NA-22
0	1333.02*	143	277	2.47	1777.28	1770	15	35.7		CO-60
0	1461.36	321	146	2.01	1948.23	1944	10	9.1		K-40

Sample ID : BACKGROUND Acquisition date : 16-MAR-1990 17:46:05

Total number of lines in spectrum	19	
Number of unidentified lines	4	
Number of lines tentatively identified by NID	15	78.95%

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/sa	Decay Corr uCi/sa	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
NA-22	2.60Y	1.001	2.037E-06	2.040E-06	0.869E-06	42.58	
CO-60	5.27Y	1.001	6.127E-06	6.131E-06	2.191E-06	35.73	
		Total Activity :	8.164E-06	8.171E-06			

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected uCi/sa	Decay Corr uCi/sa	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
K-40	1.28E+09Y	1.000	1.398E-04	1.398E-04	0.127E-04	9.11	
		Total Activity :	1.398E-04	1.398E-04			

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/sa	Decay Corr uCi/sa	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CS-137	30.00Y	1.000	2.109E-04	2.109E-04	0.029E-04	1.38	
		Total Activity :	2.109E-04	2.109E-04			

Grand Total Activity : 3.588E-04 3.588E-04

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Nuclide Identification Report V2.5 Generated 19-MAR-1990 16:24:07

Configuration : DUB0:[USER]T8230.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8230 SSTBACK (60 HR)
Deposition Date : 16-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 16-MAR-1990 00:00:00 Acquisition date : 16-MAR-1990 17:46:05
Sample ID : BACKGROUND Sample quantity : 1.0000 sa
Sample type : SST Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 2 12:00:00.00 Elapsed real time: 2 12:00:12.32 0.0%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/sa	Decay Corr uCi/sa	1-Sigma %Error
NA-22	511.00	2161	180.00	7.288E-01	2.062E-05	2.065E-05	5.82
	1274.53	50	99.94*	3.051E-01	2.037E-06	2.040E-06	42.58
CO-60	1173.24	382	99.90	3.290E-01	1.453E-05	1.454E-05	9.63
	1332.50	143	99.98*	2.930E-01	6.127E-06	6.131E-06	35.73

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/sa	Decay Corr uCi/sa	1-Sigma %Error
K-40	1460.83	321	10.67*	2.693E-01	1.398E-04	1.398E-04	9.11

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/sa	Decay Corr uCi/sa	1-Sigma %Error
CS-137	32.05	------	6.02	6.196E-01	------	Line Not Found	------
	661.66	8070	85.20*	5.621E-01	2.109E-04	2.109E-04	1.38

Sample ID : T6224 SST 107-90
Acquisition date : 14-MAR-1990 09:48:03

It	Energy.	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
7	31.88	7735	5259	1.71	42.83	42	11	1.1	4.21E+02	CS-137
7	35.68	14287	36608	3.50	47.90	42	11	2.7		
0	41.32*	685	13784	1.75	55.42	54	5	26.0		GD-153
0	59.31	679	16287	1.52	79.43	77	6	29.9		AM-241
0	97.04	654	13752	1.74	129.75	128	5	27.1		GD-153
0	102.63	373	14183	1.31	137.21	136	5	47.9		GD-153
0	122.67*	912	15336	1.98	163.94	162	5	20.7		CO-57
										EU-154
0	661.59*	365367	3286	1.88	882.55	876	14	0.2		CS-137
0	723.37*	100	34	2.11	964.91	962	8	15.3		EU-154
										ZR-95
0	756.95	30	38	1.95	1009.66	1005	9	39.8		ZR-95
3	765.85	66	24	2.48	1021.53	1018	25	19.0	2.58E+00	NB-95
3	778.87*	41	21	2.65	1038.88	1018	25	27.7		
0	873.16*	38	28	2.31	1164.55	1161	8	30.6		EU-154
0	963.90*	15	31	1.95	1285.48	1283	11	87.0		
7	996.16	43	18	1.86	1328.47	1321	26	21.7	1.02E+00	EU-154
7	1004.80*	55	16	2.62	1339.98	1321	26	23.1		EU-154
0	1173.76*	32	19	1.83	1565.12	1559	13	34.3		CO-60
0	1274.68*	86	3	2.09	1699.56	1694	14	14.1		EU-154
0	1332.79*	20	11	2.26	1776.98	1769	15	44.8		CO-60
0	1408.63	19	7	1.35	1877.99	1874	9	37.5		

Sample ID : T8224 SST 107-90 Acquisition date : 14-MAR-1990 09:48:03

Total number of lines in spectrum	20	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	20	100.00%

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CO-57~~	~~271.77D~~	~~1.001~~	~~7.743E-03~~	~~7.752E-03~~	~~1.647E-03~~	~~20.73~~	~~Eu-154~~
~~NI-63~~	~~34.77D~~	~~1.007~~	~~2.781E-03~~	~~2.755E-03~~	~~0.524E-03~~	~~17.03~~	~~Hot cell contam.~~
CS-137	30.00Y	1.000	1.536E+01	1.536E+01	0.003E+01	0.17	
EU-154	8.59Y	1.000	1.652E-02	1.652E-02	0.233E-02	14.08	
AM-241	432.70Y	1.000	1.646E-02	1.646E-02	0.493E-02	29.94	
			---	---			
	Total Activity :		1.540E+01	1.540E+01			

DEH 3/21/90

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CO-60	[illegible]	[illegible]	1.379E-03	1.380E-03	0.618E-03	44.79	
~~ZR-95~~	~~64.02D~~	~~1.003~~	[illegible]	[illegible]	~~0.703E-03~~	~~39.80~~	~~Eu-154~~
			---	---			
	Total Activity :		3.636E-03	3.647E-03			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
GD-153	241.60D	1.001	1.662E-02	1.665E-02	0.450E-02	27.06	
			---	---			
	Total Activity :		1.662E-02	1.665E-02			

Grand Total Activity : 1.542E+01 1.542E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Peak Search Report V1.7 Generated 19-MAR-1990 16:23:10

Configuration : DUB0:[USER]T8224.CNF;1
Analyses by : PEAK V16.0,ENBACK V1.3
Sample title : T8224 SST 107-90
Deposition Date : 14-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 14-MAR-1990 00:00:00 Acquisition date : 14-MAR-1990 09:48:03
Sample ID : T8224 SST 107-90 Sample quantity : 2.23760E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:28.90 0.5%
Start energy : 14.75 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Fw	Cts/Sec	%Err	Fit
1	7	31.38	7725	5259	1.71	42.83	42	11	1.29E+00	1.1	4.21E+02
2	7	35.68	14287	36606	3.56	47.90	42	11	2.38E+00	2.7	
3	0	41.32*	685	13764	1.75	55.42	54	5	1.14E-01	26.0	
4	0	59.31	679	16287	1.52	79.43	77	6	1.13E-01	29.9	
5	0	97.04	654	13752	1.74	129.75	128	5	1.09E-01	27.1	
6	0	102.63	373	14183	1.31	137.21	136	5	6.21E-02	47.9	
7	0	122.67*	912	15336	1.98	163.94	162	5	1.52E-01	20.7	
8	0	661.59*	365367	3286	1.88	882.55	876	14	6.09E+01	0.2	
9	0	723.37*	100	34	2.11	964.91	962	8	1.67E-02	15.3	
10	0	756.95	30	38	1.95	1009.66	1005	9	5.02E-03	39.8	
11	3	765.85	66	24	2.48	1021.53	1018	25	1.10E-02	19.0	2.58E+00
12	3	778.87*	41	21	2.65	1038.88	1018	25	6.82E-03	27.7	
13	0	873.16*	38	28	2.31	1164.55	1161	8	6.33E-03	30.6	
14	0	963.90*	15	31	1.95	1285.48	1283	11	2.47E-03	87.0	
15	7	996.16	43	18	1.86	1328.47	1321	26	7.10E-03	21.7	1.02E+00
16	7	1004.80*	55	16	2.62	1339.98	1321	26	9.10E-03	23.1	
17	0	1173.76*	32	19	1.83	1565.12	1559	13	5.35E-03	34.3	
18	0	1274.68*	86	3	2.09	1699.56	1694	14	1.44E-02	14.1	
19	0	1332.79*	20	11	2.26	1776.98	1769	15	3.35E-03	44.8	
20	0	1408.63	19	7	1.35	1877.99	1874	9	3.18E-03	37.5	

VAX/VMS Nuclide Identification Report V2.5 Generated 19-MAR-1990 16:23:23

Configuration : DUB0:[USER]T8224.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8224 SST 107-90 10-3300-A-1
Deposition Date : 14-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 14-MAR-1990 00:00:00 Acquisition date : 14-MAR-1990 09:48:03
Sample ID : T8224 SST 107-90 Sample quantity : 2.23760E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:28.90 0.5%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Sustematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CD-57~~	122.06	912	85.95*	2.689E+00	7.943E-03	7.952E-03	20.73
	136.47	------	10.33	2.545E+00	------ Line Not Found		------
~~NB-95~~	~~765.79~~	~~66~~	~~99.79*~~	~~4.879E-01~~	~~2.731E-03~~	~~2.755E-03~~	~~19.03~~
CS-137	32.05	7735	6.02	6.084E-01	4.251E+00	4.252E+00	1.14
	661.66	365367	85.20*	5.621E-01	1.536E+01	1.536E+01	0.17
EU-154	42.75	------	20.56	1.373E+00	------ Line Not Found		------
	123.07	912	40.42	2.689E+00	1.689E-02	1.689E-02	20.73
	247.93	------	6.84	1.549E+00	------ Line Not Found		------
	723.30	100	19.98	5.153E-01	1.959E-02	1.959E-02	15.25
	873.20	38	12.09	4.312E-01	1.467E-02	1.467E-02	30.60
	996.30	43	10.34	3.818E-01	2.172E-02	2.173E-02	21.72
	1004.76	55	17.90	3.788E-01	1.621E-02	1.621E-02	23.08
	1274.51	86	34.40*	3.051E-01	1.652E-02	1.652E-02	14.08
AM-241	59.54	679	35.90*	2.311E+00	1.646E-02	1.646E-02	29.94

Hot cell contam. 9/28 5/21/90

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-60	1173.24	32	99.90	3.288E-01	1.969E-03	1.969E-03	34.31
	1332.50	20	99.98*	2.930E-01	1.379E-03	1.380E-03	44.79
~~ZR-95~~	724.20	100	44.10	5.153E-01	8.877E-03	8.919E-03	15.25
	756.73	30	54.50*	4.934E-01	2.257E-03	2.268E-03	39.80

Energy 756.9

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
GD-153	41.31	685	96.50	1.273E+00	1.122E-02	1.124E-02	26.01
	47.00	------	18.10	1.658E+00	------ Line Not Found		------
	48.50	------	5.47	1.752E+00	------ Line Not Found		------
	97.43	654	27.60*	2.871E+00	1.662E-02	1.665E-02	27.06
	103.18	373	19.60	2.849E+00	1.344E-02	1.346E-02	47.85

VAX/VMS Peak Search Report V1.7 Generated 21-MAR-1990 08:55:42

Configuration : DUB0:[USER]T8231.CNF;1
Analyses by : PEAK V16.0.ENBACK V1.3
Sample title : T8231 SST 108-90
Deposition Date : 19-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 19-MAR-1990 00:00:00 Acquisition date : 19-MAR-1990 09:44:05
Sample ID : T8231 SST 108-90 Sample quantity : 2.54160E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:32.40 0.5%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	7	31.82	8711	5985	1.68	42.75	42	11	1.45E+00	1.1	4.50E+02
2	7	35.60	16718	40563	3.40	47.79	42	11	2.79E+00	2.4	
3	0	59.01	597	15413	1.59	79.02	78	5	9.95E-02	31.4	
4	0	73.47*	785	18193	2.77	98.32	96	6	1.31E-01	27.4	
5	0	97.13	1279	18312	1.63	129.87	128	6	2.13E-01	17.0	
6	0	122.61*	833	17447	1.46	163.85	162	5	1.40E-01	23.9	
7	0	186.14*	907	32262	2.56	248.58	246	7	1.51E-01	32.7	
8	0	661.53*	411212	3745	1.90	882.47	875	14	6.85E+01	0.2	
9	10	719.78	12	22	1.94	960.11	958	13	1.98E-03	59.6	4.20E+00
10	10	723.25*	82	44	1.95	964.74	958	13	1.36E-02	18.1	
11	0	756.64	45	31	2.08	1009.25	1006	8	7.54E-03	28.0	
12	0	765.98	48	85	1.75	1021.71	1016	13	7.92E-03	41.9	
13	0	779.69*	51	69	2.27	1039.97	1034	15	8.47E-03	38.4	
14	0	873.13*	38	54	1.38	1164.51	1159	12	6.27E-03	44.9	
15	6	996.85	52	23	1.88	1329.38	1325	21	8.61E-03	20.1	1.00E+00
16	6	1004.70	81	17	2.51	1339.84	1325	21	1.35E-02	15.5	
17	0	1085.35	18	11	1.63	1447.31	1444	7	3.06E-03	44.1	
18	0	1173.68*	19	14	1.59	1565.01	1559	11	3.19E-03	50.4	
19	0	1274.76*	76	28	1.97	1699.66	1695	9	1.26E-02	16.9	
20	0	1332.20	39	0	1.83	1776.18	1769	14	6.50E-03	20.4	
21	0	1400.70	34	0	2.17	1878.09	1871	15	5.67E-03	20.4	
22	0	1461.52*	2	7	1.05	1948.44	1944	9	3.34E-04	294.2	

Sample ID : T8231 SST 108-90
Acquisition date : 19-MAR-1990 09:44:05

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
7	31.82	8711	5985	1.68	42.75	42	11	1.1	4.50E+02	CS-137
7	35.60	16718	40563	3.40	47.79	42	11	2.4		
0	59.01	597	15413	1.59	79.02	78	5	31.4		AM-241
0	73.47*	785	18193	2.77	98.32	96	6	27.4		
0	97.13	1279	18312	1.63	129.87	128	6	17.0		
0	122.61*	838	17447	1.46	163.85	162	5	23.9		CO-57
										EU-154
0	186.14*	907	32262	2.56	248.58	246	7	32.7		
0	661.53*	411212	3745	1.90	882.47	875	14	0.2		CS-137
10	719.78	12	22	1.94	960.11	958	13	59.6	4.20E+00	
10	723.25*	82	44	1.95	964.74	958	13	18.1		EU-154
										ZR-95
0	756.64	45	31	2.08	1009.25	1006	8	28.0		ZR-95
0	765.98	48	85	1.75	1021.71	1016	13	41.9		NB-95
0	779.69*	51	69	2.27	1039.97	1034	15	38.4		
0	873.13*	38	54	1.38	1164.51	1159	12	44.9		EU-154
6	996.85	52	23	1.88	1329.38	1325	21	20.1	1.00E+00	EU-154
5	1004.70	81	17	2.51	1339.84	1325	21	15.5		EU-154
0	1085.35	18	11	1.63	1447.31	1444	7	44.1		
0	1173.68*	19	14	1.59	1565.01	1559	11	50.4		CO-60
0	1274.76*	76	28	1.97	1699.66	1695	9	16.9		EU-154
0	1332.20	39	0	1.83	1776.18	1769	14	20.4		CO-60
0	1408.70	34	0	2.17	1878.09	1871	15	20.4		
0	1461.52*	2	7	1.05	1948.44	1944	9	294.2		K-40

Sample ID : T8231 SST 108-90 Acquisition date : 19-MAR-1990 09:44:05

Total number of lines in spectrum	22	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	21	95.45%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~K-40~~	~~1.28E+09Y~~	~~1.000~~	~~1.237E-03~~	~~1.237E-03~~	~~3.638E-03~~	~~294.16~~	
			---	---			
	Total Activity :		1.237E-03	1.237E-03			

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3/21/90

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~PB-57~~	~~271.77D~~	~~1.001~~	~~6.422E-03~~	~~6.429E-03~~	~~1.537E-03~~	~~23.90~~	
~~NB-95~~	~~34.97D~~	~~1.009~~	~~1.729E-03~~	~~1.745E-03~~	~~0.731E-03~~	~~41.90~~	
CS-137	30.00Y	1.000	1.522E+01	1.522E+01	0.002E+01	0.16	
EU-154	8.59Y	1.000	1.277E-02	1.277E-02	0.216E-02	16.92	
AM-241	432.20Y	1.000	1.283E-02	1.283E-02	0.403E-02	31.44	
			---	---			
	Total Activity :		1.525E+01	1.525E+01			

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CO-60	5.27Y	1.000	2.358E-03	2.359E-03	0.482E-03	20.43	
~~ZR-95~~	~~64.02D~~	~~1.005~~	~~2.977E-03~~	~~2.993E-03~~	~~0.837E-03~~	~~27.98~~	
			---	---			
	Total Activity :		5.337E-03	5.352E-03			

Grand Total Activity : 1.526E+01 1.526E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Nuclide Identification Report V2.5 Generated 21-MAR-1990 08:55:52

Configuration	: DUB0:[USER]T8231.CNF;1		
Analyses by	: PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2		
Sample title	: T8231 SST 108-90 90-0390-A-L		
Deposition Date	: 19-MAR-1990 00:00:00	Deposition Period:	17-NOV-1858 00:00:00
Sample date	: 19-MAR-1990 00:00:00	Acquisition date :	19-MAR-1990 09:44:05
Sample ID	: T8231 SST 108-90	Sample quantity :	2.54160E-02 G
Sample type	: 10 ML IN SCV	Sample geometry :	T2SCV
Detector name	: TRACK	Detector geometry:	T2SCV
Elapsed live time:	0 01:40:00.00	Elapsed real time:	0 01:40:32.40 0.5%
Energy tolerance :	1.00	Half life ratio :	8.00
Errors propagated:	No	Systematic Error :	0.00 %
Efficiency type :	Empirical	Efficiencies at :	Peak Energy
Abundance limit :	75.00		

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~K-40~~	~~1460.83~~	~~2~~	~~10.67*~~	~~2.693E-01~~	~~1.237E-03~~	~~1.237E-03~~	~~294.16~~

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CS-57~~	~~122.06~~	~~838~~	~~85.95*~~	~~2.690E+00~~	~~6.422E-03~~	~~6.429E-03~~	~~23.90~~
	136.47	------	10.33	2.545E+00	------ Line Not Found		------
~~NB-95~~	~~765.79~~	~~48~~	~~99.79*~~	~~4.878E-01~~	~~1.729E-03~~	~~1.748E-03~~	~~41.90~~
CS-137	32.05	8711	6.02	6.043E-01	4.244E+00	4.244E+00	1.09
	661.66	411212	85.20*	5.621E-01	1.522E+01	1.522E+01	0.16
EU-154	42.75	------	20.56	1.373E+00	------ Line Not Found		------
	123.07	838	40.42	2.690E+00	1.366E-02	1.366E-02	23.90
	247.93	------	6.84	1.549E+00	------ Line Not Found		------
	723.30	82	19.98	5.154E-01	1.404E-02	1.404E-02	18.09
	873.20	38	12.09	4.312E-01	1.280E-02	1.280E-02	44.93
	996.30	52	10.34	3.815E-01	2.321E-02	2.321E-02	20.11
	1004.76	81	17.90	3.788E-01	2.121E-02	2.122E-02	15.50
	1274.51	76	34.40*	3.051E-01	1.277E-02	1.277E-02	16.92
AM-241	59.54	597	35.90*	2.299E+00	1.283E-02	1.283E-02	31.44

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Not all contam.

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-60	1173.24	19	99.90	3.288E-01	1.032E-03	1.033E-03	50.41
	1332.50	39	99.98*	2.931E-01	2.358E-03	2.359E-03	20.43
~~ZR-95~~	~~724.20~~	~~83~~	~~44.10~~	~~5.154E-01~~	~~6.359E-03~~	~~6.370E-03~~	~~18.09~~
Eu-154	~~756.73~~	~~45~~	~~54.50*~~	~~4.936E-01~~	~~2.979E-03~~	~~2.993E-03~~	~~27.98~~

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
3	32.23	2302	2769	2.68	43.30	42	11	3.3	7.65E+01	CS-137
3	35.44	2753	8997	2.86	47.58	42	11	7.2		CE-144
0	41.15*	539	5167	2.66	55.20	53	7	24.9		CE-144
0	73.79*	454	5656	1.16	98.73	95	8	29.9		
0	79.99	373	4825	1.27	107.01	104	7	31.7		CE-144
0	85.51*	488	5393	3.14	114.37	111	8	27.7		
0	96.93	329	3966	1.88	129.60	127	6	30.8		
0	122.57*	77	6537	1.75	163.80	160	9	203.2		CO-57
0	133.16	3715	6073	1.46	177.93	174	8	4.0		CE-144
0	511.07*	111	2279	2.74	681.88	676	12	93.3		NA-22
0	604.70	372	910	1.59	806.71	802	10	16.2		CS-134
0	661.61*	41790	797	1.86	882.58	876	14	0.5		CS-137
0	696.50	108	255	1.85	929.09	925	8	27.6		
0	722.84	68	166	1.53	964.20	961	7	36.1		
0	765.97	561	299	1.87	1021.69	1015	13	7.5		NB-95
0	795.92	261	162	2.00	1061.61	1057	9	11.3		CS-134
0	1004.52	85	86	2.12	1339.61	1336	9	24.8		
0	1173.43*	205	90	2.49	1564.68	1559	11	12.9		CO-60
0	1274.55*	8	55	2.14	1699.38	1693	13	240.7		NA-22
0	1332.76*	215	58	1.92	1776.93	1772	12	11.8		CO-60
0	1409.96*	9	15	2.23	1879.77	1876	11	153.3		
0	1460.94	115	59	2.49	1947.67	1942	15	17.9		K-40
0	2169.58	11	5	2.10	2891.15	2889	7	51.5		

VAX/VMS Peak Search Report V1.7 Generated 20-MAR-1990 08:47:41

Configuration : DUB0:[USER]T8234.CNF;1
Analyses by : PEAK V16.0,ENBACK V1.3
Sample title : T8234 SST 109-90 SYSTEM BLK
Deposition Date : 19-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 19-MAR-1990 00:00:00 Acquisition date : 19-MAR-1990 16:30:31
Sample ID : T8234 SST 109-90 Sample quantity : 2.38960E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 15:00:00.00 Elapsed real time: 0 15:00:07.03 0.0%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	32.23	2302	2769	2.68	43.30	42	11	4.26E-02	3.3	7.65E+01
2	3	35.44	2753	8997	2.86	47.58	42	11	5.10E-02	7.2	
3	0	41.15*	539	5167	2.66	55.20	53	7	9.99E-03	24.9	
4	0	73.79*	454	5656	1.16	98.73	95	8	8.40E-03	29.9	
5	0	79.99	373	4825	1.27	107.01	104	7	6.91E-03	31.7	
6	0	85.51*	488	5393	3.14	114.37	111	8	9.03E-03	27.7	
7	0	96.93	329	3966	1.88	129.60	127	6	6.10E-03	30.8	
8	0	122.57*	77	6537	1.75	163.80	160	9	1.42E-03	203.2	
9	0	133.16	3715	6073	1.46	177.93	174	8	6.88E-02	4.0	
10	0	511.07*	111	2279	2.74	681.88	676	12	2.06E-03	93.3	
11	0	604.70	372	910	1.59	806.71	802	10	6.89E-03	16.2	
12	0	661.61*	41790	797	1.86	882.58	876	14	7.74E-01	0.5	
13	0	696.50	108	255	1.85	929.09	925	8	2.01E-03	27.6	
14	0	722.84	68	166	1.53	964.20	961	7	1.25E-03	36.1	
15	0	765.97	561	299	1.87	1021.69	1015	13	1.04E-02	7.5	
16	0	795.92	261	162	2.00	1061.61	1057	9	4.83E-03	11.3	
17	0	1004.52	85	86	2.12	1339.61	1336	9	1.57E-03	24.8	
18	0	1173.43*	205	90	2.49	1564.68	1559	11	3.79E-03	12.9	
19	0	1274.55*	8	55	2.14	1699.38	1693	13	1.52E-04	240.7	
20	0	1332.76*	215	58	1.92	1776.93	1772	12	3.98E-03	11.8	
21	0	1409.96*	9	15	2.23	1879.77	1876	11	1.64E-04	153.3	
22	0	1460.94	115	59	2.49	1947.67	1942	15	2.13E-03	17.9	
23	0	2169.58	11	5	2.10	2891.15	2889	7	2.11E-04	51.5	

Summary of Nuclide Activity
Sample ID : T8234 SST 109-90 Acquisition date : 19-MAR-1990 16:30:31

Total number of lines in spectrum 23
Number of unidentified lines 4
Number of lines tentatively identified by NID 19 82.61%

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~NA-22~~	~~2.60Y~~	~~1.001~~	~~5.647E-05~~	~~5.652E-05~~	~~13.60E-05~~	~~240.66~~	
CO-60	5.27Y	1.000	1.535E-03	1.535E-03	0.181E-03	11.78	
		Total Activity :	1.591E-03	1.592E-03			

JE 3/21/90

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
K-40	1.28E+09Y	1.000	8.391E-03	8.391E-03	1.506E-03	17.95	
		Total Activity :	8.391E-03	8.391E-03			

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CO-57~~	~~271.77D~~	~~1.003~~	~~6.953E-05~~	~~6.971E-05~~	~~14.17E-05~~	~~203.20~~	
~~NB-95~~	~~34.97D~~	~~1.020~~	~~2.414E-03~~	~~2.462E-03~~	~~0.185E-03~~	~~7.52~~	
CS-134	2.06Y	1.001	1.299E-03	1.300E-03	0.211E-03	16.19	
CS-137	30.00Y	1.000	1.828E-01	1.828E-01	0.001E+00	0.53	
CE-144	284.90D	1.002	2.716E-02	2.723E-02	0.108E-02	3.97	
		Total Activity :	2.137E-01	2.138E-01			

Grand Total Activity : 2.237E-01 2.238E-01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

OLD, Reprocessed... see attached

VAX/VMS Nuclide Identification Report V2.5 Generated 20-MAR-1990 08:47:52

Configuration : DUB0:[USER]T8234.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8234 SST 109-90 SYSTEM BLK 90-0300-A-3
Deposition Date : 19-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 19-MAR-1990 00:00:00 Acquisition date : 19-MAR-1990 16:30:31
Sample ID : T8234 SST 109-90 Sample quantity : 2.38960E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 15:00:00.00 Elapsed real time: 0 15:00:07.03 0.0%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~NA-22~~	~~511.00~~	~~111~~	~~180.00~~	~~7.285E-01~~	~~1.774E-04~~	~~1.775E-04~~	~~93.29~~
	~~1274.53~~	~~8~~	~~99.94*~~	~~3.052E-01~~	~~5.647E-05~~	~~5.652E-05~~	~~240.66~~
CO-60	1173.24	205	99.90	3.289E-01	1.304E-03	1.305E-03	12.91
	1332.50	215	99.98*	2.930E-01	1.535E-03	1.535E-03	11.78 ✓

JE 9A 3/21/90

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
K-40	1460.83	115	10.67*	2.694E-01	8.391E-03	8.391E-03	17.95

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-57~~	~~122.06~~	~~77~~	~~85.95*~~	~~2.690E+00~~	~~6.953E-05~~	~~6.971E-05~~	~~203.20~~
	136.47	------	10.33	2.545E+00	------	Line Not Found	------
~~NB-95~~	~~765.77~~	~~561~~	~~99.79*~~	~~4.878E-01~~	~~2.414E-03~~	~~2.462E-03~~	~~7.52~~
CS-134	563.24	------	8.38	6.598E-01	------	Line Not Found	------
	569.32	------	15.40	6.527E-01	------	Line Not Found	------
	604.71	372	97.60*	6.144E-01	1.299E-03	1.300E-03	16.19
	795.87	261	85.40	4.704E-01	1.360E-03	1.361E-03	11.33
	801.95	------	8.73	4.670E-01	------	Line Not Found	------
CS-137	32.05	2302	6.02	6.315E-01	1.269E-01	1.269E-01	3.35
	661.66	41790	85.20*	5.621E-01	1.828E-01	1.828E-01	0.53
CE-144	35.88	2753	6.77	8.519E-01	9.997E-02	1.002E-01	7.23
	40.72	539	1.24	1.261E+00	7.224E-02	7.242E-02	24.85
	80.10	373	1.13	2.817E+00	2.455E-02	2.461E-02	31.68
	133.54	3715	11.10*	2.581E+00	2.716E-02	2.723E-02	3.97 ✓

Hot cell contam.

