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**REPORT OF THE DEPARTMENT OF ENERGY, OFFICE OF
ENVIRONMENTAL MANAGEMENT, GAMMA SPECTROMETRY
DATA VALIDATION PROGRAM**

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ABSTRACT

This report represents the results of analyses received on or before August 15, 1996 for the first annual Gamma Spectrometry Data Validation Program (May 1996). A calibration spectrum, a background spectrum and three sample spectra of increasing complexity were included for each format. The calibration spectrum contained nuclides covering the energy range from 59.5 keV to 1836 keV. The first two samples contained fallout nuclides with half lives of over 30 days. Naturally occurring nuclides were also present. The third sample contained both short and long lived fission product nuclides. The participants were asked to report values and uncertainties as Becquerel per sample with no decay correction. Sixteen software packages were evaluated. In general, the results do not appear to be dependent on the software used. Based on the control limits established for the Program for the three sample spectra, 62%, 63% and 53%, respectively, of the reported results were evaluated as "acceptable."

INTRODUCTION

The Gamma Spectrometry Data Validation Program is designed to assess the capability of DOE laboratories and DOE contractors in performing routine gamma spectra analyses which are required for EM projects, site evaluations and other DOE programs. Data reduction of gamma spectra are normally performed with computer codes supplied by commercial manufacturers or are developed "in house". Evaluation of some of the commercially available software was performed at EML in 1987 (Sanderson, 1988), and again in 1991 (Decker and Sanderson, 1992). The first study indicated that there were substantial differences in the ability of the programs to detect small peaks and deconvolute overlapping peaks. The second evaluation showed most of the programs had fairly good results in peak detection and deconvolution, but the analysis of a complex spectrum still gave spurious results. Many of the available commercial programs are easy to use and do not require the user to be an expert in gamma spectrometry. This may lead to errors because even the best programs occasionally give inaccurate results without user intervention.

The participants in the Program receive a data disk or tape containing synthetic spectra designed to test the sensitivity and capability of their HPGe spectrometry reduction system. The participating laboratories are asked to identify and quantify the sample spectra. The spectra are designed to test both the gamma-ray spectrometry software and the ability of the user to properly utilize the software. The Gamma Spectrometry Data Validation Program is sponsored by the Characterization Management Program of the Office of Site Operations (EM-70) within the DOE Office of Environmental Management (EM). The Program is administered as part of the services provided through the Environmental Measurements Laboratory's Quality Assessment Program (EML QAP) for environmental radiological analyses (Sanderson and Greenlaw, 1996). The first distribution for the Program was in May 1996, 31 laboratories participated. In the future, the synthetic spectra will be sent out annually by EML with the results to be reported in 90 days. The expected values will be distributed immediately after the reporting deadline and an evaluation report will be issued by EML in 90 days.

SYNTHETIC SPECTRA

The Gamma Spectrometry Data Validation Program is designed to test the ability of the commercially available software and "in house" programs to accurately identify and quantify the nuclides in complex spectra, independent of the sample geometry or matrix. Synthetic spectra were created using a computer code, SYNTH, developed at the Pacific Northwest National Laboratory and converted into a variety of formats which could be read by most PC based systems. The available formats included APTEC, APTEC Version 4.3, ASCII, CANBERRA Spectran-AT, CANBERRA MicroSAMPO, CANBERRA Gamma-AT, CANBERRA Genie Systems, IAEA Ganaas and Qxas, NUCLEAR DATA Asap, NUCLEUS PCA, ORTEC Minigam II, ORTEC ACE, SILENA SilGamma and SILENA EMCplus. The data was also put on magnetic tape for users of microvax based systems.

The data used in this evaluation simulates the spectra obtained from air filters counted 10 cm from a 22% coaxial detector with a 0.5 mm beryllium window. The detector is calibrated at 0.5 keV/channel. A calibration spectrum, a background spectrum and three sample spectra of increasing complexity were included for each format. The calibration spectrum contained nuclides covering the energy range from 59.5 keV to 1836 keV. The first two samples contained fallout nuclides with half lives of over 30 days. Naturally occurring nuclides were also present. The third sample contained both short and long lived fission product nuclides. Participants were asked to report values and uncertainties as Becquerel per sample with no decay correction.

EVALUATION CRITERIA

The control limits are those established by EML for the Quality Assessment Program (QAP) for various analyte/matrix pairs (Pan, 1995). When available, the analyte/water pair was chosen to simulate the synthetic spectra since there should be no variability among individual water samples. When the analyte/water pair was not available, the analyte/air filter pair was chosen. Participants' performance in QAP is evaluated based on historical analytical capabilities for the individual analyte/matrix pairs. The control limits were established from percentiles of historic data distributions from the last five years of QAP results (10 distributions). The QAP criteria for acceptable performance, "A", was chosen to be between the 15th and 85th percentile of the cumulative normalized distribution, which can be viewed as the middle 70% of all historic measurements. The acceptable with warning criteria, "W", is between the 5th and 15th percentile and between the 85th and 95th percentile. The not acceptable criteria, "N", is established at less than the 5th percentile and greater than the 95th percentile, the outer 10% of the historical data. If there was no historical QAP data for an analyte, the limits were set as: acceptable performance, "A", if the reported value was between 0.8 and 1.2 times the EML value; acceptable with warning, "W", if the reported value was between 0.5 and 0.8 or 1.2 and 1.5 times the EML value; and not acceptable, "N", if the reported value was less than 0.5 or greater than 1.5 times the EML value. These control limits are listed with the EML values (p. 2). The reported uncertainties may be greater than the acceptance range. For example, historically 70% of the results for ^{137}Cs in water are within 0.97 to 1.15 times the true value which causes some of the reported values here, which are within the counting error of the true value, to fall outside the acceptable range.

RESULTS

The results from the Gamma Spectrometry Data Validation Program are listed by laboratory and software program (see Table of Contents, p. v). All values are Becquerel per sample with no decay correction. The laboratories' results are compared to the experimental value, labeled the EML value, as developed from the synthetic spectra creation program, SYNTH. The ratio is the laboratory value divided by the EML value. The error terms are the uncertainties reported by the laboratories. Under the evaluation column, "A", "W" and "N" are based on the control limits described above. In addition, "FP" indicates false positive and "ND" indicates not detected (false

negative). A summary of the evaluations for each sample spectra (p. 1) shows that 62%, 63% and 53%, respectively, of the reported results were evaluated as "acceptable". Only 5-6% of the data results were evaluated as "not acceptable".

Sixteen software packages were evaluated. In general, the results do not appear to be dependent on the software used. Rather the data reflects the ability of the individual laboratories to properly utilize the software.

The results for the first two samples which contained four and six nuclides, respectively, were superior to the third sample which was a more complex spectra containing 15 nuclides. Some of the false positives appear to be due to not correcting for the background using the spectra provided. In sample three, Dysprosium-166 (Dy-166), whose two most abundant lines fall at 46.7 keV and 47.5 keV, was correctly identified by only one laboratory. Many laboratories may have identified this doublet as being the 46.5 keV line of ^{210}Pb .

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Gamma Spectrometry Data Validation Program

November 1996

A = Acceptable
W = Acceptable with Warning
N = Not Acceptable
ND = Present but Not Detected
FP = False Positive (not present
but reported)

EML Data with Evaluation Criteria

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Lower limit</u>	<u>Lower middle limit</u>	<u>Upper middle limit</u>	<u>Upper limit</u>
CE 144	1	128.00	0.61	0.69	1.09	1.31
CO 57	1	12.00	0.63	0.72	1.08	1.29
CS 137	1	21.00	0.90	0.97	1.15	1.25
MN 54	1	17.00	0.88	0.95	1.13	1.21
BE 7	2	5.10	0.50	0.80	1.20	1.50
CE 144	2	8.00	0.61	0.69	1.09	1.31
NB 95	2	4.70	0.50	0.80	1.20	1.50
PB 210	2	3.30	0.50	0.80	1.20	1.50
RU 103	2	4.70	0.50	0.80	1.20	1.50
ZR 95	2	2.00	0.50	0.80	1.20	1.50
BA 140	3	10.00	0.50	0.80	1.20	1.50
CE 141	3	1.30	0.50	0.80	1.20	1.50
CE 144	3	3.00	0.61	0.69	1.09	1.31
CS 134	3	5.40	0.70	0.80	1.08	1.21
CS 136	3	3.60	0.50	0.80	1.20	1.50
CS 137	3	5.90	0.90	0.97	1.15	1.25
DY 166	3	7.20	0.50	0.80	1.20	1.50
I 131	3	16.20	0.50	0.80	1.20	1.50
NB 95	3	7.40	0.50	0.80	1.20	1.50
RU 103	3	6.00	0.50	0.80	1.20	1.50
SB 125	3	2.00	0.50	0.80	1.20	1.50
SB 126	3	3.10	0.50	0.80	1.20	1.50
TE 132	3	23.00	0.50	0.80	1.20	1.50
XE 133	3	6.40	0.50	0.80	1.20	1.50
ZR 95	3	2.30	0.50	0.80	1.20	1.50

Control limits are established from historical QAP data, where historical data are insufficient, limits of 20% and 50% are applied.

The following are the recommended performance criteria for analysis of environmental analytes:

Acceptable:

Acceptable with Warning:

Not Acceptable:

Lower middle limit < A < Upper middle limit

Lower limit < W < Lower middle limit or Upper middle limit < W < Upper limit

N < Lower limit or N > Upper limit

Evaluation by Laboratory

AU

ORISE EESD/ESSAP, Oak Ridge

Software: Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
AC 228	1	2.61	0.27				FP
CE 144	1	106.40	1.30	0.44	128.00	0.83	A
CO 57	1	10.58	0.16	0.06	12.00	0.88	A
CS 137	1	22.18	0.45	0.10	21.00	1.06	A
K 40	1	6.68	0.89				FP
MN 54	1	16.97	0.36	0.12	17.00	1.00	A
PB 212	1	1.81	0.11				FP
PB 214	1	1.55	0.19				FP
TL 208	1	2.28	0.20				FP
AC 228	2	2.61	0.27				FP
BE 7	2	4.51	0.71	0.65	5.10	0.88	A
CE 144	2	6.78	0.43	0.44	8.00	0.85	A
K 40	2	6.68	0.89				FP
NB 95	2	4.79	0.19	0.11	4.70	1.02	A
PB 210	2				3.30		ND
PB 212	2	1.81	0.10				FP
PB 214	2	1.55	0.17				FP
RU 103	2				4.70		ND
TL 208	2	2.27	0.16				FP
ZR 95	2	2.14	0.20	0.20	2.00	1.07	A
AC 228	3	2.61	0.37				FP
BA 140	3				10.00		ND
CE 141	3				1.30		ND
CE 144	3	2.50	0.77	0.44	3.00	0.83	A
CS 134	3	5.23	0.23	0.18	5.40	0.97	A
CS 136	3	3.41	0.19	0.10	3.60	0.95	A
CS 137	3	5.49	0.23	0.10	5.90	0.93	W
DY 166	3				7.20		ND
I 131	3	12.05	0.22	0.07	16.20	0.74	W
K 40	3	6.68	0.89				FP
NB 95	3	7.13	0.25	0.11	7.40	0.96	A
PB 212	3	1.67	0.20				FP
RU 103	3				6.00		ND
SB 125	3				2.00		ND
SB 126	3				3.10		ND
TE 132	3	21.21	0.24	0.06	23.00	0.92	A
TL 208	3	2.25	0.22				FP
XE 133	3				6.40		ND
ZR 95	3	2.25	0.24	0.20	2.00	1.13	A

Evaluation by Laboratory

BL Barringer Laboratories Inc., Golden, CO

Software: APTEC 4.3

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	129.00	11.00	1.50	128.00	1.01	A
CO 57	1	12.00	1.00	0.20	12.00	1.00	A
CS 137	1	20.00	1.00	0.40	21.00	0.95	W
MN 54	1	18.00	1.00	0.20	17.00	1.06	A
BE 7	2	5.30	1.40	1.80	5.10	1.04	A
CE 144	2				8.00		ND
NB 95	2	4.80	0.40	0.20	4.70	1.02	A
PB 210	2				3.30		ND
RU 103	2	4.80	0.50	0.20	4.70	1.02	A
ZR 95	2	2.10	0.40	0.30	2.00	1.05	A
BA 140	3	8.00	1.60	1.60	10.00	0.80	W
CE 141	3	1.20	0.40	0.60	1.30	0.92	A
CE 144	3	2.80	1.60	2.50	3.00	0.93	A
CS 134	3	5.30	0.60	0.30	5.40	0.98	A
CS 136	3	3.70	0.60	0.30	3.60	1.03	A
CS 137	3	5.30	0.50	0.30	5.90	0.90	W
DY 166	3				7.20		ND
I 131	3	17.00	1.00	0.40	16.20	1.05	A
NB 95	3	7.20	0.60	0.20	7.40	0.97	A
RU 103	3	5.70	0.70	0.50	6.00	0.95	A
SB 125	3	2.20	0.90	1.00	2.00	1.10	A
SB 126	3	3.50	0.50	0.30	3.10	1.13	A
TE 132	3	30.00	3.00	0.40	23.00	1.30	W
XE 133	3				6.40		ND
ZR 95	3	2.20	0.40	0.50	2.30	0.96	A

Evaluation by Laboratory

BP

Battelle Pacific Northwest Laboratory

Software: Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
BA 140	1			1.10			
BE 7	1			2.60			
CE 141	1			0.21			
CE 144	1	115.00	5.00		128.00	0.90	A
CO 57	1	12.00	0.40		12.00	1.00	A
CS 134	1			0.26			FP
CS 136	1			0.16			
CS 137	1	21.00	1.40		21.00	1.00	A
I 131	1			0.20			
MN 54	1	17.70	0.80		17.00	1.04	A
NB 95	1			0.18			
RU 103	1			0.29			
SB 125	1			0.69			
SB 126	1			0.27			
TE 132	1			0.14			
XE 133	1			0.94			
ZR 95	1			0.33			
BA 140	2			0.60			
BE 7	2	5.20	0.88		5.10	1.02	A
CE 141	2			0.17			
CE 144	2	8.11	0.49		8.00	1.01	A
CO 57	2			0.09			
CS 134	2			0.17			
CS 136	2			0.11			
CS 137	2			0.17			
I 131	2			0.16			
MN 54	2			0.13			
NB 95	2	4.86	0.31		4.70	1.03	A
PB 210	2				3.30		ND
RU 103	2	4.52	0.32		4.70	0.96	A
SB 125	2			0.45			
SB 126	2			0.13			
TE 132	2			0.11			
XE 133	2			0.31			
ZR 95	2	2.07	0.17		2.00	1.04	A
BA 140	3	8.65	0.76		10.00	0.87	A
BE 7	3			2.80			
CE 141	3	1.33	0.22		1.30	1.02	A
CE 144	3	2.95	0.93		3.00	0.98	A
CO 57	3			0.25			
CS 134	3	5.27	0.24		5.40	0.98	A
CS 136	3	3.83	0.15		3.60	1.06	A
CS 137	3	5.64	0.43		5.90	0.96	W
DY 166	3				7.20		ND
I 131	3	16.30	0.80		16.20	1.01	A
MN 54	3			0.20			
NB 95	3	7.22	0.44		7.40	0.98	A
RU 103	3	5.43	0.41		6.00	0.90	A