Sample ID : T8234 SST 109-90 Acquisition date : 19-MAR-1990 16:30:31

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
2	1471.19	20	20	3.50	1961.32	1941	26	64.5		
0	1521.42	4	38	1.24	2028.21	2025	10	293.3		
0	1547.16	11	21	0.82	2062.50	2057	12	104.2		
0	1558.30	3	13	2.68	2077.33	2076	6	193.9		
0	1564.17	10	3	1.52	2085.15	2082	6	59.6		
0	1606.68	12	14	1.78	2141.76	2139	7	65.0		
0	1730.69	20	14	1.10	2306.90	2303	10	42.0		
0	1758.93	10	6	1.67	2344.50	2342	6	56.3		
0	1778.10	37	8	8.99	2370.03	2363	16	30.2		
0	1812.52	21	0	2.25	2415.86	2411	9	26.6		
0	1826.02	8	5	2.14	2433.82	2431	6	55.7		
3	1905.34	11	12	1.93	2539.43	2532	17	71.7	1.61E+00	
3	1910.18	19	9	1.93	2545.87	2532	17	34.8		
0	1985.03	6	11	2.09	2645.52	2644	9	121.2		
0	2045.29	22	13	2.35	2725.73	2721	13	47.4		
0	2115.03	10	6	1.47	2818.55	2816	7	61.0		
0	2167.58	11	5	2.10	2891.15	2889	7	51.5		
0	2189.32	14	18	2.20	2917.43	2909	13	86.8		
0	2219.28	5	12	0.96	2957.30	2952	10	138.9		
0	2270.75	17	6	6.37	3025.79	3020	11	46.9		
0	2303.44	7	1	0.76	3069.29	3068	4	54.4		
0	2337.31	7	5	0.85	3114.36	3112	6	66.1		
0	2352.71	7	9	2.17	3134.86	3130	9	86.0		
0	2453.94	10	5	0.84	3269.55	3263	11	59.3		
0	2470.35	14	10	5.79	3291.39	3284	14	62.3		
0	2544.04	5	12	2.07	3389.43	3383	10	144.8		
0	2553.05	5	1	0.77	3401.41	3400	4	62.1		
0	2585.72	7	5	1.07	3444.88	3441	8	66.8		
0	2610.57	12	2	2.75	3477.94	3473	9	37.2		
0	2709.30	7	9	0.77	3609.26	3603	11	90.6		
0	2746.57	17	4	5.61	3658.83	3654	10	40.7		
0	2858.29	10	11	5.03	3807.43	3801	15	99.1		
0	2909.48	5	7	1.20	3875.49	3870	9	114.5		
0	2958.79	8	7	0.87	3941.07	3934	13	117.3		

Sample ID : T8234 SST 109-90
Acquisition date : 19-MAR-1990 16:30:31

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
3	32.23	2302	2769	2.68	43.30	42	11	3.3	7.65E+01	
3	35.44	2753	8997	2.86	47.58	42	11	7.2		CE-144
0	41.15	1096	5167	2.66	55.20	53	7	11.3		CE-144
0	47.46	232	4294	2.70	63.61	61	6	45.3		
0	59.37	252	3354	1.52	79.50	78	5	35.4		AM-241
0	73.98*	267	6285	1.20	98.99	95	9	55.5		
0	79.99	373	4825	1.27	107.01	104	7	31.7		CE-144
0	85.51	776	5393	3.14	114.37	111	8	16.9		EU-155
0	96.93	329	3966	1.88	129.60	127	6	30.8		GD-153
7	102.72	142	2027	0.74	137.32	136	7	42.6	1.68E+00	GD-153
7	104.49	245	3429	1.19	139.69	136	7	36.7		EU-155
0	122.57	966	6537	1.75	163.80	160	9	15.4		CO-57
										EU-154
0	133.16	3715	6073	1.46	177.93	174	8	4.0		CE-144
0	159.75	190	3319	1.16	213.39	212	5	46.1		
3	193.95	498	12135	7.65	259.00	243	25	50.7	8.10E+00	
3	196.19	719	7917	7.65	262.00	243	25	23.9		
0	231.41	80	3320	1.11	308.97	308	6	115.1		
0	238.38*	61	3289	1.81	318.27	316	6	154.3		
0	264.62	114	3163	1.52	353.26	351	7	81.6		
0	291.43	228	2175	2.15	389.01	387	6	33.3		
0	343.50	107	1971	1.65	458.44	457	6	66.2		
0	460.89	84	2436	1.93	614.97	614	6	94.1		
0	496.55	78	1080	1.99	662.52	661	5	64.8		
0	511.07*	120	2279	2.74	681.88	676	12	86.3		NA-22
										RU-106
0	569.36	140	734	2.38	759.60	756	8	35.5		CS-134
0	604.70	372	910	1.59	806.71	802	10	16.2		CS-134
0	661.61*	41962	797	1.86	882.58	876	14	0.5		CS-137
0	696.50	108	255	1.85	929.09	925	8	27.6		
0	706.68	36	183	1.85	942.65	939	7	65.7		
0	722.84	68	166	1.53	964.20	961	7	36.1		EU-154
0	756.68	42	132	1.07	1009.31	1006	7	50.9		EU-154
0	765.97	561	299	1.87	1021.69	1015	13	7.5		NB-95
0	795.92	261	162	2.00	1061.61	1057	9	11.3		CS-134
0	823.00	30	104	2.24	1097.70	1095	7	59.6		
2	872.82	52	139	2.63	1164.10	1158	21	50.8	2.03E+00	EU-154
2	874.35	67	199	3.92	1166.14	1158	21	53.7		
0	909.97	29	112	2.73	1213.61	1211	7	66.4		
0	929.56	29	117	0.99	1239.72	1236	10	76.7		
0	995.58	41	81	3.17	1327.69	1325	8	44.8		EU-154
0	1004.52	85	86	2.12	1339.61	1336	9	24.8		EU-154
0	1062.66	23	82	5.02	1417.08	1412	10	79.6		
0	1076.05	33	78	5.79	1434.93	1428	12	63.2		
0	1087.20	27	134	6.87	1449.79	1445	13	87.3		
0	1173.43*	164	90	2.49	1564.68	1559	11	16.0		CO-60
0	1274.55*	69	55	2.14	1699.38	1693	13	26.4		EU-154
										NA-22
0	1332.76*	241	58	1.92	1776.93	1772	12	11.4		CO-60
0	1409.96	40	15	2.23	1879.77	1876	11	29.3		
2	1461.32*	65	27	2.87	1948.18	1941	26	27.2	9.33E-01	K-40

Sample ID : T8234 SST 109-90 Acquisition date : 19-MAR-1990 16:30:31

Nuclide Type: Fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
	692.40	------	1.69	5.376E-01	------	Line Not Found	------
	723.30	68	19.98	5.157E-01	1.373E-03	1.373E-03	36.13
	756.90	42	4.33	4.935E-01	4.085E-03	4.086E-03	50.87
	873.20	52	12.09	4.313E-01	2.095E-03	2.095E-03	50.79
	996.30	41	10.34	3.820E-01	2.175E-03	2.175E-03	44.84
	1004.76	85	17.90	3.789E-01	2.621E-03	2.621E-03	24.84
	1274.51	69	34.40*	3.052E-01	1.377E-03	1.378E-03	~~26.43~~ 40
	1596.50	------	1.83	2.481E-01	------	Line Not Found	------
EU-155	86.54	776	32.80	2.859E+00	1.733E-03	1.734E-03	16.86
	105.31	245	21.84*	2.839E+00	8.280E-04	8.284E-04	36.68
AM-241	59.54	252	35.90*	2.313E+00	6.361E-04	6.361E-04	35.4[illegible]

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
GD-153	97.43	329	27.60*	2.871E+00	8.710E-04	8.735E-04	~~30.80~~ 40
	103.18	142	19.60	2.848E+00	5.337E-04	5.353E-04	42.62

VAX/VMS Nuclide Identification Report V2.5 Generated 10-JUL-1990 14:10:04

Configuration : MCA0:[USER]ADC3$1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8234 SST 109-90 SYSTEM BLK
Deposition Date : 19-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 19-MAR-1990 00:00:00 Acquisition date : 19-MAR-1990 16:30:31
Sample ID : T8234 SST 109-90 Sample quantity : 2.38960E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 15:00:00.00 Elapsed real time: 0 15:00:07.03 0.0%
Energy tolerance : 1.10 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 60.00

Nuclide Line Activity Report

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~NB-92~~	511.00	120	180.00	7.285E-01	1.914E-04	1.916E-04	86.25
	1274.53	69	99.94*	3.052E-01	4.741E-04	4.745E-04	26.43
CO-60	1173.24	164	99.90	3.289E-01	1.048E-03	1.048E-03	16.00
	1332.50	241	99.98*	2.930E-01	1.725E-03	1.726E-03	~~11.35~~ 40

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
K-40	1460.83	65	10.67*	2.693E-01	4.736E-03	4.736E-03	27.17

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-57~~	~~122.06~~	~~944~~	~~85.95*~~	~~2.690E+00~~	~~8.745E-04~~	8.768E-04	~~15.43~~
	136.47	------	10.33	2.545E+00	------	Line Not Found	------
~~NB-95~~	~~765.79~~	~~561~~	~~99.79*~~	~~4.878E-01~~	~~2.414E-03~~	~~2.462E-03~~	~~7.52~~
~~RU-106~~	~~511.86~~	~~120~~	~~20.40*~~	~~7.285E-01~~	~~1.689E-03~~	~~1.692E-03~~	~~86.25~~
	621.93	------	9.94	5.974E-01	------	Line Not Found	------
	1050.41	------	1.56	3.637E-01	------	Line Not Found	------
CS-134	563.24	------	8.38	6.598E-01	------	Line Not Found	------
	569.32	140	15.40	6.526E-01	2.913E-03	2.916E-03	35.49
	604.71	**372**	**97.60***	**6.144E-01**	**1.299E-03**	**1.300E-03**	16.19
	795.87	261	85.40	4.704E-01	1.360E-03	1.361E-03	11.33
	801.95	------	8.73	4.670E-01	------	Line Not Found	------
CS-137	**661.66**	**41962**	**85.20***	**5.621E-01**	**1.835E-01**	**1.835E-01**	**0.53**
CE-144	35.88	2753	6.77	8.519E-01	9.997E-02	1.002E-01	7.23
	40.72	1096	1.24	1.261E+00	1.468E-01	1.471E-01	11.32
	80.10	373	1.13	2.817E+00	2.455E-02	2.461E-02	31.68
	~~133.54~~	~~3715~~	~~11.10*~~	~~2.581E+00~~	~~2.716E-02~~	~~2.723E-02~~	~~3.87~~ 10%
EU-154	123.07	966	40.42	2.690E+00	1.860E-03	1.860E-03	15.43
	247.93	------	6.84	1.549E+00	------	Line Not Found	------
	591.70	------	4.83	6.279E-01	------	Line Not Found	------

Peak Search Report (continued)
Sample ID : T8234 SST 109-90

Acquisition date : 19-MAR-1990 16:30:31

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
41	0	1062.66	23	82	5.02	1417.08	1412	10	4.23E-04	79.6	
42	0	1076.05	33	78	5.79	1434.93	1428	12	6.04E-04	63.2	
43	0	1087.20	27	134	6.87	1449.79	1445	13	5.08E-04	87.3	
44	0	1173.43*	164	90	2.49	1564.68	1559	11	3.04E-03	16.0	
45	0	1274.55*	69	55	2.14	1699.38	1693	13	1.28E-03	26.4	
46	0	1332.76*	241	58	1.92	1776.93	1772	12	4.47E-03	11.4	
47	0	1409.96	40	15	2.23	1879.77	1876	11	7.42E-04	29.3	
48	2	1461.32*	65	27	2.87	1948.18	1941	26	1.20E-03	27.2	9.33E-01
49	2	1471.19	20	20	3.50	1961.32	1941	26	3.75E-04	64.5	
50	0	1521.42	4	38	1.24	2028.21	2025	10	7.85E-05	293.3	
51	0	1547.16	11	21	0.82	2062.50	2057	12	2.10E-04	104.2	
52	0	1558.30	3	13	2.68	2077.33	2076	6	5.38E-05	193.9	
53	0	1564.17	10	3	1.52	2085.15	2082	6	1.85E-04	59.6	
54	0	1606.68	12	14	1.78	2141.76	2139	7	2.14E-04	65.0	
55	0	1730.69	20	14	1.10	2306.90	2303	10	3.73E-04	42.0	
56	0	1758.93	10	6	1.67	2344.50	2342	6	1.85E-04	56.3	
57	0	1778.10	37	8	8.99	2370.03	2363	16	6.85E-04	30.2	
58	0	1812.52	21	0	2.25	2415.86	2411	9	3.89E-04	26.6	
59	0	1826.02	8	5	2.14	2433.82	2431	6	1.56E-04	55.7	
60	3	1905.34	11	12	1.93	2539.43	2532	17	2.10E-04	71.7	1.61E+00
61	3	1910.18	19	9	1.93	2545.87	2532	17	3.51E-04	34.8	
62	0	1985.03	6	11	2.09	2645.52	2644	9	1.16E-04	121.2	
63	0	2045.29	22	13	2.35	2725.73	2721	13	4.07E-04	47.4	
64	0	2115.03	10	6	1.47	2818.55	2816	7	1.93E-04	61.0	
65	0	2169.58	11	5	2.10	2891.15	2889	7	2.11E-04	51.5	
66	0	2189.32	14	18	2.20	2917.43	2909	13	2.50E-04	86.8	
67	0	2219.28	5	12	0.96	2957.30	2952	10	9.84E-05	138.9	
68	0	2270.75	17	6	6.37	3025.79	3020	11	3.06E-04	46.9	
69	0	2303.44	7	1	0.76	3069.29	3068	4	1.27E-04	54.4	
70	0	2337.31	7	5	0.85	3114.36	3112	6	1.35E-04	66.1	
71	0	2352.71	7	9	2.17	3134.86	3130	9	1.30E-04	86.0	
72	0	2453.94	10	5	0.84	3269.55	3263	11	1.92E-04	59.3	
73	0	2470.35	14	10	5.79	3291.39	3284	14	2.54E-04	62.3	
74	0	2544.04	5	12	2.07	3389.43	3383	10	9.97E-05	144.8	
75	0	2553.05	5	1	0.77	3401.41	3400	4	8.95E-05	62.1	
76	0	2585.72	7	5	1.07	3444.88	3441	8	1.36E-04	66.8	
77	0	2610.57	12	2	2.75	3477.94	3473	9	2.18E-04	37.2	
78	0	2709.30	7	9	0.77	3609.26	3603	11	1.27E-04	90.6	
79	0	2746.57	17	4	5.61	3658.83	3654	10	3.09E-04	40.7	
80	0	2858.29	10	11	5.03	3807.43	3801	15	1.79E-04	99.1	
81	0	2909.48	5	7	1.20	3875.49	3870	9	8.44E-05	114.5	
82	0	2958.79	8	7	0.87	3941.07	3934	13	1.39E-04	117.3	

VAX/VMS Peak Search Report V1.7 Generated 10-JUL-1990 14:09:48

Configuration : MCA0:[USER]ADC3$1
Analyses bu : PEAK V16.0.ENBACK V1.3
Sample title : T8234 SST 109-90 SYSTEM BLK
Deposition Date : 19-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 19-MAR-1990 00:00:00 Acquisition date : 19-MAR-1990 16:30:31
Sample ID : T8234 SST 109-90 Sample quantity : 2.38960E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 15:00:00.00 Elapsed real time: 0 15:00:07.03 0.0%
Start energy : 22.26 End energy : 3074.55
Sensitivity : 2.80 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	32.23	2302	2769	2.68	43.30	42	11	4.26E-02	3.3	7.65E+01
2	3	35.44	2753	8997	2.86	47.58	42	11	5.10E-02	7.2	
3	0	41.15	1096	5167	2.66	55.20	53	7	2.03E-02	11.3	
4	0	47.46	232	4294	2.70	63.61	61	6	4.30E-03	45.3	
5	0	59.37	252	3354	1.52	79.50	78	5	4.67E-03	35.4	
6	0	73.98*	267	6285	1.20	98.99	95	9	4.94E-03	55.5	
7	0	79.99	373	4825	1.27	107.01	104	7	6.91E-03	31.7	
8	0	85.51	776	5393	3.14	114.37	111	8	1.44E-02	16.9	
9	0	96.93	329	3966	1.88	129.60	127	6	6.10E-03	30.8	
10	7	102.72	142	2027	0.74	137.32	136	7	2.63E-03	42.6	1.68E+00
11	7	104.49	245	3429	1.19	139.69	136	7	4.54E-03	36.7	
12	0	122.57	966	6537	1.75	163.80	160	9	1.79E-02	15.4	
13	0	133.16	3715	6073	1.46	177.93	174	8	6.88E-02	4.0	
14	0	159.75	190	3319	1.16	213.39	212	5	3.51E-03	46.1	
15	3	193.95	498	12135	7.65	259.00	243	25	9.22E-03	50.7	8.10E+00
16	3	196.19	719	7917	7.65	262.00	243	25	1.33E-02	23.9	
17	0	231.41	80	3320	1.11	308.97	308	6	1.49E-03	115.1	
18	0	238.38*	61	3289	1.81	318.27	316	6	1.13E-03	154.3	
19	0	264.62	114	3163	1.52	353.26	351	7	2.12E-03	81.6	
20	0	291.43	228	2175	2.15	389.01	387	6	4.22E-03	33.3	
21	0	343.50	107	1971	1.65	458.44	457	6	1.99E-03	66.2	
22	0	460.89	84	2436	1.93	614.97	614	6	1.55E-03	94.1	
23	0	496.55	78	1080	1.99	662.52	661	5	1.45E-03	64.8	
24	0	511.07*	120	2279	2.74	681.88	676	12	2.22E-03	86.3	
25	0	569.36	140	734	2.38	759.60	756	8	2.59E-03	35.5	
26	0	604.70	372	910	1.59	806.71	802	10	6.89E-03	16.2	
27	0	661.61*	41962	797	1.86	882.58	876	14	7.77E-01	0.5	
28	0	696.50	108	255	1.85	929.09	925	8	2.01E-03	27.6	
29	0	706.68	36	183	1.85	942.65	939	7	6.64E-04	65.7	
30	0	722.84	68	166	1.53	964.20	961	7	1.25E-03	36.1	
31	0	756.68	42	132	1.07	1009.31	1006	7	7.72E-04	50.9	
32	0	765.97	561	299	1.87	1021.69	1015	13	1.04E-02	7.5	
33	0	795.92	261	162	2.00	1061.61	1057	9	4.83E-03	11.3	
34	0	823.00	30	104	2.24	1097.70	1095	7	5.64E-04	59.6	
35	2	872.82	52	139	2.63	1164.10	1158	21	9.66E-04	50.8	2.03E+00
36	2	874.35	67	199	3.92	1166.14	1158	21	1.24E-03	53.7	
37	0	909.97	29	112	2.73	1213.61	1211	7	5.28E-04	66.4	
38	0	929.56	29	117	0.99	1239.72	1236	10	5.34E-04	76.7	
39	0	995.58	41	81	3.17	1327.69	1325	8	7.59E-04	44.8	
40	0	1004.52	85	86	2.12	1339.61	1336	9	1.57E-03	24.8	

Note the editorial error bar changes.

Changes replaced strictly calculated errors with more representative counting errors.

VAX/VMS Nuclide Identification Report V2.5 Generated 21-MAR-1990 09:09:00

Configuration : DUB0:[USER]T8232.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8232 SST 110-90 90-0301-0-1
Deposition Date : 19-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 19-MAR-1990 00:00:00 Acquisition date : 19-MAR-1990 12:09:22
Sample ID : T8232 SST 110-90 Sample quantity : 2.35030E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:30.13 0.5%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

JEH 3/21/90

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~K-40~~	1460.83	14	10.67*	2.694E-01	9.043E-03	9.043E-03	43.46 ± 3.93E-3
	From T8284				8.391E-3		17.95

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-57~~	~~122.06~~	~~915~~	~~85.75*~~	~~2.672E+00~~	~~7.577E-03~~	~~7.588E-03~~	~~21.09~~
	136.47	------	10.33	2.545E+00	------ Line Not Found		------
~~NE-95~~	~~765.79~~	~~50~~	~~99.79*~~	~~4.081E-01~~	~~1.985E-03~~	~~2.007E-03~~	~~30.09~~ Hot cell contam.
CS-137	32.05	------	6.02	6.196E-01	------ Line Not Found		------
	661.66	381933	85.20*	5.621E-01	1.528E+01	1.528E+01	0.16
EU-154	42.75	------	20.56	1.373E+00	------ Line Not Found		------
	123.07	915	40.42	2.692E+00	1.611E-02	1.611E-02	21.09
	247.93	------	6.84	1.549E+00	------ Line Not Found		------
	723.30	107	19.98	5.153E-01	1.998E-02	1.998E-02	17.44
	873.20	64	12.09	4.313E-01	2.355E-02	2.355E-02	17.93
	996.30	61	10.34	3.816E-01	2.967E-02	2.967E-02	17.40
	1004.76	108	17.90	3.788E-01	3.044E-02	3.044E-02	11.89
	1274.51	92	34.40*	3.051E-01	1.677E-02	1.677E-02	13.69

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-60	1173.24	24	99.90	3.291E-01	1.393E-03	1.393E-03	24.07
	1332.50	11	99.98*	2.930E-01	7.432E-04	7.434E-04	51.06

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
GD-153	41.31	966	96.50	1.272E+00	1.509E-02	1.511E-02	18.78
	47.00	------	18.10	1.658E+00	------ Line Not Found		------
	48.50	------	5.47	1.752E+00	------ Line Not Found		------

Post-NID Peak Search Report
Sample ID : T8232 SST 110-90 Acquisition date : 19-MAR-1990 12:09:22

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	35.23	12889	39562	3.29	47.30	44	9	3.1		
0	41.31*	966	14300	1.74	55.41	54	5	18.8		GD-153
0	97.01	652	14480	1.69	129.71	128	5	27.9		GD-153
0	103.37	753	17298	1.44	138.19	136	6	27.9		GD-153
0	122.45*	915	16078	1.91	163.65	162	5	21.1		CO-57
										EU-154
0	661.53*	381933	3659	1.90	882.47	875	14	0.2		CS-137
0	723.50*	107	69	2.32	965.08	960	11	17.4		EU-154
0	765.56	50	31	2.15	1021.14	1016	12	30.9		NB-95
0	779.01*	23	50	1.61	1039.06	1034	8	56.6		
0	872.87	64	20	1.66	1164.17	1160	8	17.9		EU-154
0	964.42*	58	24	3.23	1286.17	1280	16	28.2		
4	996.50	61	2	2.50	1328.92	1322	28	17.4	1.67E+00	EU-154
4	1004.71	108	6	2.50	1339.86	1322	28	11.9		EU-154
0	1111.45*	20	15	2.69	1482.09	1479	8	45.9		
0	1172.68	24	4	1.76	1563.67	1559	9	24.1		CO-60
0	1245.44	6	6	2.12	1660.60	1658	6	59.3		
0	1274.57*	92	12	2.30	1699.41	1694	12	13.7		EU-154
0	1332.63*	11	3	2.38	1776.75	1773	8	51.1		CO-60
0	1408.67	23	12	2.00	1878.04	1874	12	34.2		
0	1461.05	14	2	1.68	1947.81	1943	10	43.5		K-40

Sample ID : T8232 SST 110-90 Acquisition date : 19-MAR-1990 12:09:22

Total number of lines in spectrum	20	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	19	95.00%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~K-40~~	~~1.26E+09Y~~	~~1.000~~	~~9.043E-03~~	~~9.043E-03~~	~~3.931E-03~~	~~43.46~~	
			---	---			
Total Activity :			9.043E-03	9.043E-03			

3/21/90 JE 91

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CO-57~~	~~271.77D~~	~~1.001~~	~~7.577E-03~~	~~7.588E-03~~	~~1.600E-03~~	~~21.09~~	
~~NB-95~~	~~34.97D~~	~~1.011~~	~~1.985E-03~~	~~2.007E-03~~	~~0.620E-03~~	~~30.89~~	
CS-137	30.00Y	1.000	1.528E+01	1.528E+01	0.003E+01	0.16	
EU-154	8.59Y	1.000	1.677E-02	1.677E-02	0.230E-02	13.69	
			---	---			
Total Activity :			1.531E+01	1.531E+01			

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CO-60	5.27Y	1.000	7.432E-04	7.434E-04	3.795E-04	51.06	
			---	---			
Total Activity :			7.432E-04	7.434E-04			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
GD-153	241.60D	1.002	1.577E-02	1.579E-02	0.441E-02	27.91	
			---	---			
Total Activity :			1.577E-02	1.579E-02			

Grand Total Activity :	1.534E+01	1.534E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

Sample ID : T8232 SST 110-90 Acquisition date : 19-MAR-1990 12:09:22

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
	97.43	652	27.60*	2.871E+00	1.577E-02	1.579E-02	27.91
	103.18	753	19.60	2.845E+00	2.587E-02	2.591E-02	27.87

VAX/VMS Peak Search Report V1.7 Generated 21-MAR-1990 09:08:49

Configuration : DUB0:[USER]T8232.CNF;1
Analyses by : PEAK V16.0,ENBACK V1.3
Sample title : T8232 SST 110-90
Deposition Date : 19-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 19-MAR-1990 00:00:00 Acquisition date : 19-MAR-1990 12:09:22
Sample ID : T8232 SST 110-90 Sample quantity : 2.35030E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:30.13 0.5%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.23	12889	39562	3.29	47.30	44	9	2.15E+00	3.1	
2	0	41.31*	966	14300	1.74	55.41	54	5	1.61E-01	18.8	
3	0	97.01	652	14480	1.69	129.71	128	5	1.09E-01	27.9	
4	0	103.37	753	17298	1.44	138.19	136	6	1.25E-01	27.9	
5	0	122.45*	915	16078	1.91	163.65	162	5	1.52E-01	21.1	
6	0	661.53*	381933	3659	1.90	882.47	875	14	6.37E+01	0.2	
7	0	723.50*	107	69	2.32	965.08	960	11	1.79E-02	17.4	
8	0	765.56	50	31	2.15	1021.14	1016	12	8.41E-03	30.9	
9	0	779.01*	23	50	1.61	1039.06	1034	8	3.77E-03	56.6	
10	0	872.87	64	20	1.66	1164.17	1160	8	1.07E-02	17.9	
11	0	964.42*	58	24	3.23	1286.17	1280	16	9.62E-03	28.2	
12	4	996.50	61	2	2.50	1328.92	1322	28	1.02E-02	17.4	1.67E+00
13	4	1004.71	108	6	2.50	1339.86	1322	28	1.79E-02	11.9	
14	0	1111.45*	20	15	2.69	1482.09	1479	8	3.26E-03	45.9	
15	0	1172.68	24	4	1.76	1563.67	1559	9	3.98E-03	24.1	
16	0	1245.44	6	6	2.12	1660.60	1658	6	1.06E-03	59.3	
17	0	1274.57*	92	12	2.30	1699.41	1694	12	1.53E-02	13.7	
18	0	1332.63*	11	3	2.38	1776.75	1773	8	1.89E-03	51.1	
19	0	1408.67	23	12	2.00	1878.04	1874	12	3.83E-03	34.2	
20	0	1461.05	14	2	1.68	1947.81	1943	10	2.26E-03	43.5	

VAX/VMS Nuclide Identification Report V2.5 Generated 21-MAR-1990 09:04:03

Configuration : DUB0:[USER]T8233.CNF;2
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8233 SST 111-90 90-0301-D-2
Deposition Date : 19-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 19-MAR-1990 00:00:00 Acquisition date : 19-MAR-1990 13:53:59
Sample ID : T8233 SST 111-90 Sample quantity : 2.34510E-02 G
Sample type : 10 mL IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:30.47 0.5%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-57~~	~~122.06~~	~~855~~	~~85.75*~~	~~2.693E+00~~	~~7.096E-03~~	~~7.107E-03~~	~~26.14~~
	136.47	------	10.33	2.545E+00	------ Line Not Found		------
CS-137	32.05	------	6.02	6.196E-01	------ Line Not Found		------
	661.66	386229	85.20*	5.621E-01	1.549E+01	1.549E+01	0.16
EU-154	42.75	------	20.56	1.373E+00	------ Line Not Found		------
	123.07	855	40.42	2.693E+00	1.509E-02	1.509E-02	26.14
	247.93	------	6.84	1.549E+00	------ Line Not Found		------
	723.30	71	19.98	5.154E-01	1.332E-02	1.332E-02	30.89
	873.20	49	12.09	4.312E-01	1.796E-02	1.796E-02	25.30
	996.30	49	10.34	3.816E-01	2.390E-02	2.390E-02	26.12
	1004.76	74	17.90	3.788E-01	2.089E-02	2.089E-02	16.44
	1274.51	73	34.40*	3.052E-01	1.332E-02	1.332E-02	14.01
AM-241	59.54	494	35.90*	2.301E+00	1.148E-02	1.148E-02	42.29

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-60~~	~~1173.24~~	~~12~~	~~99.90~~	~~3.289E-01~~	~~6.845E-04~~	~~6.847E-04~~	~~88.71~~
	~~1332.50~~	~~3~~	~~99.98*~~	~~2.930E-01~~	~~2.034E-04~~	~~2.035E-04~~	~~195.84~~

D04-069

VAX/VMS Peak Search Report V1.7 Generated 21-MAR-1990 09:03:54

Configuration : DUB0:[USER]T8233.CNF;2
Analuses bu : PEAK V16.0.ENBACK V1.3
Sample title : T8233 SST 111-90
Deposition Date : 19-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 19-MAR-1990 00:00:00 Acquisition date : 19-MAR-1990 13:53:59
Sample ID : T8233 SST 111-90 Sample quantity : 2.34510E-02 G
Sample tupe : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:30.47 0.5%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.24	13239	39307	3.36	47.32	44	9	2.21E+00	3.1	
2	0	41.18*	617	17202	1.51	55.23	54	6	1.03E-01	33.9	
3	0	46.57*	521	15049	1.17	62.42	61	5	8.68E-02	35.4	
4	0	59.07	494	17159	1.91	79.10	77	6	8.23E-02	42.3	
5	0	122.33*	855	19765	2.02	163.49	161	6	1.43E-01	26.1	
6	2	187.92	5349	55666	4.31	250.96	243	30	8.91E-01	9.9	8.14E+00
7	2	191.75	4117	64890	4.61	256.08	243	30	6.86E-01	14.5	
8	2	196.16	4549	82844	5.27	261.96	243	30	7.58E-01	15.8	
9	0	472.09	768	17233	2.81	630.71	628	6	1.28E-01	27.2	
10	0	661.52*	386229	3685	1.89	882.45	875	14	6.44E+01	0.2	
11	0	713.30*	71	77	2.34	964.81	958	14	1.19E-02	30.9	
12	0	779.26*	43	35	0.90	1039.43	1035	12	7.12E-03	32.5	
13	0	873.14*	49	22	1.99	1164.52	1160	9	8.12E-03	25.3	
14	0	936.94	30	13	5.19	1236.23	1231	15	5.04E-03	35.2	
15	0	996.51	49	28	1.69	1328.94	1325	10	8.18E-03	26.1	
16	0	1004.72	74	20	1.53	1339.37	1335	11	1.23E-02	16.4	
17	0	1173.60*	12	11	2.16	1564.90	1560	10	1.95E-03	66.9	
18	0	1274.42	73	6	1.85	1699.22	1694	10	1.21E-02	14.0	
19	0	1333.01*	3	6	1.89	1777.27	1772	9	5.17E-04	195.8	
20	0	1409.43*	29	0	2.39	1879.06	1872	16	4.76E-03	20.0	

Post-NID Peak Search Report

Sample ID : T8233 SST 111-90 Acquisition date : 19-MAR-1990 13:53:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	35.24	13239	39307	3.36	47.32	44	9	3.1		
0	41.18*	617	17202	1.51	55.23	54	6	33.9		
0	46.57*	521	15049	1.17	62.42	61	5	35.4		
0	59.07	494	17159	1.91	79.10	77	6	42.3		AM-241
0	122.33*	855	19765	2.02	163.49	161	6	26.1		CO-57
										EU-154
1	187.92	5349	55666	4.31	250.96	243	30	9.9	8.14E+00	
1	191.75	4117	64890	4.31	256.08	243	30	14.5		
2	196.16	4549	68844	5.27	261.96	243	30	15.8		
0	472.49	738	17233	1.81	630.71	628	6	27.2		
0	661.52*	38229	3665	1.69	882.45	675	14	0.2		CS-137
0	723.30*	71	77	1.34	964.81	958	14	30.9		EU-154
0	779.28*	43	35	6.96	1039.43	1035	12	32.5		
0	873.14*	49	22	1.96	1164.52	1160	9	25.3		EU-154
0	926.94	30	13	5.15	1236.23	1231	15	35.2		
0	996.51	49	28	1.69	1328.94	1325	10	26.1		EU-154
0	1004.7	[illegible]	20	1.52	1339.87	1335	11	16.4		EU-154
0	1173.60*	[illegible]	11	1.16	1564.99	1560	10	66.9		CO-60
0	1274.42	73	5	[illegible]	[illegible]	1694	18	14.0		EU-154
0	1333.01*	3	6	1.89	1777.27	1772	[illegible]	9		CO-60
0	1409.43*	29	0	2.39	1879.06	1872	16	20.0		

Sample ID : T8233 SST 111-90 Acquisition date : 19-MAR-1990 13:53:59

Total number of lines in spectrum	20	
Number of unidentified lines	6	
Number of lines tentatively identified by NID	14	70.00%

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CO-57~~	~~271.77D~~	~~1.062~~	~~7.096E-03~~	~~7.107E-03~~	~~1.050E-03~~	~~26.14~~	
CS-137	30.00Y	1.000	1.549E+01	1.549E+01	0.003E+01	0.16	
EU-154	8.59Y	1.000	1.332E-02	1.332E-02	0.187E-02	14.01	
AM-241	432.20Y	1.000	1.148E-02	1.148E-02	0.486E-02	42.29	
			---	---			
	Total Activity :		1.552E+01	1.552E+01			

3/21/90 [illegible]

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CO-60~~	~~5.27Y~~	~~1.000~~	~~2.034E-04~~	~~2.035E-04~~	~~3.984E-04~~	~~195.84~~	
			---	---			
	Total Activity :		2.034E-04	2.035E-04			

Grand Total Activity : 1.552E+01 1.552E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Nuclide Identification Report V2.5 Generated 21-MAR-1990 07:28:39

Configuration : DUB0:[USERJT8239.CNF:1
Analuses bu : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8239 SST 112-90 SYSTEM BLK 90-0301-X3
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 16:12:10
Sample ID : T8239 SST 112-90 Sample quantitu : 2.34770E-02 G
Sample tupe : 10 ML IN SCV Sample geometru : T2SCV
Detector name : TRACK Detector geometru: T2SCV
Elapsed live time: 0 15:00:00.00 Elapsed real time: 0 15:00:04.09 0.0%
Energu tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiencu tupe : Empirical Efficiencies at : Peak Energu
Abundance limit : 75.00

Nuclide Line Activitu Report

Nuclide Tupe: activation

Nuclide	Energu	Area	%Abn	%Eff	Uncorrected uCi/G	Decau Corr uCi/G	1-Sigma %Error
NA-22	511.00	107	180.00	7.282E-01	1.735E-04	1.736E-04	66.94
	1274.53	68	99.94*	3.052E-01	4.780E-04	4.784E-04	25.82
CO-60	1173.24	302	99.90	3.289E-01	1.957E-03	1.957E-03	9.60
	1332.50	300	99.98*	2.930E-01	2.185E-03	2.186E-03	8.49

Nuclide Tupe: natural

Nuclide	Energu	Area	%Abn	%Eff	Uncorrected uCi/G	Decau Corr uCi/G	1-Sigma %Error
K-40	1460.83	144	10.67*	2.693E-01	1.066E-02	1.066E-02	14.07

Nuclide Tupe: fission

Nuclide	Energu	Area	%Abn	%Eff	Uncorrected uCi/G	Decau Corr uCi/G	1-Sigma %Error
NB-95	765.79	586	99.79*	4.879E-01	2.566E-03	2.617E-03	7.04
CS-134	563.24	------	8.38	6.598E-01	------ Line Not Found		------
	569.32	------	15.40	6.527E-01	------ Line Not Found		------
	604.71	228	97.60*	6.146E-01	8.101E-04	8.109E-04	18.69
	795.87	179	85.40	4.707E-01	9.467E-04	9.476E-04	17.10
	801.95	------	8.73	4.670E-01	------ Line Not Found		------
CS-137	32.05	------	6.02	6.196E-01	------ Line Not Found		------
	661.66	9656	85.20*	5.621E-01	4.299E-02	4.299E-02	1.25