Evaluation by Laboratory

BP

Battelle Pacific Northwest Laboratory

Software: Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
SB 125	3	2.12	0.35		2.00	1.06	A
SB 126	3	3.13	0.14		3.10	1.01	A
TE 132	3	27.50	1.00		23.00	1.20	A
XE 133	3	9.72	0.59		6.40	1.52	N
ZR 95	3	2.34	0.21		2.30	1.02	A

Evaluation by Laboratory

BX

B&W Nuclear Envir. Services, Lynchburg, VA

Software: Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
AC 228	1	1.67	0.51	0.00			FP
BA 133	1	0.32	0.41	1.55			FP
CE 144	1				128.00		ND
CO 57	1				12.00		ND
CS 137	1	34.40	0.69	0.75	21.00	1.64	N
FR 223	1	9.55	7.33	16.10			FP
I 129	1	0.95	0.04	0.05			FP
K 40	1	4.44	1.18	0.00			FP
KR 85	1	80.60	67.40	314.00			FP
MN 54	1				17.00		ND
PB 214	1	0.53	0.69	0.93			FP
RN 222	1	44.90	37.50	63.60			FP
TH 227	1	3.07	2.36	5.29			FP
U 234	1	267.00	124.00	251.00			FP
BE 7	2				5.10		ND
CE 144	2				8.00		ND
I 129	2	0.07	0.02	2.28			FP
K 40	2	6.05	0.81	0.00			FP
NB 95	2				4.70		ND
PB 210	2				3.30		ND
PB 214	2	4.83	0.53	0.79			FP
RN 222	2	1350.00	205.00	298.00			FP
RU 103	2				4.70		ND
ZR 95	2				2.00		ND
BA 140	3				10.00		ND
CE 141	3				1.30		ND
CE 144	3				3.00		ND
CS 134	3	7.55	0.33	5.84	5.40	1.40	N
CS 136	3				3.60		ND
CS 137	3				5.90		ND
DY 166	3				7.20		ND
I 129	3	9.22	0.38	0.73			FP
I 131	3				16.20		ND
K 40	3	6.05	0.81	0.00			FP
NB 95	3				7.40		ND
PB 214	3	4.83	0.74	1.34			FP
RN 222	3	1220.00	364.00	708.00			FP
RU 103	3				6.00		ND
SB 125	3				2.00		ND
SB 126	3				3.10		ND
TE 132	3				23.00		ND
U 234	3	631.00	110.00	278.00			FP
XE 133	3				6.40		ND
ZR 95	3				2.30		ND

Evaluation by Laboratory

CA

Atomic Energy Control Board, Ottawa, Canada

Software: APTEC 5.3

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	141.00	12.50	2.00	128.00	1.10	W
CO 57	1	12.40	1.00	0.20	12.00	1.03	A
CS 137	1	21.50	0.90	0.50	21.00	1.02	A
MN 54	1	17.80	1.10	0.20	17.00	1.05	A
BE 7	2	5.20	1.30	1.60	5.10	1.02	A
CE 144	2	8.00	1.60	1.10	8.00	1.00	A
NB 95	2	4.90	0.40	0.20	4.70	1.04	A
PB 210	2				3.30		ND
RU 103	2	4.80	0.50	3.00	4.70	1.02	A
ZR 95	2	2.40	0.40	0.30	2.00	1.20	W
BA 140	3	10.20	2.20	4.70	10.00	1.02	A
CE 141	3	1.30	0.40	0.60	1.30	1.00	A
CE 144	3	2.70	1.60	2.60	3.00	0.90	A
CS 134	3	4.90	0.70	1.40	5.40	0.91	A
CS 136	3	3.80	0.70	1.70	3.60	1.06	A
CS 137	3				5.90		ND
DY 166	3				7.20		ND
I 131	3	16.40	1.40	3.10	16.20	1.01	A
NB 95	3	7.30	0.60	0.30	7.40	0.99	A
RU 103	3	5.70	0.50	0.50	6.00	0.95	A
SB 125	3				2.00		ND
SB 126	3	3.30	0.40	0.50	3.10	1.06	A
TE 132	3	26.90	2.70	8.70	23.00	1.17	A
XE 133	3				6.40		ND
ZR 95	3	2.70	0.50	0.50	2.30	1.17	A

Evaluation by Laboratory

CH

California State Dept. Health Serv, Sanitation & Radiation Laboratory

Software: Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CD 109	1	9.30	2.60	3.87			FP
CE 144	1	122.20	1.59	1.07	128.00	0.95	A
CO 57	1	11.90	0.18	0.13	12.00	0.99	A
CS 137	1	21.60	0.43	0.32	21.00	1.03	A
K 40	1	5.15	1.37	0.00			FP
MN 54	1	17.80	0.38	0.14	17.00	1.05	A
RA 228	1	1.45	0.44	0.00			FP
TH 232	1	2.24	0.72	0.83			FP
BE 7	2	5.43	0.85	1.25	5.10	1.06	A
CE 144	2	7.76	0.55	0.76	8.00	0.97	A
K 40	2	5.15	1.37	0.00			FP
NB 95	2	4.92	0.20	0.10	4.70	1.05	A
PB 210	2				3.30		ND
RA 228	2	1.45	0.44	0.00			FP
RU 103	2	4.84	0.18	0.15	4.70	1.03	A
TH 232	2	2.24	0.61	0.53			FP
ZR 95	2	2.18	0.20	0.10	2.00	1.09	A
BA 140	3	7.97	0.78	0.12	10.00	0.80	W
CE 141	3	1.33	0.21	0.43	1.30	1.02	A
CE 144	3	2.60	0.96	1.95	3.00	0.87	A
CS 134	3	5.30	0.24	0.40	5.40	0.98	A
CS 136	3	3.68	0.22	0.13	3.60	1.02	A
CS 137	3	5.78	0.24	0.32	5.90	0.98	A
DY 166	3				7.20		ND
I 125	3	23.40	1.58	2.06			FP
I 131	3	17.60	0.32	0.30	16.20	1.09	A
K 40	3	5.15	1.37	0.00			FP
NB 95	3	7.31	0.25	0.17	7.40	0.99	A
RU 103	3	5.82	0.25	0.34	6.00	0.97	A
SB 122	3	0.71	0.24	0.47			FP
SB 125	3	2.27	0.41	0.90	2.00	1.14	A
SB 126	3	3.12	0.18	0.28	3.10	1.01	A
TE 132	3	30.20	0.34	0.27	23.00	1.31	W
XE 133	3				6.40		ND
ZR 89	3	0.44	0.16	0.17			FP
ZR 95	3	2.30	0.24	0.34	2.30	1.00	A

Evaluation by Laboratory

ES

Environmental Sci. & Engr., Inc., Gainesville, FL

Software: Vertechs GDR/P 3.1c

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	133.00	10.60	0.99	128.00	1.04	A
CO 57	1	12.20	0.98	0.21	12.00	1.02	A
CS 137	1	20.90	1.67	0.43	21.00	1.00	A
MN 54	1	17.40	1.39	0.19	17.00	1.02	A
BE 7	2	5.25	0.66	1.59	5.10	1.03	A
CE 144	2	8.24	0.66	0.77	8.00	1.03	A
NB 95	2	4.79	0.38	0.13	4.70	1.02	A
PB 210	2				3.30		ND
RU 103	2	4.64	0.37	0.19	4.70	0.99	A
ZR 95	2	2.06	0.17	0.23	2.00	1.03	A
BA 140	3	8.16	0.65	1.49	10.00	0.82	A
CE 141	3	1.34	0.18	0.58	1.30	1.03	A
CE 144	3	3.11	0.85	3.05	3.00	1.04	A
CS 134	3	5.20	0.42	0.28	5.40	0.96	A
CS 136	3	3.58	0.29	0.18	3.60	1.00	A
CS 137	3	5.47	0.44	0.34	5.90	0.93	W
DY 166	3				7.20		ND
I 131	3	17.30	1.38	0.22	16.20	1.07	A
NB 95	3	7.09	0.57	0.21	7.40	0.96	A
RU 103	3	5.56	0.45	0.41	6.00	0.93	A
SB 125	3	2.15	0.27	0.93	2.00	1.08	A
SB 126	3	3.06	0.24	0.23	3.10	0.99	A
TE 132	3	29.50	2.36	0.42	23.00	1.28	W
XE 133	3				6.40		ND
ZR 95	3	2.04	0.16	0.40	2.30	0.89	A

Evaluation by Laboratory

FL

Florida Dept of Health & Rehab. Serv., Orlando

Software: Canberra SAMPO 90

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
BA 140	1	19.10	0.90				FP
BE 7	1			2.20			
CE 141	1			0.20			
CE 144	1	128.00	6.00		128.00	1.00	A
CO 57	1	12.00	0.50		12.00	1.00	A
CS 134	1			0.20			
CS 136	1			0.03			
CS 137	1			0.21	21.00	0.00	N
I 131	1			0.16			
MN 54	1	17.20	0.80		17.00	1.01	A
PB 210	1			5.40			
RU 103	1			0.25			
SB 125	1			0.60			
SB 126	1			0.12			
TE 132	1			0.13			
ZR 95	1			0.30			
BA 140	2			0.52			
BE 7	2	5.00	0.20		5.10	0.98	A
CE 141	2			0.17			
CE 144	2	8.00	0.40		8.00	1.00	A
CO 57	2			0.08			
CS 134	2			0.14			
CS 136	2			0.03			
CS 137	2			0.14			
I 131	2			0.13			
MN 54	2			0.13			
NB 95	2				4.70		ND
PB 210	2	3.50	0.50		3.30	1.06	A
RU 103	2	4.60	0.20		4.70	0.98	A
SB 125	2			0.40			
SB 126	2			0.15			
TE 132	2			0.11			
ZR 95	2	2.00	0.20		2.00	1.00	A
BA 140	3	7.60	0.60		10.00	0.76	W
BE 7	3			2.30			
CE 141	3	1.30	0.10		1.30	1.00	A
CE 144	3	2.80	0.10		3.00	0.93	A
CO 57	3			0.21			
CS 134	3	5.20	0.20		5.40	0.96	A
CS 136	3	3.50	0.20		3.60	0.97	A
CS 137	3	5.80	0.30		5.90	0.98	A
DY 166	3				7.20		ND
I 131	3	16.80	0.80		16.20	1.04	A
MN 54	3			0.19			
NB 95	3				7.40		ND
PB 210	3	26.00	3.00				FP
RU 103	3	5.40	0.20		6.00	0.90	A
SB 125	3	1.99	0.08		2.00	1.00	A

Evaluation by Laboratory

FL

Florida Dept of Health & Rehab. Serv., Orlando

Software: Canberra SAMPO 90

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
SB 126	3	3.10	0.10		3.10	1.00	A
TE 132	3	30.00	1.00		23.00	1.30	W
XE 133	3				6.40		ND
ZR 95	3	2.20	0.20		2.30	0.96	A

Evaluation by Laboratory

FM

Florida Mobile Emergency Radiological Laboratory, Orlando

Software: Canberra SAMPO 90

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
BA 140	1			0.96			
BE 7	1			2.43			
CE 144	1	123.00	5.10		128.00	0.96	A
CO 57	1	11.60	0.40		12.00	0.97	A
CS 134	1			0.20			
CS 136	1			0.03			
CS 137	1	21.10	0.60		21.00	1.00	A
I 131	1			0.18			
MN 54	1	17.20	0.50		17.00	1.01	A
NB 95	1			0.17			
RU 103	1			0.25			
SB 125	1			0.30			
SB 126	1			0.12			
TE 132	1			0.12			
ZN 72	1			0.11			
ZR 95	1			0.30			
BA 140	2			0.57			
BE 7	2	5.50	0.50		5.10	1.08	A
CE 144	2	7.70	0.50		8.00	0.96	A
CO 57	2			0.08			
CS 134	2			0.16			
CS 136	2			0.03			
CS 137	2			0.15			
I 131	2			0.15			
MN 54	2			0.13			
NB 95	2	4.80	0.20		4.70	1.02	A
PB 210	2				3.30		ND
RU 103	2	4.70	0.20		4.70	1.00	A
SB 125	2			0.44			
SB 126	2			0.30			
TE 132	2			0.10			
ZN 72	2			0.09			
ZR 95	2	2.10	0.20		2.00	1.05	A
BA 140	3	8.30	0.50		10.00	0.83	A
CE 141	3				1.30		ND
CE 144	3	2.80	0.40		3.00	0.93	A
CS 134	3	5.30	0.10		5.40	0.98	A
CS 136	3	3.60	0.10		3.60	1.00	A
CS 137	3	5.80	0.20		5.90	0.98	A
DY 166	3				7.20		ND
I 131	3	16.60	0.50		16.20	1.02	A
NB 95	3	7.20	0.30		7.40	0.97	A
RU 103	3	5.90	0.20		6.00	0.98	A
SB 125	3	2.10	0.26		2.00	1.05	A
SB 126	3	3.20	0.10		3.10	1.03	A
TE 132	3	28.90	1.00		23.00	1.26	W
XE 133	3				6.40		ND
ZN 72	3	0.84	0.08				FP

Evaluation by Laboratory

FM

Florida Mobile Emergency Radiological Laboratory, Orlando

Software: Canberra SAMPO 90

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
ZR 95	3	2.30	0.20		2.30	1.00	A

Evaluation by Laboratory

GA

Lockheed Martin, Pikton, OH

Software: Canberra PROCOUNT

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	118.03	14.51	14.86	128.00	0.92	A
CO 57	1	11.55	1.58	0.13	12.00	0.96	A
CS 137	1	21.15	3.34	0.34	21.00	1.01	A
MN 54	1	17.46	2.24	0.16	17.00	1.03	A
BE 7	2	5.29	1.83	1.34	5.10	1.04	A
CE 144	2	7.67	1.29	0.73	8.00	0.96	A
NB 95	2	4.83	0.77	0.12	4.70	1.03	A
PB 210	2	4.57	4.22	3.08	3.30	1.38	W
RU 103	2	4.79	0.71	0.16	4.70	1.02	A
ZR 95	2	1.91	0.51	0.46	2.00	0.96	A
BA 140	3	9.52	2.18	1.54	10.00	0.95	A
CE 141	3	1.28	0.43	0.42	1.30	0.98	A
CE 144	3	2.90	1.86	1.93	3.00	0.97	A
CS 134	3	5.27	0.84	0.23	5.40	0.98	A
CS 136	3	3.47	0.58	0.21	3.60	0.96	A
CS 137	3	5.67	0.98	0.33	5.90	0.96	W
DY 166	3				7.20		ND
I 131	3	16.42	3.39	0.30	16.20	1.01	A
NB 95	3	7.17	1.10	0.19	7.40	0.97	A
PB 210	3	86.58	19.76	7.32			FP
RU 103	3	5.75	0.89	0.35	6.00	0.96	A
SB 125	3	2.18	0.87	0.90	2.00	1.09	A
SB 126	3	3.05	0.69	0.31	3.10	0.98	A
TE 132	3	26.67	4.02	0.26	23.00	1.16	A
XE 133	3				6.40		ND
ZR 95	3	1.70	0.67	0.67	2.30	0.74	W