VAX/VMS Peak Search Report V1.7 Generated 21-MAR-1990 07:28:28

Configuration : DUB0:[USERJT8239.CNF;1
Analyses by : PEAK V16.0.ENBACK V1.3
Sample title : T8239 SST 112-90 SYSTEM BLK
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 16:12:10
Sample ID : T8239 SST 112-90 Sample quantity : 2.34770E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 15:00:00.00 Elapsed real time: 0 15:00:04.09 0.0%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	34.62	190	2273	1.45	46.49	44	5	3.52E-03	37.6	
2	4	72.78*	54	1431	1.49	97.38	95	10	9.96E-04	117.7	1.32E+00
3	4	74.88*	17	2034	1.49	100.19	95	10	3.21E-04	481.7	
4	0	85.43*	223	3406	3.60	114.27	110	10	4.14E-03	52.1	
5	0	92.53*	9	1981	2.45	123.73	121	6	1.61E-04	945.6	
6	0	133.28	267	2800	1.67	178.08	175	7	4.94E-03	33.3	
7	0	511.26*	107	919	2.99	682.14	678	11	1.98E-03	66.9	
8	0	604.53	228	443	1.72	806.48	802	9	4.22E-03	18.7	
9	0	661.60*	9656	470	1.89	882.57	876	12	1.79E-01	1.3	
10	0	765.89	586	211	1.88	1021.58	1015	14	1.09E-02	7.0	
11	0	795.39	179	171	1.78	1060.90	1055	11	3.31E-03	17.1	
12	0	1173.40*	302	95	1.88	1564.63	1559	13	5.58E-03	9.6	
13	0	1274.40	68	47	1.96	1699.19	1692	15	1.27E-03	25.8	
14	0	1332.84*	300	54	2.04	1777.04	1773	12	5.56E-03	8.5	
15	0	1461.34	144	40	2.66	1948.20	1943	15	2.66E-03	14.1	

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	34.62	190	2273	1.45	46.49	44	5	37.6		
4	72.78*	54	1431	1.49	97.38	95	10	117.7	1.32E+00	
4	74.88*	17	2034	1.49	100.19	95	10	481.7		
0	85.43*	223	3406	3.60	114.27	110	10	52.1		
0	92.53*	9	1981	2.45	123.73	121	6	945.6		
0	133.28	267	2800	1.67	178.08	175	7	33.3		
0	511.26*	107	919	2.99	682.14	678	11	66.9		NA-22
0	604.53	228	443	1.72	806.48	802	9	18.7		CS-134
0	661.60*	9656	470	1.89	882.57	876	12	1.3		CS-137
0	765.89	586	211	1.88	1021.58	1015	14	7.0		NB-95
0	795.39	179	171	1.78	1060.90	1055	11	17.1		CS-134
0	1173.40*	302	95	1.88	1564.63	1559	13	9.6		CO-60
0	1274.40	68	47	1.96	1699.19	1692	15	25.8		NA-22
0	1332.84*	300	54	2.04	1777.04	1773	12	8.5		CO-60
0	1461.34	144	40	2.66	1948.20	1943	15	14.1		K-40

Summary of Nuclide Activity
Sample ID : T8239 SST 112-90 Acquisition date : 20-MAR-1990 16:12:10

Total number of lines in spectrum	15	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	14	93.33%

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~NA-22~~	~~2.60Y~~	~~1.001~~	~~4.780E-04~~	~~4.784E-04~~	~~1.235E-04~~	~~25.82~~	
CO-60	5.27Y	1.000	2.185E-03	2.186E-03	0.186E-03	8.49	
			---	---			
Total Activity :			2.663E-03	2.664E-03			

AMD 6-28-90

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
K-40	~~1.23E+09Y~~	~~1.000~~	~~1.066E-02~~	~~1.066E-02~~	~~0.150E-02~~	~~14.07~~	
			---	---			
Total Activity :			1.066E-02	1.066E-02			

AMD 6-28-90

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~NB-95~~	~~34.97D~~	~~1.020~~	~~2.566E-03~~	~~2.617E-03~~	~~0.184E-03~~	~~7.04~~	
CS-134	2.06Y	1.001	8.101E-04	8.109E-04	1.516E-04	18.69	
CS-137	30.00Y	1.000	4.299E-02	4.299E-02	0.054E-02	1.25	
			---	---			
Total Activity :			4.636E-02	4.642E-02			

AMD 6-28-90

Grand Total Activity :	5.969E-02	5.974E-02

Flags: "K" = Keyline not found: "M" = Manually accepted: "E" = Manually edited

VAX/VMS Peak Search Report V1.7 Generated 20-MAR-1990 10:39:27

Configuration : DUB0:[USER]T8235.CNF;1
Analyses by : PEAK V16.0 ENBACK V1.3
Sample title : T8235 SST 113-90 (90-0304-A-1 110B-C9-ST FUSION)
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 08:58:02
Sample ID : T8235 SST 113-90 Sample quantity : 2.24930E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:22.70 0.4%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	7	31.89	6557	4165	1.70	42.85	42	11	1.09E+00	1.2	3.75E+02
2	7	35.83	11315	28505	3.39	48.10	42	11	1.89E+00	3.0	
3	0	41.32*	857	11080	1.79	55.43	54	5	1.43E-01	18.6	
4	0	46.70*	529	11284	1.76	62.60	61	5	8.82E-02	30.1	
5	0	59.26	400	10546	1.43	79.35	78	5	6.67E-02	38.8	
6	0	85.44*	289	12889	1.79	114.27	113	6	4.80E-02	62.6	
7	0	97.22	738	12928	1.13	129.99	128	6	1.23E-01	24.6	
8	0	102.40	333	11307	1.33	136.90	136	5	5.55E-02	48.0	
9	0	122.53*	1168	17006	1.43	163.74	161	7	1.95E-01	18.8	
10	0	133.00	478	12474	1.51	177.71	176	5	7.96E-02	35.2	
11	0	661.53*	286282	2932	1.89	882.47	875	14	4.77E+01	0.2	
12	0	696.79	28	40	1.57	929.47	927	7	4.62E-03	45.6	
13	0	722.98*	115	41	1.42	964.39	959	11	1.91E-02	16.0	
14	0	766.31	40	47	2.07	1022.14	1018	11	6.64E-03	40.5	
15	0	779.28*	58	50	2.78	1039.43	1034	15	9.69E-03	33.0	
16	0	795.32	45	21	1.30	1060.80	1058	8	7.52E-03	24.1	
17	0	873.08*	63	18	2.09	1164.44	1160	10	1.05E-02	19.7	
18	0	963.70*	19	31	1.83	1285.22	1282	9	3.20E-03	56.3	
19	0	995.71	65	4	2.02	1327.87	1321	15	1.08E-02	20.7	
20	0	1004.82*	56	14	2.00	1340.01	1336	10	9.39E-03	21.8	
21	0	1173.71*	39	9	2.35	1565.04	1560	14	6.44E-03	32.0	
22	0	1274.39	107	17	1.77	1699.17	1693	11	1.78E-02	11.1	
23	0	1332.64*	16	7	2.15	1776.77	1770	12	2.69E-03	39.0	
24	0	1408.25	26	11	2.43	1877.49	1871	12	4.41E-03	28.0	

Post-NID Peak Search Report
Sample ID : T8235 SST 113-90

Acquisition date : 20-MAR-1990 08:58:02

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Fw	%Err	Fit	Nuclides
7	31.89	6557	4165	1.70	42.85	42	11	1.2	3.75E+02	CS-137
7	35.83	11315	28505	3.39	48.10	42	11	3.0		CE-144
0	41.32*	857	11080	1.79	55.43	54	5	18.6		CE-144
										GD-153
0	46.70*	529	11284	1.76	62.60	61	5	30.1		GD-153
0	59.26	400	10546	1.43	79.35	78	5	38.8		AM-241
0	85.44*	288	12865	1.90	114.27	113	6	62.6		
0	97.22	738	12928	1.13	129.99	128	6	24.6		GD-153
0	102.40	333	11307	1.33	136.90	136	5	48.0		GD-153
0	122.53*	1168	17006	1.43	163.74	161	7	18.8		CO-57
										EU-154
0	133.00	478	12474	1.51	177.71	176	5	35.2		CE-144
0	661.53*	286282	2932	1.89	882.47	875	14	0.2		CS-137
0	696.79	28	40	1.57	929.47	927	7	45.6		
0	722.98*	115	41	1.42	964.39	959	11	16.0		EU-154
0	766.31	40	47	2.07	1022.14	1018	11	40.5		NB-95
0	779.28*	58	50	2.78	1039.43	1034	15	33.0		
0	795.32	45	21	1.30	1060.80	1058	8	24.1		
0	873.08*	63	18	2.09	1164.44	1160	10	19.7		EU-154
0	963.70*	19	31	1.83	1285.22	1282	9	56.3		
0	995.71	65	4	2.02	1327.87	1321	15	20.7		EU-154
0	1004.82*	56	14	2.00	1340.01	1336	10	21.8		EU-154
0	1173.71*	39	9	2.35	1565.04	1560	14	32.0		CO-60
0	1274.39	107	17	1.77	1699.17	1693	11	11.1		EU-154
0	1332.64*	16	7	2.15	1776.77	1770	12	39.0		CO-60
0	1408.25	26	11	2.43	1877.49	1871	12	28.0		

Summary of Nuclide Activity
Sample ID : T8235 SST 113-90 Acquisition date : 20-MAR-1990 08:58:02

Total number of lines in spectrum	24	
Number of unidentified lines	2	
Number of lines tentatively identified by NID	22	91.67%

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CS-137~~	~~30.07Y~~	~~1.000~~	~~1.012E-02~~	~~1.012E-02~~	~~0.190E-02~~	~~18.75~~	
~~CE-95~~	~~34.07D~~	~~1.000~~	~~1.140E-03~~	~~1.653E-03~~	~~0.670E-03~~	~~40.55~~	
CS-137	30.00Y	1.000	1.197E+01	1.197E+01	0.002E+01	0.19	
CE-144	284.90D	1.001	3.338E-02	3.342E-02	1.176E-02	35.21	
EU-152	9.59Y	1.000	2.035E-02	2.036E-02	0.225E-02	11.05	
AM-241	432.00Y	1.000	9.666E-03	9.666E-03	3.747E-03	38.76	
			---	---			
	Total Activity :		1.205E+01	1.205E+01			

3/21/90 JEH

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CO-60	5.27Y	1.000	1.104E-03	1.104E-03	0.430E-03	38.98	
			---	---			
	Total Activity :		1.104E-03	1.104E-03			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
GD-153	241.60D	1.001	1.866E-02	1.868E-02	0.460E-02	24.60	
			---	---			
	Total Activity :		1.866E-02	1.868E-02			

Grand Total Activity : 1.207E+01 1.207E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

Sample ID : T8235 SST 113-90 Acquisition date : 20-MAR-1990 08:58:02

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
	103.18	333	19.60	2.850E+00	1.193E-02	1.194E-02	47.99

VAX/VMS Nuclide Identification Report V2.5 Generated 20-MAR-1990 10:39:39

Configuration : DUB0:[USER]T8235.CNF;1
Analyses by : PEAK V16.0.PEAKEFF V2.2.ENBACK V1.3.NID/DEP V2.2
Sample title : T8235 SST 113-90 (90-0304-A-1 110B-C9-5T FUSION)
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 08:58:02
Sample ID : T8235 SST 113-90 Sample quantity : 2.24930E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:22.70 0.4%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Sustematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-57~~	~~122.06~~	~~1168~~	~~85.95*~~	~~2.691E+00~~	~~1.012E-02~~	~~1.013E-02~~	~~18.75~~
	136.47	------	10.33	2.545E+00	------ Line Not Found		------
~~NB-95~~	~~765.79~~	~~40~~	~~99.79*~~	~~4.076E-01~~	~~1.340E-03~~	~~1.353E-03~~	~~40.55~~
CS-137	32.05	6557	6.02	6.093E-01	3.580E+00	3.580E+00	1.20
	661.66	286282	85.20*	5.621E-01	1.197E+01	1.197E+01	0.19
CE-144	35.88	11315	6.77	8.795E-01	3.806E+00	3.809E+00	3.04
	40.72	857	1.24	1.273E+00	1.087E+00	1.088E+00	18.56
	80.10	------	1.13	2.818E+00	------ Line Not Found		------
	133.54	478	11.10*	2.582E+00	3.338E-02	3.342E-02	35.21
EU-154	42.75	------	20.56	1.373E+00	------ Line Not Found		------
	123.07	1168	40.42	2.691E+00	2.151E-02	2.152E-02	18.75
	247.93	------	6.84	1.549E+00	------ Line Not Found		------
	723.30	115	19.98	5.156E-01	2.228E-02	2.228E-02	16.03
	873.20	63	12.09	4.312E-01	2.429E-02	2.430E-02	19.67
	996.30	65	10.34	3.819E-01	3.297E-02	3.298E-02	20.72
	1004.76	56	17.90	3.787E-01	1.665E-02	1.665E-02	21.75
	1274.51	107	34.40*	3.052E-01	2.035E-02	2.036E-02	11.05
AM-241	59.54	400	35.90*	2.309E+00	9.666E-03	9.666E-03	38.76

JEF 6/8/90

Hot cell contam.

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-60	1173.24	39	99.90	3.288E-01	2.357E-03	2.357E-03	32.01
	1332.50	16	99.98*	2.930E-01	1.104E-03	1.104E-03	38.98

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
GD-153	41.31	857	96.50	1.273E+00	1.397E-02	1.398E-02	18.56
	47.00	529	18.10	1.639E+00	3.572E-02	3.576E-02	30.10
	48.50	------	5.47	1.752E+00	------ Line Not Found		------
	97.43	738	27.60*	2.870E+00	1.866E-02	1.868E-02	24.60

VAX/VMS Peak Search Report V1.7 Generated 20-MAR-1990 12:42:03

Configuration : DUB0:[USER]T8236.CNF;1
Analyses by : PEAK V16.0,ENBACK V1.3
Sample title : T8236 SST 114-90 (90-0304-A-2 110B-C9-57)
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 10:41:23
Sample ID : T8236 SST 114-90 Sample quantity : 2.25210E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:22.63 0.4%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.34	7901	33830	3.26	47.44	44	9	1.32E+00	4.6	
2	0	41.10*	4061	16603	2.02	55.13	53	7	6.77E-01	5.6	
3	0	47.00*	1877	15513	2.32	63.00	60	7	3.13E-01	11.3	
4	0	73.98*	569	12667	1.72	98.99	97	6	9.48E-02	31.5	
5	0	85.83*	866	12779	2.15	114.80	112	6	1.44E-01	20.9	
6	0	97.14	2286	15036	1.54	129.89	127	7	3.81E-01	9.2	
7	0	102.94	1734	17631	1.60	137.61	134	8	2.89E-01	13.4	
8	0	122.31*	3388	21291	2.34	163.45	159	9	5.65E-01	7.9	
9	2	187.63	4712	45599	5.75	250.58	242	31	7.85E-01	10.7	1.42E+01
10	2	191.76	5024	63713	5.75	256.08	242	31	8.37E-01	13.2	
11	0	661.54*	281831	2475	1.89	882.48	875	14	4.70E+01	0.2	
12	0	723.11*	221	60	1.88	964.55	959	10	3.68E-02	10.0	
13	0	779.35*	84	72	1.79	1039.52	1035	12	1.39E-02	24.6	
14	0	867.69*	34	41	2.88	1157.26	1153	9	5.67E-03	46.6	
15	0	873.34*	102	43	1.78	1164.79	1161	10	1.70E-02	17.7	
16	0	963.90*	84	30	2.32	1285.48	1280	12	1.41E-02	19.3	
17	0	996.83	81	36	1.36	1329.36	1325	9	1.34E-02	18.3	
18	0	1004.78*	140	30	1.73	1339.95	1334	12	2.33E-02	12.5	
19	0	1086.68*	36	30	1.48	1449.09	1443	12	5.99E-03	31.8	
20	0	1112.82*	55	21	2.52	1483.92	1480	11	9.12E-03	23.7	
21	0	1274.43	214	22	2.11	1699.23	1692	12	3.56E-02	7.6	
22	0	1407.93	57	6	2.38	1877.06	1871	15	9.55E-03	15.3	

Sample ID : T8236 SST 114-90 Acquisition date : 20-MAR-1990 10:41:23

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	35.34	7901	33830	3.26	47.44	44	9	4.6		
0	41.10*	4061	16603	2.02	55.13	53	7	5.6		GD-153
0	47.00*	1877	15513	2.32	63.00	60	7	11.3		GD-153
0	73.98*	569	12667	1.72	98.99	97	6	31.5		
0	85.83*	866	12779	2.15	114.80	112	6	20.9		
0	97.14	2286	15036	1.54	129.89	127	7	9.2		GD-153
0	102.94	1734	17631	1.60	137.61	134	8	13.4		GD-153
0	122.31*	3388	21291	2.34	163.45	159	9	7.9		CO-57
										EU-154
2	187.63	4712	45599	5.75	250.58	242	31	10.7	1.42E+01	
2	191.76	5024	63713	5.75	256.08	242	31	13.2		
0	661.54*	281831	2475	1.89	882.48	875	14	0.2		CS-137
0	723.11*	221	60	1.88	964.55	959	10	10.0		EU-154
0	779.35*	84	72	1.79	1039.52	1035	12	24.6		
0	867.69*	34	41	2.88	1157.26	1153	9	46.6		
0	873.34*	102	43	1.78	1164.79	1161	10	17.7		EU-154
0	963.90*	84	30	2.32	1285.48	1280	12	19.3		
0	996.83	81	36	1.36	1329.36	1325	9	18.3		EU-154
0	1004.78*	140	30	1.73	1339.95	1334	12	12.5		EU-154
0	1086.68*	36	30	1.48	1449.09	1443	12	31.8		
0	1112.82*	55	21	2.52	1483.92	1480	11	23.7		
0	1274.43	214	22	2.11	1699.23	1692	12	7.6		EU-154
0	1407.93	57	6	2.38	1877.06	1871	15	15.3		

Sample ID : T8236 SST 114-90 Acquisition date : 20-MAR-1990 10:41:23

Total number of lines in spectrum	22	
Number of unidentified lines	3	
Number of lines tentatively identified by NID	19	86.36%

Nuclide Type : fission

3/21/90 RH

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CS-57~~	~~271.77D~~	~~1.001~~	~~2.928E-02~~	~~2.931E-02~~	~~0.232E-02~~	~~7.93~~	
CS-137	30.00Y	1.000	1.177E+01	1.177E+01	0.002E+01	0.19	
EU-154	8.59Y	1.000	4.069E-02	4.069E-02	0.309E-02	7.59	
			---	---			
	Total Activity :		1.184E+01	1.184E+01			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
GD-153	241.60D	1.001	5.771E-02	5.779E-02	0.529E-02	9.16	
			---	---			
	Total Activity :		5.771E-02	5.779E-02			

Grand Total Activity : 1.190E+01 1.190E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Nuclide Identification Report V2.5 Generated 20-MAR-1990 12:42:16

Configuration : DUB0:[USER]T8236.CNF;1
Analuses bu : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEF V2.2
Sample title : T8236 SST 114-90 (90-0304-A-2 110B-C9-57)
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 10:41:23
Sample ID : T8236 SST 114-90 Sample quantity : 2.25210E-02 G
Sample tupe : 10 ML IN SCV Sample geometru : T2SCV
Detector name : TRACK Detector geometru: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:22.63 0.4%
Energu tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Sustematic Error : 0.00 %
Efficiencu tupe : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activitu Report

Nuclide Tupe: fission

Nuclide	Energu	Area	%Abn	%Eff	Uncorrected uCi/G	Decau Corr uCi/G	1-Sigma %Error
~~CR-57~~	~~122.06~~	~~3388~~	~~85.75*~~	~~2.693E+00~~	~~2.728E-02~~	~~2.931E-02~~	~~7.93~~
	136.47	------	10.33	2.545E+00	------ Line Not Found		------
CS-137	32.05	------	6.02	6.196E-01	------ Line Not Found		------
	661.66	281831	85.20*	5.621E-01	1.177E+01	1.177E+01	0.19
EU-154	42.75	------	20.56	1.373E+00	------ Line Not Found		------
	123.07	3388	40.42	2.693E+00	6.225E-02	6.226E-02	7.93
	247.93	------	6.84	1.549E+00	------ Line Not Found		------
	723.30	221	19.98	5.155E-01	4.284E-02	4.285E-02	9.96
	873.20	102	12.09	4.311E-01	3.914E-02	3.915E-02	17.68
	996.30	81	10.34	3.815E-01	4.084E-02	4.085E-02	18.34
	1004.76	140	17.90	3.788E-01	4.128E-02	4.128E-02	12.54
	1274.51	214	34.40*	3.052E-01	4.069E-02	4.069E-02	7.59

3/21/90
RCH

Nuclide Tupe: ACTIVATION

Nuclide	Energu	Area	%Abn	%Eff	Uncorrected uCi/G	Decau Corr uCi/G	1-Sigma %Error
GD-153	41.31	4061	96.50	1.257E+00	6.695E-02	6.705E-02	5.58
	47.00	1877	18.10	1.658E+00	1.251E-01	1.252E-01	11.26
	48.50	------	5.47	1.752E+00	------ Line Not Found		------
	97.43	2286	27.60*	2.870E+00	5.771E-02	5.779E-02	9.16
	103.18	1734	19.60	2.847E+00	6.215E-02	6.223E-02	13.37

VAX/VMS Nuclide Identification Report V2.5 Generated 22-MAR-1990 07:31:57

Configuration : DUB0:[USERJT8245.CNF;1
Analyses by : PEAK V16.0.PEAKEFF V2.2.ENBACK V1.3.NID/DEP V2.2
Sample title : T8245 SST 115-90 SYSTEM BLK 90-0304-N3
Deposition Date : 21-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 21-MAR-1990 00:00:00 Acquisition date : 21-MAR-1990 17:40:24
Sample ID : T8245 SST 115-90 Sample quantity : 2.25070E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 13:50:16.26 Elapsed real time: 0 13:50:19.49 0.0%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-60	1173.24	106	99.90	3.288E-01	7.777E-04	7.780E-04	22.39
	1332.50	115	99.98*	2.930E-01	9.463E-04	9.466E-04	16.67

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
NB-95	765.79	156	99.79*	4.877E-01	7.720E-04	7.878E-04	20.30
CS-134	563.24	------	8.38	6.598E-01	------ Line Not Found		------
	569.32	------	15.40	6.527E-01	------ Line Not Found		------
	604.71	88	97.60*	6.141E-01	3.547E-04	3.550E-04	38.85
	795.87	40	85.40	4.703E-01	2.392E-04	2.394E-04	42.06
	801.95	------	8.73	4.670E-01	------ Line Not Found		------
CS-137	32.05	578	6.02	6.354E-01	3.641E-02	3.641E-02	7.42
	661.66	3221	85.20*	5.621E-01	1.621E-02	1.621E-02	2.69

VAX/VMS Peak Search Report V1.7 Generated 22-MAR-1990 07:31:46

Configuration : DUB0:[USER]T8245.CNF;1
Analyses by : PEAK V16.0.ENBACK V1.3
Sample title : T8245 SST 115-90 SYSTEM BLK
Deposition Date : 21-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 21-MAR-1990 00:00:00 Acquisition date : 21-MAR-1990 17:40:24
Sample ID : T8245 SST 115-90 Sample quantity : 2.25070E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 13:50:16.26 Elapsed real time: 0 13:50:19.49 0.0%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Fw	Cts/Sec	%Err	Fit
1	5	32.29	578	672	2.59	43.38	41	11	1.16E-02	7.4	1.47E+01
2	5	35.72	499	1581	2.59	47.95	41	11	1.00E-02	15.1	
3	7	72.76*	100	1564	1.97	97.36	94	11	2.00E-03	71.6	2.22E+00
4	0	92.50*	37	1860	1.58	123.70	120	7	7.33E-04	223.3	
5	0	133.39	474	2786	1.71	178.23	174	9	9.51E-03	20.4	
6	0	511.47*	49	1080	3.52	682.42	676	19	9.76E-04	180.6	
7	0	604.98	88	334	2.59	807.08	803	8	1.77E-03	38.9	
8	0	661.63*	3221	302	1.90	882.60	876	14	6.47E-02	2.7	
9	0	766.16	156	190	1.92	1021.94	1016	13	3.13E-03	20.3	
10	0	796.11	40	88	1.36	1061.86	1060	6	8.00E-04	42.1	
11	0	1173.81*	106	77	1.82	1565.17	1560	12	2.13E-03	22.4	
12	0	1332.98*	115	38	2.15	1777.23	1773	9	2.31E-03	16.7	
13	0	1461.99*	32	21	2.32	1949.07	1943	15	6.38E-04	56.3	

Sample ID : T8245 SST 115-90 Acquisition date : 21-MAR-1990 17:40:24

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
5	32.29	578	672	2.59	43.38	41	11	7.4	1.47E+01	CS-137
5	35.72	499	1581	2.59	47.95	41	11	15.1		
7	72.76*	100	1564	1.97	97.36	94	11	71.6	2.22E+00	
0	92.50*	37	1860	1.58	123.70	120	7	223.3		
0	133.39	474	2786	1.71	178.23	174	9	20.4		
0	511.47*	49	1080	3.52	682.42	676	19	180.6		
0	604.98	88	334	2.59	807.08	803	8	38.9		CS-134
0	661.63*	3221	302	1.90	882.60	876	14	2.7		CS-137
0	766.16	156	190	1.92	1021.94	1016	13	20.3		NB-95
0	796.11	40	88	1.36	1061.86	1060	6	42.1		CS-134
0	1173.81*	106	77	1.82	1565.17	1560	12	22.4		CO-60
0	1332.98*	115	38	2.15	1777.23	1773	9	16.7		CO-60
0	1461.99*	32	21	2.32	1949.07	1943	15	56.3		

Summary of Nuclide Activity

Sample ID : T8245 SST 115-90 Acquisition date : 21-MAR-1990 17:40:24

Total number of lines in spectrum	13	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	12	92.31%

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CO-60	5.27Y	1.000	9.463E-04	9.466E-04	1.578E-04	16.67	
			---	---			
Total Activity :			9.463E-04	9.466E-04			

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~NB-95~~	~~34.97D~~	~~1.021~~	~~7.720E-04~~	~~7.870E-04~~	~~1.577E-04~~	~~20.30~~	
CS-134	2.06Y	1.001	3.547E-04	3.550E-04	1.379E-04	38.85	
CS-137	30.00Y	1.000	1.621E-02	1.621E-02	0.044E-02	2.69	
			---	---			
Total Activity :			1.734E-02	1.736E-02			

Grand Total Activity : 1.829E-02 1.830E-02

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

VAX/VMS Peak Search Report V1.7 Generated 20-MAR-1990 14:27:00

Configuration : DUB0:[USER]T8237.CNF;1
Analyses by : PEAK V16.0.ENRACK V1.3
Sample title : T8237 SST 116-90 (90-0305-A-1 110B-C9-5B FUSION)
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 12:46:08
Sample ID : T8237 SST 116-90 Sample quantity : 2.33580E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:23.84 0.4%
Start energy : 14.76 End energy : 3074.55
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	31.96	9419	4419	2.32	42.94	42	11	1.57E+00	0.9	3.65E+02
2	3	35.85	8942	34650	2.83	48.12	42	11	1.49E+00	4.2	
3	0	41.00*	554	11378	1.78	55.00	54	5	9.23E-02	29.0	
4	0	47.65	623	13545	2.03	63.86	62	6	1.04E-01	29.8	
5	0	97.17	601	13530	1.76	129.92	128	6	1.00E-01	31.0	
6	0	122.31*	752	15382	1.95	163.45	161	6	1.25E-01	26.3	
7	0	661.53*	302597	2911	1.89	882.47	875	14	5.04E+01	0.2	
8	0	723.19*	78	38	1.97	964.66	961	9	1.30E-02	20.3	
9	0	777.43	24	55	1.41	1036.97	1032	11	4.05E-03	63.5	
10	0	872.93	31	16	1.59	1164.25	1161	9	5.13E-03	36.7	
11	0	965.17*	27	24	2.04	1287.17	1283	11	4.42E-03	44.7	
12	0	995.10	42	26	1.87	1327.05	1320	14	7.02E-03	35.8	
13	0	1004.43	32	45	0.91	1339.49	1339	7	5.38E-03	32.1	
14	0	1085.51	5	27	0.60	1447.53	1444	7	7.79E-04	177.5	
15	0	1173.59*	26	11	1.73	1564.88	1558	13	4.34E-03	33.4	
16	0	1274.76*	82	6	1.67	1699.67	1694	11	1.37E-02	12.0	
17	0	1332.99*	27	0	2.75	1777.24	1771	13	4.51E-03	27.6	
18	0	1408.13	38	3	1.68	1877.33	1871	12	6.33E-03	20.2	
19	0	1460.97	13	5	1.56	1947.71	1944	8	2.21E-03	38.4	

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
3	31.96	9419	4419	2.32	42.94	42	11	0.9	3.65E+02	CS-137
3	35.85	8942	34650	2.83	48.12	42	11	4.2		
0	41.00*	554	11378	1.78	55.00	54	5	29.0		GD-153
0	47.65	623	13545	2.03	63.86	62	6	29.8		GD-153
										GD-153
0	97.17	601	13530	1.76	129.92	128	6	31.0		GD-153
0	122.31*	752	15382	1.95	163.45	161	6	26.3		CO-57
										EU-154
0	661.53*	302597	2911	1.89	882.47	875	14	0.2		CS-137
0	723.19*	78	38	1.97	964.66	961	9	20.3		EU-154
0	777.43	24	55	1.41	1036.97	1032	11	63.5		
0	872.93	31	16	1.59	1164.25	1161	9	36.7		EU-154
0	965.17*	27	24	2.04	1287.17	1283	11	44.7		
0	995.10	42	26	1.87	1327.05	1320	14	35.8		
0	1004.43	32	45	0.91	1339.49	1339	7	32.1		EU-154
0	1085.51	5	27	0.60	1447.53	1444	7	177.5		
0	1173.59*	26	11	1.73	1564.88	1558	13	33.4		CO-60
0	1274.76*	82	6	1.67	1699.67	1694	11	12.0		EU-154
0	1332.99*	27	0	2.75	1777.24	1771	13	27.6		CO-60
0	1408.13	38	3	1.68	1877.33	1871	12	20.2		
0	1460.97	13	5	1.56	1947.71	1944	8	38.4		K-40

Sample ID : T8237 SST 116-90 Acquisition date : 20-MAR-1990 12:46:08

Total number of lines in spectrum	19	
Number of unidentified lines	2	
Number of lines tentatively identified by NID	17	89.47%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~K-40~~	~~1.28E+09Y~~	~~1.000~~	~~8.914E-03~~	~~8.914E-03~~	~~3.421E-03~~	~~38.38~~	
			---	---			
Total Activity :			8.914E-03	8.914E-03			

3/21/90 JEM

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CO-57~~	~~271.77D~~	~~1.001~~	~~8.268E-03~~	~~8.275E-03~~	~~1.651E-03~~	~~26.31~~	
CS-137	30.00Y	1.000	1.218E+01	1.218E+01	0.002E+01	0.19	
EU-154	8.59Y	1.000	1.515E-02	1.516E-02	0.182E-02	12.01	
			---	---			
Total Activity :			1.221E+01	1.221E+01			

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CO-60	5.27Y	1.000	1.782E-03	1.782E-03	0.492E-03	27.60	
			---	---			
Total Activity :			1.782E-03	1.782E-03			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~GD-153~~	~~241.60D~~	~~1.002~~	~~1.463E-02~~	~~1.465E-02~~	~~0.454E-02~~	~~30.98~~	
			---	---			
Total Activity :			1.463E-02	1.465E-02			

Grand Total Activity :	1.223E+01	1.223E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

Sample ID : T8237 SST 116-90 Acquisition date : 20-MAR-1990 12:46:08

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
	103.18	------	19.60	2.846E+00	------	Line Not Found	------

VAX/VMS Nuclide Identification Report V2.5 Generated 20-MAR-1990 14:27:11

Configuration : DUB0:[USER]T8237.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8237 SST 116-90 (90-0305-A-1 110B-C9-5B FUSION)
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 12:46:08
Sample ID : T8237 SST 116-90 Sample quantity : 2.33580E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:23.84 0.4%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
K-40	1460.83	13	10.67*	2.694E-01	8.914E-03	8.914E-03	38.38
	From T8234 System Blank					8.39E-3	17.95

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-57~~	~~122.06~~	~~752~~	~~85.75*~~	~~2.693E+00~~	~~8.266E-03~~	~~6.275E-03~~	~~26.31~~
	136.47	------	10.33	2.545E+00	------ Line Not Found		------
CS-137	32.05	9419	6.02	6.138E-01	4.916E+00	4.916E+00	0.86
	661.66	302597	85.20*	5.621E-01	1.218E+01	1.218E+01	0.19
EU-154	42.75	------	20.56	1.373E+00	------ Line Not Found		------
	123.07	752	40.42	2.693E+00	1.332E-02	1.333E-02	26.31
	247.93	------	6.84	1.549E+00	------ Line Not Found		------
	723.30	78	19.98	5.155E-01	1.462E-02	1.462E-02	20.26
	873.20	31	12.09	4.313E-01	1.139E-02	1.139E-02	36.74
	996.30	------	10.34	3.817E-01	------ Line Not Found		------
	1004.76	32	17.90	3.789E-01	9.186E-03	9.187E-03	32.11
	1274.51	82	34.40*	3.051E-01	1.515E-02	1.516E-02	12.01

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-60	1173.24	26	99.90	3.289E-01	1.529E-03	1.529E-03	33.43
	1332.50	27	99.98*	2.930E-01	1.782E-03	1.782E-03	27.60

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
GD-153	41.31	554	96.50	1.250E+00	8.853E-03	8.868E-03	29.05
~~Substituted~~	47.00	623	18.10	1.699E+00	3.904E-02	3.910E-02	29.75
~~not no~~	48.50	623	5.47	1.699E+00	1.292E-01	1.294E-01	29.75
~~103.2KeV~~	97.43	601	27.60*	2.870E+00	1.463E-02	1.465E-02	30.98

Post-NID Peak Search Report
Sample ID : T8237 SST 116-90

Acquisition date : 20-MAR-1990 12:46:08

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
3	31.96	9419	4419	2.32	42.94	42	11	0.9	3.65E+02	
3	35.85	8942	34650	2.83	48.12	42	11	4.2		
0	41.00	616	11378	1.78	55.00	54	5	26.1		
0	47.65	623	13545	2.03	63.86	62	6	29.8		
0	58.34	114	13322	1.25	78.13	77	6	160.3		
0	74.56*	211	11062	1.55	99.77	98	5	75.3		
0	86.04*	238	11278	1.79	115.08	113	5	67.1		EU-155
0	97.17	601	13530	1.76	129.92	128	6	31.0		GD-153
0	102.76	245	13666	1.63	137.38	135	6	75.2		GD-153
0	122.31	851	15382	1.95	163.45	161	6	23.2		CO-57
										EU-154
0	131.15	317	15200	2.14	175.24	173	6	61.7		
0	137.08	322	15287	0.94	183.15	181	6	61.1		CO-57
0	186.43	400	23696	3.00	248.98	246	7	63.7		
0	190.99	343	21414	2.25	255.06	252	6	67.5		
0	223.40	332	15979	2.00	298.28	297	6	60.6		
0	327.48	99	8072	2.07	437.09	436	5	136.1		
0	386.50	109	8373	1.96	515.79	515	5	126.5		
0	420.68	99	9615	0.88	561.36	559	5	148.5		
0	471.73	336	13511	3.33	629.44	628	6	54.8		
0	575.65	79	1694	2.12	767.98	766	6	85.2		
0	661.53*	302616	2911	1.89	882.47	875	14	0.2		CS-137
0	691.49	21	62	2.21	922.41	920	10	73.5		EU-154
0	723.19	84	38	1.97	964.66	961	9	18.7		EU-154
0	777.43	24	55	1.41	1036.97	1032	11	63.5		
0	837.38	12	7	2.16	1116.86	1114	6	52.1		
0	872.93	31	16	1.59	1164.25	1161	9	36.7		EU-154
0	926.77	12	11	1.62	1236.00	1231	9	53.0		
0	965.17	32	24	2.04	1287.17	1283	11	37.1		
0	995.76	32	35	1.77	1327.94	1321	13	42.7		EU-154
0	1004.43	32	45	0.91	1339.49	1339	7	32.1		EU-154
0	1023.53	10	9	1.35	1364.95	1362	7	55.6		
0	1033.64	16	15	9.57	1378.42	1369	17	67.9		
0	1085.51	5	27	0.60	1447.53	1444	7	177.5		
0	1094.21	8	8	2.45	1459.11	1456	7	60.1		
0	1111.60	19	4	3.04	1482.30	1478	8	34.3		
0	1128.24	6	11	3.16	1504.46	1501	9	124.5		
0	1173.59*	22	11	1.73	1564.88	1558	13	40.4		CO-60
0	1240.54	1	10	0.59	1654.08	1650	6	375.8		
0	1274.76*	89	6	1.67	1699.67	1694	11	11.1		EU-154
0	1332.99*	30	0	2.75	1777.24	1771	13	25.2		CO-60
0	1408.13	38	3	1.68	1877.33	1871	12	20.2		
0	1460.64*	8	2	1.62	1947.27	1941	11	66.7		K-40

Sample ID : T8237 SST 116-90 Acquisition date : 20-MAR-1990 12:46:08

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
GD-153	97.43	601	27.60*	2.870E+00	1.463E-02	1.465E-02	30.98
	103.18	245	19.60	2.848E+00	8.478E-03	8.492E-03	75.20

VAX/VMS Nuclide Identification Report V2.5 Generated 10-JUL-1990 14:18:20

Configuration : MCA0:[USER]ADC3$1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8237 SST 116-90 (90-0305-A-1 110B-C9-58 FUSION)
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 12:46:08
Sample ID : T8237 SST 116-90 Sample quantity : 2.33580E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:23.84 0.4%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 60.00

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~K-40~~	1460.83	8	10.67*	2.695E-01	5.245E-03	5.245E-03	66.72

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-57~~	122.06	851	85.95*	2.693E+00	7.088E-03	7.099E-03	23.24
	136.47	322	10.33	2.538E+00	2.370E-02	2.373E-02	61.14
CS-137	661.66	302616	85.20*	5.621E-01	1.218E+01	1.219E+01	0.19
EU-154	123.07	851	40.42	2.693E+00	1.507E-02	1.507E-02	23.24
	247.93	------	6.84	1.549E+00	------ Line Not Found		------
	591.70	------	4.83	6.279E-01	------ Line Not Found		------
	692.40	21	1.69	5.383E-01	4.403E-02	4.403E-02	73.49
	723.30	84	19.98	5.155E-01	1.575E-02	1.576E-02	18.74
	756.90	------	4.33	4.934E-01	------ Line Not Found		------
	873.20	31	12.09	4.313E-01	1.139E-02	1.139E-02	36.74
	996.30	32	10.34	3.819E-01	1.550E-02	1.550E-02	42.65
	1004.76	32	17.90	3.789E-01	9.186E-03	9.187E-03	32.11
	1274.51	89	34.40*	3.051E-01	1.639E-02	1.640E-02	11.06
	1596.50	------	1.83	2.481E-01	------ Line Not Found		------
EU-155	86.54	238	32.80	2.862E+00	4.882E-03	4.884E-03	67.14
	105.31	------	21.84*	2.834E+00	------ Line Not Found		------

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-60	1173.24	22	99.90	3.289E-01	1.266E-03	1.266E-03	40.35
	1332.50	30	99.98*	2.930E-01	1.976E-03	1.977E-03	25.19

VAX/VMS Peak Search Report V1.7 Generated 10-JUL-1990 14:18:08

Configuration : MCA0:[USER]ADC3$1
Analyses by : PEAK V16.0,ENBACK V1.3
Sample title : T8237 SST 116-90 (90-0305-A-1 110B-C9-5B FUSION)
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 12:46:08
Sample ID : T8237 SST 116-90 Sample quantity : 2.33580E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:23.84 0.4%
Start energy : 22.26 End energy : 3074.55
Sensitivity : 2.70 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	31.96	9419	4419	2.32	42.94	42	11	1.57E+00	0.9	3.65E+02
2	3	35.85	8942	34650	2.83	48.12	42	11	1.49E+00	4.2	
3	0	41.00	616	11378	1.78	55.00	54	5	1.03E-01	26.1	
4	0	47.65	623	13545	2.03	63.86	62	6	1.04E-01	29.8	
5	0	58.34	114	13322	1.25	78.13	77	6	1.90E-02	160.3	
6	0	74.56*	211	11062	1.55	99.77	98	5	3.52E-02	75.3	
7	0	86.04*	238	11278	1.79	115.08	113	5	3.96E-02	67.1	
8	0	97.17	601	13530	1.76	129.92	128	6	1.00E-01	31.0	
9	0	102.76	245	13666	1.63	137.38	135	6	4.09E-02	75.2	
10	0	122.31	851	15382	1.95	163.45	161	6	1.42E-01	23.2	
11	0	131.15	317	15200	2.14	175.24	173	6	5.29E-02	61.7	
12	0	137.08	322	15287	0.94	183.15	181	6	5.37E-02	61.1	
13	0	186.43	400	23696	3.00	248.98	246	7	6.67E-02	63.7	
14	0	190.99	343	21414	2.25	255.06	252	6	5.72E-02	67.5	
15	0	223.40	332	15979	2.00	298.28	297	6	5.53E-02	60.6	
16	0	327.48	99	8072	2.07	437.09	436	5	1.65E-02	136.1	
17	0	386.50	109	8373	1.96	515.79	515	5	1.82E-02	126.5	
18	0	420.68	99	9615	0.08	561.36	559	5	1.65E-02	148.5	
19	0	471.73	336	13511	3.33	629.44	628	6	5.60E-02	54.8	
20	0	575.65	79	1694	2.12	767.98	766	6	1.31E-02	85.2	
21	0	661.53*	302616	2911	1.89	882.47	875	14	5.04E+01	0.2	
22	0	691.49	21	62	2.21	922.41	920	10	3.46E-03	73.5	
23	0	723.19	84	38	1.97	964.66	961	9	1.40E-02	18.7	
24	0	777.43	24	55	1.41	1036.97	1032	11	4.05E-03	63.5	
25	0	837.38	12	7	2.16	1116.86	1114	6	1.95E-03	52.1	
26	0	872.93	31	16	1.59	1164.25	1161	9	5.13E-03	36.7	
27	0	926.77	12	11	1.62	1236.00	1231	9	1.92E-03	53.0	
28	0	965.17	32	24	2.04	1287.17	1283	11	5.30E-03	37.1	
29	0	995.76	32	35	1.77	1327.94	1321	13	5.29E-03	42.7	
30	0	1004.43	32	45	0.91	1339.49	1339	7	5.38E-03	32.1	
31	0	1023.53	10	9	1.35	1364.95	1362	7	1.68E-03	55.6	
32	0	1033.64	16	15	9.57	1378.42	1369	17	2.70E-03	67.9	
33	0	1085.51	5	27	0.60	1447.53	1444	7	7.79E-04	177.5	
34	0	1094.21	8	8	2.45	1459.11	1456	7	1.39E-03	60.1	
35	0	1111.60	19	4	3.04	1482.30	1478	8	3.19E-03	34.3	
36	0	1128.24	6	11	3.16	1504.46	1501	9	9.22E-04	124.5	
37	0	1173.59*	22	11	1.73	1564.88	1558	13	3.59E-03	40.4	
38	0	1240.54	1	10	0.59	1654.08	1650	6	1.87E-04	375.8	
39	0	1274.76*	89	6	1.67	1699.67	1694	11	1.49E-02	11.1	
40	0	1332.99*	30	0	2.75	1777.24	1771	13	5.00E-03	25.2	

Sample ID : T8237 SST 116-90 Acquisition date : 20-MAR-1990 12:46:08

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
41	0	1408.13	38	3	1.68	1877.33	1871	12	6.33E-03	20.2	
42	0	1460.64*	8	2	1.62	1947.27	1941	11	1.30E-03	66.7	

VAX/VMS Peak Search Report V1.7 Generated 20-MAR-1990 16:10:01

Configuration : DUB0:[USER]T8238.CNF;1
Analuses bu : PEAK V16.0,ENBACK V1.3
ample title : T8238 SST 117-90
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 14:29:10
Sample ID : T8238 SST 117-90 Sample quantitu : 2.29130E-02 G
Sample tupe : 10 ML IN SCV Sample geometru : T2SCV
Detector name : TRACK Detector geometru: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:22.87 0.4%
Start energu : 14.76 End energu : 3074.55
Sensitivitu : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energu	Area	Bkgnd	FWHM	Channel	Left	Fw	Cts/Sec	%Err	Fit
1	7	31.88	6302	8109	1.60	42.83	42	12	1.05E+00	2.0	2.73E+02
2	7	35.69	10780	33607	3.36	47.92	42	12	1.80E+00	3.5	
3	0	41.15*	667	10782	1.45	55.19	54	5	1.11E-01	23.6	
4	0	46.98*	570	13262	1.29	62.97	61	6	9.49E-02	32.1	
5	0	97.08	774	10582	1.28	129.80	128	5	1.29E-01	20.3	
6	0	103.45	606	13715	1.34	138.30	136	6	1.01E-01	30.1	
7	0	122.69*	1034	17053	2.00	163.96	161	7	1.72E-01	21.1	
8	0	661.53*	290063	2829	1.89	882.46	875	14	4.83E+01	0.2	
9	0	723.25*	90	40	1.74	964.75	960	12	1.49E-02	18.7	
10	0	778.66	35	38	2.15	1038.60	1034	9	5.89E-03	37.4	
11	0	873.17*	48	9	1.82	1164.56	1161	9	8.00E-03	21.1	
12	0	996.26	44	12	1.66	1328.60	1324	10	7.29E-03	22.1	
13	0	1005.21*	58	24	2.08	1340.53	1335	14	9.68E-03	20.6	
14	0	1084.74	15	15	2.05	1446.50	1443	11	2.51E-03	60.4	
15	0	1173.13	29	4	1.53	1564.27	1560	9	4.84E-03	26.3	
16	0	1274.32	92	0	2.00	1699.08	1694	10	1.53E-02	11.1	
17	0	1332.59*	10	8	1.94	1776.70	1770	11	1.60E-03	72.3	
18	0	1408.41	24	12	2.12	1877.70	1872	10	4.08E-03	26.6	

VAX/VMS Nuclide Identification Report V2.5 Generated 20-MAR-1990 16:10:13

Configuration : DUB0:[USER]T8238.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENBACK V1.3,NID/DEP V2.2
Sample title : T8238 SST 117-90 90-0305-A-2
Deposition Date : 20-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 20-MAR-1990 00:00:00 Acquisition date : 20-MAR-1990 14:29:10
Sample ID : T8238 SST 117-90 Sample quantity : 2.29130E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 01:40:00.00 Elapsed real time: 0 01:40:22.87 0.4%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~CO-57~~	~~122.06~~	~~1034~~	~~85.95*~~	~~2.887E+00~~	~~0.792E-03~~	~~0.607E-03~~	~~21.09~~
	136.47	------	10.33	2.545E+00	------ Line Not Found		------
CS-137	32.05	6302	6.02	6.085E-01	3.382E+00	3.382E+00	1.96
	661.66	290063	85.20*	5.621E-01	1.191E+01	1.191E+01	0.19
EU-154	42.75	------	20.56	1.373E+00	------ Line Not Found		------
	123.07	1034	40.42	2.689E+00	1.870E-02	1.870E-02	21.09
	247.93	------	6.84	1.549E+00	------ Line Not Found		------
	723.30	90	19.98	5.154E-01	1.711E-02	1.711E-02	18.72
	873.20	48	12.09	4.312E-01	1.810E-02	1.810E-02	21.11
	996.30	44	10.34	3.817E-01	2.180E-02	2.180E-02	22.10
	1004.76	58	17.90	3.786E-01	1.685E-02	1.685E-02	20.56
	1274.51	92	34.40*	3.052E-01	1.723E-02	1.723E-02	11.11

JEH 3/21/90

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
CO-60	1173.24	29	99.90	3.290E-01	1.737E-03	1.737E-03	26.30
	1332.50	10	99.98*	2.930E-01	6.455E-04	6.456E-04	72.27

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
GD-153	41.31	667	96.50	1.260E+00	1.078E-02	1.080E-02	23.59
	47.00	570	18.10	1.657E+00	3.734E-02	3.741E-02	32.10
	48.50	------	5.47	1.752E+00	------ Line Not Found		------
	97.43	774	27.60*	2.870E+00	1.922E-02	1.925E-02	20.31
	103.18	606	19.60	2.844E+00	2.135E-02	2.139E-02	30.12

Sample ID : T8238 SST 117-90 Acquisition date : 20-MAR-1990 14:29:10

Total number of lines in spectrum 18
Number of unidentified lines 1
Number of lines tentatively identified by NID 17 94.44%

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~CO-57~~	~~271.77D~~	~~1.002~~	~~3.793E-03~~	~~8.807E-03~~	~~1.858E-03~~	~~21.07~~	
CS-137	30.00Y	1.000	1.191E+01	1.191E+01	0.002E+01	0.19	
EU-154	8.59Y	1.000	1.723E-02	1.723E-02	0.191E-02	11.11	
	Total Activity :		1.193E+01	1.193E+01			

JZ 3/21/90

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
CO-60	5.27Y	1.000	6.455E-04	6.456E-04	4.666E-04	72.27	
	Total Activity :		6.455E-04	6.456E-04			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
GD-153	241.60D	1.002	1.922E-02	1.925E-02	0.391E-02	20.31	
	Total Activity :		1.922E-02	1.925E-02			

Grand Total Activity : 1.195E+01 1.195E+01

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

Sample ID : T8238 SST 117-90 Acquisition date : 20-MAR-1990 14:29:10

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
7	31.88	6302	8109	1.60	42.83	42	12	2.0	2.73E+02	CS-137
7	35.69	10780	33602	3.36	47.92	42	12	3.5		
0	41.15*	667	10782	1.45	55.19	54	5	23.6		GD-153
0	46.98*	570	13262	1.29	62.97	61	6	32.1		GD-153
0	97.08	774	10582	1.28	129.80	128	5	20.3		GD-153
0	103.45	606	13215	1.34	138.30	136	6	30.1		GD-153
0	122.69*	1034	17053	2.00	163.96	161	7	21.1		CO-57
										EU-154
0	661.53*	290063	2829	1.89	882.46	875	14	0.2		CS-137
0	723.25*	90	40	1.74	964.75	960	12	18.7		EU-154
0	770.66	35	38	2.15	1038.60	1034	9	37.4		
0	873.17*	48	9	1.82	1164.56	1161	9	21.1		EU-154
0	996.26	44	12	1.66	1328.60	1324	10	22.1		EU-154
0	1005.21*	58	24	2.08	1340.53	1335	14	20.6		EU-154
0	1084.74	15	15	2.05	1446.50	1443	11	60.4		
0	1173.13	29	4	1.53	1564.27	1560	9	26.3		CO-60
0	1274.32	92	0	2.00	1699.08	1694	10	11.1		EU-154
0	1332.59*	10	8	1.94	1776.70	1770	11	72.3		CO-60
0	1408.41	24	12	2.12	1877.70	1872	10	26.6		

Sample ID : T3256 SST 110-90 Acquisition date : 27-MAR-1993 17:17:21

Total number of lines in spectrum 25
Number of unidentified lines 6
Number of lines tentatively identified by NID 19 76.00%

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~NA-22~~	~~2.60Y~~	~~1.001~~	~~3.228E-07~~	~~3.230E-07~~	~~1203.E-07~~	~~37379.84~~	
CO-60	5.27Y	1.000	1.600E-03	1.601E-03	0.193E-03	12.04	
		Total Activity :	1.600E-03	1.601E-03			

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~K-40~~	~~1.28E+09Y~~	~~1.000~~	~~4.756E-03~~	~~4.756E-03~~	~~1.26[illegible]E-03~~	~~26.34~~	
		Total Activity :	4.756E-03	4.756E-03			

Nuclide Type : fission

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
~~NB-95~~	~~34.97D~~	~~1.021~~	~~1.237E-03~~	~~1.265E-03~~	~~0.145E-03~~	~~11.45~~	
CS-134	2.06Y	1.001	7.440E-04	7.447E-04	1.849E-04	24.83	
CS-137	30.00Y	1.000	3.610E-02	3.610E-02	0.052E-02	1.45	
CE-144	284.90D	1.003	3.279E-03	3.287E-03	0.776E-03	23.62	
		Total Activity :	4.136E-02	4.140E-02			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Uncorrected uCi/G	Decay Corr uCi/G	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
GD-153	241.60D	1.003	3.602E-04	3.612E-04	~~1.87[illegible]E-04~~	~~50.70~~	
		Total Activity :	3.602E-04	3.612E-04	see page 2		

Grand Total Activity : 4.808E-02 4.812E-02

Flags: "K" = Keyline not found; "M" = Manually accepted; "E" = Manually edited

Post-NID Peak Search Report
Sample ID : T8256 EST 110-90

Acquisition Date : 22-MAR-1990 17:17:21

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Fw	%Err	Fit	Nuclides
6	32.19	733	1483	2.67	43.24	41	11	9.1	1.40E+01	CS-137
6	35.53	717	2978	2.66	47.70	41	11	14.0		
0	41.15*	12	2684	2.34	55.20	52	8	914.8		CE-144
										GD-153
0	46.46*	236	2185	2.43	62.28	60	7	35.6		GD-153
0	73.45*	581	4050	2.74	98.28	95	11	23.0		
0	85.32*	224	3365	3.14	114.12	110	9	49.5		
0	91.86	324	2604	2.23	122.83	120	7	26.6		
0	96.99	132	1925	1.62	129.68	128	5	50.9		GD-153
0	103.80	445	3005	2.65	138.77	135	8	22.2		GD-153
0	133.15	434	3349	1.34	177.92	174	8	23.6		CE-144
0	238.40*	62	1590	1.56	318.29	316	6	113.8		
0	510.72*	230	1266	3.01	681.41	675	15	38.2		NA-22
0	604.27	206	626	1.74	806.14	801	10	24.8		CS-134
0	661.48*	7993	512	1.87	882.41	875	13	1.5		CS-137
0	765.69	279	234	1.68	1021.32	1017	8	11.5		NB-95
0	795.35	217	241	1.22	1060.84	1056	10	15.6		CS-134
0	1001.32*	34	119	1.80	1335.35	1332	7	72.2		
0	1121.26	188	169	1.83	1495.17	1489	13	15.4		
0	1173.64*	300	85	2.42	1564.95	1559	14	10.3		CO-60
0	1188.94	111	94	1.87	1585.33	1580	11	20.6		
0	1221.31	212	82	1.77	1628.46	1621	13	11.6		
0	1231.39	101	83	2.30	1641.89	1637	12	21.5		
0	1274.63*	0	26	2.48	1699.50	1696	8	*****		NA-22
0	1332.88*	217	85	1.71	1777.09	1771	13	12.0		CO-60
0	1461.44*	63	17	1.45	1948.33	1943	11	26.5		K-40

VAX/VMS Nuclide Identification Report V2.5 Generated 22-MAR-1990 13:57:31

Configuration : DUB0:[USER]T8256.CNF;1
Analyses by : PEAK V16.0,PEAKEFF V2.2,ENDACK V1.3,NID/DCP V2.2
Sample title : T8256 SST 118-90 SYSTEM BLK (15 HR) 90-0305-NS
Deposition Date : 22-MAR-1990 00:00:00 Deposition Period: 17-NOV-1858 00:00:00
Sample date : 22-MAR-1990 00:00:00 Acquisition date : 22-MAR-1990 17:17:21
Sample ID : T8256 SST 118-90 Sample quantity : 2.31360E-02 G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 15:00:00.00 Elapsed real time: 0 15:00:04.28 0.0%
Energy tolerance : 1.00 Half life ratio : 8.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Nuclide Line Activity Report

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
~~NA-22~~	511.00	230	180.00	7.290E-01	3.787E-04	3.770E-04	38.13
	1274.53	0	99.94*	3.051E-01	3.228E-07	3.230E-07	37399.84
CO-60	1173.24	300	99.90	3.289E-01	1.974E-03	1.775E-03	10.33
	1332.50	217	99.98*	2.930E-01	1.600E-03	1.601E-03	12.04

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
? K-40	1460.83	63	10.67*	2.693E-01	4.736E-03	4.756E-03	26.54

per. comm FE Hitt

Nuclide Type: fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
NB-95	765.79	279	99.79*	4.880E-01	1.239E-03	1.265E-03	11.45
CS-134	563.24	------	8.38	6.598E-01	------	Line Not Found	------
	569.32	------	15.40	6.527E-01	------	Line Not Found	------
	604.71	206	97.60*	6.148E-01	7.440E-04	7.447E-04	24.03
	795.87	217	85.40	4.707E-01	1.166E-03	1.167E-03	13.62
	801.95	------	8.73	4.670E-01	------	Line Not Found	------
CS-137	32.05	733	6.02	6.285E-01	4.190E-02	4.190E-02	9.39
	661.66	7993	85.20*	5.622E-01	3.610E-02	3.610E-02	1.45
CE-144	40.72	12	1.24	1.261E+00	1.637E-03	1.641E-03	914.76
	80.10	------	1.13	2.818E+00	------	Line Not Found	------
	133.54	434	11.10*	2.581E+00	3.279E-03	3.287E-03	23.62
	696.50	------	1.34	5.346E-01	------	Line Not Found	------

Hot cell contamination

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
GD-153	41.31	12	96.50	1.261E+00	2.103E-05	2.110E-05	914.76
	47.00	236	18.10	1.623E+00	1.737E-03	1.743E-03	35.65

Sample ID : T8256 SST 110-90 Acquisition Date - 22-MAR-1990 17:17:21

Nuclide Type: ACTIVATION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error
	48.50	------	5.47	1.752E+00	------	Line Not Found	------
	~~97.43~~	~~172~~	~~27.60~~	~~2.871E+00~~	~~3.402E-04~~	~~3.412E-04~~	~~50.50~~
	103.18	445	19.60	2.842E+00	1.729E-03	1.734E-03	22.24

2 of 4 peaks agree, overrule key line @ 97.43

ST 3/23/90

VAX/VMS Peak Search Report V1.7 Generated 23-MAR-1990 [illegible]

Configuration : DUB0:[USER]T8256.CNF;1
Analyzed by : PEAK V16.0,ENBACK V1.3
Sample title : T8256 SST 118-90 SYSTEM BLK (15 YR)
Deposition Date : 22-MAR-1990 00:00:00 Deposition Period: 17-NOV-1859 00:00:00
Sample date : 22-MAR-1990 00:00:00 Acquisition date : 22-MAR 1990 17:17:21
Sample ID : T8256 SST 118-90 Sample quantity : [illegible] G
Sample type : 10 ML IN SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 15:00:00.00 Elapsed real time: [illegible] 0.0%
Start energy : 14.76 End energy : [illegible]
Sensitivity : 5.00 Gaussian : 13.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Tw	Cts/Sec	%Err	Fit
1	6	32.19	733	1483	2.67	43.24	41	11	1.30E-02	9.1	1.49E+01
2	6	35.53	717	2978	2.62	47.70	41	11	1.23E-02	14.0	
3	0	41.15*	12	2684	2.34	55.70	52	5	2.17E-04	14.0	
4	0	46.46*	236	2185	2.43	62.28	60	7	1.37E-03	33.7	
5	0	73.45*	581	4050	2.74	98.28	95	11	1.00E-02	27.6	
6	0	85.32*	224	3365	3.14	114.12	110	9	4.15E-03	42.5	
7	0	91.86	324	2604	2.23	122.83	120	7	6.61E-03	26.7	
8	0	96.99	132	1925	1.62	129.68	128	5	2.44E-03	53.9	
9	0	103.80	445	3005	2.65	138.77	135	8	8.23E-03	20.2	
10	0	133.15	434	3349	1.34	177.92	174	8	8.04E-03	23.6	
11	0	238.40*	62	1570	1.56	318.29	316	6	1.13E-03	117.0	
12	0	510.72*	230	1266	3.01	681.41	675	15	4.25E-03	38.2	
13	0	604.27	206	626	1.74	804.14	801	10	3.82E-03	24.9	
14	0	661.48*	7993	512	1.87	882.41	875	13	1.48E-01	1.5	
15	0	765.69	279	234	1.68	1021.32	1017	8	5.17E-03	11.8	
16	0	795.35	217	241	1.22	1060.84	1056	10	4.01E-03	15.6	
17	0	1001.32*	34	119	1.60	1333.35	1330	7	6.27E-04	72.2	
18	0	1121.26	188	169	1.83	1495.17	1487	13	3.47E-03	15.4	
19	0	1173.64*	300	85	2.42	1564.95	1559	14	5.55E-03	10.3	
20	0	1188.94	111	94	1.87	1585.33	1580	11	2.05E-03	29.6	
21	0	1221.31	212	82	1.77	1628.46	1621	13	3.92E-03	11.8	
22	0	1231.39	101	83	2.30	1641.89	1637	12	1.87E-03	21.5	
23	0	1274.63*	0	26	2.48	1699.50	1696	9	0.43E-07	*****	
24	0	1332.88*	217	85	1.71	1777.09	1771	13	4.01E-03	12.9	
25	0	1461.44*	63	17	1.45	1948.33	1943	11	1.17E-02	26.5	

2/16/90

6-3089 P7-22

RB

SAMPLE PREP DATA SHEET
325-B Hot Cells)

Core ID: 110B-C9

Segment(s): 3

☐ Composite

☐ Prehomogenized ☒ Homogenized

Alig (wet) 10.1064 Fusions Leg# 8/Aliquot

		Analyte or Analysis	Sample Wt Wet (g)	~~Sample Wt~~ Dry (g)	Percent Solids	Water Wt (g)	Total Vol (ml)	Spike ID	Spike Vol (ml)	Dilution Factor	Diluent Matrix	Pipet Calib (ml)	Miscellaneous
107-90	110B-C9-3T	90-0300-A-1 GEA+	0.5535		conversion factor 0.0404-256		250		0.022376				
108		90-0300-A-2	0.6287						0.025416				
109		-A3	—	R = 0.5911					0.023596				BLANK
110	110B-C9-3B	90-0301-A1	0.5814						0.023503				
111		A2	0.5801						0.023451				
112		A3	—	R = 0.58075					0.023477				BLANK
		alpha, total beta, uranium											

D04-109

2/16/90

6-3089 P7-22

RTS

SAMPLE PREP DATA SHEET
325-B Hot Cells)

Core ID: 110B-C9

Segment(s): 5

☐ Composite

☐ Prehomogenized ☒ Homogenized

Aliquot Code 16.1064 FUSIONS Log # # Aliquot

Analyte or Analysis	Sample Wt Wet (g)	Sample Wt Dry (g)	Percent Solids	Water Wt (g)	Total Vol (ml)	Spike ID	Spike Vol (ml)	Dilution Factor	Diluent Matrix	Pipet Calib (ml)	Miscellaneous
EA +	0.5564		conversion factor 0.0404256		250		0.022493				
	0.5571						0.022521				
	—	x̄ = 0.55695					0.022507				BLANK
	0.5728						0.023358				
	0.5668						0.022913				
	—	x̄ = 0.5723					0.023136				BLANK
lpha, Total Beta, uranium											

113-90 110B-C9-5T 90-0304-A-1
114 A-2
115 A-3
116 110B-C9-5B 90-0305 A-1
117 A-2
18 A-3

D04-110

SST SAMPLE WEIGHT CALCULATION AND DATA MANIPULATION RECORD FOR GEA ANALYSIS
FOR SAMPLE #s:

ALO #	SST #	IRB LOGNUM	(2) WET SOLID WEIGHT	DILUANT (WEIGHT,g) (VOLUME,ml)	(3) DENSITY FACTOR	ALIQUOT VOLUME	(1,2) GRAMS/ ALIQUOT	COUNT DATE	COMFILE (VERSION)	TOL. & ABUND	REPROCESS DATE
90-1257-C-1	249-90	T8336	2.0779	202.0588g	Y	10.0998	0.10363	5/23/90	SSTGEN 5/21	1.0 75%	
" " -C-2	250-90	T8337	2.0215	199.0698g	Y	10.0998 ~~[illegible]~~	0.10233 ~~[illegible]~~	5/23/90	SSTGEN 5/21	1.0 75%	
" " -C-5	251-90	T8338	—	200.3024g	Y	"	0.10312	"	"	1.0 75%	

Sample weight algorithm:
(1) g/aliquot=(wet solid wt.(g) / diluant (vol) x aliquot (vol))
(2) System process blanks wet solid weights are zero. For purposes of calculation, the system blank wet solid weight values are considered to be equal to the mean values for the samples to which the system blank applies.
(3) Density set to 0.99777 for water at 22 degrees C (hot cell average temp.) if diluent is water. A different density is given if not water.

D04-111

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer GST		Date Received 2-16-90	Work Order No M62037
Serial No	Customer Ident	Constituent	Result
107 -90	90-0300-A-1	GSA	
T8224	110B-C9-31 FUSION		
MTE No. -------		HTA-4-9	
Serial Number 104462	3/7/90	Date	Approval

SERIAL NUMBER 104462

0.5535g + 250 ml.