Evaluation by Laboratory

HC

Lawrence Livermore Laboratory, California

Software: Canberra PROCOUNT

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	125.30	25.30	1.01	128.00	0.98	A
CO 57	1	11.95	1.83	0.13	12.00	1.00	A
CS 137	1	21.20	3.82	0.32	21.00	1.01	A
MN 54	1	17.70	2.80	0.14	17.00	1.04	A
XE 133	1	5.90	1.09	0.49			FP
BE 7	2	5.22	1.84	1.19	5.10	1.02	A
CE 144	2	8.06	1.93	0.79	8.00	1.01	A
NB 95	2	4.88	0.89	0.10	4.70	1.04	A
PB 210	2				3.30		ND
RU 103	2	4.66	0.95	0.14	4.70	0.99	A
XE 133	2	0.32	0.22	0.25			FP
ZR 95	2	2.16	0.54	0.19	2.00	1.08	A
BA 140	3	7.72	3.12	1.21	10.00	0.77	W
CE 141	3	1.29	0.46	0.41	1.30	0.99	A
CE 144	3	2.96	1.95	1.91	3.00	0.99	A
CS 134	3	5.18	0.97	0.38	5.40	0.96	A
CS 136	3	3.70	0.74	0.16	3.60	1.03	A
CS 137	3	5.68	1.10	0.33	5.90	0.96	W
DY 166	3				7.20		ND
I 131	3	16.70	2.95	0.29	16.20	1.03	A
NB 95	3	7.25	1.29	0.19	7.40	0.98	A
RU 103	3	5.60	1.17	0.34	6.00	0.93	A
SB 122	3	0.69	0.47	0.48			FP
SB 125	3				2.00		ND
SB 126	3				3.10		ND
TE 132	3	28.30	5.62	0.25	23.00	1.23	W
XE 133	3	10.30	1.86	0.66	6.40	1.61	N
ZR 95	3	2.28	0.62	0.36	2.30	0.99	A

Evaluation by Laboratory

HL

Heritage Laboratories, Inc., Romeoville, IL

Software: Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
AM 243	1	2.05	0.94	0.78			FP
CE 144	1	690.80	109.20	5.90	128.00	5.40	N
CO 57	1	73.17	10.23	0.66	12.00	6.10	N
CS 137	1	37.77	4.55	0.50	21.00	1.80	N
MN 54	1	18.15	2.14	0.13	17.00	1.07	A
NP 237	1	17.29	6.90	3.98			FP
BE 7	2	20.29	10.41	4.28	5.10	3.98	N
CE 144	2	48.04	11.08	4.32	8.00	6.01	N
NB 95	2	6.15	0.85	0.13	4.70	1.31	W
PB 210	2				3.30		ND
RU 103	2	15.80	2.30	0.46	4.70	3.36	N
ZR 95	2	2.83	0.46	0.23	2.00	1.42	W
BA 140	3	26.01	5.12	3.05	10.00	2.60	N
CE 141	3	9.20	3.46	2.50	1.30	7.08	N
CE 144	3	18.96	12.50	10.33	3.00	6.32	N
CS 134	3	7.38	0.71	0.22	5.40	1.37	N
CS 136	3	3.92	0.39	0.14	3.60	1.09	A
CS 137	3	10.13	1.42	0.48	5.90	1.72	N
DY 166	3				7.20		ND
I 131	3	64.24	8.80	1.77	16.20	3.97	N
NB 95	3	9.14	1.20	0.20	7.40	1.24	W
RU 103	3	19.10	2.91	1.00	6.00	3.18	N
SB 125	3	4.25	2.67	3.20	2.00	2.13	N
SB 126	3	5.25	0.59	0.41	3.10	1.69	N
TE 132	3	191.00	35.60	1.80	23.00	8.30	N
XE 133	3				6.40		ND
ZR 95	3	3.19	0.58	0.40	1.39	1.39	W

Evaluation by Laboratory

JP

Japan Chemical Analysis Center

Software: IN HOUSE

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
BA 140	1			1.10			
BE 7	1			2.70			
CE 141	1			0.25			
CE 144	1	130.00	22.00	1.20	128.00	1.02	A
CO 57	1	13.00	2.10	0.22	12.00	1.08	W
CS 134	1			0.28			
CS 136	1			0.20			
CS 137	1	21.00	4.00	0.35	21.00	1.00	A
I 131	1			0.20			
MN 54	1	18.00	3.30	0.24	17.00	1.06	A
NB 95	1			0.22			
RU 103	1			0.31			
SB 125	1			0.70			
SB 126	1			0.23			
TE 132	1			0.14			
ZR 95	1			0.38			
BA 140	2			0.70			
BE 7	2	5.20	2.30	1.60	5.10	1.02	A
CE 141	2			0.22			
CE 144	2	8.30	2.30	0.95	8.00	1.04	A
CO 57	2			0.12			
CS 134	2			0.20			
CS 136	2			0.17			
CS 137	2			0.21			
I 131	2			0.17			
MN 54	2			0.18			
NB 95	2	4.80	1.20	0.18	4.70	1.02	A
PB 210	2				3.30		ND
RU 103	2	4.60	1.10	0.22	4.70	0.98	A
SB 125	2			0.51			
SB 126	2			0.17			
TE 132	2			0.12			
ZR 95	2	2.10	0.08	0.32	2.00	1.05	A
BA 140	3	7.80	2.40	1.20	10.00	0.78	W
BE 7	3			2.90			
CE 141	3	1.30	0.50	0.45	1.30	1.00	A
CE 144	3	2.90	1.60	2.00	3.00	0.97	A
CO 57	3			0.26			
CS 134	3	5.20	1.30	0.31	5.40	0.96	A
CS 136	3	3.50	0.96	0.23	3.60	0.97	A
CS 137	3	5.60	1.40	0.31	5.90	0.95	W
DY 166	3				7.20		ND
I 131	3	16.00	2.90	0.31	16.20	0.99	A
MN 54	3			0.23			
NB 95	3	7.10	1.60	0.23	7.40	0.96	A
RU 103	3	5.80	1.20	0.36	6.00	0.97	A
SB 125	3	2.00	0.95	0.84	2.00	1.00	A
SB 126	3	3.10	0.80	0.30	3.10	1.00	A

Evaluation by Laboratory

JP

Japan Chemical Analysis Center

Software: IN HOUSE

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
TE 132	3	27.00	4.30	0.34	23.00	1.17	A
XE 133	3				6.40		ND
ZR 95	3	2.20	0.85	0.40	2.30	0.96	A

Evaluation by Laboratory

LA1 Los Alamos National Lab

Software: EG&G Ortec Gammavision

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	127.49	8.92	1.12	128.00	1.00	A
CO 57	1	12.83	0.91	0.46	12.00	1.07	A
CS 137	1	21.71	1.80	0.15	21.00	1.03	A
MN 54	1	17.88	1.51	0.04	17.00	1.05	A
BE 7	2	5.31	2.01	0.43	5.10	1.04	A
CE 144	2	8.77	1.58	0.25	8.00	1.10	W
NB 95	2	4.93	0.63	0.01	4.70	1.05	A
PB 210	2				3.30		ND
RU 103	2	4.83	0.59	0.06	4.70	1.03	A
ZR 95	2	2.19	0.45	0.02	2.00	1.10	A
BA 140	3	10.07	3.76	0.79	10.00	1.01	A
CE 141	3				1.30		ND
CE 144	3				3.00		ND
CS 134	3	5.10	0.73	0.19	5.40	0.94	A
CS 136	3	3.56	0.58	0.07	3.60	0.99	A
CS 137	3	5.44	1.10	0.34	5.90	0.92	W
DY 166	3	4.97	2.67	1.00	7.20	0.69	W
I 131	3	15.99	1.44	0.17	16.20	0.99	A
NB 95	3	7.34	0.85	0.07	7.40	0.99	A
RU 103	3	5.78	0.79	0.14	6.00	0.96	A
SB 125	3	1.63	1.00	0.33	2.00	0.81	A
SB 126	3	2.65	0.51	0.19	3.10	0.85	A
TE 132	3	23.33	1.55	0.14	23.00	1.01	A
XE 133	3				6.40		ND
ZR 95	3	2.15	0.56	0.12	2.30	0.93	A

Evaluation by Laboratory

LA2 Los Alamos National Lab

Software: EG&G Ortec GELIGAM

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	140.00	7.00	3.70	128.00	1.09	W
CO 57	1	12.10	0.60	0.21	12.00	1.01	A
CS 137	1	22.20	1.40	0.17	21.00	1.06	A
MN 54	1	17.90	1.20	0.17	17.00	1.05	A
BE 7	2	5.08	1.23	4.10	5.10	1.00	A
CE 144	2	8.45	1.07	3.70	8.00	1.06	A
NB 95	2	4.93	0.40	0.20	4.70	1.05	A
PB 210	2				3.30		ND
RU 103	2	4.53	0.41	0.36	4.70	0.96	A
ZR 95	2	2.13	0.30	0.56	2.00	1.07	A
BA 140	3	8.00	1.40	1.30	10.00	0.80	W
CE 141	3				1.30		ND
CE 144	3				3.00		ND
CS 134	3	5.18	0.56	0.26	5.40	0.96	A
CS 136	3	3.59	0.35	0.15	3.60	1.00	A
CS 137	3	5.70	1.43	0.20	5.90	0.97	W
DY 166	3				7.20		ND
I 131	3	15.80	0.00	0.23	16.20	0.98	A
NB 95	3	7.32	0.64	0.20	7.40	0.99	A
RU 103	3	5.45	0.53	0.36	6.00	0.91	A
SB 125	3	1.82	0.65	0.68	2.00	0.91	A
SB 126	3	2.92	0.33	0.23	3.10	0.94	A
TE 132	3	28.40	1.30	0.13	23.00	1.23	W
XE 133	3				6.40		ND
ZR 95	3	2.25	0.45	0.56	2.30	0.98	A

Evaluation by Laboratory

LB

Lawrence Berkeley Lab UCB

Software: APTEC 4.0

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
AC 228	1	5.33	0.86	0.83			FP
CE 144	1				128.00		ND
CO 57	1				12.00		ND
CS 137	1	21.55	0.77	0.25	21.00	1.03	A
K 40	1	6.86	0.94	0.12			FP
MN 54	1	17.91	0.59	0.11	17.00	1.05	A
PB 214	1	53.57	7.06	14.01			FP
AC 228	2	5.61	0.96	0.83			FP
BE 7	2	5.26	0.66	0.90	5.10	1.03	A
CE 144	2				8.00		ND
K 40	2	6.86	0.94	0.12			FP
NB 95	2	4.97	0.23	0.08	4.70	1.06	A
PB 210	2				3.30		ND
RU 103	2	4.77	0.23	0.12	4.70	1.01	A
TH 234	2	1.85	0.78	1.47			FP
ZR 95	2	2.02	0.21	0.21	2.00	1.01	A
BA 140	3				10.00		ND
CE 141	3	1.33	0.19	0.35	1.30	1.02	A
CE 144	3				3.00		ND
CS 134	3	5.32	0.34	0.81	5.40	0.99	A
CS 136	3	4.05	0.31	0.95	3.60	1.13	A
CS 137	3	5.67	0.28	0.35	5.90	0.96	W
DY 166	3				7.20		ND
I 131	3	16.55	0.80	2.73	16.20	1.02	A
K 40	3	6.86	0.94	0.12			FP
NB 95	3	7.39	0.31	0.14	7.40	1.00	A
PB 212	3	3.74	0.36	0.58			FP
PB 214	3	53.38	6.89	11.57			FP
RU 103	3	5.78	0.29	0.26	6.00	0.96	A
SB 125	3				2.00		ND
SB 126	3	2.80	0.23	0.39	3.10	0.90	A
TE 132	3				23.00		ND
XE 133	3				6.40		ND
ZR 95	3	1.96	0.26	0.37	2.30	0.85	A

Evaluation by Laboratory

NL

FERMCO, Cincinnati, OH

Software: Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	121.00	2.00	1.10	128.00	0.95	A
CO 57	1	11.90	0.20	0.19	12.00	0.99	A
CS 137	1	20.20	34.00	0.40	21.00	0.96	W
MN 54	1	17.60	0.40	0.19	17.00	1.04	A
BE 7	2	5.36	0.84	1.70	5.10	1.05	A
CE 144	2	7.88	0.47	0.80	8.00	0.99	A
NB 95	2	4.88	0.20	0.15	4.70	1.04	A
PB 210	2				3.30		ND
RU 103	2	4.78	0.18	0.21	4.70	1.02	A
ZR 95	2	2.07	0.15	0.31	2.00	1.04	A
BA 140	3	7.87	0.77	1.50	10.00	0.79	W
CE 141	3	1.31	0.21	0.52	1.30	1.00	A
CE 144	3	2.98	0.94	2.40	3.00	0.99	A
CS 134	3	5.41	0.16	0.29	5.40	1.00	A
CS 136	3	3.58	0.20	0.25	3.60	1.00	A
CS 137	3	5.41	0.22	0.30	5.90	0.92	W
DY 166	3				7.20		ND
I 131	3	17.40	0.30	0.37	16.20	1.07	A
NB 95	3	7.25	0.25	0.24	7.40	0.98	A
RU 103	3	5.74	0.25	0.42	6.00	0.96	A
SB 125	3	2.08	0.53	2.00	2.00	1.02	A
SB 126	3				3.10		ND
TE 132	3	29.80	0.30	0.33	23.00	1.30	W
XE 133	3	9.38	0.38	0.74	6.40	1.47	W
ZR 95	3	2.36	0.20	0.49	2.30	1.03	A

Evaluation by Laboratory

OD ORNL, Radiobioassay Lab

Software: Canberra PROCOUNT

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CD 109	1	8.00	2.70	4.00			FP
CE 144	1	125.90	7.70	1.10	128.00	0.98	A
CO 57	1	11.80	0.80	0.10	12.00	0.98	A
CS 137	1	21.10	1.60	0.30	21.00	1.00	A
I 125	1	252.50	30.80	5.60			FP
MN 54	1	17.50	1.10	0.10	17.00	1.03	A
BE 7	2	5.30	0.90	1.10	5.10	1.04	A
CE 144	2	7.90	0.70	0.70	8.00	0.99	A
I 125	2	14.90	2.60	3.10			FP
NB 95	2	4.80	0.40	0.10	4.70	1.02	A
PB 210	2				3.30		ND
RU 103	2	4.70	0.40	0.10	4.70	1.00	A
ZR 95	2	2.10	0.20	0.20	2.00	1.05	A
BA 140	3	7.70	0.70	1.10	10.00	0.77	W
CE 141	3	1.30	0.20	0.40	1.30	1.00	A
CE 144	3	3.00	1.00	1.90	3.00	1.00	A
CS 134	3	4.80	0.30	0.30	5.40	0.89	A
CS 136	3				3.60		ND
CS 137	3	5.70	0.50	0.30	5.90	0.97	W
DY 166	3				7.20		ND
I 125	3	22.00	4.00	6.40			FP
I 131	3	16.70	1.40	0.30	16.20	1.03	A
NB 95	3	7.10	0.50	0.20	7.40	0.96	A
RE 188	3	2.00	0.80	1.80			FP
RU 103	3	5.30	0.40	0.30	6.00	0.88	A
SB 125	3	2.10	0.40	0.80	2.00	1.05	A
SB 126	3				3.10		ND
TE 132	3	27.50	1.60	0.30	23.00	1.20	A
TH 230	3	104.30	28.20	56.80			FP
XE 133	3				6.40		ND
ZR 95	3	5.70	0.30	0.30	2.48	2.48	N