2(5.0532 ml) undil. sample

$0.5535g\left(\frac{10.1064}{250.}\right) = 0.022376g$ ST

DATA

(Over)

T8224

54-1700-177 (05/89)

D04-112

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62037
Serial No	Customer Ident	Constituent	Result
108 -90	90-0300-A-2	GSA	
T8231	110B-C9-3 FUSION		
2-16-90 MTE No. 3 BNW52920 p. 67		HTA-4-9	
Serial Number 104466		3/7/90	Date / Approval

SERIAL NUMBER 104466

0.6287g. + 250 ml.

2(5.0532ml) undil sample

$0.6287\left(\frac{10.1064}{250.}\right) = 0.0254166$

DATA

(Over)

T8231

54-1700-177 (05/89)

☆ U.S. GPO: 1989—664-597

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62037
Serial No	Customer Ident	Constituent	Result
109 -90	90-0300-A-3	GSA	
T8234	110B-C9-37 FUSION		
MTE No. BNW52920 p. 67		HTA-4-9	
Serial Number 104470		3/7/90	Date / Approval

SERIAL NUMBER 104470

BLANK

2(5.0532ml) undil sample

$\left(\frac{0.5535 + 0.6287}{2}\right)\left(\frac{10.1064}{250}\right) = 0.023896$ ST

DATA

(Over)

T8234

54-1700-177 (05/89)

☆ U.S. GPO: 1989—924-937

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62037
Serial No	Customer Ident	Constituent	Result
110 -90	90-0301-A-1	GSA	
	110B-C9-3B FUSION		
MTE No. BNW52920 p. 67		HTA-4-9	
Serial Number 104474		Date 3/7/	Approval

SERIAL NUMBER 104474

0.5814g. + 250ml.

2(5.0532ml) undil sample

$0.5814g\left(\frac{10.1064}{250}\right) = 0.023503g$

DATA

(Over)

T8232

54-1700-177 (05/89)

D04-115

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62037
Serial No	Customer Ident	Constituent	Result
111 -90	90-0301-A-2	GSA	
	110B-C9-3B FUSION		
MTE No. ------ BNW52920 p. 67		HTA-4-9	
Serial Number 104478		03/7/90	Date / Approval

SERIAL NUMBER 104478

0.5801 g. + 250ml.

2(5.0532 ml) undil sample

$0.5801g \left(\frac{10.1064}{250}\right) = 0.023451g$ JST

DATA

(Over)

T8233

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62037
Serial No	Customer Ident	Constituent	Result
112 -90	90-0301-A-3	GSA	
	110B-C9-3 B FUSION		
MTE No. ------- BNW52920 p. 67		HTA-4-9	
Serial Number 103903		3/7/90	Date / Approval

SERIAL NUMBER 103903

BLANK

2(5.0532 ml) undil sample

$\left(\frac{0.5814 + 0.5801}{2}\right)\left(\frac{10.1064}{250.}\right) = 0.023477g$

DATA

(Over)

T8239

54-1700-177 (05/89)

☆ U.S. GPO: 1989—[illegible]

D04-117

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M620 37
Serial No	Customer Ident	Constituent	Result
113 -90	90-0304-A-1	GSA	
T8235	110B-C9-5T FUSION		
MTE No. BNW52920 p. 167		HTA-4-9	
Serial Number 103907		3/7/90	Date / Approval

SERIAL NUMBER 103907

0.5564g. ÷ 250ml.

2(5.0532 ml) undil sample

0.5564g $\left(\frac{10.1064}{250}\right)$ = 0.022493g ST

DATA

(Over)

T8235

54-1700-177 (05/89)

☆ U.S. GPO: 1989—604-037

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62037
Serial No	Customer Ident	Constituent	Result
114 -90	90-0304-A-2	GSA	
	110B-C9-SST FUSION		
MTE No. ------- BNW52920 p. 67		HTA-4-9	
Serial Number 103912		3/7/90	Date / Approval

SERIAL NUMBER 103912

0.5571g. + 250ml.

2(5.0532ml) undil sample

$0.5571g \left(\frac{10.1064}{250}\right) = 0.02252g$ SST

DATA

(Over)

T8236

54-1700-177 (05/89)

☆U.S. GPO: 1988—204-037

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62037
Serial No	Customer Ident	Constituent	Result
115 -90	90-0304-A-3	GSA	
	110B-C9-ST FUSION		
MTE No. ____ BNW52920 p. 67		HTA-4-9	
Serial Number 103916		Date 3/7/90	Approval

SERIAL NUMBER 103916

BLANK

2(5.0532 ml) undil sample

$\left(\frac{.5564 + 0.5571}{2}\right)\left(\frac{10.1064}{250.}\right) =$

0.022507 g ST

DATA

(Over)

T8245

54-1700-177 (05/89)

☆U.S. GPO: 1989—654-327

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62037
Serial No	Customer Ident	Constituent	Result
116 -90	90-0305-A-1	GSA	
	110B-C9-50 FUSION		
MTE No. ------- BNW52920 p. 67		HTA-4-9	
Serial Number 103920		3/7/90	Date / Approval

SERIAL NUMBER 103920

0.5778g. ÷ 250ml.

2(5.0532ml) undil sample

$0.5778g \times \left(\frac{10.1064}{250}\right) = 0.023358g$ ST

DATA

(Over)

T8237

54-1700-177 (05/89)

☆U.S. GPO: 1989—802-537

D04-121

Pacific Northwest Laboratory		ANALYTICAL REPORT		
Customer SST		Date Received 2-16-90	Work Order No. M62037	
Serial No	Customer Ident	Constituent	Result	
117 -90	90-0305-A-2 110B-C9-53 FUSION	GSA		
MTE No. ____ BNW52920 p. 67		HTA-4-9		
Serial Number 103924		3/7/90	Date	Approval

SERIAL NUMBER 103924

0.5668g. + 250ml.

2(5.0532ml) undil sample

$0.5668g \left(\frac{10.1064}{250.}\right) = 0.022913g$ ST

DATA

(Over)

T 8238

54-1700-177 (05/89)

☆U.S. GPO: 1989—664-037

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No M62037
Serial No	Customer Ident	Constituent	Result
118 -90	90-0305-A-3	GSA	
	110B-C9-58 FUSION		
MTE No. ____ BNW52920 p. 67		HTA-4-9	
Serial Number 103928		3/7/90 Date	Approval

54-1700-177 (05/89) ☆U.S. GPO: 1989—664-337

SERIAL NUMBER 103928

BLANK

2(5.0532 ml) undil sample

$\left(\frac{0.5778+0.5668}{2}\right)\left(\frac{10.1044}{250.}\right)=0.023136$ g

SF

DATA

(Over)

SF 3/23/90

T8256 ~~T8246~~

Pacific Northwest Laboratory		ANALYTICAL REPORT		
Customer SST		Date Received 3-13-90	Work Order No. ~~M260~~ M62037 3/26/90	
Serial No	Customer Ident	Constituent	Result	
188 -90	110B-C9-T 90-1255-A-1 TK110B-C9 Segment COM Ni FUSION	GSA HTA-4-9		
M&TE 360-06-01-018 BNW52920 p. 53 M&TE WB37560				
Serial Number 102742 3/26/90			Date	Approval

SERIAL NUMBER 102742

0.5560g + 250ml

2(5.0622 ml) undil 1 sample

$\frac{0.5560}{250} \times 2(5.0622) = 0.0225161$ g

DATA

(Over)

T8271

54-1700-177 (05/89)

☆ U.S. GPO: 1989—686-037

D04-124

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No ~~M260~~ M62037
Serial No	Customer Ident	Constituent	Result
189 -90 M&TE 360-06-01-018 BNW52920 p. 83 M&TE NB37560	110B-C9-T 90-1255-A-2 TK110B-C9 Segment COM Ni FUSION	GSA HTA-4-9	
Serial Number 102752		Date	Approval

SERIAL NUMBER 102752

0.5749g + 250ml

2(5.0622ml) undil sample

$\frac{0.5749}{250} \times 2(5.0622) = 0.2328207$ g

DATA

(Over)

T8273

54-1700-177 (05/89)

D04-125

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. ~~M860~~ M62037
Serial No	Customer Ident	Constituent	Result
190 -90	110B-C9-T 90-1255-A-3 TK110B-C9 Segment COM Ni FUSION	GSA HTA-4-9	
M&TE 360-06-01-018 BNW52920 p. 83 M+TE WB37560			
Serial Number 102762		Date	Approval

SERIAL NUMBER 102762

_____ ÷ 250ml

2(5.0622mL) undil sample

$$\frac{0.5560+0.5749}{2}\left(\frac{1}{250}\right)2(5.0622)=$$

0.022899368 g

DATA

(Over)

T 8279

54-1700-177 (05/89)

D04-126

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. ~~M260~~ M62037
Serial No	Customer Ident	Constituent	Result
191 -90	110B-C9-B 90-1256-A-1 TK110B-C9 Segment CDM Ni FUSION	GSA HTA-4-9	
M&TE 360-06-01-01B BNW52920 p. 83 M&TE WB375466			
Serial Number 102772		Date 3/26/90	Approval

SERIAL NUMBER 102772

0.5252g + 250ml

2(5.0622ml) until simple

$\frac{0.5252}{250} \times 2(5.0622) = 0.021269$

DATA

(Over)

T8274

54-1700-177 (05/89)

D04-127

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. M860 M62037
Serial No	Customer Ident	Constituent	Result 3/26/90
192 -90	110B-C9-B 90-1256-A-2 TK110B-C9 Segment COM Ni FUSION	GSA HTA-4-9	
M&TE 360-06-01-01B BNW52920 p. 53 M&TE WB375 60			
Serial Number	102782	Date	Approval

SERIAL NUMBER 102782

0.5922g + 250ml

2(5.0622 ml) undil sample

$\frac{0.5922}{250} \times 2(5.0622) = 0.0239927$ g

DATA

(Over)

T 8276

54-1700-177 (05/89)

☆ U.S. G.P.O.: 1989—264-537

D04-128

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 4-3-90	Work Order No. M62037
Serial No	Customer Ident	Constituent	Result
249 -90	110B-C9-AN 90-1257-C-1	GSA	
BNW 52920 p. 130	H2O LEACH	HTA-4-9	
Serial Number 103231		5/23/90	Date / Approval

SERIAL NUMBER 103231

2.0799g. + 202.0588g. H20

2(5.0499 ml) undil sample

$\frac{2.0799g}{202.0588ml} \times 2(5.0499ml) = 0.1039g$

DATA

T8336

(Over)

54-1700-177 (05/89)

☆ U.S. GPO: 1989—864-937

D04-129

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 4-3-90	Work Order No. M62037
Serial No	Customer Ident	Constituent	Result
250 -90	110B-C9-AN 90-1257-C-2	GSA	
BNW 52920 p. 130	H2O LEACH	HTA-4-9	
Serial Number 103232	5/23/90	Date	Approval

SERIAL NUMBER 103232

2.0215 g. + 199.0698 g. H2O

2(5.0499 ml) undil. sample

$\frac{2.0215}{199.0698} \times 2 \times 5.0499 = 0.102$ Seq

DATA

T8332

(Over)

54-1700-177 (05/89)

☆ U.S. GPO: 1989—[illegible]

D04-130

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 4-3-90	Work Order No M6203
Serial No	Customer Ident	Constituent	Result
251 -90	110B-C9-AN 90-1257-C-5	GSA	
BNW 52920 p. 130	H20 LEACH	HTA-4-9	
Serial Number 103233	5/23/90	Date	Approval

SERIAL NUMBER 103233

BLANK + 200.3024 g. H20

2(5.0499 ml) undil sample

DATA

(Over)

T8338

54-1700-177 (05/89)

☆U.S. GPO: 1989—[illegible]

D04-131

GEA

CALIBRATION DATA

D04-132

AMERS-59T

Configuration : [illegible]
Analyzed by : [illegible]
Detector Name : [illegible]
Efficiency Type : Spline
Detector Geometry: [illegible]

Energy Calibration Report

Energy = -0.2577 + 0.76404(Channel) + 3.1385E-07*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	117.34	88.04	87.89	0.107
2	163.00	122.06	122.03	-0.028
3	221.35	165.00	165.07	-0.068
4	372.38	279.00	279.10	-0.101
5	522.72	391.70	391.68	0.017
6	685.78	514.00	513.97	0.034
7	882.58	661.65	661.58	0.069
8	1197.63	898.00	897.94	0.065
9	1564.36	1173.00	1173.14	-0.144
10	1776.62	1332.50	1332.47	0.035
11	2447.10	1836.00	1835.98	0.015

FWHM Calibration Report

FWHM = 0.7395 + 3.7573E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	88.00	1.32	1.09	0.233
2	122.00	1.06	1.15	-0.087
3	165.00	1.45	1.22	0.231
4	279.00	1.17	1.36	-0.187
5	391.70	1.41	1.47	-0.061
6	514.00	1.41	1.58	-0.170
7	661.65	1.65	1.70	-0.047
8	898.00	1.70	1.85	-0.078
9	1173.00	1.90	2.01	-0.028
10	1332.50	2.07	2.10	-0.034
11	1836.00	2.56	2.33	0.224

Efficiency Calibration Report

Nbr	Energy ()	Measured Efficiency	Efficiency Error
1	88.00	2.6798E-02	1.4225E-03
2	122.00	2.6983E-02	6.2484E-04
3	165.00	2.2411E-02	8.8003E-04
4	279.00	1.3985E-02	2.3459E-03
5	391.70	9.7073E-03	4.5478E-04
6	514.00	6.6868E-03	3.1967E-04
7	661.65	5.3973E-03	1.7984E-04
8	898.00	4.2498E-03	1.4427E-04
9	1173.00	3.3055E-03	2.7004E-05
10	1332.50	2.9225E-03	2.3829E-05
11	1836.00	2.2020E-03	6.2007E-05

Approved by: [illegible] Approval Date: 8.7.90

BNW 52327, pg 128
[illegible]

BNW LABORATORY NOTEBOOK NO. 52327 COPIED FOR PNL RECORDS CENTER SEP 11 '90

Project No. _____ Date of Work _____

Entered By [illegible] Date Jun 29, 1990

Disclosed To and Understood By

Signed 1. _____ Date _____

2. _____ Date _____

BNW LABORATORY NOTEBOOK NO. 52327 COPIED FOR PNL RECORDS CENTER SEP 11 '90

VAX/VMS Peak Search Report V1.7 Generated 29-MAR-1990 12:58:00

AMERS-SST

Configuration : RCA0:[USER]ADC361
Analyses by : PEAK V16.0,PEAKEFF V2.2
Sample title. : T8055 AMERS. STD 0CY.44 RB/270/25 IN 10ML SCV
Sample date : Acquisition date : 5-DEC-1989 13:40:14
Sample ID : T8055 0CY.44 STD Sample quantity : 1.6640 G
Sample type : 10ML SCV Sample geometry : T2SCV
Detector name : TRACK Detector geometry: T2SCV
Elapsed live time: 0 15:00:00.00 Elapsed real time: 0 15:05:56.43 0.6%
Start energy : 14.77 End energy : 3074.51
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	4	21.52	1431099	307455	1.51	29.40	3.41E-02	2.65E+01	0.1	1.54E+04
2	4	24.43	557653	238721	1.51	32.89	7.89E-02	1.03E+01	0.2	
3	0	31.04	165010	249177	1.76	42.76	3.19E-01	3.06E+00	0.6	
4	0	36.60	42348	130704	2.12	49.11	5.62E-01	7.84E-01	1.5	
5	0	51.08	3417	98471	1.53	69.50	1.50E+00	6.33E-02	13.3	
6	0	63.95	3975	209373	2.72	88.28	2.19E+00	7.36E-02	20.6	
7	0	75.17	1413	114754	1.89	100.58	2.48E+00	2.62E-02	36.1	
8	0	87.09	509918	223771	1.32	117.54	2.70E+00	9.44E+00	0.2	
9	0	122.03	297745	175728	1.06	163.00	2.67E+00	5.51E+00	0.3	
10	0	136.40	35093	149940	1.35	182.35	2.55E+00	6.50E-01	2.6	
11	0	145.87	99991	165028	1.45	221.55	2.29E+00	1.85E+00	0.8	
12	0	255.21	4173	93522	1.30	340.72	1.52E+00	7.73E-02	11.7	
13	0	279.10	2677	78917	1.17	372.58	1.39E+00	4.96E-02	16.7	
14	0	310.38	2399	67672	1.34	414.30	1.24E+00	4.44E-02	17.3	
15	0	391.68	84320	95289	1.41	522.72	9.65E-01	1.56E+00	0.8	
16	0	475.35	1475	58690	2.71	634.29	7.05E-01	3.10E-02	23.0	
17	0	513.97	15032	48195	1.41	685.78	7.23E-01	2.78E-01	2.6	
18	2	458.32	1988	32809	1.94	878.23	5.43E-01	3.68E-02	14.5	2.14E+01
19	2	661.59	825224	29150	1.53	882.60	5.60E-01	1.53E+01	0.1	
20	0	813.91	2364	32851	2.12	1085.63	4.59E-01	4.38E-02	12.7	
21	0	821.42	1403	33018	2.02	1095.65	4.55E-01	2.60E-02	21.6	
22	0	897.94	91548	68664	1.77	1197.63	4.19E-01	1.70E+00	0.7	
23	0	1173.14	541002	32305	1.98	1564.36	3.29E-01	1.00E+01	0.2	
24	9	1325.23	3860	10041	4.90	1766.98	2.95E-01	7.15E-02	9.4	4.36E+01
25	9	1332.46	470532	3616	2.06	1776.62	2.94E-01	8.86E+00	0.1	
26	0	1835.98	50653	1234	2.55	2447.18	2.17E-01	9.38E-01	0.5	
27	0	2505.21	1974	100	3.20	3337.85	1.54E-01	3.66E-02	2.6	
28	0	2614.73	35	15	3.59	3483.54	1.46E-01	6.47E-04	31.6	
29	0	2733.86	381	23	3.23	3642.00	1.38E-01	7.06E-03	5.9	

VAX/VMS Calibration Report V1.1 Generated 29-MAR-1990 11:41:04

Configuration : RCA0:[USER]ADC361
Analyses by : CALIBRATE V1.3,PEAK V16.0,PEAKEFF V2.2
Detector Name : Energy Calib Time: 29-MAR-1990 11:39:46
Efficiency type : Empirical Effncy Calib Time: 29-MAR-1990 11:41:03
Detector Geometry: T2SCV Shelf : #2

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a4	a5	a6	a7
962.0	-5.530	0.9085	6.4414E-02	0.8661E-02	-5.6399E-02	0.0000E+00

Average Deviation = 1.61 % Reduced Chi-Square = 0.700

Nbr	Energy ()	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error
1	88.00	2.6798E-02	1.0225E-03	2.6984E-02	-0.18
2	122.00	2.6903E-02	6.2604E-04	2.6747E-02	0.25
3	165.00	2.2411E-02	8.0803E-04	2.2554E-02	-0.16
4	279.00	1.3985E-02	2.3659E-03	1.3891E-02	0.04
5	391.70	9.7673E-03	4.5478E-04	9.6401E-03	0.13
6	514.00	6.6868E-03	3.1967E-04	7.2298E-03	-1.70
7	661.45	5.7514E-03	1.7041E-04	5.5997E-03	0.85
8	898.00	4.2494E-03	1.6427E-04	4.1914E-03	0.35
9	1173.00	3.3055E-03	2.7004E-05	3.2926E-03	0.48
10	1332.50	2.9199E-03	2.3060E-05	2.9364E-03	-0.79
11	1836.00	2.2052E-03	6.2091E-05	2.1721E-03	0.53

Approved by: [signature] Approval Date: 5 / 2 / 90

BNW52327
pg 129
[illegible]

Project No. _____ Date of Work _____
Entered By [signature] Date Mar 29, 1990
Disclosed To and Understood By
Signed 1. _____ Date _____
2. _____ Date _____

DNW 52327
Pg 130

Event Time : 29-MAR-1990 13:37:34.50
Certificate data name : DUB01:[USER]MARLB-SSI.CER;1
Certificate title : OCT.44 RB/270/25
Certificate date : 1-OCT-1988 0:00:00.00
Certificate quantity : 1.0000E+00

Rcd	Nuclide	Halflife	CAL/ Intf	Energy	Rate	%Abun	Activity (uCi)
1	Cs-109	462.000	Tot	88.00	6.2200E+02	3.61	4.7316E-01
2	Cs-137	271.700	no	122.00	5.7000E+02	85.50	1.0271E-02
3	Cs-139	137.500	no	165.86	6.8100E+02	79.90	2.3034E-02
4	Hg-203	46.600	no	279.00	2.0190E+03	81.50	4.6954E-02
5	Sn-113	115.100	no	391.70	2.6230E+03	64.20	8.5165E-02
6	Sr-85	64.800	no	514.00	3.9210E+03	99.20	1.0683E-01
7	Cs-137	30.137	no	661.65	2.5660E+03	85.10	8.1474E-02
8	I-88	104.600	no	898.00	6.1710E+03	93.20	1.7895E-01
9	Co-60	5.271	no	1173.00	3.3570E+03	99.86	9.0045E-02
10	Co-60	5.271	no	1332.50	3.3310E+03	99.98	9.0045E-02
11	I-88	104.600	Tot	1836.00	6.5790E+03	99.36	1.7896E-01

VAX/VMS Nuclide Identification Report V2.5 Generated 29-MAR-1990 16:41:54

Configuration : DUB01:[USER]125CV-FREB.CMF;1
Analyzed by : PEAK V16.0,PEAKEFF V2.2,NID V2.2
Sample title : 18055 ANERS. STD OCT.44 RB/270/25 IN 10ML SCV
Sample date :
Sample ID : 18055 OCT.44 STD
Sample type : 10ML SCV
Detector name : TRACK
Elapsed live time: 0 15:00:00.00
Energy tolerance : 0.50
Errors propagated: No
Efficiency type : Empirical
Abundance limit : 50.00

Acquisition date : 5-DEC-1989 13:40:16
Sample quantity : 1.0000 G
Sample geometry : 125CV
Detector geometry: 125CV
Elapsed real time: 0 15:05:50.43 0.02
Half life ratio : 15.00
Systematic Error : 0.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: Fission

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error	[illegible]
CS-137	122.06	297745	85.600	2.6750E+00	6.1180E-03	1.0346E-02	0.31	[illegible]
	136.47	35693	11.10	2.3560E+00	5.8331E-03	1.7560E-02	1.99	
SR-85	514.00	15032	99.270	7.2300E-01	9.8537E-04	9.8380E-02	2.58	[illegible]
I-88	898.02	91548	91.29	4.1910E-01	1.1250E-02	1.0550E-01	4.66	[illegible]
	1836.13	56653	99.360	2.1720E-01	1.1060E-02	1.8170E-01	6.47	[illegible]
CS-109	88.03	509918	3.790	2.6970E+00	2.3460E-01	4.5350E-01	0.21	[illegible]
SN-113	391.69	84179	64.000	9.6650E-01	6.4230E-03	8.6810E-02	0.77	[illegible]
CS-137	661.65	825524	85.000	5.0600E-01	8.1550E-02	8.3790E-02	0.12	[illegible]
CE-139	165.85	99991	79.900	2.2550E+00	2.6110E-02	2.3010E-02	0.00	[illegible]

Nuclide Type: Activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/G	Decay Corr uCi/G	1-Sigma %Error	
CO-60	1173.21	541882	99.90	3.2920E-01	7.7390E-02	9.0370E-02	0.15	[illegible]
	1332.47	478532	100.000	2.9360E-01	7.6660E-02	8.9510E-02	0.15	[illegible]
HG-203	279.19	2677	81.500	1.3070E+00	1.1130E-04	6.5970E-02	16.72	[illegible]

LABORATORY BOOK NO. 52327 COPY RECEIVED SEP 11 '90

Project No. _____ Date of Work _____
Entered By [signature] Date Mar 29, 1990
Disclosed To and Understood By
Signed 1. _____ Date _____
2. _____ Date _____

Amersham International plc
Amersham UK

[illegible]

BRITISH CALIBRATION SERVICE
Approval No. 0146

[illegible]

Description Product code: QCY.44 Solution number: R8/270/25

This mixed radionuclide gamma-ray reference standard consists of a solution in 4M HCl of the nine radionuclides listed below.

Measurement and Accuracy Reference time: 1200 GMT on 1 October 1988

Mass of solution: 5.3264 grams Density: 1.065 g/ml at 20°C

Parent radionuclide	Gamma-ray energy (MeV)	Gamma-rays per second per gram of solution	Random uncertainty	Systematic uncertainty	Overall uncertainty
Cadmium-109	0.088	632	± 0.1 %	± 3.7 %	± 3.8 %
Cobalt-57	0.122	578	± 0.3 %	± 2.0 %	± 2.3 %
Cerium-139	0.166	681	± 0.3 %	± 3.5 %	± 3.8 %
Mercury-203	0.279	2019	± 0.2 %	± 2.0 %	± 2.2 %
Tin-113	0.392	2023	± 0.4 %	± 4.2 %	± 4.6 %
Strontium-85	0.514	3921	± 0.2 %	± 1.7 %	± 1.9 %
Caesium-137	0.662	2566	± 0.5 %	± 2.6 %	± 3.1 %
Yttrium-88	0.898	6171	± 0.2 %	± 3.6 %	± 3.8 %
Cobalt-60	1.173	3327	± 0.3 %	± 0.5 %	± 0.8 %
Cobalt-60	1.333	3331	± 0.3 %	± 0.5 %	± 0.8 %
Yttrium-88	1.836	6579	± 0.2 %	± 2.6 %	± 2.8 %

Purity At the reference time the solution also contained the following impurities:

Cobalt-56 equal to 5.6×10^{-7} microcuries per gram
Cobalt-58 equal to 1.6×10^{-7} microcuries per gram
Selenium-75 equal to 3.2×10^{-7} microcuries per gram
Zinc-65 equal to 1.1×10^{-6} microcuries per gram

Remarks Further details, including composition of the solution, methods of measurement, decay scheme assumptions, decay tables and definitions of uncertainties, are given in the data sheet accompanying this certificate.

This product meets the quality assurance requirements of NRC Regulatory Guide 4.15 for achieving explicit NBS traceability as defined in NCRP58 (1985).

Approved Signatory

G D H Parker

Amersham

D04-136

2636 South Clearbrook Drive
Arlington Heights, Illinois 60005-4692
(312) 593-6300

Amersham

TRACEABILITY TO NBS

This product satisfies the quality assurance requirements of USNRC Regulatory Guide 4.15, Revision 1, February 19, 1979, for achieving NBS traceability, as defined in NCRP 58 (1985), through Amersham's participation in the USCEA/NBS Measurements Assurance Program of the Nuclear Power Industry.

278004A
2/18/88

GEA

DAILY CONTROL DATA

D04–138

BNW-52327
1
7-17-87

THIS BOOK IS INTENDED TO BE USED FOR RECORDING RESEARCH SUPPORTED ENTIRELY BY BATTELLE MEMORIAL INSTITUTE OR ITS SUBSIDIARIES.

K/33954

LABORATORY RECORD BOOK NUMBER BNW- 52327	This document consists of ..... pages, copy no. .....
TITLE (INDICATE SUBJECT CONTENT) Track Detector Daily Controls, Standards and Maintenance Notes	
AUTHOR - DIVISION AND DEPARTMENT F.E. Holt Materials & Chemical Sciences Center Chemical Sciences Center	
PERIOD COVERED FROM	TO

Route To	P. R. No.	Location	Route Date	Signature & Date
F E HOLT	30040325		JUL 17 1987	Fred E Holt 7/30/87

Classification

138993

BATTELLE MEMORIAL INSTITUTE PACIFIC NORTHWEST LABORATORY TO BE RETAINED BY RECIPIENT

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325	

personally the document listed above and responsibility for its safe handling, storage elsewhere in accordance with existing se-ma.

Recipient	Date
F. Holt	7/17/87

Recipient By | Returned To File | Date

D04-139

1990 Constant Count Data (March)

MS130-1 Source in Tank position 72 cm 15 min.

Date	Time	59.5 ±0.4 Am 241		661.65 ±0.02 Cs 137		1332.5 ±0.08 Co 60		Initials
3/1/90	15:33	59.42	53.8	662.04	33.2	1332.07	16.5	ST
3/2	10:52	59.11	53.3	661.65	33.1	1332.48	16.6	ST
3/2 RC	9:09	59.06	51.6	661.56	33.3	1332.42	16.5	ST
"	9:26	59.07	52.1	661.55	33.0	1332.43	16.7	ST
5	9:16	59.30	52.7	661.65	32.9	1332.38	16.6	ST
6	9:50	59.29	54.3	661.65	33.6	1332.35	16.9	ST
6	11:02	59.32	52.9	661.65	33.0	1332.34	16.4	ST
7	8:17	59.20	53.3	661.63	33.0	1332.37	16.6	ST
8	10:07	59.26	52.6	661.67	33.3	1332.42	16.6	ST
14	9:30	59.36	52.9	661.83	33.3	1332.71	16.6	ST
15	8:15	59.32	52.9	661.79	33.0	1332.64	16.7	ST
16	9:57	59.18	52.8	661.74	33.6	1332.62	16.4	ST
19	9:15	59.31	53.6	661.77	32.9	1332.58	16.8	ST
20	8:36	59.36	53.2	661.76	33.0	1332.55	16.5	ST
21	7:29	59.38	53.1	661.77	32.9	1332.59	16.5	ST
22	7:35	59.33	53.1	661.82	33.3	1332.67	16.4	ST
23	8:58	59.15	52.4	661.69	33.3	1332.58	16.4	ST
3/24	11:18	59.25 3/24/90 ~~59.60~~	52.6	661.80	33.3	1332.67	16.6	[illegible]
3/26	07:48	59.10	53.6	661.70	33.3	1332.59	16.7	[illegible]
3/27/90	0817	59.02	51.2	661.6	33.1	1332.55	16.7	AEK
3/27/90	0845	59.48	54.2	661.65	33.1	1332.19	16.5	
~~3/28/90~~	~~0750~~ 0821	~~59.41~~		~~661.57~~		1332.01	AEK 3/28/90	
3/28/90	0821	59.72	52.4	661.84	33.6	1332.3	16.7	AEK
3/29/90	0808	59.58	52.6	661.79	33.2	1332.24	16.3	AEK
3/30/90	0726	59.69	52.4	661.81	33.1	1332.26	16.5	AEK
4/2/90	0806	59.68	52.9	661.82	33.0	1332.26	16.5	AEK
4/3/90	0647	59.72	53.1	661.82	32.8	1332.22	16.5	AEK
4/5/90	0935	59.75	52.5	661.82	33.0	1332.22	16.5	AEK
4/6/90	0759	59.76	53.5	661.82	32.9	1332.21	16.4	AEK
4/9/90	0632	59.78	52.5	661.88	33.0	1332.32	16.3	AEK

OK SP

(; DT = -0.82)

PET tests SP

curve tests SP

ST

ST

ST

ST

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1990 Control Count Data (April)(May)

M8-130-1 in T6 for 15 Min.

Peak Energy + Counts/Sec

Date/Time		59.550.4 Am		137 Cs		1332.5± 60 Co		Initials
4/11	0643	59.8	52.9	661.8	33.3	1332.3	16.3	[illegible]
4/12	0629	59.8	52.9	661.9	33.2	1332.3	16.5	[illegible]
4/18	0913	59.9	53.3	662.2	33.5	1332.9	16.4	[illegible]
4/19	0734	59.9	53.0	662.3	33.6	1333.1	16.3	[illegible]
4/19	0804	59.5	53.9	661.8	33.2	1332.5	16.7	[illegible]
4/19	12:35	59.4	53.1	661.9	33.3	1332.7	16.4	SMT
4/20	12:39	59.31	52.9	661.7	33.3	1332.44	16.0	SMT
4/25	13:52	59.48	53.8	661.93	33.1	1332.79	16.4	SMT
4/30	8:49	59.24	53.0	661.58	33.2	1332.29	16.5	SMT
"	10:29	59.27	52.5	661.59	33.4	1332.30	16.2	SMT
5/1	9:16	59.25	52.7	661.57	33.3	1332.25	16.1	SMT
5/2	10:21	59.25	52.3	661.55	33.2	1332.22	16.4	SMT
5/3	12:38	59.28	52.8	661.89	33.0	1332.93	16.3	[illegible]
5/4	09:47	59.22	53.9	661.63	33.2	1332.48	16.0	[illegible]
5/9	07:31	59.26	53.1	661.58	33.2	1332.22	16.2	[illegible]
5/7	13:33	59.31	54.9	661.91	33.0	1332.96	16.2	SMT
5/10	8:24	59.42	53.2	661.83	33.4B	1332.70	16.2	SMT
" Repeat	8:58	59.39	53.7	661.84	33.0	1332.71	16.1	SMT
5/11	10:07	59.50	54.3	662.10	33.2	1333.20	16.4	SMT
5/14	8:40	59.42	53.3	661.76	32.7	1332.57	16.4	SMT
5/15	7:06	59.38	54.0	661.96	33.1	1332.93	16.0	SMT
5/17	6:46	59.49	54.2	661.90	32.9	1332.79	16.2	[illegible]
5/18	8:11	59.37	52.4	661.85	32.8	1332.73	16.0	SMT
5/21	8:39	59.38	53.0	661.89	33.4	1332.76	16.2	SMT
" RC	9:29	59.41	53.5	661.98	33.1	1332.77	15.9	SMT
5/22	7:58	59.38	53.3	661.96	32.9	1332.98	15.8	SMT
5/23	7:54	59.35	53.2	661.89	33.1	1332.85	16.0	[illegible]
5/24	7:10	59.35	52.4	661.87	33.1	1332.83	16.1	SMT
5/30	7:42	59.59	53.9	661.94	32.9	1332.82	16.1	SMT
5/31	6:48	59.58	54.6	661.92	33.2	1332.79	15.9	SMT

Project No. _____ Date of Work _____

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NW LABORATORY NOTEBOOK NO. 52327 SEP 11 '90

BNW LABORATORY NOTEBOOK NO. 52327 COPIED FOR PNL RECORDS CENTER SEP 11 '90

Entered by M C Weiler
4-11-90

Initials

Page: 125
LRB No.: BNW 52327

The following provides evidence of surveillance and/or technical reviews of this LRB in accordance with MG 4.3. When completed, this sheet is to be inserted into the LRB each month.