Evaluation by Laboratory

OT

ORNL Radioactive Material Analysis Lab

Software: Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	120.00	10.00		128.00	0.94	A
CO 57	1	11.00	1.00		12.00	0.92	A
CS 137	1	18.00	1.00		21.00	0.86	N
MN 54	1	12.00	1.00		17.00	0.71	N
BE 7	2	3.80	1.20		5.10	0.75	W
CE 144	2	7.40	0.90		8.00	0.93	A
NB 95	2	2.70	0.40		4.70	0.57	W
PB 210	2				3.30		ND
RU 103	2	3.40	0.30		4.70	0.72	W
ZR 95	2	1.20	0.40		2.00	0.60	W
BA 140	3	5.40	1.00		10.00	0.54	W
CE 141	3	0.34	0.29		1.30	0.26	N
CE 141	3	1.20	0.30		1.30	0.92	A
CE 144	3	2.60	1.40		3.00	0.87	A
CS 134	3	3.30	0.40		5.40	0.61	N
CS 136	3	2.30	0.50		3.60	0.64	W
CS 137	3	3.50	0.50		5.90	0.59	N
DY 166	3				7.20		ND
I 131	3	15.00	1.00		16.20	0.93	A
NB 95	3	4.80	0.50		7.40	0.65	W
RU 103	3	4.10	0.40		6.00	0.68	W
SB 125	3				2.00		ND
SB 126	3	1.90	0.30		3.10	0.61	W
TE 132	3	27.00	1.00		23.00	1.17	A
XE 133	3				6.40		ND
ZR 95	3	1.30	0.40		2.30	0.57	W

Evaluation by Laboratory

RE

Bechtel Nevada, Mercury, NV

Software: IN HOUSE

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	132.00	12.40	0.68	128.00	1.03	A
CO 57	1	12.40	1.23	0.09	12.00	1.03	A
CS 137	1	22.20	2.42	0.15	21.00	1.06	A
MN 54	1	18.00	2.01	0.17	17.00	1.06	A
BE 7	2	5.01	1.85	0.85	5.10	0.98	A
CE 144	2	8.14	1.55	0.68	8.00	1.02	A
NB 95	2	4.95	0.73	0.16	4.70	1.05	A
PB 210	2				3.30		ND
RU 103	2	4.54	0.64	0.11	4.70	0.97	A
ZR 95	2	2.22	0.54	0.28	2.00	1.11	A
BA 140	3	7.80	2.00	0.32	10.00	0.78	W
CE 141	3	1.32	0.49	0.16	1.30	1.02	A
CE 144	3	2.98	1.93	0.68	3.00	0.99	A
CS 134	3	5.32	0.83	0.11	5.40	0.99	A
CS 136	3	3.64	0.64	0.16	3.60	1.01	A
CS 137	3	5.83	0.93	0.15	5.90	0.99	A
DY 166	3				7.20		ND
I 131	3	15.70	1.66	0.10	16.20	0.97	A
NB 95	3	7.35	1.00	0.16	7.40	0.99	A
RU 103	3	5.48	0.84	0.11	6.00	0.91	A
SB 125	3	1.79	0.90	0.30	2.00	0.90	A
SB 126	3	4.14	0.68	0.14	3.10	1.34	W
TE 132	3	28.50	2.62	0.09	23.00	1.24	W
XE 133	3	8.52	1.24	0.38	6.40	1.33	W
ZR 95	3	2.35	0.64	0.28	2.30	1.02	A

Evaluation by Laboratory

SA

Sandia Labs Radioactive Sample Diag. Prog., NM

Software: Canberra Genie PC

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	131.00	24.20	1.25	128.00	1.02	A
CO 57	1	12.50	2.35	0.17	12.00	1.04	A
CS 137	1	21.60	3.60	0.41	21.00	1.03	A
MN 54	1	17.90	2.88	0.18	17.00	1.05	A
BE 7	2	5.25	2.32	1.51	5.10	1.03	A
CE 144	2	7.93	1.78	1.15	8.00	0.99	A
NB 95	2	4.92	1.00	0.14	4.70	1.05	A
PB 210	2				3.30		ND
RU 103	2	4.65	1.03	0.18	4.70	0.99	A
ZR 95	2	2.22	0.87	0.25	2.00	1.11	A
BA 140	3	8.04	2.40	1.44	10.00	0.80	A
CE 141	3	1.33	0.59	0.51	1.30	1.02	A
CE 144	3				3.00		ND
CS 134	3	5.40	1.20	0.38	5.40	1.00	A
CS 136	3	3.65	1.18	0.25	3.60	1.01	A
CS 137	3	5.71	1.19	0.36	5.90	0.97	W
DY 166	3				7.20		ND
I 131	3	16.70	2.98	0.33	16.20	1.03	A
NB 95	3	7.29	1.74	0.25	7.40	0.99	A
RU 103	3	5.59	1.22	0.38	6.00	0.93	A
SB 125	3	2.10	0.95	1.09	2.00	1.05	A
SB 126	3	3.09	0.69	0.32	3.10	1.00	A
TE 132	3	27.60	4.92	0.30	23.00	1.20	W
XE 133	3	7.27	4.07	1.00	6.40	1.14	A
ZR 95	3	2.34	0.97	0.40	2.30	1.02	A

Evaluation by Laboratory

SI

(QAP labcode IS) Quanterra Incorporated, Earth City, MO

Software: Canberra PROCOUNT

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
BA 133	1	4.15	0.66	1.07			FP
CE 144	1	561.00	7.00	5.00	128.00	4.38	N
CO 57	1	50.60	0.80	0.60	12.00	4.22	N
CS 137	1	74.40	1.50	1.10	21.00	3.54	N
I 129	1	122.00	5.00	10.00			FP
K 40	1	21.30	3.20	0.00			FP
MN 54	1	59.10	1.30	0.50	17.00	3.48	N
PB 212	1	8.00	0.60	1.16			FP
PB 214	1	9.40	1.42	1.71			FP
RA 228	1	7.81	0.82	0.00			FP
TL 208	1	7.05	0.66	1.05			FP
BA 133	2	4.51	0.41	0.87			FP
BE 7	2	19.90	3.10	4.60	5.10	3.90	N
CE 144	2	34.30	2.20	3.40	8.00	4.29	N
I 129	2	8.42	2.54	4.75			FP
K 40	2	21.30	3.20	0.00			FP
NB 95	2	16.50	0.70	0.30	4.70	3.51	N
PB 210	2	17.50	4.30	7.80	3.30	5.30	N
PB 212	2	8.14	4.89	0.90			FP
PB 214	2	15.80	1.40	1.50			FP
RA 228	2	7.99	0.79	0.00			FP
RU 103	2	17.50	0.70	0.50	4.70	3.72	N
TL 208	2	7.06	0.52	0.68			FP
ZR 95	2	7.08	0.50	0.59	2.00	3.54	N
BA 140	3	30.90	2.40	4.30	10.00	3.09	N
CE 141	3	5.65	0.91	1.90	1.30	4.35	N
CE 144	3	12.30	4.00	8.70	3.00	4.10	N
CS 134	3	18.30	0.60	1.40	5.40	3.39	N
CS 136	3	11.90	0.50	0.40	3.60	3.31	N
CS 137	3	19.90	0.80	1.10	5.90	3.37	N
DY 166	3				7.20		ND
I 129	3	36.90	5.50	10.60			FP
I 131	3	67.20	1.20	1.10	16.20	4.15	N
K 40	3	21.30	3.20	0.00			FP
NB 95	3	24.50	0.80	0.60	7.40	3.31	N
PB 210	3	214.00	11.00	19.00			FP
PB 212	3	5.60	0.95	2.21			FP
PB 214	3	6.91	1.11	2.46			FP
RA 228	3	19.60	4.85	1.56			FP
RU 103	3	21.10	0.90	1.20	6.00	3.52	N
SB 125	3	14.20	3.90	3.40	2.00	7.10	N
SB 126	3	12.50	0.50	0.90	3.10	1.03	N
TE 132	3	89.90	16.70	1.10	23.00	3.91	N
TL 208	3	6.79	0.74	1.26			FP
XE 133	3	27.70	1.40	2.20	6.40	4.33	N
XE133M	3	1043.00	116.00	9.00			FP
ZR 95	3	7.95	0.65	1.12	3.46	3.46	N

Evaluation by Laboratory

SL

Stanford Linear Accelerator, Menlow Park, CA

Software: Canberra MICROSAMPO

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	132.50	5.40	0.90	128.00	1.04	A
CO 57	1	12.10	0.60	0.10	12.00	1.01	A
CS 137	1	21.80	1.30	0.20	21.00	1.04	A
MN 54	1	17.70	1.00	0.10	17.00	1.04	A
BE 7	2	5.40	0.60	0.90	5.10	1.06	A
CE 144	2	8.40	0.60	0.60	8.00	1.05	A
NB 95	2	4.90	0.30	0.70	4.70	1.04	A
PB 210	2				3.30		ND
RU 103	2	4.80	0.30	0.60	4.70	1.02	A
ZR 95	2	2.00	0.20	0.20	2.00	1.00	A
BA 140	3	8.40	0.40	0.80	10.00	0.84	A
CE 141	3	1.30	0.10	0.30	1.30	1.00	A
CE 144	3	3.00	0.50	2.00	3.00	1.00	A
CS 134	3	5.50	0.50	0.60	5.40	1.02	A
CS 136	3	3.70	0.30	0.09	3.60	1.03	A
CS 137	3	6.10	0.40	0.20	5.90	1.03	A
DY 166	3				7.20		ND
I 131	3	17.00	1.00	0.20	16.20	1.05	A
NB 95	3	7.30	0.50	0.10	7.40	0.99	A
RU 103	3	5.80	0.30	0.70	6.00	0.97	A
SB 122	3	0.90	0.20	0.60			FP
SB 125	3	1.40	0.10	0.70	2.00	0.70	W
SB 126	3	3.10	0.10	0.10	3.10	1.00	A
TE 132	3	130.00	5.20	1.00	23.00	5.65	N
XE 133	3	6.00	0.50	0.60	6.40	0.94	A
ZR 95	3	1.90	0.10	0.30	2.30	0.83	A

Evaluation by Laboratory

SR

Savannah River Plant

Software: Canberra PROCOUNT

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CD 109	1	8.00	6.00	4.20			FP
CE 144	1	122.00	16.00	1.10	128.00	0.95	A
CO 57	1	12.00	1.00	0.10	12.00	1.00	A
CS 137	1	21.00	3.00	0.30	21.00	1.00	A
MN 54	1	18.00	2.00	0.20	17.00	1.06	A
NP 237	1	2.50	1.70	1.30			FP
BE 7	2	5.00	2.00	1.30	5.10	0.98	A
CE 144	2	8.00	2.00	0.80	8.00	1.00	A
NB 95	2	4.90	0.70	0.10	4.70	1.04	A
PB 210	2				3.30		ND
RU 103	2	4.60	0.80	0.20	4.70	0.98	A
ZR 95	2	2.10	0.40	0.20	2.00	1.05	A
BA 140	3	8.00	2.00	1.20	10.00	0.80	W
CE 141	3	1.30	0.40	0.40	1.30	1.00	A
CE 144	3	3.40	2.00	2.00	3.00	1.13	W
CS 134	3	5.30	0.50	0.30	5.40	0.98	A
CS 136	3	3.50	0.30	0.20	3.60	0.97	A
CS 137	3	5.70	0.90	0.30	5.90	0.97	W
DY 166	3				7.20		ND
I 131	3	16.00	2.00	0.30	16.20	0.99	A
NB 95	3	7.00	1.00	0.20	7.40	0.95	A
RU 103	3	5.50	1.00	0.30	6.00	0.92	A
SB 125	3	2.20	0.70	0.90	2.00	1.10	A
SB 126	3				3.10		ND
TE 132	3	26.00	5.00	0.20	23.00	1.13	A
XE 133	3				6.40		ND
ZR 95	3	2.40	0.40	0.40	2.30	1.04	A

Evaluation by Laboratory

TM

TMA/Eberline-Albuquerque Lab, NM

Software: Nuclear Data ASAP

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	124.00	1.51	0.98	128.00	0.97	A
CO 57	1	11.60	0.18	0.19	12.00	0.97	A
CS 137	1	21.30	0.43	0.43	21.00	1.01	A
MN 54	1	17.40	0.37	0.17	17.00	1.02	A
BE 7	2	5.62	0.88	2.07	5.10	1.10	A
CE 144	2	7.91	0.50	0.95	8.00	0.99	A
NB 95	2	5.02	0.20	0.14	4.70	1.07	A
PB 210	2				3.30		ND
RU 103	2	4.92	0.18	0.21	4.70	1.05	A
ZR 95	2	2.21	0.20	0.26	2.00	1.11	A
BA 140	3	6.36	0.62	1.54	10.00	0.64	W
CE 141	3	1.32	0.21	0.64	1.30	1.02	A
CE 144	3	2.91	0.92	2.87	3.00	0.97	A
CS 134	3	5.25	0.24	0.45	5.40	0.97	A
CS 136	3				3.60		ND
CS 137	3	5.72	0.23	0.32	5.90	0.97	W
DY 166	3				7.20		ND
I 131	3				16.20		ND
NB 95	3	7.46	0.26	0.25	7.40	1.01	A
PR 144	3	268.00	11.30	21.90			FP
RU 103	3	5.92	0.26	0.50	6.00	0.99	A
SB 125	3				2.00		ND
SB 126	3				3.10		ND
TE 132	3				23.00		ND
XE 133	3				6.40		ND
ZR 95	3	2.32	0.25	0.47	2.30	1.01	A

Evaluation by Laboratory

UK

Lockheed Martin Energy Systems, Oak Ridge

Software: EG&G Ortec Maestro

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CD 109	1	10.70	0.34	2.81			FP
CE 144	1	132.00	3.00	0.86	128.00	1.03	A
CO 57	1	12.00	0.34	0.79	12.00	1.00	A
CS 137	1	21.00	0.80	0.18	21.00	1.00	A
MN 54	1	17.40	0.73	0.22	17.00	1.02	A
NP 237	1	3.51	1.00	0.95			FP
PB 208	1	0.41	0.25	0.06			FP
TE125M	1	12.70	2.30	3.03			FP
TH 234	1	7.00	2.30	1.86			FP
BE 7	2	5.24	1.30	1.34	5.10	1.03	A
CE 144	2	7.93	0.96	0.85	8.00	0.99	A
NB 95	2	4.77	0.37	0.19	4.70	1.01	A
PB 210	2	5.15	4.70	3.54	3.30	1.56	N
RU 103	2	4.71	0.33	0.14	4.70	1.00	A
TE125M	2	4.79	2.80	3.03			FP
ZR 95	2	2.05	0.28	0.34	2.00	1.03	A
BA 140	3				10.00		ND
CE 141	3				1.30		ND
CE 144	3				3.00		ND
CS 134	3				5.40		ND
CS 136	3				3.60		ND
CS 137	3				5.90		ND
DY 166	3				7.20		ND
I 131	3				16.20		ND
NB 95	3				7.40		ND
RU 103	3				6.00		ND
SB 125	3				2.00		ND
SB 126	3				3.10		ND
TE 132	3				23.00		ND
XE 133	3				6.40		ND
ZR 95	3				2.30		ND

This laboratory did not report any data for sample 3. Due to the complexity of the sample, they chose not to participate in the intercomparison for sample 3.