SURVEILLANCE REVIEWS
(Monthly for Impact Level I or II LRB entries by the Line Manager or delegate, and, if appropriate, by the Project Manager):

Pages Reviewed: 116 thru 122
Date Reviewed: 4-11-90
Basis of Review: Check for legibility, completeness, traceability of entries, and a sample of requirements (1-14) of MG 4.3.
Results:

Completeness, legibility, and data meet record requirements

Reviewer's Dated Signature: M C Weiler 4-11-90

TECHNICAL REVIEWS
(Monthly reviews for Impact Level I or II LRB entries and prior to Project close out by a technically competent individual):

Pages Reviewed: 116 thru 122
Date of Review: 4-11-90
Objective/Approach of Review: To determine (check one or more):
✓ 1) adequacy/appropriateness of methodology
✓ 2) if inferences and conclusions are soundly based
✓ 3) if data reduction and/or calculations are correct
___ 4) other (specify):

Results/Conclusions:
Data complete, data processing & plotting (page 126) correct.

Reviewer's Dated Signature: M C Weiler 4-11-90

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Entered By _____ Date _____
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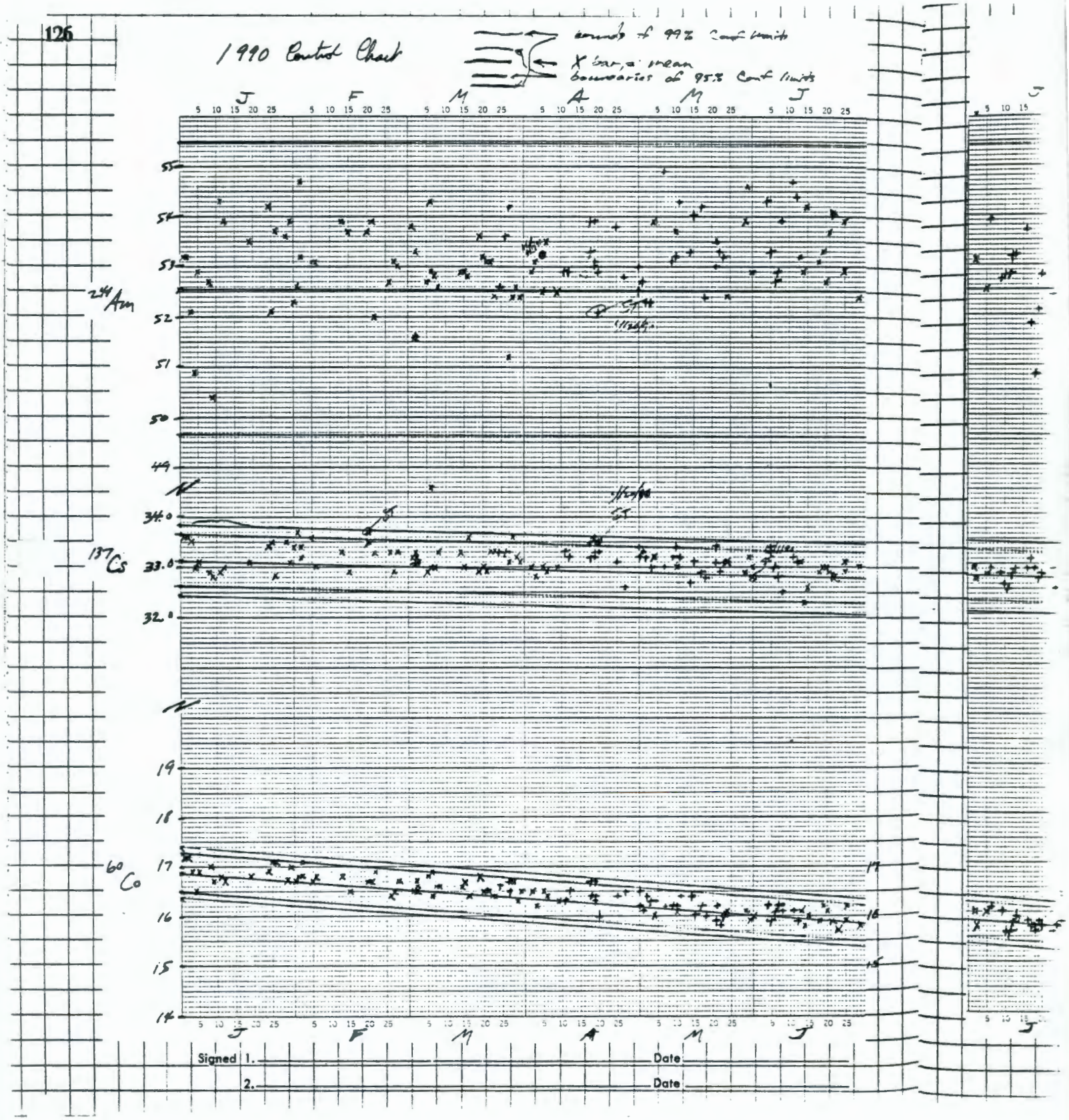
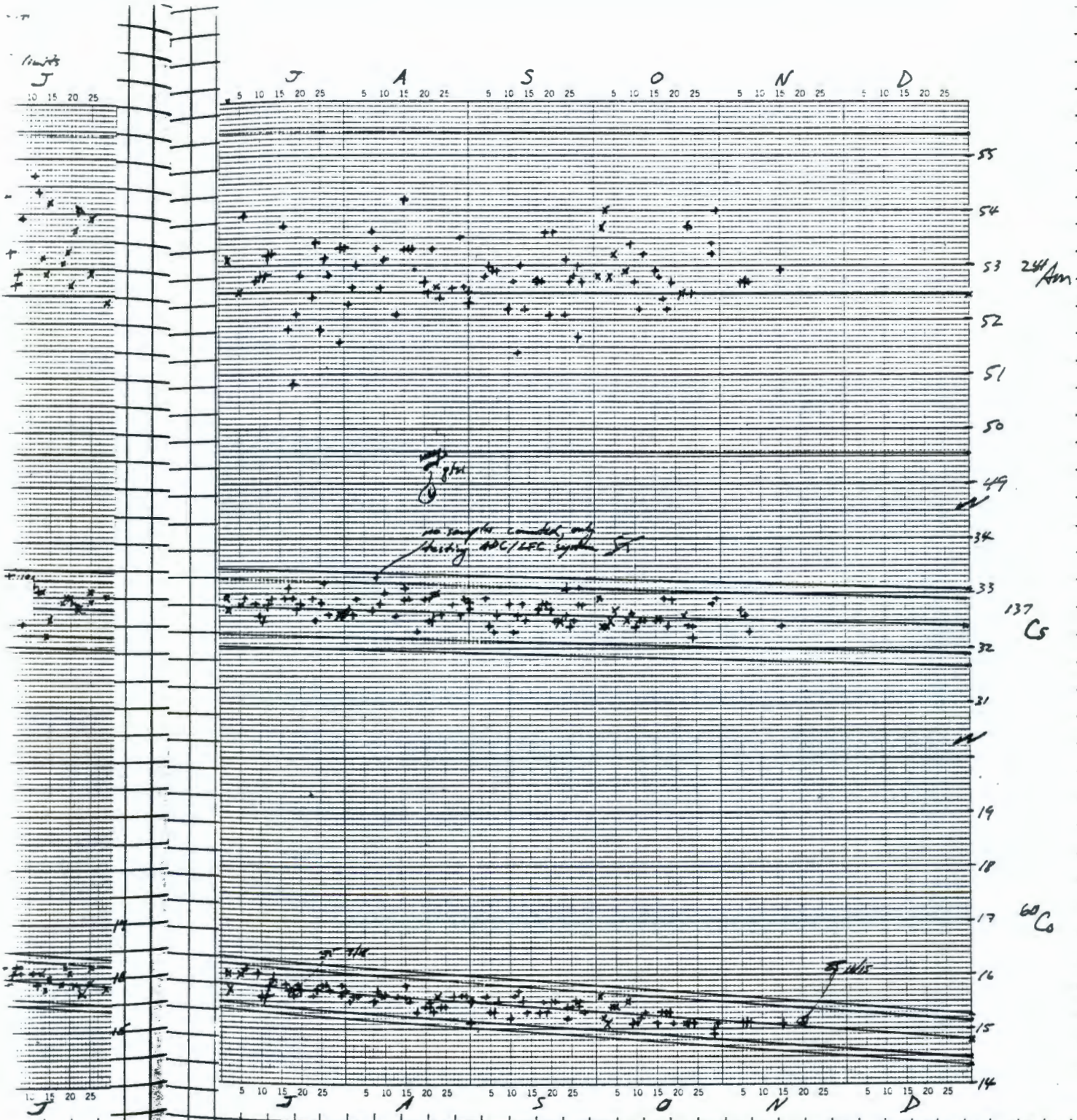
1990 Control Chart



Signed 1. _____ Date _____

2. _____ Date _____


limits
J A S O N D
5 10 15 20 25
55
54
53
52
51
50
49
34
33
32
31
19
18
17
16
15
14
244 Am
137 Cs
60 Co
no sample counted, only
Signed 1.
Date
2.
Date

D5 - ALPHA ANALYSIS

TOTAL ALPHA

PRIMARY DATA PACKAGE

D05-001

SST

TOTAL ALPHA DATA COVER SHEET

Sample Number: 90-0300-A-1/2/3
90-0301-A-1/2/3
90-0304-A-1/2/3
90-0305-A-1/2/3
90-1255-A-1/2/3
90-1256-A-1/2
90-1257-C-1/2/5

Procedure: Method-A Cation Column, HTA-4-6

Pipet Calibration LRB#: 52920

Equipment (M&TE#): PAC #1 WM00579, PAC #2 WM00582, SAC #1 WA82314, #2 WA82315, #3 WA82316, #4 WA82317, #5 WA82318, #6 WA82319

System Calibration LRB#: PACs HEDL-N-3219
SACs HEDL-N-3430
HEDL-N-3431
BNW 52343

Control Data LRB#: PACs BNW 52341
SACs BNW 52343

SST

ALPHA ENERGY ANALYSIS DATA COVER SHEET

Sample Number: 90-1255-A-1/2/3
90-1256-A-1/2
90-1257-C-1/2

Procedure: Method-A Cation Column, HTA-4-6

Pipet Calibration LRB#: 52920

Equipment (M&TE#): PAC #1 WM00579, PAC #2 WM00582, SAC #1 WA82314, #2 WA82315, #3 WA82316, #4 WA82317, #5 WA82318, #6 WA82319

System Calibration LRB#: PACs HEDL-N-3219
SACs HEDL-N-3430
HEDL-N-3431
BNW 52343

Control Data LRB#: PACs BNW 52341
SACs BNW 52343

TOTAL ALPHA

ALPHA ENERGY ANALYSIS

(Pu-238, 239/240

Np-237, Am-241)

SUMMARY DATA REPORTS

D05-004

SST DATA RESULTS FOR CORE 9

TOTAL ALPHA

Customer No.	Tot alpha dpm/g
Core 9 - Segment 3	
90-0300-A-1	1.68E+05
90-0300-A-2	1.71E+05
90-0300-A-3	2.57E+03
90-0301-A-1	1.80E+05
90-0301-A-2	1.88E+05
90-0301-A-3	1.94E+03
Core 9 - Segment 5	
90-0304-A-1	1.83E+05
90-0304-A-2	1.72E+05
90-0304-A-3	4.11E+02
90-0305-A-1	1.76E+05
90-0305-A-2	1.62E+05
90-0305-A-3	1.87E+03
Core 9 Composite	
90-1255-A-1	2.63E+05
90-1255-A-2	2.39E+05
90-1255-A-3	1.78E+03
90-1256-A-1	2.55E+05
90-1256-A-2	2.65E+05
Composite Water Leach	
90-1257-C-1	1.78E+03
90-1257-C-2	2.35E+03
90-1257-C-5	3.35E+01

* Total alpha values are low as there is a loss of Pu, Am and Np during preparation of sample for counting. A quantified multiplier has not been identified yet but we are going to report 30% uncertainties in the results on top of the existing errors.

ALPHA ENERGY ANALYSIS OF Pu and Np

Customer No.	Pu 239&240 dpm/g	+/- % error	Pu 238 dpm/g	+/- % error	Np 237 dpm/g	+/- % error
Core 9 Composite						
90-1255-A-1	2.05E+05	5.0	3.13E+03	19.0	1.85E+02	52
90-1255-A-2	2.06E+05	5.2	3.20E+03	20.6	1.88E+02	52
90-1255-A-3	5.96E+02	21.5	(total Pu)		<1.45E+02	
90-1256-A-1	2.15E+05	5.2	6.43E+03	15.6	9.86E+01	93
90-1256-A-2	2.12E+05	5.2	4.54E+03	16.6	2.37E+02	41
Composite Water Leach						
90-1257-C-1	1.15E+03	9.0	2.12E+01	20.0	<5.00E+00	
90-1257-C-2	1.75E+03	7.1	3.39E+01	18.0	<5.53E+00	

Pu results calculated at 100% recovery.
Np results calculated at 93.1% recovery.

ALPHA ENERGY ANALYSIS OF Am AND Cm

Customer No.	Am 241 dpm/g	+/- % error	Cm-243&244 dpm/g	+/- % error
Core 9 Composite				
90-1255-A-1	8.05E+04	8.6		
90-1255-A-2	8.01E+04	8.6		
90-1255-A-3	1.05E+03	45		
90-1256-A-1	8.23E+04	9		
90-1256-A-2	7.80E+04	7	1.51E+03	23
Composite Water Leach				
90-1257-C-1	6.10E+02	17		
90-1257-C-2	1.02E+03	12		

Am and Cm resultes calculated at 100% recovery.

TOTAL ALPHA

ANALYTICAL REPORT CARDS

D05-007

TOTAL ALPHA ANALYSIS

Proportional Alpha Counters (PAC) or Zinc Sulfide Scintillation Alpha Counters (SAC). A radiochemistry ANALYTICAL REPORT card accompanies each sample. This card has a card serial number, the date the sample was received into the radiochemistry laboratory, work package number, a radiochemistry lab serial number, customer identification number, the 325A Hot Cell sample identification number, the constituent requested (i.e., total alpha), and the results. The balance ID number, BNW laboratory record book (LRB) number that holds the pipet calibration data, and the M&TE number of the alpha counting system are noted in the "Serial No." column. This number cross references to the LRB that contains the calibration data and the daily control data. A copy of the pipet calibration is provided under separate cover. The procedure number used to perform the Total Alpha analysis is noted in the "Constituent" column.

The volume of the aliquot taken from the sample solution (the dissolved fusion or the water leach) is written under the "SERIAL NUMBER" of the card on the right side of the card. This volume is used in the separation procedure which is a cation column procedure. The second aliquot (if any) is the volume of eluate and the third volume is the portion of the eluate evaporated on the stainless steel disk (or dish) that is then alpha counted. If only one volume appears then that volume is evaporated firectly on the disk or dish and then alpha counted. The mass of sample sludge aliquot and the volume of solution used in the dissolution of the fusion or the water leach is written below the sample aliquot volumes.

On the bottom half of the card under "DATA" is the hand calculation of the data. This follows from the procedure. The corrected count rate, sample volume, counter efficiency, sample weight and volume of solution of fusion or water leach are incorporated. Final results are given in disintegrations per gram.

On the back side of the card (xeroxed on the bottom half of page) is the counting raw data. The counter number and efficiency, date counted, total counts, time counted, calculated count rate, background counts per minute and the calculated corrected count rate are listed. If the sample was counted a second time the counter number, efficiency for that counter and the M&TE number for that counter are written above the header "ALPHA COUNTING DATA".

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62038
Serial No	Customer Ident	Constituent	Result
107-90	90-0300-A-1	TOTAL ALPHA	1.68 E+5 dpm/g wet wt
TS-SST-59	1108-C9-3T FUSION	Cation Column Used	
BNW52341 p 36			
NTE No. 700-00 579			
BNW52920 p. 112			
Serial Number 104463		Date 6-13-90	Approval COF

54-1700-177 (05/89)

SERIAL NUMBER 104463

0.5535g + 250 ml.

0.9912 ml sample + 200λ NH4OH-free dried.

0.9912 ml sample → 500λ — 200λ [0.5033 ml 0.1842 ml]

BNW 52920 P. 80

$$df = \frac{250\ (0.5033)}{(0.5535)(0.9912)(0.1842)} = 1.2451\ E+3$$

$$\frac{68.23}{0.5062}\ (1.2451\ E+3) = 1.6782\ E+5\ d/m/g$$

✓ BMB 10-21-90

68.23

(Over)

ALPHA COUNTING DATA			
Counter #1. 5062	By Jean Rizzle		
Date	9/19/90		
Registers			
Total Counts	6923		
Min	100.		
C/M	69.23		
Bkg.	1.00		
Corr C/M	68.23		

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 104463

54-1700-177R (005/89)

D05-009

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62038
Serial No	Customer Ident	Constituent	Result
108 -90	90-0300-A-2	TOTAL ALPHA	1.71 E+5 dpm/g wet wt
TI-SST-57	110B-C9-35 FUSION	Cation Column Used Zmaniti ~~HTA 1 22~~ 3/16/90	
BNW 52341 p 36 MTE No. 9010579 BNW52920 p. 72			
Serial Number 104467		Date 6-13-90	Approval COH

SERIAL NUMBER 104467

0.6287g. + 250 ml.

0.9912 ml → 500λ — 200λ
sample [0.5033 ml 0.1842 ml]
BNW 52920 P.80

$$df = \frac{250\,(0.5033)}{(0.6287)(0.9912)(0.1842)} = 1.0962E+3$$

$$\frac{79.15}{0.5062}\,(1.0962E+3) = 1.7140\ E+5\ d/m/g$$

✓ BMB 10-21-90

(Over)

79.15

ALPHA COUNTING DATA			
Counter #1.5067	By Steve Lingle		
Date	3/19/90		
Registers			
Total Counts	8015		
Min	100.		
C/M	80.15		
Bkg.	1.00		
Corr C/M	79.15		

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

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Serial No. 104467

54-1700-177R (005/89)

54-1700-177 (05/89)

D05-010

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M620 38
Serial No	Customer Ident	Constituent	Result
109-90	90-0300-A-3	TOTAL ALPHA	2.57 E+3 dpm/g wet wt
II-SST-57	110B-C9-37 FUSION	Cation Column Used	
BNW 52343 p 79		Emanit ~~HTA 1 22~~ 3/16/90	
NTE No. WA 82314			
BNW52920 p. 72			
Serial Number 104471		Date 6-13-90	Approval CLY

54-1700-177 (05/89)

SERIAL NUMBER 104471

BLANK $\frac{0.5535 \text{ (-A-1)} + 0.6287 \text{ (-A-2)}}{2}$ g + 250 ml

0.9912 ml → 500λ — 200λ [0.5033 ml 0.1842 ml]

BNW 52920 P.80

$df = \frac{250\,(0.5033)}{(0.5911)(0.9912)(0.1842)} = 1.1659\ E+3$

$\frac{0.9269}{0.4199}\,(1.1659\ E+3) = 2.5736\ E+3$ d/m/g

SMB 10-24-90

based on the average wt of Samples fused

.9269

(Over)

ALPHA COUNTING DATA			
Counter L-1 .4199	By [illegible]		
Date	3/20/90		
Registers			
Total Counts	526		
Min	3/20/90 450		
C/M	1.1689		
Bkg.	.242		
Corr C/M	0.9269		

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

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Serial No. 104471

54-1700-177R (005/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: SST		Date Received: 2-16-90	Work Order No.: M62038
Serial No	Customer Ident	Constituent	Result
110 -90	90-0301-A-1	TOTAL ALPHA	1.90 E+5 dpm/g wet wt
TEAST-59	110B-C9-30 FUSION	Cation Column Used	
BNW 52341 p 36			
MTE No. M20052			
BNW52920 p. 78			
Serial Number: 104475		Date: 6-13-90	Approval: Cod

SERIAL NUMBER 104475

0.5814g. + 250ml.

0.9912 ml → 500λ — 200λ
0.5033ml 0.1842ml
BNW 52920 P. 80

$$df = \frac{250\ (0.5033)}{(0.5814)(0.9912)(0.1842)} = 1.1853\ E+3$$

$$\frac{76.64}{0.5051}\ (1.1853\ E+3) = 1.9985\ E+5\ d/m/g$$

BMB
10-21-90

(Over)

76.64

26

ALPHA COUNTING DATA			
Counter #2. 5051	By Jim Ruzzel		
Date	3/19/90		
Registers			
Total Counts	7794		
Min	100.		
C/M	77.94		
Bkg.	1.30		
Corr C/M	76.64		

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

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Serial No. 104475

54-1700-177R (005/89)

54-1700-177 (05/89)

D05-012

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: SST		Date Received: 2-16-90	Work Order No.: M62038
Serial No	Customer Ident	Constituent	Result
111-90	90-0301-A-2	TOTAL ALPHA	1.88 E+5 dpm
TE-SST-59	110B-C9-36 FUSION	Cation Column Used	
BNW52341 p 36			
MTE No. M00582			
BNW52920 p. 72			
Serial Number: 104479		Date: 6-13-90	Approval: COH

54-1700-177 (05/89)

SERIAL NUMBER 104479

0.5801 g. + 250ml.

0.9912 ml → 500λ — 200λ
[0.5033ml 0.1842ml]
BNW52920 P.80

$$df = \frac{250\ (0.5033)}{(0.5801)(0.9912)(0.1842)} = 1.1880\ E+3$$

79.98 / 0.5051 (1.1880 E+3) = 1.8811 E+5 d/m/g
COH 6-13-90
✓ bmb 90-21-90

(Over)

79.90

ALPHA COUNTING DATA			
Counter #2 .5051			
Date	3/19/90		
Registers			
Total Counts	8128		
Min	100.		
C/M	81.28		
Bkg.	1.30		
Corr C/M	79.98		

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

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Serial No. 104479

54-1700-177R (005/89)

D05-013

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62038
Serial No	Customer Ident	Constituent	Result
112 → 90 TS-SST-59 BNW 52343 p 75 MTE No. WA 8034 BNW52920 p. 112	90-0301-A-3 110B-C9-3B FUSION	TOTAL ALPHA Cation Column Used Jmaiti 3/16/90 ~~HTA-1-22~~	1.94 E+3 dpm/g wet wt
Serial Number 103904		Date	Approval

54-1700-177 (05/89)

SERIAL NUMBER 103904

BLANK $\frac{0.5814 + 0.5801}{2 \quad 3}$ → 250 ml

0.9912 ml → 500λ — 200λ
[0.5033 ml 0.1842 ml
BNW 52920 P.80

$df = \frac{250\ (0.5033)}{(0.5808)(0.9912)(0.1842)} = 1.1866E$

$\frac{0.706}{0.4328}$ (1.1866 E+3) = 1.9356 E+3 d/m/g

✓ bmb 10-21-90

based on the amount of Samples Used

(Over)

ALPHA COUNTING DATA			
Counter L-3 .4328	By [signature]		
Date 3/20/90			
Registers			
Total Counts	423		
Min	450		
C/M	0.940		
Bkg.	.234		
Corr C/M	0.706		

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103904

54-1700-177R (005/89)

D05-014

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62038
Serial No	Customer Ident	Constituent	Result
113 -90	90-0304-A-1	TOTAL ALPHA	1.83 E+5 dpm/g wet wt
	110B-C9-51 FUSION		
MTE No. BNW52920 p. 99		HTA-4-22	
Serial Number 103909			Date 6-7-90 / Approval Cott

N Lathley 4-18-90 P.J. Ramey 4-12-90

SERIAL NUMBER 103909

0.5564g. + 250ml.

2(0.4760 ml) → 500λ - 100λ [0.5041ml 0.1009m]
Sample
BNW52920 p12

$$df = \frac{250\ (0.5041)}{(0.5564)(0.9520)(0.1009)} = 2.3580\ E+3$$

$$\frac{39.24}{0.5062}(2.3580\ E+3) = 1.8279\ E+5\ d/m/g$$

✓ BMB 10-21-90

(Over)

ALPHA COUNTING DATA			
Counter PAC-1		By Anne E Kopelsky	
Date	4/19/90		
Registers EF	0.5062		
Total Counts	4010		
Min	100		
C/M	40.10		
Bkg.	0.86		
Corr C/M	39.24		

WM00579
BNW52341 p.36

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103909

54-1700-177R (005/89)

D05-015

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62038
Serial No	Customer Ident	Constituent	Result
114 -90	90-0304-A-2	TOTAL ALPHA	1.72 E+5 dpm/g wet wt
	110B-C9-ST FUSION		
NTE No. ------ BNW52920 p. 29		HTA-4-22	
Serial Number 103913 N Lolley 4-18-90		P. Haney 4-12-90	Date 6-7-90 / Approval Colt

SERIAL NUMBER 103913

0.5571g. → 250ml.

2(0.4760) ml → 500λ - 100λ
Sample [0.5041ml 0.1009]
BNW52920 p.20

$$df = \frac{250\ (0.5041)}{(0.5571)(0.9520)(0.1009)} = 2.3550E+3$$

DATA

$$\frac{37.06}{0.5062}(2.3550E+3) = 1.7242E+5\ d/m/g$$

✓ amb 10-21-90

(Over)

ALPHA COUNTING DATA			
Counter PAC-1		By Anne E Kyle Lily	
Date	4/20/90		
Registers EF	0.5062		
Total Counts	3797		
Min	100		
C/M	37.97		
Bkg.	0.91		
Corr C/M	37.06		

WM00579
BNW52341 p. 36

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103913

54-1700-177R (005/89)

54-1700-177 (05/89)

D05-016

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62038
Serial No	Customer Ident	Constituent	Result
115-90	90-0304-A-3	TOTAL ALPHA	4.11 E+2 dpm/g wet wt
	110B-C9-ST FUSION		
MTE No. BNW52920 p. 99		HTA-4-22	
Serial Number 103917			Date 4-7-90 / Approval Co 4

54-1700-177 (05/89)

SERIAL NUMBER 103917

BLANK $\frac{0.5561+0.5571}{2}$ g → 250 ml

2(0.4760) Sample ml → 500 l – 100 λ

0.504 ml 0.1009 ml

BNW 52920 p. 120

$df = \frac{250\ (0.504)}{(0.5568)(0.9520)(0.1009)} = 2.3563\ E+3$

$\frac{0.072}{0.4132}(2.3563\ E+3) = 4.1058\ E+2$ d/m/g

$3\sqrt{\frac{RKG}{\frac{.278}{900}}} = .05$

10-21-90

based on ave weight of samples fused

(Over)

ALPHA COUNTING DATA			
Counter L-5		By Anne E Kopelsky	
Date	4/19/90		
Registers EF	0.4132		
Total Counts	168		
Min	480		
C/M	0.350		
Bkg.	0.278		
Corr C/M	0.072		

WA 82318

BNW 52343 p 80

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103917

54-1700-177R (005/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62038
Serial No	Customer Ident	Constituent	Result
116-90	90-0305-A-1	TOTAL ALPHA	1.76 E+5 dpm/g wet wt
	110B-C9-58 FUSION		
MTE No. BNW52920 p. 99		HTA-4-22	
Serial Number 103921			Date 6-7-90 / Approval Coff

SERIAL NUMBER 103921

0.5778g. + 250ml.

- 2(0.4760) sample ml → 500λ − 100λ [0.5041ml 0.1009ml] BNW52920 p.12.

$$df = \frac{(250)(0.5041)}{(0.5778)(.952)(0.1009)} = 2.2707\ E+3$$

DATA

$$\frac{39.25}{(0.5051)}(2.2707\ E+3) = 1.7645\ E+5\ d/m/g$$

BMB 10-21-90

(Over)

ALPHA COUNTING DATA			
Counter PAC-2		By Anne Hopkins	
Date	4/19/90		
Registers EF	~~0.506~~ 0.5051 ml		
Total Counts	4049		
Min	100		
C/M	40.49		
Bkg.	1.24		
Corr C/M	39.25		

WM00582
BNW 52.341 p.36

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103921

54-1700-177R (005/89)

D05-018

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62036
Serial No	Customer Ident	Constituent	Result
117 -90	90-0305-A-2	TOTAL ALPHA	1.62E+5 dpm / g wet wt
	110B-C9-5[illegible] FUSION		
NTE No. BNW52920 p. 97		HTA-4-22	
Serial Number 103925		Date 6-7-90	Approval COH

SERIAL NUMBER 103925

0.5668g. + 250ml.