Evaluation by Laboratory

UP

Lockheed Martin Energy Systems, Y-12 Plant, Oak Ridge

Software: Canberra PROCOUNT

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	121.50	21.70	1.10	128.00	0.95	A
CO 57	1	11.85	1.60	0.13	12.00	0.99	A
CS 137	1	21.18	3.17	0.34	21.00	1.01	A
MN 54	1	17.55	2.23	0.16	17.00	1.03	A
BE 7	2	5.32	1.85	1.34	5.10	1.04	A
CE 144	2	7.89	1.67	0.75	8.00	0.99	A
NB 95	2	4.85	0.75	0.12	4.70	1.03	A
PB 210	2				3.30		ND
RU 103	2	4.74	0.89	0.16	4.70	1.01	A
ZR 95	2	1.96	0.52	0.34	2.00	0.98	A
BA 140	3	9.02	4.67	4.86	10.00	0.90	A
CE 141	3	1.31	0.45	0.43	1.30	1.01	A
CE 144	3	2.98	1.94	1.98	3.00	0.99	A
CS 134	3	5.37	0.84	0.33	5.40	0.99	A
CS 136	3	3.56	0.59	0.21	3.60	0.99	A
CS 137	3	5.68	0.94	0.33	5.90	0.96	W
DY 166	3				7.20		ND
I 131	3	17.25	3.37	0.30	16.20	1.06	A
NB 95	3	7.20	1.08	0.19	7.40	0.97	A
RU 103	3	5.69	1.10	0.35	6.00	0.95	A
SB 125	3	2.23	0.89	0.92	2.00	1.14	A
SB 126	3	3.27	0.73	0.33	3.10	1.05	A
TE 132	3	29.62	5.46	0.27	23.00	1.29	W
XE 133	3	9.43	1.74	0.62	6.40	1.47	W
ZR 95	3	2.43	0.71	0.49	2.30	1.06	A

Evaluation by Laboratory

UY

Lockheed Martin Energy Systems, Y-12 Plant, Oak Ridge

Software: Canberra PROCOUNT

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	121.50	14.90	1.10	128.00	0.95	A
CO 57	1	11.84	1.60	0.13	12.00	0.99	A
CS 137	1	21.19	3.16	0.34	21.00	1.01	A
MN 54	1	17.56	2.22	0.16	17.00	1.03	A
BE 7	2	5.32	1.84	1.34	5.10	1.04	A
CE 144	2	7.89	1.33	0.75	8.00	0.99	A
NB 95	2	4.85	0.75	0.12	4.70	1.03	A
PB 210	2				3.30		ND
RU 103	2	4.74	0.72	0.16	4.70	1.01	A
ZR 95	2	1.96	0.51	0.34	2.00	0.98	A
BA 140	3	9.02	4.67	5.02	10.00	0.90	A
CE 141	3	1.31	0.44	0.43	1.30	1.01	A
CE 144	3	2.98	1.91	1.98	3.00	0.99	A
CS 134	3	5.37	0.83	0.32	5.40	0.99	A
CS 136	3	3.56	0.59	0.21	3.60	0.99	A
CS 137	3	5.69	0.94	0.33	5.90	0.96	W
DY 166	3				7.20		ND
I 131	3	17.26	3.34	0.30	16.20	1.07	A
NB 95	3	7.21	1.07	0.19	7.40	0.97	A
RU 103	3	5.70	0.90	0.35	6.00	0.95	A
SB 125	3	2.23	0.89	0.92	2.00	1.11	A
SB 126	3	3.27	0.71	0.66	3.10	1.05	A
TE 132	3	29.62	4.30	0.27	23.00	1.29	W
XE 133	3	9.43	1.78	0.58	6.40	1.47	W
ZR 95	3	2.43	0.70	0.49	2.30	1.05	A

Evaluation by Laboratory

WA

Environmental Radiation Lab, Off. of Public Health Labs. Seattle

Software: Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
AM 243	1	0.70	0.30	0.20			FP
CE 144	1	130.00	11.00	0.60	128.00	1.02	A
CO 57	1	12.30	1.10	0.10	12.00	1.03	A
CS 137	1	20.90	2.40	0.10	21.00	1.00	A
MN 54	1	17.60	2.10	0.10	17.00	1.04	A
BE 7	2	5.30	1.80	0.90	5.10	1.04	A
CE 144	2	8.00	1.30	0.60	8.00	1.00	A
NB 95	2	4.80	0.70	0.10	4.70	1.02	A
PB 210	2	4.40	4.00	2.60	3.30	1.33	W
RU 103	2	4.70	0.60	0.10	4.70	1.00	A
ZR 95	2	2.10	0.30	0.20	2.00	1.05	A
BA 140	3	7.90	1.40	0.70	10.00	0.79	W
CE 141	3	1.30	0.50	0.10	1.30	1.00	A
CE 144	3	3.10	2.00	0.60	3.00	1.03	A
CS 134	3	5.20	0.50	0.10	5.40	0.96	A
CS 136	3	3.70	0.30	0.10	3.60	1.03	A
CS 137	3	5.60	0.80	0.10	5.90	0.95	W
DY 166	3				7.20		ND
I 131	3	16.40	1.70	0.10	16.20	1.01	A
NB 95	3	7.10	1.00	0.10	7.40	0.96	A
PB 210	3	77.20	25.40	2.60			FP
RU 103	3	5.50	0.80	0.10	6.00	0.92	A
SB 125	3				2.00		ND
SB 126	3	3.00	0.30	0.10	3.10	0.97	A
TE 132	3	26.70	2.80	0.10	23.00	1.16	A
XE 133	3				6.40		ND
ZR 95	3	2.30	0.40	0.20	2.30	1.00	A

Evaluation by Laboratory

WC

Westinghouse Hanford Co.

Software: Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	123.00	5.60	1.10	128.00	0.96	A
CO 57	1	12.20	0.60	0.14	12.00	1.02	A
CS 137	1	21.00	1.70	0.34	21.00	1.00	A
MN 54	1	17.70	1.10	0.16	17.00	1.04	A
BE 7	2	5.16	0.86	1.30	5.10	1.01	A
CE 144	2	8.03	0.65	0.77	8.00	1.00	A
NB 95	2	4.87	0.38	0.12	4.70	1.04	A
PB 210	2				3.30		ND
RU 103	2	4.68	0.31	0.16	4.70	1.00	A
ZR 95	2	2.05	0.18	0.21	2.00	1.03	A
BA 140	3	10.10	0.89	1.50	10.00	1.01	A
CE 141	3	1.35	0.23	0.44	1.30	1.04	A
CE 144	3	3.08	0.98	2.00	3.00	1.03	A
CS 134	3	5.25	0.27	0.23	5.40	0.97	A
CS 136	3	3.54	0.16	0.16	3.60	0.98	A
CS 137	3	5.64	0.49	0.33	5.90	0.96	W
DY 166	3				7.20		ND
I 131	3	16.30	0.90	0.28	16.20	1.01	A
NB 95	3	7.24	0.55	0.19	7.40	0.98	A
RU 103	3	5.63	0.39	0.34	6.00	0.94	A
SB 125	3	2.09	0.35	0.87	2.00	1.05	A
SB 126	3	2.99	0.14	0.28	3.10	0.96	A
TE 132	3	26.10	1.50	12.00	23.00	1.13	A
XE 133	3	9.30	0.70	0.61	6.40	1.45	W
ZR 95	3	2.32	0.22	0.36	2.30	1.01	A

Evaluation by Laboratory

WN

WINCO, Idaho Chemical Processing Plant, Scoville

Software: IN HOUSE

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	135.00	18.30	0.90	128.00	1.05	A
CO 57	1				12.00		ND
CO 58	1	12.50	1.30	0.10			FP
CS 137	1	21.80	2.80	0.30	21.00	1.04	A
MN 54	1	17.50	2.20	0.10	17.00	1.03	A
BE 7	2	5.50	0.60	1.30	5.10	1.08	A
CE 144	2	8.30	1.10	0.70	8.00	1.04	A
NB 95	2	4.90	0.60	0.10	4.70	1.04	A
PB 210	2				3.30		ND
RU 103	2	4.80	0.80	0.20	4.70	1.02	A
ZR 95	2	2.30	0.20	0.20	2.00	1.15	A
BA 140	3	7.80	1.80	1.00	10.00	0.78	W
CE 141	3	1.30	1.80	0.40	1.30	1.00	A
CE 144	3	3.00	0.40	1.80	3.00	1.00	A
CS 134	3	5.40	0.60	0.20	5.40	1.00	A
CS 136	3	3.40	0.40	0.20	3.60	0.94	A
CS 137	3	5.40	0.60	0.30	5.90	0.92	W
DY 166	3				7.20		ND
I 131	3	15.60	1.90	0.20	16.20	0.96	A
NB 95	3	7.30	0.20	0.90	7.40	0.99	A
RU 103	3	5.70	0.80	0.30	6.00	0.95	A
SB 125	3				2.00		ND
SB 126	3	3.10	0.30	0.30	3.10	1.00	A
TE 132	3	25.50	3.50	0.20	23.00	1.11	A
XE 133	3				6.40		ND
ZR 95	3	2.30	0.30	0.30	2.30	1.00	A

Evaluation by Laboratory

YA

Yankee Atomic Electric Company, Westboro, MA

Software: Vertechs GDR/P 3.1

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>
CE 144	1	137.90	1.56	1.03	128.00	1.08	A
CO 57	1	12.75	0.17	0.20	12.00	1.06	A
CS 137	1	22.10	0.42	0.46	21.00	1.05	A
MN 54	1	17.94	0.38	0.18	17.00	1.06	A
BE 7	2	5.93	0.74	1.79	5.10	1.16	A
CE 144	2	8.57	0.46	0.80	8.00	1.07	A
NB 95	2	4.98	0.19	0.13	4.70	1.06	A
PB 210	2				3.30		ND
RU 103	2	5.43	0.19	0.23	4.70	1.16	A
ZR 95	2	2.15	0.13	0.24	2.00	1.08	A
BA 140	3	8.59	0.51	1.59	10.00	0.86	A
CE 141	3	1.36	0.18	0.59	1.30	1.05	A
CE 144	3	3.02	0.82	2.96	3.00	1.01	A
CS 134	3	5.48	0.15	0.29	5.40	1.01	A
CS 136	3	3.60	0.10	0.16	3.60	1.00	A
CS 137	3	5.87	0.23	0.34	5.90	0.99	A
DY 166	3				7.20		ND
I 131	3	16.29	0.27	0.96	16.20	1.01	A
NB 95	3	7.40	0.24	0.22	7.40	1.00	A
PB 210	3	35.25	2.33	6.16			FP
RU 103	3	6.52	0.24	0.48	6.00	1.09	A
SB 125	3	2.24	0.27	0.96	2.00	1.12	A
SB 126	3	3.22	0.08	0.24	3.10	1.04	A
TE 132	3	25.55	0.25	0.30	23.00	1.11	A
XE 133	3	8.71	0.36	1.02	6.40	1.36	W
ZR 95	3	2.45	0.16	0.42	2.30	1.07	A

Evaluation by Software

APTEC 4.0

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
AC 228	1	5.33	0.86	0.83			FP	LB
AC 228	2	5.61	0.96	0.83			FP	LB
BA 140	3				10.00		ND	LB
BE 7	2	5.26	0.66	0.90	5.10	1.03	A	LB
CE 141	3	1.33	0.19	0.35	1.30	1.02	A	LB
CE 144	1				128.00		ND	LB
CE 144	2				8.00		ND	LB
CE 144	3				3.00		ND	LB
CO 57	1				12.00		ND	LB
CS 134	3	5.32	0.34	0.81	5.40	0.99	A	LB
CS 136	3	4.05	0.31	0.95	3.60	1.13	A	LB
CS 137	1	21.55	0.77	0.25	21.00	1.03	A	LB
CS 137	3	5.67	0.28	0.35	5.90	0.96	W	LB
DY 166	3				7.20		ND	LB
I 131	3	16.55	0.80	2.73	16.20	1.02	A	LB
K 40	1	6.86	0.94	0.12			FP	LB
K 40	2	6.86	0.94	0.12			FP	LB
K 40	3	6.86	0.94	0.12			FP	LB
MN 54	1	17.91	0.59	0.11	17.00	1.05	A	LB
NB 95	2	4.97	0.23	0.08	4.70	1.06	A	LB
NB 95	3	7.39	0.31	0.14	7.40	1.00	A	LB
PB 210	2				3.30		ND	LB
PB 212	3	3.74	0.36	0.58			FP	LB
PB 214	1	53.57	7.06	14.01			FP	LB
PB 214	3	53.38	6.89	11.57			FP	LB
RU 103	2	4.77	0.23	0.12	4.70	1.01	A	LB
RU 103	3	5.78	0.29	0.26	6.00	0.96	A	LB
SB 125	3				2.00		ND	LB
SB 126	3	2.80	0.23	0.39	3.10	0.90	A	LB
TE 132	3				23.00		ND	LB
TH 234	2	1.85	0.78	1.47			FP	LB
XE 133	3				6.40		ND	LB
ZR 95	2	2.02	0.21	0.21	2.00	1.01	A	LB
ZR 95	3	1.96	0.26	0.37	2.30	0.85	A	LB

Evaluation by Software

APTEC 4.3

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	3	8.00	1.60	1.60	10.00	0.80	W	BL
BE 7	2	5.30	1.40	1.80	5.10	1.04	A	BL
CE 141	3	1.20	0.40	0.60	1.30	0.92	A	BL
CE 144	1	129.00	11.00	1.50	128.00	1.01	A	BL
CE 144	2				8.00		ND	BL
CE 144	3	2.80	1.60	2.50	3.00	0.93	A	BL
CO 57	1	12.00	1.00	0.20	12.00	1.00	A	BL
CS 134	3	5.30	0.60	0.30	5.40	0.98	A	BL
CS 136	3	3.70	0.60	0.30	3.60	1.03	A	BL
CS 137	1	20.00	1.00	0.40	21.00	0.95	W	BL
CS 137	3	5.30	0.50	0.30	5.90	0.90	W	BL
DY 166	3				7.20		ND	BL
I 131	3	17.00	1.00	0.40	16.20	1.05	A	BL
MN 54	1	18.00	1.00	0.20	17.00	1.06	A	BL
NB 95	2	4.80	0.40	0.20	4.70	1.02	A	BL
NB 95	3	7.20	0.60	0.20	7.40	0.97	A	BL
PB 210	2				3.30		ND	BL
RU 103	2	4.80	0.50	0.20	4.70	1.02	A	BL
RU 103	3	5.70	0.70	0.50	6.00	0.95	A	BL
SB 125	3	2.20	0.90	1.00	2.00	1.10	A	BL
SB 126	3	3.50	0.50	0.30	3.10	1.13	A	BL
TE 132	3	30.00	3.00	0.40	23.00	1.30	W	BL
XE 133	3				6.40		ND	BL
ZR 95	2	2.10	0.40	0.30	2.00	1.05	A	BL
ZR 95	3	2.20	0.40	0.50	2.30	0.96	A	BL