2 (0.4760) ml → 500l - 100l
Sample [0.504ml 0.1009ml]
BNW52920 p.120

$$df = \frac{250\,(0.504)}{(0.5668)(0.9520)(0.1009)} = 2.3147E+3$$

35.32 / 0.5051 (2.3147E+3) = 1.6186 E+5 d/m/g

Pmb 10-21-90

(Over)

ALPHA COUNTING DATA			
Counter PAC-2		By Anne Etzenhouser	
Date	4/18/90		
Registers EF	0.5051		
Total Counts	3656		
Min	100		
C/M	36.56		
Bkg.	1.24		
Corr C/M	35.32		

WM00582
BNW52341 p.36

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103925

54-1700-177R (005/89)

54-1700-177 (05/89)

D05-019

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 2-16-90	Work Order No. M62038
Serial No	Customer Ident	Constituent	Result
118 -90	90-0305-A-3	TOTAL ALPHA	1.87 E+3 dpm/g wet wt
	110B-C9-SB FUSION		
MTE No. ------ BNW52920 p.99		HTA-4-22	
Serial Number 103929			Date 6-7-90 / Approval COH

SERIAL NUMBER 103929

BLANK $\frac{0.5778 + 0.5668}{2}$ g → 250 ml

~~2 ml~~ → PJR 4-12-90

2(0.4760) ml → 500 λ - 100 λ

Sample [0.5041 - 0.1009]

BNW52920 p.120

$df = \frac{250\ (0.5041)}{(0.5723)(0.4520)(0.1009)} = 2.2925E+$

$\frac{0.348}{0.1268}(2.2925E+3) = 1.8692\ E+3$ d/m/g

DMB 10-21-90

(Over)

ALPHA COUNTING DATA			
Counter L-4		By Anne E Kgilsby	
Date	4/19/90		
Registers EF	0.1268		
Total Counts	308		
Min	480		
C/M	0.642		
Bkg.	0.294		
Corr C/M	0.348		

WAB2317

BNW52343 p.80

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103929

54-1700-177R (005/89

54-1700-177 (05/89)

D05-020

Pacific Northwest Laboratory		ANALYTICAL REPORT		
Customer SST		Date Received 3-13-90	Work Order No. M26039	
Serial No	Customer Ident	Constituent	Result	
188 -90 TZSST-67 M&TE 360-06-01-013 BNW52920 p. ___	110B-C9-T 90-1255-A-1 TK110B-C9 Segaent COM Ni FUSION	Total alpha ~~HTA 4-22~~ Cation Column Method Sep by [illegible] 4/24/90 [illegible]	2.63 E+5 dpm/g wet wt	
Serial Number 102740			Date 6-6-90	Approval Colt

SERIAL NUMBER 102740

0.5560g + 250ml

1000λ sample → 500λ → 100λ

1.0160 ml [BNW 52920 P.102] [0.4984 ml 0.1008 ml BNW 52920 P.106]

$$df = \frac{250\,(0.4984)}{(0.5560)(1.0160)(0.1008)} = 2.1882\ E+3$$

DATA

$\frac{60.43}{0.5062}$ (2.1882 E+3) = 2.6123 E+5 d/m/g

$\bar{X}_2$ = 2.6278 E+5 d/m/g ✓ DMB 10-21-90

r = 4.19%

$\frac{45.814}{0.37927}$ (2.1882 E+3) = 2.6433 E+5 d/m/g

(Over)

ALPHA COUNTING DATA			
Counter	AAC-1 & GEA Scint	By	[illegible]
Date	4/25/90	4/25/90	
Registers EF	0.5062	0.37927	
Total Counts	6131	4602	
Min	100	100	
C/M	61.31	46.02	
Bkg.	0.88	0.206	
Corr C/M	60.43	45.814	

WM00579
BNW05234 / p.36

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102740

54-1700-177R (005/89)

D05-021

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. M26038
Serial No	Customer Ident	Constituent	Result
189 -90 TI-SST-67 M&TE 360-06-01-01B BNW52920 p. ___	110B-C9-T 90-1255-A-2 TK110B-C9 Segment COM Ni FUSION	Total alpha ~~HTA 4-22~~ Cation Column Method Sample 4/24/90 WLA 4-18-90	2.39 E+5 dpm/gram
Serial Number 102750		Date 4-6-90	Approval Cact

SERIAL NUMBER 102750

0.5749g + 250ml

1000λ → 500λ — 100λ

sample 1.0160ml [BNW 52920 P.102]

[0.4984ml 0.1008ml] BNW 52920 P.106

$$df = \frac{250\ (0.4984)}{(0.5749)(1.0160)(0.1008)} = 2.1163\ E+3$$

$$\frac{57.88}{0.5062}\ (2.1163\ E+3) = 2.4198\ E+5$$

$\bar{X}_D$ = 2.3868 E+5 d/m/g ✓ 10-21-90

r = 2.81%

$$\frac{42.183}{0.37927}\ (2.1163\ E+3) = 2.3538\ E+5$$

(Over)

ALPHA COUNTING DATA			
Counter PAC-1, 6E & Saint		By Anne Engelhardt	
Date	4/25/90	4/26/90	
Registers EF	0.5062	0.37927	
Total Counts	5876	4235	
Min	100	100	
C/M	58.76	42.35	
Bkg.	0.88	0.167	
Corr C/M	57.88	42.183	

WM00579 WA42546
BNW52341, p 36 BNW52825, p 27

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102750

54-1700-177R (005/89)

D05-022

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. M260__
Serial No	Customer Ident	Constituent	Result
190 -90 TI-SST-67 W&TE 360-06-01-018 BNW52920 p. ___	110B-C9-T 90-1255-A-3 TK110B-C9 Sequent COM Ni FUSION	Total alpha ~~HTA 1-22~~ Cation Column Method Sep by Ion Exchange 4/24/90 NL Abbey 7-18-90	1.78E+3 dpm/g wet wt
Serial Number 102760			Date / Approval

SERIAL NUMBER 102760

0.5560 + 0.5749

2 g + 250ml

1000λ sample → 500λ — 100λ

[0.4984ml 0.1008ml]

1.0160ml

[BNW 52920 P.102]

BNW 52920 P.106

$$df = \frac{250\ (0.4984)}{(0.5655)(1.0160)(0.1008)} = 2.1514\ E+3$$

DATA

$$\frac{0.358}{0.4328}\ (2.1514\ E+3) = 1.7796\ E+3\ d/m/g$$

✓ AMD 10-21-90

based on average wts of Samples fuced

(Over)

ALPHA COUNTING DATA			
Counter Ludlum - 3		By Anne E. Fogelsby	
Date	4/25/90		
Registers Df	0.4328		
Total Counts	295		
Min	480		
C/M	0.615		
Bkg.	0.259		
Corr C/M	0.358		

WA82316
BNW52343p-80

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102760

54-1700-177R (005/89)

54-1700-177 (05/89)

D05-023

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. M260
Serial No	Customer Ident	Constituent	Result
191 -90 II-SST-67 M&TE 360-06-01-01B BNW52920 p. ___	110B-C9-B 90-1256-A-1 TK110B-C9 Segment COM Ni FUSION	Total alpha ~~HTA-4-22~~ Cation Column Method Sep by [illegible] 4/24/90 [illegible] 4-18-90	2.55 E+5 dpm / g wet wt
Serial Number 102770			Date 6-6-90 / Approval Coll

54-1700-177 (05/89)

SERIAL NUMBER 102770

0.5252g + 250ml
~~1000λ~~ [illegible] 4/13/90
~~[BNW 52920 P.102]~~
~~1.0115ml~~
1000λ sample → 500λ ——— 100λ
1.0160ml [0.4984ml 0.1008ml
[BNW 52920 P.102] BNW 52920 P.106

$$df = \frac{250\,(0.4984)}{(0.5252)(1.0160)(0.1008)} = 2.3165\ E+3$$

$$\frac{55.80}{0.5062}(2.3165\ E+3) = 2.5536\ E+5$$

$\bar{x}_d$ = 2.5522 E+5 d/m/g ✓ [illegible] 10-21-90

r = 0.11%

$$\frac{41.763}{0.37927}(2.3165\ E+3) = 2.5508\ E+5$$

(Over)

ALPHA COUNTING DATA			
Counter PAC-1, GEL Scint		By [illegible]	
Date	4/25/90	4/26/90	
Registers DF	0.5062	0.37927	
Total Counts	5668	4193	
Min	100	100	
C/M	56.68	41.93	
Bkg.	0.88	0.167	
Corr C/M	55.80	41.763	
	WM00579 BNW52341 p.36	WM42546 BNW52825 p.27	

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102770

54-1700-177R (005/89)

D05-024

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. M260
Serial No	Customer Ident	Constituent	Result
192 -90 TI-SST-67 M&TE 360-06-01-018 BNW52920 p. ---	110B-C9-B 90-1256-A-2 TK110B-C9 Segment COM Ni FUSION	Total alpha ~~HTA 4-22~~ Cation Column Method Sep 6x 4/24/90 WLAbb, 4-15-90	2.65E+5 dpm/g wet wt
Serial Number 102780		Date 6-6-90	Approval Coq

SERIAL NUMBER 102780

0.5922g + 250ml

1000λ → 500λ — 100λ

[1.0115 ml] [0.4984 ml 0.1008 ml

BNW 52920 P.99 BNW 52920 P.106

$$df = \frac{250\,(0.4984)}{(0.5922)(0.1008)(1.0115)} = 2.0636\ E+3$$

DATA

$\frac{65.59}{0.5062}$ (2.0636 E+3) = 2.6739 E+5

$\bar{x}_3$ = 2.6619 E+5 d/m/g ✓ BMB 10-21-90

r = 0.90%

$\frac{48.703}{0.37927}$ (2.0636 E+3) = 2.6499 E+5

(Over)

ALPHA COUNTING DATA			
Counter PAC-1		By Anne E Hoyle Kirby	
Date	4/26/90	4/26/90	
Registers	0.5062	0.37927	
Total Counts	6660	4887	
Min	100	100	
C/M	66.60	48.87	
Bkg.	1.01	0.167	
Corr C/M	65.59	48.703	
	WM00579 BNW52384, 38	WA42546 BNW52825, p27	

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102780

54-1700-177R (005/89)

54-1700-177 (05/89)

D05-025

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 4-6-90	Work Order No. M62038
Serial No	Customer Ident	Constituent	Result
249 -90	110B-C9-AN 90-1257-C-1	TOTAL ALPHA	1.78 E+3 pCi/g
	H2OLEACH	Cation Column ~~HTA 1-22~~ Method Tmarti 5/3/90	
BNW52920 p. 107			
Serial Number 103201 4/25/90		Date	Approval

SERIAL NUMBER 103201 2(100)

e 225 pCi/g = .77676

2.0799g + 202.0588g. H2O = 202.7156 ml

2(0.0995ml)

RE-RUN 4/25/90

5.0397 ml Evap.

(Sample) → 500λ — 100λ

[0.5000ml 0.1012ml]

BNW 52920 P.112

df = (2.0799)

DATA

$$\frac{9.43}{.5062} \cdot \frac{(202.7156)(6.5)}{(2.0799)(5.0397)(0.1012)} = 1.7799 \text{ E+3 pCi/g}$$

omb 10-21-90

(Over)

9.10

ALPHA COUNTING DATA			
Counter PAC-1		By Anne Eboyliskey	
Date	5/4/90		
Registers EF	0.5062		
Total Counts	1044		
Min	100		
C/M	10.44		
Bkg.	1.01		
Corr C/M	9.43		

WM00579
BNW52341 p.38

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103201

54-1700-177R (005/89)

D05-026

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 4-6-90	Work Order No. M620
Serial No	Customer Ident	Constituent	Result
250 -90	110B-C9-AN 90-1257-C-2	TOTAL ALPHA Cation Column	2.35 E+3 dpm & net wt
BNW52920 p.107	H2OLEACH	~~HTA-4-22~~ Method Zmaiti 5/3/90	
Serial Number 103211		Date 6-13-90	Approval CCG

SERIAL NUMBER 103211 2(100λ)

@ 23.5°C ρH2O = .99676

2.0215g. + 199.0698g. H2O = 199.7167 ml

2(0.0995 ml)

RERUN 4/25/90

5.0397 ml Evap. (sample) → 500λ → 100λ [0.5000 ml 0.1012 ml]

BNW 52920. P. 112

DATA

$$\frac{123}{.5062} \frac{(199.7167)(0.50)}{(2.0215)(5.0397)(0.1012)} = 2.3534 \text{ E+3}$$

DMB 10-21-90

(Over)

ALPHA COUNTING DATA			
Counter PAC-1		By Anne E Kopelsky	
Date	5/4/90		
Registers EF	0.5062		
Total Counts	1331		
Min	100		
C/M	13.31		
Bkg.	1.01		
Corr C/M	12.30		

WM00579
BNW 52371, P.36

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103211

54-1700-177R (005/89)

D05-027

Pacific Northwest Laboratory		ANALYTICAL REPORT		
Customer SST		Date Received 4-6-90	Work Order No. M620	
Serial No	Customer Ident	Constituent	Result	
251 -90	110B-C9-AN 90-1257-C-5	TOTAL ALPHA	3.35E+1 dpm/2 wet wt	
	H2OLEACH	Cation ~~HTA-1-22~~ Column		
BNW52920 p. 107				
Serial Number	103221 Virginia L. Dilm 4/25/90		Date 6-13-90	Approval C Off

SERIAL NUMBER 103221 2(100λ)
@ 225°C ρ H2O = .99676
BLANK- 200.3024 g H2O = 200.9535 ml
2(0.0995 ml)
Rerun 4/25/90
5.0397 ml. Evap
(Sample) → 500λ — 100λ
[0.5000 ml 0.1012 ml]
BNW 52920 P. 112

$\frac{2.0799 + 2.0215}{2}$

DATA

$$\frac{0.151}{.4328} \quad \frac{(200.9535)(0.50)}{(2.0507)(5.0397)(0.1012)} = 3.3517 \text{ E+1}$$

✓ DMB 10-2-90

(Over)

0.151

ALPHA COUNTING DATA			
Counter L-3		By Anne E Kopelich	
Date	5/7/90		
Registers EF	0.4328		
Total Counts	209		
Min	450		
C/M	~~0.232~~ 0.464		
Bkg. 1st 5/7/90	0.313		
Corr C/M	~~-0.081~~ 0.151		

WA82316
BNW52343 p. 109

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103221

54-1700-177R (005/89)

D05-028

ALPHA ENERGY ANALYSIS

Proportional Alpha Counters (PAC) or Zinc Sulfide Scintillation Alpha Counters (SAC). A radiochemistry ANALYTICAL REPORT card accompanies each sample. This card has a card serial number, the date the sample was received into the radiochemistry laboratory, work package number, a radiochemistry lab serial number, customer identification number, the 325A Hot Cell sample identification number, the constituent requested (i.e., Am-241, Pu-239 & 240 or Np-237), and the results. The balance ID number, BNW laboratory record book (LRB) number that holds the pipet calibration data, and the M&TE number of the alpha counting system are noted in the "Serial No." column. This number cross references to the LRB that contains the calibration data and the daily control data. A copy of the pipet calibration is provided under separate cover. The procedure number used to perform the Total Alpha analysis is noted in the "Constituent" column.

The volume of the aliquot taken from the sample solution (the dissolved fusion or the water leach) is written under the "SERIAL NUMBER" of the card on the right side of the card. This volume is used in the separation procedure which is an ion exchange column and/or a solvent extraction procedure. The second aliquot is the volume of eluate or solvent and the third volume is the portion of the eluate or solvent evaporated on the stainless steel disk that is then alpha counted. After total alpha counting the disk in then put on the AEA system and relative abundances of the alpha peaks are calculated. The mass of sample sludge aliquot and the volume of solution used in the dissolution of the fusion or the water leach is written below the sample aliquot volumes.

On the bottom half of the card under "DATA" is the hand calculation of the data. This follows from the procedure. The corrected count rate, sample volume, counter efficiency, analysts recovery, fraction of isotope, sample weight and volume of solution of fusion or water leach are incorporated. Final results are given in disintegrations per gram.

On the back side of the card (xeroxed on the bottom half of page) is the counting raw data. The counter number and efficiency, date counted, total counts, time counted, calculated count rate, background counts per minute and the calculated corrected count rate are listed. If the sample was counted a second time the counter number, efficiency for that counter and the M&TE number for that counter are written above the header "ALPHA COUNTING DATA".

Pacific Northwest Laboratory		ANALYTICAL REPORT		
Customer SST		Date Received 3-13-90	Work Order No. ~~M280~~ M62048	
Serial No	Customer Ident	Constituent	Result 5/16/90	
188 -90 TS-SST-67 M&TE 360-06-01-018 BNW52920 p. 125	110B-C9-T 90-1255-A-1 TK110B-C9 Segment COM Ni FUSION	Pu-239 Pu-240 HTA-4-15 Emmanuel 5/18/90	239,240 Pu 2.05 E+5 ± 5% cpm 2 out of 238 Pu 3.13 E+3 ± 19%	
Serial Number 102745			Date 6-8-90	Approval CoA

54-1700-177 (05/89)

SERIAL NUMBER 102745

0.5560g + 250ml

NO 2(1.0086ml) → 2ml — 1ml 0.99783ml [1.9778ml G.Pipet] BNW52920 p. 127

DATA

$$\frac{238.69}{0.5062} \quad \frac{(1.9778)\ (250)}{(2.0172)\ (0.99783)\ (0.5560)} = 2.0833\ E+5$$

239,240 Pu x .985 = 0.052 E+5 ± 5%

238 Pu x .015 = 3.125 E+3 ± 19%

Bmb 10-21-90

(Over)

ALPHA COUNTING DATA			
Counter PAC-1 0.5062		By Anne E Kyetsky	
Date	5/21/90		
Registers			
Total Counts	23959		
Min	100		
C/M	23959		
Bkg.	0.90		
Corr C/M	238.69		

W7100579 ± 1.5
BNW52341 p.38

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102745

54-1700-177R (005/89)

D05-030

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. ~~M860~~ M62049
Serial No	Customer Ident	Constituent	Result 5/16/90
189 -90	110B-C9-T 90-1255-A-2 TK110B-C9 Segment CDM Ni FUSION	Pu-239 Pu-240 HTA-4-15	239+240 Pu 2.06 E+5 ±5.2% 238 Pu 3.20 E+3 ± 20.6%
M&TE 360-06-01-018 BNW52920 p. 125			
Serial Number 102755		Date 6-11-90	Approval Coff

54-1700-177 (05/89)

SERIAL NUMBER 102755

0.5749g + 250ml

2(1.0086 ml) → 2 ml — 1 ml [1.9778 ml 0.99783 ml] 9 Point BNW 52920 P. 127

DATA

$$\frac{247.66}{0.5062} \quad \frac{(1.9778)(250)}{(0.5749)(2.0172)(.99783)} = 2.0705 E+5$$

$Pu^{239+240}$ X .9847 = 2.0586 E+5 ± 5.2%

Pu^{238} X .0153 = 3.1985 E+3 ± 20.6%

(Over)

10-21-90

ALPHA COUNTING DATA			
Counter AAC-1	0.5062	By Anne E Stoplicky	
Date	5/21/90		
Registers			
Total Counts	24856		
Min	100		
C/M	248.56		
Bkg.	0.90		
Corr C/M	247.66		

WM00579 1.3%
BNW52341, p.38

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102755

54-1700-177R (005/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. ~~M360~~ M62048
Serial No	Customer Ident	Constituent	Result VWD 5/16/90
190 -90	110B-C9-T 90-1255-A-3 TK110B-C9 Segment COM Ni FUSION	Pu-239 Pu-240 HTA-4-15	Pu 239,40 5.96 E+2 ± 21.5% Pu 238 ___
M&TE 360-06-01-01B BNW52920 p. 125		Kmaiti 5/18/90	
Serial Number 102765		Date	Approval

54-1700-177 (05/89)

SERIAL NUMBER 102765

1 ml

$\frac{.5560 + .5749}{2} = .5655$

_____ + 250ml

VWD

1.0086 ml → 2ml ——— 1ml

[1.9778ml 0.99783ml]

G. Pipet

P. 127 BNW 52920

DATA

$$\frac{.5935}{.4328} \quad \frac{(1.9778)(250)}{(2.0172)(.99783)(.5655)} = 5.9569 \text{ E}+2 \quad \sqrt{\text{BWD}}$$

19 .5 .05 2.5 .5 .5 .5

± 21.5 10-21-90

* 1ml sample only left

.5935

(Over)

ALPHA COUNTING DATA			
Counter L-3		By Anne E Kyle	
Date	5/21/90		
Registers	0.4328		
Total Counts	361		
Min	420		
C/M	0.8595		
Bkg.	0.266		
Corr C/M	0.5935		

WA 82316 ± 19%

BNW52343 p. 109

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102765

54-1700-177R (005/89)

D05-032

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. ~~M260~~ M62648
Serial No	Customer Ident	Constituent	Result VVP 5/16/90
191 -90	110B-C9-B 90-1256-A-1 TK110B-C9 Segaent COM Ni FUSION	Pu-239 Pu-240	239+240 Pu = 2.15E+5 dpm ± 5.2 %
M&TE 360-06-01-018 BNW52920 p. 125		HTA-4-15 Emaitis 5/18/90	238 Pu = 6.43 E+3 ± 15.6 %
Serial Number 102775		Date 6-11-90	Approval COLF

SERIAL NUMBER 102775

0.5252g + 250ml
VVP
2(1.0086 ml) → 2ml —— 1ml
[1.9778ml 0.99783]
BNW 52920 G. Pipet
P. 127

DATA

$$\frac{239.55}{.5051} \quad \frac{(1.9778)(250)}{(2.0172)(.99783)(.5252)} = 2.218 \text{ E+5}$$

239 +240 Pu × .971 = 2.1537 E+5 ± 5.2

238 Pu × .029 = 6.4329 E+3 ± 15.6

BMB 10-21-90

(Over)

239.55

ALPHA COUNTING DATA			
Counter PAC-2 0.5051		By Anne E Kyhill	
Date	5/21/90		
Registers			
Total Counts	24136		
Min	100		
C/M	241.36		
Bkg.	1.81		
Corr C/M	239.55		

WTM00582
BNW5234 p.38 ± 1.5

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102775

54-1700-177R (005/89)

54-1700-177 (05/89)

D05-033

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. ~~M260~~ M62048
Serial No	Customer Ident	Constituent	Result
192 -90	110B-C9-B 90-1256-A-2 TK110B-C9 Segment COM Ni FUSION	Pu-239 Pu-240 HTA-4-15	239+240 Pu = 2.125E+5 ± 5.28 dpm/g wet 238 Pu = 4.54E+3 ± 16.62 dpm/g wet
M&TE 360-06-01-018 BNW52920 p. 125		5/18/90	
Serial Number 102785		Date 6-11-9	Approval Coll

54-1700-177 (05/89)

SERIAL NUMBER 102785

0.5922g + 250ml

2(1.0086ml) → 2ml —— 1ml

[1.9778ml 0.99183ml]

BNW 52920 p. 127

DATA

$$\frac{263.06}{0.5051} \quad \frac{(1.9778)(250)}{(2.0172)(.99183)(.5922)} = 2.1604\ E+5$$

239+240 Pu $\times .979 = 2.115\ E+5$ dpm/g wet wt

238 Pu $\times .021 = 4.5368\ E+3 \pm 16.62$

SMB 10-21-90

(Over)

ALPHA COUNTING DATA			
Counter PAC-2 0.5051		By Jane Eckelberry	
Date	5/21/90		
Registers			
Total Counts	26487		
Min	100		
C/M	264.87		
Bkg.	1.81		
Corr C/M	263.06		

WM00582 ± 1.4
BNW52391 p.38

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

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Serial No. 102785

54-1700-177R (005/89)

D05-034

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 4-6-90	Work Order No. ~~M620~~ M62048
Serial No	Customer Ident	Constituent	Result VWO 5/16/90
249 -90	110B-C9-AN 90-1257-C-1	239-240 PLUTONIUM	dis/g water 239+240 Pu 1.15 E+3 ± 9%
	H2OLEACH	HTA-4-15	238 Pu 2.12E+1 ± 20%
BNW52920 p. 125		Tmaniti 5/18/90	
Serial Number 103205		Date 6-13-90	Approval CAH

54-1700-177 (05/89)

SERIAL NUMBER 103205

5 ml

@ 22.5°C ρ H2O = .98676

2.0799g + 202.0588g. H2O = 202.7156 ml

VWO

5.0673 ml → 200ml — 1ml

[1.9778 ml 0.99783 ml G. pipet]

BNW 52920 p. 127

DATA

$$\frac{15.57}{0.5051} \quad \frac{202.7156}{2.0799} \quad \frac{(1.9778)}{(5.0673)(.99783)} = 1.17518\ E+3$$

$^{239+240}Pu \times .982 = 1.1540\ E+3 \pm 9\%$ dpm/g

$^{238}Pu \times .018 = 2.115\ E+1 \pm 20\%$

5/21-90

ALPHA COUNTING DATA			
Counter PAC-2 0.5051		By Anne Engelich	
Date	5/21/90		
Registers			
Total Counts	1738		
Min	100		
C/M	17.38		
Bkg.	1.81		
Corr C/M	15.57		

WM00582 ± 5.5
BNW52311 p.38

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103205

54-1700-177R (005/89)

6-4-90

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 4-6-90	Work Order No. ~~M620~~ M62048
Serial No	Customer Ident	Constituent	Result
250 -90	110B-C9-AN 90-1257-C-2	239-240 PLUTONIUM	d/m / gram wet
	H2OLEACH	HTA-4-15	$^{239+240}Pu$ = 1.75 E+3 ± 7.1 %
BNW52920 p. 125		5/18/90	^{238}Pu = 3.39 E+1 ± 18%
Serial Number 103215		Date	Approval

54-1700-177 (05/89)

SERIAL NUMBER 103215

@ 22.5°c ρ H2O = .97676

2.0215g. + 199.0698g. H2O = 199.7169 ml

5.0673 ml → 2000 l ——— 1 ml

[1.9778 ml 0.99783 ml]

BNW 52920 9.pipt

p. 127

DATA

$$\frac{23.36}{.5062} \quad \frac{(199.7169)(\cancel{0.99783})}{(2.0215)(5.0673)(0.99783)} \quad \frac{1.9778}{} \quad \text{conv}_{6.12.90} = 1.78337\ E+3$$

$^{239+240}Pu \times .781 = 1.7495\ E+3 \pm 7.1$

$^{238}Pu \times .019 = 3.3884\ E+1 \pm 18$

(Over)

22.3c

ALPHA COUNTING DATA				BETA OR GAMMA COUNTING DATA			
Counter PAC-1	0.5062	By Anne E Fogelisch		Inst. No.	Shelf No.	ABS	By
Date	5/21/90						
Registers				Date			
Total Counts	2426			Total Counts			
Min	100			Min			
C/M	24.26			C/M			
Bkg.	0.90			Bkg.			
Corr C/M	23.36			Corr C/M			

WM80579 ± 4
BNW5234 p.38

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Serial No. 103215

54-1700-177R (005/89)

D05-036

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. M2806 2048
Serial No	Customer Ident	Constituent	Result VVD 4/17/90
188 -90 II-SST-67 M&TE 360-06-01-018 BNW52920 p. 101	110B-C9-T 90-1255-A-1 TK110B-C9 Segment COM Ni FUSION	Aa HTA-4-35 -------- 4/24/90	8.05 E+4 dpm/g wet wt ± 9.6 %
Serial Number 102739		Date 6-8-90	Approval Cok

SERIAL NUMBER 102739

0.5560g + 250ml

0.9993 ml → 500λ → 100λ
[0.4984 ml 0.1008 ml]
BNW 52920 P.106

DATA

$\frac{18.35}{0.5051} = 36.329$ 6 3619 × 3619 Cok

$\frac{13.674}{0.37927} = 36.053$

$\frac{(0.4984)(250)}{(0.9993)(0.1008)(.5560)}$ (.7 .07 .5 .7 .5) $= 8.052\ E+4\ \frac{dpm}{g}$ ± 9.6

smb 10-24-90

(Over)

ALPHA COUNTING DATA			
Counter PAC-2, 6 Ea Scint		By Anne E Kaplan	
Date	4/26/90	4/25/90	
Registers EF	0.5051	0.37927	
Total Counts	1963	1388	
Min	100	100	
C/M	19.63	13.88	
Bkg.	1.28	0.206	
Corr C/M	18.35	13.674	

WM 00582 BNW 52341 p. 38 WA 42546 BNW 52825 p27

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102739

54-1700-177R (005/89)

54-1700-177 (05/89)

D05-037

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. ~~M260~~ 62048
Serial No	Customer Ident	Constituent	Result
189 -90 TI-SST-67 M&TE 360-06-01-01B BNW52920 p. 101	110B-C9-T 90-1255-A-2 TK110B-C9 Segment COM Ni FUSION	Am HTA-4-35 --- 4/24/90	8.01 E+4 dpm/gram wet ± 862
Serial Number 102749		Date 6-8-90	Approval Coy

SERIAL NUMBER 102749

0.5749g + 250ml

0.9993 ml → 500λ — 100λ
[0.4984ml 0.1008ml]
BNW 52920 P. 106

DATA

$\frac{18.48}{0.5051} = 36.587$

$\bar{x}$ 37.23 $\frac{(0.4984)^{.7}(250)^{.05}}{(0.9993)^{.5}(0.1008)^{.7}(.5749)^{.5}} = 8.011E+4$ dpm/g ± 862

$\frac{14.364}{0.37927} = 37.873$

6

4/21/90

(Over)

ALPHA COUNTING DATA			
Counter PAC-2 GEx Saint		By Anne Engelsby	
Date	4/27/90	4/30/90	
Registers	0.5051	0.37927	
Total Counts	1971	1454	
Min	100	100	
C/M	19.71	14.54	
Bkg.	1.23	0.176	
Corr C/M	18.48	14.364	
±6	WM00582 BNW5234 p38	WA42546 BNW52825 p.27	

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102749

54-1700-177R (005/89)

D05-038

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. M2~~60~~62048
Serial No	Customer Ident	Constituent	Result
190-90	110B-C9-T 90-1255-A-3 TK110B-C9 Segment COM Ni FUSION	As	1.05 E +3 dpm/g wet wt
T-SST-67 M&TE 360-06-01-01B BNW52920 p. 101		HTA-4-35 Emanti 4/24/90	± 45%
Serial Number 102759		Date 6-8-90	Approval CGH

54-1700-177 (05/89)

SERIAL NUMBER 102759

$\frac{.5560 + .5749}{2} = .5655$

_____ + 250ml

0.9993 ml → 500λ — 100λ

[0.4984 ml 0.1008 ml]

BNW 52920 P. 106

$\frac{0.199}{0.4132} \frac{(0.4984)(250)}{(0.9993)(0.1008)(0.5655)} = 1.054 E +3 \frac{dpm}{g}$

± 45%

GMB 10-21-90

Based on average wt of Samples fused

(Over)

ALPHA COUNTING DATA			
Counter Ludlum-5		By Anne E Hopkins	
Date	4/25/90		
Registers	0.4132		
Total Counts	225		
Min	480		
C/M	0.469		
Bkg.	0.270		
Corr C/M	0.199		

WA 82318 ± 41
BNW52343 p. 80

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

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Serial No. 102759

54-1700-177R (005/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: SST		Date Received: 3-13-90	Work Order No.: M~~260~~ 62048
Serial No	Customer Ident	Constituent	Result 4/17/90
191 -90 TF-SST-67 M&TE 360-06-01-018 BNW52920 p. 101	110B-C9-B 90-1256-A-1 TK110B-C9 Segment COM Ni FUSION	Am HTA-4-35 -------- 4/24/90	8.23 E+4 dpm/gram wet wt ± 9%
Serial Number: 102769		Date: 6-8-90	Approval: COCF

SERIAL NUMBER 102769

0.5252g + 250ml

0.9993 ml → 500λ — 100λ
[0.4984ml 0.1008ml]
BNW 52920 P. 106

DATA

$\frac{17.49}{0.5051}$ (2σ) = 34.627

$\bar{X}$ 34.958

$\frac{(0.4984)(250)}{(0.9993)(0.1008)(.5252)}$ = 8.233 E+4 $\frac{dpm}{g}$

± 8.6 %

$\frac{13.384}{0.37927}$ = 35.289

BMS 10-21-90

(Over)

ALPHA COUNTING DATA			
Counter	PAC-2, GEA Sint	By	Anne C Hoyle Jr
Date	4/27/90	5/1/90	
Registers	1.5051	0.37927	
Total Counts	1872	1355	
Min	100	100	
C/M	18.72	13.55	
Bkg.	1.23	0.166	
Corr C/M	17.49	13.384	

WA00582 ±5% WA 12546
BNW52341 p 58 BNW52825 p.27

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

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Serial No. 102769

54-1700-177R (005/89)

D05-040

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. ~~M260~~ 62048
Serial No	Customer Ident	Constituent	Result 4/17/90
192 -90 TF-351-67 M&TE 360-06-01-018 BNW52920 p. 101	110B-C9-B 90-1256-A-2 TK110B-C9 Segmnt COM Ni FUSION	Am HTA-4-35 4/24/90	Am 7.90 E+4 dpm/g sent out ± 7% Cm 1.51E+3 ± ± 23%
Serial Number 102779		Date 6-8-90	Approval CGH

0.5922g + 250ml

0.9993ml → 500λ — 100λ
[0.4984ml 0.1008ml]
BNW 52920 P. 106

DATA

$\frac{19.17}{0.5051} = 37.95$

$\times 38.084 \frac{(0.4984)(250)}{(0.9993)(0.1008)(.5922)} = 7.955 E+4$

$\frac{14.494}{0.37927} = 38.216$

$\times .981 = 7.80 E4$ Am 241

$\times .019 = 1.51 E3$ Cm 243/244

22% ± 23%

± 7%

1021-90

(Over)

ALPHA COUNTING DATA			
Counter PAC-2, 90-2 Sent		By	
Date	4/27/90	4/30/90	
Registers	0.5051	0.37925	
Total Counts	2040	1467	
Min	100	100	
C/M	20.40	14.67	
Bkg.	1.23	0.176	
Corr C/M	19.17	14.494	
±6	WM00582 BNW52341 p.38	WA42546 0.176 BNW52825 p.27	

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102779

54-1700-177R (005/89)

D05-041

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 4-6-90.	Work Order No. M62048
Serial No	Customer Ident	Constituent	Result
249 -90	1108-C9-AN 90-1257-C-1	AMERICIUM-CURIUM	6.10E+2 d/m g wet wt
BNW52920 p.107	H2OLEACH	HTA-4-35	± 17%
Serial Number 103000			Date 6-20-90 / Approval CCG

54-1700-177 (05/89)

SERIAL NUMBER 103000

@ 22.5 °C ρ H2O = .99676

2.0799g + 202.0588g. H2O = 202.7156 mL

1.0065 mL → 500λ — 100λ

(sample) [0.5031 mL 0.0992 mL]

BNW 52920 P.109

DATA

17%

$$\frac{.538}{.4328} \quad \frac{(.5031)(202.7156)}{(1.0065)(0.0992)(2.0799)} = 6.10476E+2$$

.7 .5 .5 .7 .5

2.5

± 17 % Bmb

6-21-90

ALPHA COUNTING DATA			
Counter L-3		By Anne E Kopelsky	
Date	5/3/90		
Registers EF	0.4328		
Total Counts	365		
Min	440		
C/M	0.830		
Bkg.	.292		
Corr C/M	0.538		