Evaluation by Software

APTEC 5.3

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	3	10.20	2.20	4.70	10.00	1.02	A	CA
BE 7	2	5.20	1.30	1.60	5.10	1.02	A	CA
CE 141	3	1.30	0.40	0.60	1.30	1.00	A	CA
CE 144	1	141.00	12.50	2.00	128.00	1.10	W	CA
CE 144	2	8.00	1.60	1.10	8.00	1.00	A	CA
CE 144	3	2.70	1.60	2.60	3.00	0.90	A	CA
CO 57	1	12.40	1.00	0.20	12.00	1.03	A	CA
CS 134	3	4.90	0.70	1.40	5.40	0.91	A	CA
CS 136	3	3.80	0.70	1.70	3.60	1.06	A	CA
CS 137	1	21.50	0.90	0.50	21.00	1.02	A	CA
CS 137	3				5.90		ND	CA
DY 166	3				7.20		ND	CA
I 131	3	16.40	1.40	3.10	16.20	1.01	A	CA
MN 54	1	17.80	1.10	0.20	17.00	1.05	A	CA
NB 95	2	4.90	0.40	0.20	4.70	1.04	A	CA
NB 95	3	7.30	0.60	0.30	7.40	0.99	A	CA
PB 210	2				3.30		ND	CA
RU 103	2	4.80	0.50	3.00	4.70	1.02	A	CA
RU 103	3	5.70	0.50	0.50	6.00	0.95	A	CA
SB 125	3				2.00		ND	CA
SB 126	3	3.30	0.40	0.50	3.10	1.06	A	CA
TE 132	3	26.90	2.70	8.70	23.00	1.17	A	CA
XE 133	3				6.40		ND	CA
ZR 95	2	2.40	0.40	0.30	2.00	1.20	W	CA
ZR 95	3	2.70	0.50	0.50	2.30	1.17	A	CA

Evaluation by Software

Canberra Genie PC

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	3	8.04	2.40	1.44	10.00	0.80	A	SA
BE 7	2	5.25	2.32	1.51	5.10	1.03	A	SA
CE 141	3	1.33	0.59	0.51	1.30	1.02	A	SA
CE 144	1	131.00	24.20	1.25	128.00	1.02	A	SA
CE 144	2	7.93	1.78	1.15	8.00	0.99	A	SA
CE 144	3				3.00		ND	SA
CO 57	1	12.50	2.35	0.17	12.00	1.04	A	SA
CS 134	3	5.40	1.20	0.38	5.40	1.00	A	SA
CS 136	3	3.65	1.18	0.25	3.60	1.01	A	SA
CS 137	1	21.60	3.60	0.41	21.00	1.03	A	SA
CS 137	3	5.71	1.19	0.36	5.90	0.97	W	SA
DY 166	3				7.20		ND	SA
I 131	3	16.70	2.98	0.33	16.20	1.03	A	SA
MN 54	1	17.90	2.88	0.18	17.00	1.05	A	SA
NB 95	2	4.92	1.00	0.14	4.70	1.05	A	SA
NB 95	3	7.29	1.74	0.25	7.40	0.99	A	SA
PB 210	2				3.30		ND	SA
RU 103	2	4.65	1.03	0.18	4.70	0.99	A	SA
RU 103	3	5.59	1.22	0.38	6.00	0.93	A	SA
SB 125	3	2.10	0.95	1.09	2.00	1.05	A	SA
SB 126	3	3.09	0.69	0.32	3.10	1.00	A	SA
TE 132	3	27.60	4.92	0.30	23.00	1.20	W	SA
XE 133	3	7.27	4.07	1.00	6.40	1.14	A	SA
ZR 95	2	2.22	0.87	0.25	2.00	1.11	A	SA
ZR 95	3	2.34	0.97	0.40	2.30	1.02	A	SA

Evaluation by Software

Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
AC 228	1	2.61	0.27				FP	AU
AC 228	1	1.67	0.51	0.00			FP	BX
AC 228	2	2.61	0.27				FP	AU
AC 228	3	2.61	0.37				FP	AU
AM 243	1	2.05	0.94	0.78			FP	HL
AM 243	1	0.70	0.30	0.20			FP	WA
BA 133	1	0.32	0.41	1.55			FP	BX
BA 140	1			1.10				BP
BA 140	2			0.60				BP
BA 140	3				10.00		ND	AU
BA 140	3	8.65	0.76		10.00	0.87	A	BP
BA 140	3				10.00		ND	BX
BA 140	3	7.97	0.78	0.12	10.00	0.80	W	CH
BA 140	3	26.01	5.12	3.05	10.00	2.60	N	HL
BA 140	3	7.87	0.77	1.50	10.00	0.79	W	NL
BA 140	3	5.40	1.00		10.00	0.54	W	OT
BA 140	3	7.90	1.40	0.70	10.00	0.79	W	WA
BA 140	3	10.10	0.89	1.50	10.00	1.01	A	WC
BE 7	1			2.60				BP
BE 7	2	4.51	0.71	0.65	5.10	0.88	A	AU
BE 7	2	5.20	0.88		5.10	1.02	A	BP
BE 7	2				5.10		ND	BX
BE 7	2	5.43	0.85	1.25	5.10	1.06	A	CH
BE 7	2	20.29	10.41	4.28	5.10	3.98	N	HL
BE 7	2	5.36	0.84	1.70	5.10	1.05	A	NL
BE 7	2	3.80	1.20		5.10	0.75	W	OT
BE 7	2	5.30	1.80	0.90	5.10	1.04	A	WA
BE 7	2	5.16	0.86	1.30	5.10	1.01	A	WC
BE 7	3			2.80				BP
CD 109	1	9.30	2.60	3.87			FP	CH
CE 141	1			0.21				BP
CE 141	2			0.17				BP
CE 141	3				1.30		ND	AU
CE 141	3	1.33	0.22		1.30	1.02	A	BP
CE 141	3				1.30		ND	BX
CE 141	3	1.33	0.21	0.43	1.30	1.02	A	CH
CE 141	3	9.20	3.46	2.50	1.30	7.08	N	HL
CE 141	3	1.31	0.21	0.52	1.30	1.00	A	NL
CE 141	3	0.34	0.29		1.30	0.26	N	OT
CE 141	3	1.20	0.30		1.30	0.92	A	OT
CE 141	3	1.30	0.50	0.10	1.30	1.00	A	WA
CE 141	3	1.35	0.23	0.44	1.30	1.04	A	WC
CE 144	1	106.40	1.30	0.44	128.00	0.83	A	AU
CE 144	1	115.00	5.00		128.00	0.90	A	BP
CE 144	1				128.00		ND	BX
CE 144	1	122.20	1.59	1.07	128.00	0.95	A	CH
CE 144	1	690.80	109.20	5.90	128.00	5.40	N	HL
CE 144	1	121.00	2.00	1.10	128.00	0.95	A	NL
CE 144	1	120.00	10.00		128.00	0.94	A	OT
CE 144	1	130.00	11.00	0.60	128.00	1.02	A	WA

Evaluation by Software

Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
CE 144	1	123.00	5.60	1.10	128.00	0.96	A	WC
CE 144	2	6.78	0.43	0.44	8.00	0.85	A	AU
CE 144	2	8.11	0.49		8.00	1.01	A	BP
CE 144	2				8.00		ND	BX
CE 144	2	7.76	0.55	0.76	8.00	0.97	A	CH
CE 144	2	48.04	11.08	4.32	8.00	6.01	N	HL
CE 144	2	7.88	0.47	0.80	8.00	0.99	A	NL
CE 144	2	7.40	0.90		8.00	0.93	A	OT
CE 144	2	8.00	1.30	0.60	8.00	1.00	A	WA
CE 144	2	8.03	0.65	0.77	8.00	1.00	A	WC
CE 144	3	2.50	0.77	0.44	3.00	0.83	A	AU
CE 144	3	2.95	0.93		3.00	0.98	A	BP
CE 144	3				3.00		ND	BX
CE 144	3	2.60	0.96	1.95	3.00	0.87	A	CH
CE 144	3	18.96	12.50	10.33	3.00	6.32	N	HL
CE 144	3	2.98	0.94	2.40	3.00	0.99	A	NL
CE 144	3	2.60	1.40		3.00	0.87	A	OT
CE 144	3	3.10	2.00	0.60	3.00	1.03	A	WA
CE 144	3	3.08	0.98	2.00	3.00	1.03	A	WC
CO 57	1	10.58	0.16	0.06	12.00	0.88	A	AU
CO 57	1	12.00	0.40		12.00	1.00	A	BP
CO 57	1				12.00		ND	BX
CO 57	1	11.90	0.18	0.13	12.00	0.99	A	CH
CO 57	1	73.17	10.23	0.66	12.00	6.10	N	HL
CO 57	1	11.90	0.20	0.19	12.00	0.99	A	NL
CO 57	1	11.00	1.00		12.00	0.92	A	OT
CO 57	1	12.30	1.10	0.10	12.00	1.03	A	WA
CO 57	1	12.20	0.60	0.14	12.00	1.02	A	WC
CO 57	2			0.09				BP
CO 57	3			0.25				BP
CS 134	1			0.26				BP
CS 134	2			0.17				BP
CS 134	3	5.23	0.23	0.18	5.40	0.97	A	AU
CS 134	3	5.27	0.24		5.40	0.98	A	BP
CS 134	3	7.55	0.33	5.84	5.40	1.40	N	BX
CS 134	3	5.30	0.24	0.40	5.40	0.98	A	CH
CS 134	3	7.38	0.71	0.22	5.40	1.37	N	HL
CS 134	3	5.41	0.16	0.29	5.40	1.01	A	NL
CS 134	3	3.30	0.40		5.40	0.61	N	OT
CS 134	3	5.20	0.50	0.10	5.40	0.96	A	WA
CS 134	3	5.25	0.27	0.23	5.40	0.97	A	WC
CS 136	1			0.16				BP
CS 136	2			0.11				BP
CS 136	3	3.41	0.19	0.10	3.60	0.95	A	AU
CS 136	3	3.83	0.15		3.60		ND	BP
CS 136	3				3.60		ND	BX
CS 136	3	3.68	0.22	0.13	3.60	1.02	A	CH
CS 136	3	3.92	0.39	0.14	3.60	1.09	A	HL
CS 136	3	3.58	0.20	0.25	3.60	0.99	A	NL
CS 136	3	2.30	0.50		3.60	0.64	W	OT

Evaluation by Software

Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
CS 136	3	3.70	0.30	0.10	3.60	1.03	A	WA
CS 136	3	3.54	0.16	0.16	3.60	0.98	A	WC
CS 137	1	22.18	0.45	0.10	21.00	1.06	A	AU
CS 137	1	21.00	1.40		21.00	1.00	A	BP
CS 137	1	34.40	0.69	0.75	21.00	1.64	N	BX
CS 137	1	21.60	0.43	0.32	21.00	1.03	A	CH
CS 137	1	37.77	4.55	0.50	21.00	1.80	N	HL
CS 137	1	20.20	0.40	0.40	21.00	0.96	W	NL
CS 137	1	18.00	1.00		21.00	0.86	N	OT
CS 137	1	20.90	2.40	0.10	21.00	1.00	A	WA
CS 137	1	21.00	1.70	0.34	21.00	1.00	A	WC
CS 137	2			0.17				BP
CS 137	3	5.49	0.23	0.10	5.90	0.93	W	AU
CS 137	3	5.64	0.43		5.90	0.96	W	BP
CS 137	3				5.90		ND	BX
CS 137	3	5.78	0.24	0.32	5.90	0.98	A	CH
CS 137	3	10.13	1.42	0.48	5.90	1.72	N	HL
CS 137	3	5.41	0.22	0.30	5.90	0.92	W	NL
CS 137	3	3.50	0.50		5.90	0.59	N	OT
CS 137	3	5.60	0.80	0.10	5.90	0.95	W	WA
CS 137	3	5.64	0.49	0.33	5.90	0.96	W	WC
DY 166	3				7.20		ND	AU
DY 166	3				7.20		ND	BP
DY 166	3				7.20		ND	BX
DY 166	3				7.20		ND	CH
DY 166	3				7.20		ND	HL
DY 166	3				7.20		ND	NL
DY 166	3				7.20		ND	OT
DY 166	3				7.20		ND	WA
DY 166	3				7.20		ND	WC
FR 223	1	9.55	7.33	16.10			FP	BX
I 125	3	23.40	1.58	2.06			FP	CH
I 129	1	0.95	0.04	0.05			FP	BX
I 129	2	0.07	0.02	2.28			FP	BX
I 129	3	9.22	0.38	0.73			FP	BX
I 131	1			0.20				BP
I 131	2			0.16				BP
I 131	3	12.05	0.22	0.07	16.20	0.74	W	AU
I 131	3	16.30	0.80		16.20	1.01	A	BP
I 131	3				16.20		ND	BX
I 131	3	17.60	0.32	0.30	16.20	1.09	A	CH
I 131	3	64.24	8.80	1.77	16.20	3.97	N	HL
I 131	3	17.40	0.30	0.37	16.20	1.08	A	NL
I 131	3	15.00	1.00		16.20	0.93	A	OT
I 131	3	16.40	1.70	0.10	16.20	1.01	A	WA
I 131	3	16.30	0.90	0.28	16.20	1.01	A	WC
K 40	1	6.68	0.89				FP	AU
K 40	1	4.44	1.18	0.00			FP	BX
K 40	1	5.15	1.37	0.00			FP	CH
K 40	2	6.68	0.89				FP	AU

Evaluation by Software

Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
K 40	2	6.05	0.81	0.00			FP	BX
K 40	2	5.15	1.37	0.00			FP	CH
K 40	3	6.68	0.89				FP	AU
K 40	3	6.05	0.81	0.00			FP	BX
K 40	3	5.15	1.37	0.00			FP	CH
KR 85	1	80.60	67.40	314.00			FP	BX
MN 54	1	16.97	0.36	0.12	17.00	1.00	A	AU
MN 54	1	17.70	0.80		17.00	1.04	A	BP
MN 54	1				17.00		ND	BX
MN 54	1	17.80	0.38	0.14	17.00	1.05	A	CH
MN 54	1	18.15	2.14	0.13	17.00	1.07	A	HL
MN 54	1	17.60	0.40	0.19	17.00	1.04	A	NL
MN 54	1	12.00	1.00		17.00	0.71	N	OT
MN 54	1	17.60	2.10	0.10	17.00	1.04	A	WA
MN 54	1	17.70	1.10	0.16	17.00	1.04	A	WC
MN 54	2			0.13				BP
MN 54	3			0.20				BP
NB 95	1			0.18				BP
NB 95	2	4.79	0.19	0.11	4.70	1.02	A	AU
NB 95	2	4.86	0.31		4.70	1.03	A	BP
NB 95	2				4.70		ND	BX
NB 95	2	4.92	0.20	0.10	4.70	1.05	A	CH
NB 95	2	6.15	0.85	0.13	4.70	1.31	W	HL
NB 95	2	4.88	0.20	0.15	4.70	1.04	A	NL
NB 95	2	2.70	0.40		4.70	0.57	W	OT
NB 95	2	4.80	0.70	0.10	4.70	1.02	A	WA
NB 95	2	4.87	0.38	0.12	4.70	1.04	A	WC
NB 95	3	7.13	0.25	0.11	7.40	0.96	A	AU
NB 95	3	7.22	0.44		7.40	0.98	A	BP
NB 95	3				7.40		ND	BX
NB 95	3	7.31	0.25	0.17	7.40	0.99	A	CH
NB 95	3	9.14	1.20	0.20	7.40	1.24	W	HL
NB 95	3	7.25	0.25	0.24	7.40	0.98	A	NL
NB 95	3	4.80	0.50		7.40	0.65	W	OT
NB 95	3	7.10	1.00	0.10	7.40	0.96	A	WA
NB 95	3	7.24	0.55	0.19	7.40	0.98	A	WC
NP 237	1	17.29	6.90	3.98			FP	HL
PB 210	2				3.30		ND	AU
PB 210	2				3.30		ND	BP
PB 210	2				3.30		ND	BX
PB 210	2				3.30		ND	CH
PB 210	2				3.30		ND	HL
PB 210	2				3.30		ND	NL
PB 210	2				3.30		ND	OT
PB 210	2	4.40	4.00	2.60	3.30	1.33	W	WA
PB 210	2				3.30		ND	WC
PB 210	3	77.20	25.40	2.60			FP	WA
PB 212	1	1.81	0.11				FP	AU
PB 212	2	1.81	0.10				FP	AU
PB 212	3	1.67	0.20				FP	AU

Evaluation by Software

Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
PB 214	1	1.55	0.19				FP	AU
PB 214	1	0.53	0.69	0.93			FP	BX
PB 214	2	1.55	0.17				FP	AU
PB 214	2	4.83	0.53	0.79			FP	BX
PB 214	3	4.83	0.74	1.34			FP	BX
RN 222	1	44.90	37.50	63.60			FP	BX
RN 222	2	1350.00	205.00	298.00			FP	BX
RN 222	3	1220.00	364.00	708.00			FP	BX
RU 103	1			0.29				BP
RU 103	2				4.70		ND	AU
RU 103	2	4.52	0.32		4.70	0.96	A	BP
RU 103	2				4.70		ND	BX
RU 103	2	4.84	0.18	0.15	4.70	1.03	A	CH
RU 103	2	15.80	2.30	0.46	4.70	3.36	N	HL
RU 103	2	4.78	0.18	0.21	4.70	1.02	A	NL
RU 103	2	3.40	0.30		4.70	0.72	W	OT
RU 103	2	4.70	0.60	0.10	4.70	1.00	A	WA
RU 103	2	4.68	0.31	0.16	4.70	1.00	A	WC
RU 103	3				6.00		ND	AU
RU 103	3	5.43	0.41		6.00	0.90	A	BP
RU 103	3				6.00		ND	BX
RU 103	3	5.82	0.25	0.34	6.00	0.97	A	CH
RU 103	3	19.10	2.91	1.00	6.00	3.18	N	HL
RU 103	3	5.74	0.25	0.42	6.00	0.96	A	NL
RU 103	3	4.10	0.40		6.00	0.68	W	OT
RU 103	3	5.50	0.80	0.10	6.00	0.92	A	WA
RU 103	3	5.63	0.39	0.34	6.00	0.94	A	WC
SB 122	3	0.71	0.24	0.47			FP	CH
SB 125	1			0.69				BP
SB 125	2			0.45				BP
SB 125	3				2.00		ND	AU
SB 125	3	2.12	0.35		2.00	1.06	A	BP
SB 125	3	2.27	0.41	0.90	2.00	1.14	A	CH
SB 125	3	4.25	2.67	3.20	2.00	2.13	N	HL
SB 125	3	2.08	0.53	2.00	2.00	1.05	A	NL
SB 125	3				2.00		ND	OT
SB 125	3				2.00		ND	WA
SB 125	3	2.09	0.35	0.87	2.00	1.05	A	WC
SB 126	1			0.27				BP
SB 126	2			0.13				BP
SB 126	3				3.10		ND	AU
SB 126	3	3.13	0.14		3.10	1.01	A	BP
SB 126	3				3.10		ND	BX
SB 126	3	3.12	0.18	0.28	3.10	1.01	A	CH
SB 126	3	5.25	0.59	0.41	3.10	1.69	N	HL
SB 126	3				3.10		N	NL
SB 126	3	1.90	0.30		3.10	0.61	W	OT
SB 126	3	3.00	0.30	0.10	3.10	0.97	A	WA
SB 126	3	2.99	0.14	0.28	3.10	0.96	A	WC
SB125	3				2.00		ND	BX

Evaluation by Software

Canberra Genie VMS

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
TE 132	1			0.14				BP
TE 132	2			0.11				BP
TE 132	3	21.21	0.24	0.06	23.00	0.92	A	AU
TE 132	3	27.50	1.00		23.00	1.20	A	BP
TE 132	3				23.00		ND	BX
TE 132	3	30.20	0.34	0.27	23.00	1.31	W	CH
TE 132	3	191.00	35.60	1.80	23.00	8.30	N	HL
TE 132	3	29.80	0.30	0.33	23.00	1.30	W	NL
TE 132	3	27.00	1.00		23.00	1.17	A	OT
TE 132	3	26.70	2.80	0.10	23.00	1.16	A	WA
TE 132	3	26.10	1.50	12.00	23.00	1.13	A	WC
TH 227	1	3.07	2.36	5.29			FP	BX
TL 208	1	2.28	0.20				FP	AU
TL 208	2	2.27	0.16				FP	AU
TL 208	3	2.25	0.22				FP	AU
U 234	1	267.00	124.00	251.00			FP	BX
U 234	3	631.00	110.00	278.00			FP	BX
XE 133	1			0.94				BP
XE 133	2			0.31				BP
XE 133	3				6.40		ND	AU
XE 133	3	9.72	0.59		6.40	1.52	N	BP
XE 133	3				6.40		ND	BX
XE 133	3				6.40		ND	CH
XE 133	3				6.40		ND	HL
XE 133	3	9.38	0.38	0.74	6.40	1.47	W	NL
XE 133	3				6.40		ND	OT
XE 133	3				6.40		ND	WA
XE 133	3	9.30	0.70	0.61	6.40	1.45	W	WC
ZR 89	3	0.44	0.16	0.17			FP	CH
ZR 95	1			0.33				BP
ZR 95	2	2.14	0.20	0.20	2.00	1.07	A	AU
ZR 95	2	2.07	0.17		2.00	1.04	A	BP
ZR 95	2				2.00		ND	BX
ZR 95	2	2.18	0.20	0.10	2.00	1.09	A	CH
ZR 95	2	2.83	0.46	0.23	2.00	1.42	W	HL
ZR 95	2	2.07	0.15	0.31	2.00	1.04	A	NL
ZR 95	2	1.20	0.40		2.00	0.60	W	OT
ZR 95	2	2.10	0.30	0.20	2.00	1.05	A	WA
ZR 95	2	2.05	0.18	0.21	2.00	1.03	A	WC
ZR 95	3	2.25	0.24	0.20	2.30	0.98	A	AU
ZR 95	3	2.34	0.21		2.30	1.02	A	BP
ZR 95	3				2.30		ND	BX
ZR 95	3	2.30	0.24	0.34	2.30	1.00	A	CH
ZR 95	3	3.19	0.58	0.40	1.39	1.39	W	HL
ZR 95	3	2.36	0.20	0.49	2.30	1.03	A	NL
ZR 95	3	1.30	0.40		2.30	0.57	W	OT
ZR 95	3	2.30	0.40	0.20	2.30	1.00	A	WA
ZR 95	3	2.32	0.22	0.36	2.30	1.01	A	WC

Evaluation by Software

Canberra MicroSAMPO

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	3	8.40	0.40	0.80	10.00	0.84	A	SL
BE 7	2	5.40	0.60	0.90	5.10	1.06	A	SL
CE 141	3	1.30	0.10	0.30	1.30	1.00	A	SL
CE 144	1	132.50	5.40	0.90	128.00	1.04	A	SL
CE 144	2	8.40	0.60	0.60	8.00	1.05	A	SL
CE 144	3	3.00	0.50	2.00	3.00	1.00	A	SL
CO 57	1	12.10	0.60	0.10	12.00	1.01	A	SL
CS 134	3	5.50	0.50	0.60	5.40	1.02	A	SL
CS 136	3	3.70	0.30	0.09	3.60	1.03	A	SL
CS 137	1	21.80	1.30	0.20	21.00	1.04	A	SL
CS 137	3	6.10	0.40	0.20	5.90	1.03	A	SL
DY 166	3				7.20		ND	SL
I 131	3	17.00	1.00	0.20	16.20	1.05	A	SL
MN 54	1	17.70	1.00	0.10	17.00	1.04	A	SL
NB 95	2	4.90	0.30	0.70	4.70	1.04	A	SL
NB 95	3	7.30	0.50	0.10	7.40	0.99	A	SL
PB 210	2				3.30		ND	SL
RU 103	2	4.80	0.30	0.60	4.70	1.02	A	SL
RU 103	3	5.80	0.30	0.70	6.00	0.97	A	SL
SB 122	3	0.90	0.20	0.60			FP	SL
SB 125	3	1.40	0.10	0.70	2.00	0.70	W	SL
SB 126	3	3.10	0.10	0.10	3.10	1.00	A	SL
TE 132	3	130.00	5.20	1.00	23.00	5.65	N	SL
XE 133	3	6.00	0.50	0.60	6.40	0.94	A	SL
ZR 95	2	2.00	0.20	0.20	2.00	1.00	A	SL
ZR 95	3	1.90	0.10	0.30	2.30	0.83	A	SL

Evaluation by Software

Canberra PROCount

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 133	1	4.15	0.66	1.07			FP	SI
BA 133	2	4.51	0.41	0.87			FP	SI
BA 140	3	9.52	2.18	1.54	10.00	0.95	A	GA
BA 140	3	7.72	3.12	1.21	10.00	0.77	W	HC
BA 140	3	7.70	0.70	1.10	10.00	0.77	W	OD
BA 140	3	30.90	2.40	4.30	10.00	3.09	N	SI
BA 140	3	8.00	2.00	1.20	10.00	0.80	W	SR
BA 140	3	9.02	4.67	4.86	10.00	0.90	A	UP
BA 140	3	9.02	4.67	5.02	10.00	0.90	A	UY
BE 7	2	5.29	1.83	1.34	5.10	1.04	A	GA
BE 7	2	5.22	1.84	1.19	5.10	1.02	A	HC
BE 7	2	5.30	0.90	1.10	5.10	1.04	A	OD
BE 7	2	19.90	3.10	4.60	5.10	3.90	N	SI
BE 7	2	5.00	2.00	1.30	5.10	0.98	A	SR
BE 7	2	5.32	1.85	1.34	5.10	1.04	A	UP
BE 7	2	5.32	1.84	1.34	5.10	1.04	A	UY
CD 109	1	8.00	2.70	4.00			FP	OD
CD 109	1	8.00	6.00	4.20			FP	SR
CE 141	3	1.28	0.43	0.42	1.30	0.98	A	GA
CE 141	3	1.29	0.46	0.41	1.30	0.99	A	HC
CE 141	3	1.30	0.20	0.40	1.30	1.00	A	OD
CE 141	3	5.65	0.91	1.90	1.30	4.35	N	SI
CE 141	3	1.30	0.40	0.40	1.30	1.00	A	SR
CE 141	3	1.31	0.45	0.43	1.30	1.01	A	UP
CE 141	3	1.31	0.44	0.43	1.30	1.01	A	UY
CE 144	1	118.03	14.51	14.86	128.00	0.92	A	GA
CE 144	1	125.30	25.30	1.01	128.00	0.98	A	HC
CE 144	1	125.90	7.70	1.10	128.00	0.98	A	OD
CE 144	1	561.00	7.00	5.00	128.00	4.38	N	SI
CE 144	1	122.00	16.00	1.10	128.00	0.95	A	SR
CE 144	1	121.50	21.70	1.10	128.00	0.95	A	UP
CE 144	1	121.50	14.90	1.10	128.00	0.95	A	UY
CE 144	2	7.67	1.29	0.73	8.00	0.96	A	GA
CE 144	2	8.06	1.93	0.79	8.00	1.01	A	HC
CE 144	2	7.90	0.70	0.70	8.00	0.99	A	OD
CE 144	2	34.30	2.20	3.40	8.00	4.29	N	SI
CE 144	2	8.00	2.00	0.80	8.00	1.00	A	SR
CE 144	2	7.89	1.67	0.75	8.00	0.99	A	UP
CE 144	2	7.89	1.33	0.75	8.00	0.99	A	UY
CE 144	3	2.90	1.86	1.93	3.00	0.97	A	GA
CE 144	3	2.96	1.95	1.91	3.00	0.99	A	HC
CE 144	3	3.00	1.00	1.90	3.00	1.00	A	OD
CE 144	3	12.30	4.00	8.70	3.00	4.10	N	SI
CE 144	3	3.40	2.00	2.00	3.00	1.13	W	SR
CE 144	3	2.98	1.94	1.98	3.00	0.99	A	UP
CE 144	3	2.98	1.91	1.98	3.00	0.99	A	UY
CO 57	1	11.55	1.58	0.13	12.00	0.96	A	GA
CO 57	1	11.95	1.83	0.13	12.00	1.00	A	HC
CO 57	1	11.80	0.80	0.10	12.00	0.98	A	OD
CO 57	1	50.60	0.80	0.60	12.00	4.22	N	SI

Evaluation by Software

Canberra PROCOUNT

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
CO 57	1	12.00	1.00	0.10	12.00	1.00	A	SR
CO 57	1	11.85	1.60	0.13	12.00	0.99	A	UP
CO 57	1	11.84	1.60	0.13	12.00	0.99	A	UY
CS 134	3	5.27	0.84	0.23	5.40	0.98	A	GA
CS 134	3	5.18	0.97	0.38	5.40	0.96	A	HC
CS 134	3	4.80	0.30	0.30	5.40	0.89	A	OD
CS 134	3	18.30	0.60	1.40	5.40	3.39	N	SI
CS 134	3	5.30	0.50	0.30	5.40	0.98	A	SR
CS 134	3	5.37	0.84	0.33	5.40	0.99	A	UP
CS 134	3	5.37	0.83	0.32	5.40	0.99	A	UY
CS 136	3	3.47	0.58	0.21	3.60	0.96	A	GA
CS 136	3	3.70	0.74	0.16	3.60	1.03	A	HC
CS 136	3				3.60		ND	OD
CS 136	3	11.90	0.50	0.40	3.60	3.31	N	SI
CS 136	3	3.50	0.30	0.20	3.60	0.97	A	SR
CS 136	3	3.56	0.59	0.21	3.60	0.99	A	UP
CS 136	3	3.56	0.59	0.21	3.60	0.99	A	UY
CS 137	1	21.15	3.34	0.34	21.00	1.01	A	GA
CS 137	1	21.20	3.82	0.32	21.00	1.01	A	HC
CS 137	1	21.10	1.60	0.30	21.00	1.00	A	OD
CS 137	1	74.40	1.50	1.10	21.00	3.54	N	SI
CS 137	1	21.00	3.00	0.30	21.00	1.00	A	SR
CS 137	1	21.18	3.17	0.34	21.00	1.01	A	UP
CS 137	1	21.19	3.16	0.34	21.00	1.01	A	UY
CS 137	3	5.67	0.98	0.33	5.90	0.96	W	GA
CS 137	3	5.68	1.10	0.33	5.90	0.96	W	HC
CS 137	3	5.70	0.50	0.30	5.90	0.97	W	OD
CS 137	3	19.90	0.80	1.10	5.90	3.37	N	SI
CS 137	3	5.70	0.90	0.30	5.90	0.97	W	SR
CS 137	3	5.68	0.94	0.33	5.90	0.96	W	UP
CS 137	3	5.69	0.94	0.33	5.90	0.96	W	UY
DY 166	3				7.20		ND	GA
DY 166	3				7.20		ND	HC
DY 166	3				7.20		ND	OD
DY 166	3				7.20		ND	SI
DY 166	3				7.20		ND	SR
DY 166	3				7.20		ND	UP
DY 166	3				7.20		ND	UY
I 125	1	252.50	30.80	5.60			FP	OD
I 125	2	14.90	2.60	3.10			FP	OD
I 125	3	22.00	4.00	6.40			FP	OD
I 129	1	122.00	5.00	10.00			FP	SI
I 129	2	8.42	2.54	4.75			FP	SI
I 129	3	36.90	5.50	10.60			FP	SI
I 131	3	16.42	3.39	0.30	16.20	1.01	A	GA
I 131	3	16.70	2.95	0.29	16.20	1.03	A	HC
I 131	3	16.70	1.40	0.30	16.20	1.03	A	OD
I 131	3	67.20	1.20	1.10	16.20	4.15	N	SI
I 131	3	16.00	2.00	0.30	16.20	0.99	A	SR
I 131	3	17.25	3.37	0.30	16.20	1.06	A	UP