WR82316 17%

BNW 52343 p.109

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103000

54-1700-177R (005/89)

D05-043

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 4-6-90	Work Order No. M62048
Serial No	Customer Ident	Constituent	Result
250 -90	110B-C9-AN 90-1257-C-2	AMERICIUM-CURIUM	1.02 E +3 d/m/g wet wt ± 12%
BNW52920 p.107	H2OLEACH	HTA-4-35	
Serial Number 103210		Date 6-20-90	Approval Coef

SERIAL NUMBER 103210

@ 225°C ρ H2O = .99626

2.0215g. + 199.0698g. H2O = 199.7169 ml

1.0065 ml → 500λ → 100λ
(Sample) [0.5031 ml 0.0992 ml]
BNW 52920 P.109

DATA

$$\frac{.975}{.4268} \frac{(0.5031)(199.7169)}{(1.0065)(0.0992)(2.0215)} = 1.0206 \text{ E } +3 \text{ d/m/g}$$

± 12.33

ALPHA COUNTING DATA			
Counter L-4		By Gene E Kozelsky	
Date	5/3/90		
Registers EF	1.4268		
Total Counts	503		
Min	440		
C/M	1.143		
Bkg.	.268		
Corr C/M	0.875		

WA 82317 ± 12%
BNW 52343 p.107

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

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Serial No. 103210

54-1700-177R (005/89)

54-1700-177 (05/89)

D05-043

Pacific Northwest Laboratory		ANALYTICAL REPORT		
Customer SST		Date Received 3-13-90	Work Order No. ~~M260~~ M62048	
Serial No	Customer Ident	Constituent	Result VMD 5/16/90	
188 -90	110B-C9-T 90-1255-A-1 TK110B-C9 Segment COM Ni FUSION	Np-237 HTA-4-14	1.95E+2 dpm/g wet wt ± 52 %	
M&TE 360-06-01-018 BNW52920 p. 125, 128				
Serial Number 102744	5/21/90	Date 6-7-90	Approval COH	

SERIAL NUMBER 102744

0.5560g + 250ml

2(1.0086ml) − 0.9987ml

− 500λ

glass calib p.pet

(498.47)

DATA

$$0.167 \frac{(0.9987)^{.5}(250)^{.05}}{(.4328)(2.0172)^{.5}(.49847)^{.7}(.5560)^{.5}(.731)^{(2.5)}} = 1.951E+2 \frac{dpm}{g\ wet\ wt}$$

± 52%

VMD 5-21-90

(Over)

0.167

ALPHA COUNTING DATA			
Counter L-3		By Anne Eckelberry	
Date	5/23/90		
Registers	0.4328		
Total Counts	192		
Min	450		
C/M	0.427		
Bkg.	0.260		
Corr C/M	0.167		

NA 82316 L49 I
BNW52943 p.109

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102744

54-1700-177R (005/89)

D05-044

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. ~~11260~~ M 62048
Serial No	Customer Ident	Constituent	Result VLD 5/16/90
189 -90	110B-C9-T 90-1255-A-2 TK110B-C9 Segment COM Ni FUSION	Np-237 HTA-4-14	1.88 E+2 dpm/g wet wt ± 52 %
M&TE 360-06-01-018 BNW52920 p. 125 (29)			
Serial Number 102754		Date 6-7-90	Approval COH

SERIAL NUMBER 102754

0.5749g + 250ml

2(1.0086 ml) - 0.9987 ml

- 500λ

glass calib pipet (49847)

DATA

$$\frac{(0.9987)(250)}{(2.0172)(0.9987)(.49847)(0.5749)(.931)} = 1.880 E+2$$

.7 .05 .5 .5 .7 .5

COH 6-7-90

± 52

VSMB 10-21-90

.49 .173 .4268 (2.5)

(Over)

0.173

ALPHA COUNTING DATA			
Counter L-4		By Anne E Shelley	
Date	5/23/90		
Registers	0.4268		
Total Counts	208		
Min	450		
C/M	0.462		
Bkg.	0.289		
Corr C/M	0.173		

WA 82319 ± 49
BNW52343 p. 109

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102754

54-1700-177R (005/89)

D05-045

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. ~~M260~~ M62048
Serial No	Customer Ident	Constituent	Result
190 -90	110B-C9-T 90-1255-A-3 TK110B-C9 Segment COM Ni FUSION	Np-237 HTA-4-14	<1.45E+2 dpm 2 weight
M&TE 360-06-01-018 BNW52920 p.126, 128			
Serial Number 102764		Date 5/21/90	Approval

SERIAL NUMBER 102764

$\frac{0.5560 + 0.5747}{2} = .5655$

_____ + 250ml

* 2(1.0079ml) − 0.9987ml

− 500λ

glass calib. pipet (498.47)

DATA

$$< \frac{(.035 + .092)}{.4132} \quad \frac{(0.9987)\ (250)}{(2.0158)\ (.49847)\ (.5655)\ (.931)} = < 1.45\ E+2 \ \frac{dpm}{g}$$

SMB 5/21/90

based on average wt's of Samples fumed

* sample pipeted day after rest of run.

(Over)

0.035

ALPHA COUNTING DATA			
Counter L-5		By Anne Etheridge	
Date	5/23/90		
Registers	0.4132		
Total Counts	127		
Min	440		
C/M	0.289		
Bkg.	0.254		
Corr C/M	0.035		

WA12318
BNW52343 p.109

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Serial No. 102764

Please Do Not Write In This Space While Report Sheet is Attached

54-1700-177R (005/89)

D05-046

Pacific Northwest Laboratory		ANALYTICAL REPORT		
Customer SST		Date Received 3-13-90	Work Order No. ~~M860~~ M62048	
Serial No	Customer Ident	Constituent	Result VVD 5/17/90	
191 -90	110B-C9-B 90-1256-A-1 TK110B-C9 Segaent COM Ni FUSION	Np-237 HTA-4-14	9.86 E+1 dpm/g wet wt ± 93%	
M&TE 360-06-01-018 BNW52920 p. 125, 128				
Serial Number 102774	Virginia L Dunn 5/21/90	Date 6-7-90	Approval Cott	

SERIAL NUMBER 102774

0.5252g + 250ml

2(1.0086ml) — 0.9987ml

— 500λ glass calib. pipet (498.47)

DATA

$$\frac{0.084^{90}}{.4328} \quad \frac{(0.9987)^{.5}\ (250)^{.05}}{(2.0172)^{.5}\ (.49847)^{.7}\ (0.5252)^{.5}\ (.931)} = 9.86\ E+1 \ \frac{dpm}{g} \pm 93\%$$

Virginia 5/21/90

(Over)

0.084

ALPHA COUNTING DATA			
Counter L-3		By Anne E Kogelisky	
Date	5/24/90		
Registers	0.4328		
Total Counts	156		
Min	450		
C/M	0.347		
Bkg.	0.263		
Corr C/M	0.084		

WAS 2316 ±90%
BNW52343 p.110

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102774

54-1700-177R (005/89)

D05-047

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 3-13-90	Work Order No. ~~M260~~ M62048
Serial No	Customer Ident	Constituent	Result
192 -90	110B-C9-B 90-1256-A-2 TK110B-C9 Segment COM Ni FUSION	Np-237 HTA-4-14	2.376+2 dpm/g wet wt ±41%
M&TE 360-06-01-01B BNWS2920 p. 125, 128			
Serial Number 102784		Date 6-7-90	Approval COK

VDD 5/17/90

Virginia J. Dunn 5/21/90

SERIAL NUMBER 102784

0.5922g + 250ml

2(1.0086ml) — 0.9987ml

— 500λ glass calib pipet (498.47)

DATA

$$\frac{.225}{.4268} \quad (2.5) \qquad \frac{(0.9987)(250)}{(2.0172)(498.47)(0.5922)(.931)} = 2.374\,E+2 \ \frac{dpm}{g}$$

.5 .05 .5 .5 .7 .5

±41%

BMD 5-21-90

(Over)

0.225

ALPHA COUNTING DATA			
Counter L-4		By Anne Engelsky	
Date	5/24/90		
Registers	0.4268		
Total Counts	219		
Min	450		
C/M	0.487		
Bkg.	0.262		
Corr C/M	0.225		

WH82317 ± 38
BNW52343, 110

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 102784

54-1700-177R (005/89)

54-1700-177 (05/89)

D05-048

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 4-6-90	Work Order No. ~~M620~~ M62048
Serial No	Customer Ident	Constituent	Result
249 -90	110B-C9-AN 90-1257-C-1	237NEPTUNIUM	<5.0 4.66 dpm/g wet wt ~~± 62%~~
	H2OLEACH	HTA-4-14	
BNW52920 p. 125, 128			
Serial Number 103204	5/21/90	Date 6-13-90	Approval COB

SERIAL NUMBER 103204

@ 22.5°C ρ H2O .99676

2.0799g + 202.0588g. H2O = 202.7156 ml

5.0673ml − 0.9987 ml

− 500λ glass calib pipet (498.47)

DATA

$$< \left(\frac{0.050}{.4132}\right) \frac{(202.7156)(0.9987)}{(2.0799)(5.0673)(.49847)} = 4.66 \frac{dpm}{g} \div .931 = <5.0$$

(2σ) ± 62%

.99 .5 .5 .5 .5 .2 .5

8mb 10-21-90

based on total count of separation, because no AEA possible to determine possibility of other alpha emitters (Over)

0.050

ALPHA COUNTING DATA			
Counter L-5		By Anne Eckfeldt	
Date	5/24/90		
Registers	0.4132		
Total Counts	125		
Min	150		
C/M	0.278		
Bkg.	0.228		
Corr C/M	0.050		

WA82318 59

BNW52323 p.110

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Please Do Not Write In This Space While Report Sheet is Attached

Serial No. 103204

54-1700-177R (005/89)

D05-049

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer SST		Date Received 4-6-90	Work Order No. M62048
Serial No	Customer Ident	Constituent	Result
250 -90	110B-C9-AN 90-1257-C-2	237NEPTUNIUM	<5.53 dpm/g without
	H2OLEACH	HTA-4-14	~~± 59%~~ Co4 C-7220
BNW52920 p. 125, 128			
Serial Number 103214		Date 5/21/90	Approval

SERIAL NUMBER 103214

e 225°c ρ H2O = .99676

2.0215g. + 199.0698g. H2O = 199.7169 ml

5.0673ml — 0.9987ml

— 500 ml glass calib pipet (498.47)

DATA

$$< \frac{.057}{.4328} \frac{(199.7169)(0.9987)}{(2.0215)(5.0673)(.49847)} = 5.1446 \frac{dpm}{g} \div .931 = <5.526$$

56 .057 .4328 (2.5) .5 .5 .5 .2 .5 ~~.931~~ Co4

<59% BMD 10-21-90

based on total count of separation because no ~~AOA~~ possible to determine possibility of other alpha emitters (Over)

0.057

ALPHA COUNTING DATA			
Counter L-3		By Anne Engelstoty	
Date	5/25/90		
Registers	0.4328		
Total Counts	128		
Min	420		
C/M	0.305		
Bkg.	0.248		
Corr C/M	0.057		

WA8236 ± 56

BNW52343 p. 110

BETA OR GAMMA COUNTING DATA			
Inst. No.	Shelf No.	ABS	By
Date			
Total Counts			
Min			
C/M			
Bkg.			
Corr C/M			

Serial No. 103214

Please Do Not Write In This Space While Report Sheet is Attached

54-1700-177R (005/89)

54-1700-177 (05/89)

D05-050

TOTAL ALPHA

CALIBRATION DATA

FOR

PROPORTIONAL ALPHA COUNTERS (PAC)

D05–051

HEDL-N-3219
P1

FORM NBS-443
(REV. 11-68)

Tot & Calibration
PA 1 + 2

U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
WASHINGTON, D.C. 20234

REPORT OF CALIBRATION

PLUTONIUM-239 SOLUTION

submitted by

U.S. TESTING CORPORATION
Richland, Washington

The sample, identified as T-1350-1, consisted of a flame-sealed glass ampoule containing 4.0585 grams of a solution, said to be plutonium-239 in 4.291 M HNO_3.

The alpha-particle emission rate per gram of this solution was determined by liquid-scintillation counting. Counting samples were prepared by quantitatively transferring aliquants of the source material into vials containing 10 milliliters of an emulsion scintillator.

The alpha-particle-emission rate per gram of this solution, due to plutonium-239 and alpha-particle-emitting impurities, as of October 1979, was

$$*1.97_6 \times 10^3\ \alpha s^{-1} g^{-1} \pm 1.0_5\%*.$$

The uncertainty in this value, 1.0_5 percent, is the linear sum of 0.3_5 percent, which is the limit of the random error at the 99-percent confidence level (4.032 S_m, where S_m is the standard error computed from 6 determinations), and 0.7 percent, which is the estimated upper limit of conceivable systematic errors.

For the Director,

W. B. Mann

W. B. Mann, Principal Scientist
Radioactivity Group
Center for Radiation Research

P.O. No. P-8213
November 27, 1979

D05-052

Hanford Engineering
Development Laboratory

P.O. BOX 1970 RICHLAND, WA 99352

HEDL-N-3219
P2

July 24, 1979

Radioactivity Standard T-1350
High Purity Plutonium-239

This radioactivity standard consists of plutonium-239 in a nominal four grams of solution in a flame-sealed glass ampoule. Twenty individual, serially numbered standards were prepared; their respective amounts of solution are as follows:

T-1350-1	4.0585	grams	T-1350-11	4.1040	grams
-2	4.2157	"	-12	4.1209	"
-3	4.3091	"	-13	3.9944	"
-4	4.0277	"	-14	4.0784	"
-5	4.1596	"	-15	4.0933	"
-6	4.3244	"	-16	3.9688	"
-7	4.1664	"	-17	4.1800	"
-8	4.0974	"	-18	4.3587	"
-9	4.0434	"	-19	4.2665	"
-10	3.9786	"	-20	4.0233	"

The solution is 4.291 molar nitric acid; its density is 1.126 grams per milliliter at 23.1 °C.

Nominal total alpha activity of the solution as of July 20, 1979 was

$$2.0 \times 10^3 \ s^{-1} g^{-1}$$

This radioactivity standard was prepared from plutonium oxide material obtained from Oak Ridge National Laboratory on June 18, 1979, batch number 277-AA. Plutonium isotopic composition, as stated by Oak Ridge National Laboratory for the basic material and as measured at HEDL by the Applied Chemistry and Analysis subsection upon the standard solution, is as follows:

	ORNL assay %	HEDL weight %
Pu-238	<1.2 ppm	0.00053
Pu-239	99.9985	99.998
Pu-240	12.6 ppm	0.00128
Pu-241	0.9 ppm	0.00015
Pu-242	1.4 ppm	<0.0002
Pu-244	2 ppm	nd

This radioactivity standard was prepared at the Hanford Engineering Development Laboratory, Chemical Engineering Department, Chemistry and Analysis Section.

Radiochemistry

— of PAC#1 & #2 standards from T-1350 count data and NBS certification 7/24/79

∴ NBS certified value $= 1.97_6 \times 10^3$ d s^{-1} g^{-1} $= 1.0_5$ % (99% cl)

$= 1.97_6 \times 10^3 \pm 20._7$ d s^{-1} g^{-1} (99% cl)

$= (1.97_6 \times 10^3 \pm 20._7)(60) = 1.18_5 \times 10^5 \pm 1.2_4 \times 10^3$ d m^{-1} g^{-1} (99% cl)

$(1.18_5 \times 10^5 \pm 1.2_4 \times 10^3)(1.1261 \pm 0.0014) = 1.33_4 \times 10^5 \pm 1.4_6 \times 10^3$ d/m/g

& geometry, uncertainty in calibration : ± 0.02 % (99% cl) [obtained from calib program data]

.92 % object of T-1350, absolute activity

$= (1.33_4 \times 10^5 \pm 1.4_6 \times 10^3)(0.02492 \pm 0.00005)$

$= 3.32_4 \times 10^3 \pm \sqrt{(1.46 \times 10^3)^2 (2.492 \times 10^{-2})^2 + (1.334 \times 10^5)^2 (5 \times 10^{-5})^2}$

$= 3.32_4 \times 10^3 \pm 35_5$ d/m 0d 1979 (99% cl)

.92 % object of T-1350, absolute activity

$= (1.33_4 \times 10^5 \pm 1.4_6 \times 10^3)(0.02490 \pm 0.00005)$

$= 3.32_1 \times 10^3 \pm \sqrt{(1.46 \times 10^3)^2 (2.49 \times 10^{-2})^2 + (1.33_4 \times 10^5)^2 (5 \times 10^{-5})^2}$

$= 3.32_1 \times 10^3 \pm 35._4$ d/m 0d 1979 (99% cl)

i = 1:

1663.4 / (3324 ± 36) = 0.50043 ± 0.00548

1707.0 / (") = ~~0.51355 ± 0.00555~~ Achmy standard

1673.7 / (") = 0.50351 ± 0.00545

1671.8 / (") = 0.50294 ± 0.00544

1683.0 / (3321 ± 35) = 0.50677 ± 0.00534

1669.7 / (") = 0.50279 ± 0.00536

1669.9 / (") = 0.50255 ± 0.00536

1660.2 / (") = ~~0.49951 ± 0.00526~~ achmy standard

$\Sigma(\bar{c}) = 3.03729 \pm \sqrt{(.00548)^2 + (.00545)^2 + (.00544)^2 + (.00534)^2 + (.00536)^2 + (.00536)^2 + (.00526)^2}$

$= 3.03729 \pm 0.01324$

$\bar{c} = \dfrac{3.03729 \pm 0.01324}{6} = \boxed{0.5062_1 \pm 0.002_{20}}$ AHP #1

mean : .4902

Δ : 3.1677 %

1728.4 / (3324 ± 36) = ~~0.51997 ± 0.00563~~ Achmy standard

$$3603 \pm \sqrt{(.00547)^2 + (.00544)^2 + (.00541)^2 + (.00534)^2 + (.00536)^2 + (.00534)^2 + (.00529)^2}$$

$$3603 \pm 0.01424$$

$$\frac{3603 \pm 0.01424}{7} = \boxed{0.50514 \pm 0.00203}$$

HUP #2

error .01433

% = 2.84%

TOTAL ALPHA

CALIBRATION DATA

FOR

SCINTILLATION ALPHA COUNTERS (SAC)

D05–056

Ludlum BAC Calibration data
1-6

Book 52343
Page 45
Jean Rogers

[redacted]

T-1350 NBS Calibration Summary 10/27/88

24.90ul 3321 ± 35 d/m
24.92ul 3324 ± 35 d/m

24.90ul $\bar{X}_4$ 1405.70_8 cpm
$\bar{X}_4$ 1402.16_8 cpm
$\bar{X}_8$ 1403.93_8 cpm

3321 d/m ÷ 1403.93_8 cpm = 2.3655 d/c = 0.4227

24.92ul $\bar{X}_4$ 1384.71_8 cpm
24.92ul $\bar{X}_4$ 1387.86_8 cpm
$\bar{X}_8$ 1386.29_3 cpm

3324 d/m ÷ 1386.29_3 cpm = 2.3978 d/c = 0.4171

$\bar{X}_2$ = 0.4199

L S Kellogg
L. S. Kellogg

BNW LABORATORY NOTEBOOK NO. 52343
COPIED FOR PNL RECORDS CENTER MAY 04 '89

RICHLAND, WASHINGTON

SAMPLE: [illegible]-1, L-1

SUBMITTED BY: L. D. Kellogg

COUNTED BY: Jean Kingsley

REMARKS: NBS TR-[illegible] Pu 239 Standard [illegible] 10/21/10 [illegible] -42

24.90λ 3321 ± 35 dpm Operating Voltage = 2.4

24.92λ 3324 ± 35 dpm

SAMPLE NUMBER		DATE 19 88	INST. NO.	INT. (MIN.) T	RECORDER READING SCALE OF:	TOTAL COUNTS N	RECORDED RATE R = N/T	COINC. CORR'N. C	BGD B	NET RATE X = R − B + C	GEOMETRY %	DISINTEGRATION RATE d/m
24.90λ	1	10-27	1	10	+	13458			.142			
	2				+	14074						
	3				+	14127						
	4				+	14095						
					+	$\bar{x}_1$ 14058.5				$\bar{x}_1$ = 1405.70, cpm		
					+					$\bar{x}_2$ 1402.10, cpm		
24.92λ	1				+	14108				$\bar{x}_3$ = 1403.93, cpm		
	2				+	13570						
	3				+	13885						
	4	10-28			+	13832			.57			
					+	$\bar{x}_1$ 13848.75				$\bar{x}_1$ = 1384.71, cpm		
					+					$\bar{x}_2$ = 1387.88, cpm		
Daily Control	1				+	10071				$\bar{x}_3$ = 1386.29, cpm		
	2				+	10205						
	3				+	10035						
	4				+	9900						
	5				+	10037						
	6				+	9909						
	7				+	10157						
	8				+	10155						
	9				+	10340						
	10				+	9964						
					+	$\bar{x}_{10}$ 10047.5						
					+							
					+							

BNW LABORATORY NOTEBOOK NO. [illegible]

LOAN FOR PKL RECORDS CENTER MAY 04 '88

D05-058

BN-1709-132 (10-67) ARC-OL RICHLAND, WASH

BNW 53,943
Page 44
Jean Kuegler

BATTELLE-NORTHWEST
RICHLAND, WASHINGTON

ALPHA COUNTER DATA SHEET

SAMPLE Pudlegn-1, K-1
SUBMITTED BY D. J. Kuegler
COUNTED BY Jean Kuegler

REMARKS NBS 1350 Pu 239 source — Page 2 of 2
24.90λ 3321 ± 35 dpm — Operating Voltage = 2.4
24.92λ 3324 ± 35 dpm

SAMPLE NUMBER	DATE 19 87	INST. NO.	INT. (MIN.) T	RECORDER READING SCALE OF:	TOTAL COUNTS N	RECORDED RATE R = N/T	COINC. CORR'N. C	BGD B	NET RATE X = R − B + C	GEOMETRY %	DISINTEGRATION RATE d/m
24.90λ 1	10-28	1	10	+	14001			.157			
2				+	13798						
3				+	13886						
4				+	14408						
				+	$\bar{X}$ 14023.25				$\bar{X}$ 1402.16, cpm		
				+							
				+							
				+							
24.92λ 1				+	13967						
2				+	13757						
3				+	13817						
4				+	13980						
				+	$\bar{X}$ 13880.25				$\bar{X}$ 1387.86, cpm		
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							

BNW LABORATORY NOTEBOOK NO. 5243

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DOS-059

(HEDL)

ALPHA COUNTER DATA SHEET

SUBMITTED BY [redacted]

COUNTED BY [illegible]

REMARKS: 3.0 — 24.90A = 3321 ± 35 cpm; 24.92A = 3324 ± 35 cpm

SAMPLE NUMBER	DATE 19 87	INST. NO.	INT. (MIN.) T	RECORDER READING SCALE OF:	TOTAL COUNTS N	RECORDED RATE R = N/T	COINC. CORR'N. C	BGD B	NET RATE X = R − B + C	GEOMETRY G	DISINTEGRATION RATE A
T1350 24.90A 1	0905 1-22	2	10	+	14206		3321	÷ 14	01.1 = 2.370 cpm	the	0.4257
2	0915			+	13850		3324	1382.75	= 2.405 cpm		0.4158
3	0928			+	14037						$\bar{x}$ = 0.411
4	1003			+	14099						
				+	$\bar{x}$ 14048				$\bar{x}$ 1404.8 cpm		
				+					$\bar{x}$ 1397.4 cpm		
T1350 24.92A 1	1014			+	13947				$\bar{x}$ 1401.1 cpm		
2	1028			+	13653						
3	1039			+	12614				$\bar{x}$ 1374.8 cpm		
4	1049			+	13779				$\bar{x}$ 1389.7 cpm		
				+	$\bar{x}$ 13748.25				$\bar{x}$ 1382.75 cpm		
				+							
R-2 Daily Blanks 1	1100			+	9724						
2	1111			+	9821						
3	1121			+	9752						
4	1133			+	9810						
5	1144			+	9766						
6	1154			+	9952						
7	1205			+	9843						
8	1218			+	9875						
9	1237			+	9894						
10	1247			+	9831		± 207 2σ				
				+	$\bar{x}$ 9826.8	± 31 ± 99	2σ/10 1σ				
				+							
				+							

[redacted] ZnS Alpha Scintillation Counter 4/26/85 RDL

Standard Counts
NBS-T1350 Pu239 Stand Source See HEDL-N-3215 page 1-3

24.90 ± 3321 ± 35 dpm
24.92 ± 3324 ± 35 dpm

NBS T1350		Counts (10 min)	
24.90 ±	#1	14502	
	2	14435	
	3	14504	
	4	14505	$\bar{x}_4$ = 14488
24.92 ±	#1	14586	
	2	14124	
	3	14267	
	4	14434	$\bar{x}_4$ = 14353
L-3 Control Repetitive Counts	1	10282	
	2	10249	
	3	9905	
	4	10170	
	5	10366	
	6	10120	
	7	10346	
	8	10217	
	9	10037	±210 26
	10	9933	$\bar{x}_{10}$ = 10162 ±32 ±100 ±105 16
24.90 ±	#1	14367	
	2	14365	
	3	14436	
	4	14516	$\bar{x}_4$ = 14425
24.92 ±	#1	14570	
	2	14142	
	3	14080	
	4	14188	$\bar{x}_4$ = 14245

TN 1350 NBS CALIBRATION SUMMARY 01/22/87

24.90λ 3321 ± 35 d/m
24.92λ 3324 ± 35 d/m

24.90λ $\overline{X}_4$ 1404.8 cpm
$\overline{X}_4$ 1397.4 cpm
$\overline{X}_2$ 1401.1 cpm

3321 d/m ÷ 1401.1 cpm = 2.370 d/c or 0.4219 Eff.

24.92λ $\overline{X}_4$ 1374.8 cpm
$\overline{X}_4$ 1389.7 cpm
$\overline{X}_2$ 1382.25 cpm

3324 d/m ÷ 1382.25 cpm = 2.405 d/c or 0.4158 Eff.

$\overline{X}_2$ 0.4188_5

TN1350 NBS Calibration Summary 4/26/85 [illegible]

24.90 d 3321 ± 35 dcm
24.90 d 3324 ± 35 dcm

24.90 d

$\bar{x}_4$	=	1448.8 cm
$\bar{y}_4$	=	1441.5 cm
$\bar{x}_8$	=	1445.7 cm

3321 dcm ÷ 1445.7 cm = 2.297 d/c = .4353 eff

24.92

$\bar{x}_4$		1435.3 cm
$\bar{y}_4$		1424.5 cm
$\bar{x}_8$		1429.9 cm

3324 ÷ 1429.9 cm = 2.325 d/c = .4302 Eff
.4328 eff

WESTINGHOUSE HANFORD COMPANY
(HEDL)

ALPHA COUNTER DATA SHEET

SAMPLE [redacted]

SUBMITTED BY [illegible]

COUNTED BY [illegible]

REMARKS HV = 3.0 Page 1 of 2

SAMPLE NUMBER	DATE 19 87	INST. NO.	INT. (MIN.) T	RECORDER READING SCALE OF:	TOTAL COUNTS N	RECORDED RATE R = N/T	COINC. CORR'N. C	BGD B	NET RATE X = R − B + C	GEOMETRY S	DISINTEGRATION RATE d/m
T1350 24-90A 1	8 28	4	10	+	14244			.151			
2				+	14333						
3				+	14384						
4				+	14447	$\bar{X}_4$ = 1435.20			$\bar{X}_4$ = 1435.2 c/m		
				+					$\bar{X}_4$ = 1432.35 c/m		
				+					$\bar{X}_4$ = 1433.75 c/m		
T1350 24-92A 1				+	14199						
2				+	13973						
3				+	14030						
4				+	14013	$\bar{X}_4$ = 1403.35			$\bar{X}_4$ = 1405.375 c/m		
				+					$\bar{X}_4$ = 1399.75 c/m		
				+					$\bar{X}_4$ = 1402.25 c/m		
Daily Control 1				+	10242						
2				+	10333						
3				+	10313						
4				+	10579						
5				+	10194						
6				+	10455						
7				+	10283						
8				+	10262						
9				+	10357						
10				+	10381	$\bar{X}_4$ = 10339.9 ± 32 ± 141			212 ± 106		
				+							

BNW LABORATORY NOTEBOOK NO. 5-234-3

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BNW 328 B

Initial 5/6/87 [illegible]

D05-064

WESTINGHOUSE HANFORD COMPANY
(HEDL)

ALPHA COUNTER DATA SHEET

SAMPLE: Leslie-4

SUBMITTED BY: RCW

COUNTED BY: [illegible]

REMARKS: HV = 3.0

Page 2 of 2

SAMPLE NUMBER	DATE 19 87	INST. NO.	INT. (MIN.) T	RECORDER READING SCALE OF:	TOTAL COUNTS N	RECORDED RATE R = N/T	COINC. CORR'N. C	BGD B	NET RATE X = R − B + C	GEOMETRY S	DISINTEGRATION RATE d/m
T1350 2492 1	8-28	4	10	+	14200			151			
2				+	14259						
3				+	14424						
4				+	14411	$\bar{x}$ 14323.5			$\bar{x}_4$ 14322	35 c/m	
				+							
				+							
				+							
T1350 2492 1				+	14033						
2				+	14003						
3				+	14032	—					
4				+	13895	$\bar{x}_4$ − 13991.75			$\bar{x}_4$ = 13991.75 c/m		
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							
				+							

Example

$\bar{x}$ 212.22

$\bar{x}_{10}$ 10335.9 ± 22 ± 101 = 10610

$\sqrt{x^2 + x^2}$

106 10

BMW LABORATORY NOTEBOOK NO. 5234

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Page 3 of 3 Page 11

D05-065

Original 9/9/87 [illegible]

Entered 4/9/87 J. Kupka

T1350 NBS Calibration Summary 8/28/87

24.90A 3321 ± 35 d/m
24.92A 3324 ± 35 d/m

24.90A $\bar{x}_4$ 1435.2 c/m
$\bar{x}_4$ 1432.4 c/m
$\bar{x}_8$ 1433.8 c/m

3321 d/m ÷ 1433.8 c/m = 2.3162 d/c = 0.4317

24.92A $\bar{x}_4$ 1405.4 c/m
$\bar{x}_4$ 1399.2 c/m
$\bar{x}_8$ 1402.3 c/m

3324 d/m ÷ 1402.3 c/m = 2.3704 d/c = 0.4219

$\bar{x}$ = 0.4218

BNW 52343
Page 12

Project No. _____ Date of Work _____
Entered By _____ Date _____
Disclosed To and Understood By _____ Signed 1. _____ Date _____
Date _____

BNW LABORATORY NOTEBOOK NO. 5 05483

COPIED FOR PNL RECORDS CENTER MAY 04 '89

D05-066

4/27/85

[redacted] ZnS Alpha Scintillation Counter
Standard Counts

NBS T1350 Pu 239 Standard Source See HEPC-N 3215 page 1-3

24.90 d 3321 ± 35 dpm
24.92 d 3324 ± 35 dpm

		Counts (10 minutes)	
NBS T1350			
24.90 d	#1	13927	
	2	13845	
	3	13722	
	4	14016	$\bar{x}_4$ = 13877
24.92 d	#1	13541	
	2	13543	
	3	13670	
	4	13744	$\bar{x}_4$ = 13624
L-5 Control Repetition Counts	#1	10091	
	2	10102	
	3	10295	
	4	10177	
	5	10194	
	6	10157	
	7	10166	
	8	10274	
	9	10215	±212 2σ
	10	10220	$\bar{x}_{10}$ = 10169 ± 32 ± 101 ± 101 1σ
24.90 d	#1	13901	
	2	13860	
	3	13758	
	4	13868	$\bar{x}_4$ = 13847
24.92 d	#1	13723	
	2	13492	
	3	13644	
	4	13436	$\bar{x}_4$ = 13566

4/27/85.

T1350 NBS Calibration Summary (L-5)

24.50 d 3321 ± 35 d/m
24.92 d 3324 ± 35 d/m

24.50 d $\bar{x}_y$ = 1387.7 c/m
$\bar{x}_y$ = 1384.7 c/m
$\bar{x}_g$ = 1386.2 c/m

3321 d/m ÷ 1386.2 c/m = 2.356 d/c or .4174 Eff

24.92 d $\bar{x}_y$ = 1362.4 c/m
$\bar{x}_y$ = 1356.6 c/m
$\bar{x}_g$ = 1359.5 c/m

3324 ± 35 ÷ 1359.5 c/m = 2.445 d/c or .4690 Eff

$\bar{x}_c$ = .4432 Eff

D05-068