Evaluation by Software

Canberra PROCOUNT

Nuclide	Sample	Value	Error	MDA	EML Value	Ratio	Evaluation	Lab
I 131	3	17.26	3.34	0.30	16.20	1.07	A	UY
K 40	1	21.30	3.20	0.00			FP	SI
K 40	2	21.30	3.20	0.00			FP	SI
K 40	3	21.30	3.20	0.00			FP	SI
MN 54	1	17.46	2.24	0.16	17.00	1.03	A	GA
MN 54	1	17.70	2.80	0.14	17.00	1.04	A	HC
MN 54	1	17.50	1.10	0.10	17.00	1.03	A	OD
MN 54	1	59.10	1.30	0.50	17.00	3.48	N	SI
MN 54	1	18.00	2.00	0.20	17.00	1.06	A	SR
MN 54	1	17.55	2.23	0.16	17.00	1.03	A	UP
MN 54	1	17.56	2.22	0.16	17.00	1.03	A	UY
NB 95	2	4.83	0.77	0.12	4.70	1.03	A	GA
NB 95	2	4.88	0.89	0.10	4.70	1.04	A	HC
NB 95	2	4.80	0.40	0.10	4.70	1.02	A	OD
NB 95	2	16.50	0.70	0.30	4.70	3.51	N	SI
NB 95	2	4.90	0.70	0.10	4.70	1.04	A	SR
NB 95	2	4.85	0.75	0.12	4.70	1.03	A	UP
NB 95	2	4.85	0.75	0.12	4.70	1.03	A	UY
NB 95	3	7.17	1.10	0.19	7.40	0.97	A	GA
NB 95	3	7.25	1.29	0.19	7.40	0.98	A	HC
NB 95	3	7.10	0.50	0.20	7.40	0.96	A	OD
NB 95	3	24.50	0.80	0.60	7.40	3.31	N	SI
NB 95	3	7.00	1.00	0.20	7.40	0.95	A	SR
NB 95	3	7.20	1.08	0.19	7.40	0.97	A	UP
NB 95	3	7.21	1.07	0.19	7.40	0.97	A	UY
NP 237	1	2.50	1.70	1.30			FP	SR
PB 210	2	4.57	4.22	3.08	3.30	1.38	W	GA
PB 210	2				3.30		ND	HC
PB 210	2				3.30		ND	OD
PB 210	2	17.50	4.30	7.80	3.30	5.30	N	SI
PB 210	2				3.30		ND	SR
PB 210	2				3.30		ND	UP
PB 210	2				3.30		ND	UY
PB 210	3	86.58	19.76	7.32			FP	GA
PB 210	3	214.00	11.00	19.00			FP	SI
PB 212	1	8.00	0.60	1.16			FP	SI
PB 212	2	8.14	4.89	0.90			FP	SI
PB 212	3	5.60	0.95	2.21			FP	SI
PB 214	1	9.40	1.42	1.71			FP	SI
PB 214	2	15.80	1.40	1.50			FP	SI
PB 214	3	6.91	1.11	2.46			FP	SI
RA 228	1	7.81	0.82	0.00			FP	SI
RA 228	2	7.99	0.79	0.00			FP	SI
RA 228	3	19.60	4.85	1.56			FP	SI
RE 188	3	2.00	0.80	1.80			FP	OD
RU 103	2	4.79	0.71	0.16	4.70	1.02	A	GA
RU 103	2	4.66	0.95	0.14	4.70	0.99	A	HC
RU 103	2	4.70	0.40	0.10	4.70	1.00	A	OD
RU 103	2	17.50	0.70	0.50	4.70	3.72	N	SI
RU 103	2	4.60	0.80	0.20	4.70	0.98	A	SR

Evaluation by Software

Canberra PROCOUNT

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
RU 103	2	4.74	0.89	0.16	4.70	1.01	A	UP
RU 103	2	4.74	0.72	0.16	4.70	1.01	A	UY
RU 103	3	5.75	0.89	0.35	6.00	0.96	A	GA
RU 103	3	5.60	1.17	0.34	6.00	0.93	A	HC
RU 103	3	5.30	0.40	0.30	6.00	0.88	A	OD
RU 103	3	21.10	0.90	1.20	6.00	3.52	N	SI
RU 103	3	5.50	1.00	0.30	6.00	0.92	A	SR
RU 103	3	5.69	1.10	0.35	6.00	0.95	A	UP
RU 103	3	5.70	0.90	0.35	6.00	0.95	A	UY
SB 122	3	0.69	0.47	0.48			FP	HC
SB 125	3	2.18	0.87	0.90	2.00	1.09	A	GA
SB 125	3				2.00		ND	HC
SB 125	3	2.10	0.40	0.80	2.00	1.05	A	OD
SB 125	3	14.20	3.90	3.40	2.00	7.10	N	SI
SB 125	3	2.20	0.70	0.90	2.00	1.10	A	SR
SB 125	3	2.23	0.89	0.92	2.00	1.14	A	UP
SB 125	3	2.23	0.89	0.92	2.00	1.11	A	UY
SB 126	3	3.05	0.69	0.31	3.10	0.98	A	GA
SB 126	3				3.10		ND	HC
SB 126	3				3.10		ND	OD
SB 126	3	12.50	0.50	0.90	3.10	1.03	N	SI
SB 126	3				3.10		ND	SR
SB 126	3	3.27	0.73	0.33	3.10	1.05	A	UP
SB 126	3	3.27	0.71	0.66	3.10	1.05	A	UY
TE 132	3	26.67	4.02	0.26	23.00	1.16	A	GA
TE 132	3	28.30	5.62	0.25	23.00	1.23	W	HC
TE 132	3	27.50	1.60	0.30	23.00	1.20	A	OD
TE 132	3	89.90	16.70	1.10	23.00	3.91	N	SI
TE 132	3	26.00	5.00	0.20	23.00	1.13	A	SR
TE 132	3	29.62	5.46	0.27	23.00	1.29	W	UP
TE 132	3	29.62	4.30	0.27	23.00	1.29	W	UY
TH 230	3	104.30	28.20	56.80			FP	OD
TL 208	1	7.05	0.66	1.05			FP	SI
TL 208	2	7.06	0.52	0.68			FP	SI
TL 208	3	6.79	0.74	1.26			FP	SI
XE 133	1	5.90	1.09	0.49			FP	HC
XE 133	2	0.32	0.22	0.25			FP	HC
XE 133	3				6.40		ND	GA
XE 133	3	10.30	1.86	0.66	6.40	1.61	N	HC
XE 133	3				6.40		ND	OD
XE 133	3	27.70	1.40	2.20	6.40	4.33	N	SI
XE 133	3				6.40		ND	SR
XE 133	3	9.43	1.74	0.62	6.40	1.47	W	UP
XE 133	3	9.43	1.78	0.58	6.40	1.47	W	UY
XE133M	3	1043.00	116.00	9.00			FP	SI
ZR 95	2	1.91	0.51	0.46	2.00	0.96	A	GA
ZR 95	2	2.16	0.54	0.19	2.00	1.08	A	HC
ZR 95	2	2.10	0.20	0.20	2.00	1.05	A	OD
ZR 95	2	7.08	0.50	0.59	2.00	3.54	N	SI
ZR 95	2	2.10	0.40	0.20	2.00	1.05	A	SR

Evaluation by Software

Canberra PROCount

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
ZR 95	2	1.96	0.52	0.34	2.00	0.98	A	UP
ZR 95	2	1.96	0.51	0.34	2.00	0.98	A	UY
ZR 95	3	1.70	0.67	0.67	2.30	0.74	W	GA
ZR 95	3	2.28	0.62	0.36	2.30	0.99	A	HC
ZR 95	3	5.70	0.30	0.30	2.30	2.48	N	OD
ZR 95	3	7.95	0.65	1.12	2.30	3.46	N	SI
ZR 95	3	2.40	0.40	0.40	2.30	1.04	A	SR
ZR 95	3	2.43	0.71	0.49	2.30	1.06	A	UP
ZR 95	3	2.43	0.70	0.49	2.30	1.05	A	UY

Evaluation by Software

Canberra SAMPO 90

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	1	19.10	0.90				FP	FL
BA 140	1			0.96				FM
BA 140	2			0.52				FL
BA 140	2			0.57				FM
BA 140	3	7.60	0.60		10.00	0.76	W	FL
BA 140	3	8.30	0.50		10.00	0.83	A	FM
BE 7	1			2.20				FL
BE 7	1			2.43				FM
BE 7	2	5.00	0.20		5.10	0.98	A	FL
BE 7	2	5.50	0.50		5.10	1.08	A	FM
BE 7	3			2.30				FL
CE 141	1			0.20				FL
CE 141	2			0.17				FL
CE 141	3	1.30	0.10		1.30	1.00	A	FL
CE 141	3				1.30		ND	FM
CE 144	1	128.00	6.00		128.00	1.00	A	FL
CE 144	1	123.00	5.10		128.00	0.96	A	FM
CE 144	2	8.00	0.40		8.00	1.00	A	FL
CE 144	2	7.70	0.50		8.00	0.96	A	FM
CE 144	3	2.80	0.10		3.00	0.93	A	FL
CE 144	3	2.80	0.40		3.00	0.93	A	FM
CO 57	1	12.00	0.50		12.00	1.00	A	FL
CO 57	1	11.60	0.40		12.00	0.97	A	FM
CO 57	2			0.08				FL
CO 57	2			0.08				FM
CO 57	3			0.21				FL
CS 134	1			0.20				FL
CS 134	1			0.20				FM
CS 134	2			0.14				FL
CS 134	2			0.16				FM
CS 134	3	5.20	0.20		5.40	0.96	A	FL
CS 134	3	5.30	0.10		5.40	0.98	A	FM
CS 136	1			0.03				FL
CS 136	1			0.03				FM
CS 136	2			0.03				FL
CS 136	2			0.03				FM
CS 136	3	3.50	0.20		3.60	0.97	A	FL
CS 136	3	3.60	0.10		3.60	1.00	A	FM
CS 137	1			0.21	21.00		ND	FL
CS 137	1	21.10	0.60		21.00	1.00	A	FM
CS 137	2			0.14				FL
CS 137	2			0.15				FM
CS 137	3	5.80	0.30		5.90	0.98	A	FL
CS 137	3	5.80	0.20		5.90	0.98	A	FM
DY 166	3				7.20		ND	FL
DY 166	3				7.20		ND	FM
I 131	1			0.16				FL
I 131	1			0.18				FM
I 131	2			0.13				FL
I 131	2			0.15				FM

Evaluation by Software

Canberra SAMPO 90

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
I 131	3	16.80	0.80		16.20	1.04	A	FL
I 131	3	16.60	0.50		16.20	1.02	A	FM
MN 54	1	17.20	0.80		17.00	1.01	A	FL
MN 54	1	17.20	0.50		17.00	1.01	A	FM
MN 54	2			0.13				FL
MN 54	2			0.13				FM
MN 54	3			0.19				FL
NB 95	1			0.17				FM
NB 95	2				4.70		ND	FL
NB 95	2	4.80	0.20		4.70	1.02	A	FM
NB 95	3				7.40		ND	FL
NB 95	3	7.20	0.30		7.40	0.97	A	FM
PB 210	1			5.40				FL
PB 210	2	3.50	0.50		3.30	1.06	A	FL
PB 210	2				3.30		ND	FM
PB 210	3	26.00	3.00				FP	FL
RU 103	1			0.25				FL
RU 103	1			0.25				FM
RU 103	2	4.60	0.20		4.70	0.98	A	FL
RU 103	2	4.70	0.20		4.70	1.00	A	FM
RU 103	3	5.40	0.20		6.00	0.90	A	FL
RU 103	3	5.90	0.20		6.00	0.98	A	FM
SB 125	1			0.60				FL
SB 125	1			0.30				FM
SB 125	2			0.40				FL
SB 125	2			0.44				FM
SB 125	3	1.99	0.08		2.00	1.00	A	FL
SB 125	3	2.10	0.26		2.00	1.05	A	FM
SB 126	1			0.12				FL
SB 126	1			0.12				FM
SB 126	2			0.15				FL
SB 126	2			0.30				FM
SB 126	3	3.10	0.10		3.10	1.00	A	FL
SB 126	3	3.20	0.10		3.10	1.03	A	FM
TE 132	1			0.13				FL
TE 132	1			0.12				FM
TE 132	2			0.11				FL
TE 132	2			0.10				FM
TE 132	3	30.00	1.00		23.00	1.30	W	FL
TE 132	3	28.90	1.00		23.00	1.26	W	FM
XE 133	3				6.40		ND	FL
XE 133	3				6.40		ND	FM
ZN 72	1			0.11				FM
ZN 72	2			0.09				FM
ZN 72	3	0.84	0.08				FP	FM
ZR 95	1			0.30				FL
ZR 95	1			0.30				FM
ZR 95	2	2.00	0.20		2.00	1.00	A	FL
ZR 95	2	2.10	0.20		2.00	1.05	A	FM
ZR 95	3	2.20	0.20		2.30	0.96	A	FL

Evaluation by Software

Canberra SAMPO 90

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
ZR 95	3	2.30	0.20		2.30	1.00	A	FM

Evaluation by Software

EG&G Ortec GELIGAM

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	3	8.00	1.40	1.30	10.00	0.80	W	LA2
BE 7	2	5.08	1.23	4.10	5.10	1.00	A	LA2
CE 141	3				1.30		ND	LA2
CE 144	1	140.00	7.00	3.70	128.00	1.09	W	LA2
CE 144	2	8.45	1.07	3.70	8.00	1.06	A	LA2
CE 144	3				3.00		ND	LA2
CO 57	1	12.10	0.60	0.21	12.00	1.01	A	LA2
CS 134	3	5.18	0.56	0.26	5.40	0.96	A	LA2
CS 136	3	3.59	0.35	0.15	3.60	1.00	A	LA2
CS 137	1	22.20	1.40	0.17	21.00	1.06	A	LA2
CS 137	3	5.70	1.43	0.20	5.90	0.97	W	LA2
DY 166	3				7.20		ND	LA2
I 131	3	15.80	0.00	0.23	16.20	0.98	A	LA2
MN 54	1	17.90	1.20	0.17	17.00	1.05	A	LA2
NB 95	2	4.93	0.40	0.20	4.70	1.05	A	LA2
NB 95	3	7.32	0.64	0.20	7.40	0.99	A	LA2
PB 210	2				3.30		ND	LA2
RU 103	2	4.53	0.41	0.36	4.70	0.96	A	LA2
RU 103	3	5.45	0.53	0.36	6.00	0.91	A	LA2
SB 125	3	1.82	0.65	0.68	2.00	0.91	A	LA2
SB 126	3	2.92	0.33	0.23	3.10	0.94	A	LA2
TE 132	3	28.40	1.30	0.13	23.00	1.23	W	LA2
XE 133	3				6.40		ND	LA2
ZR 95	2	2.13	0.30	0.56	2.00	1.07	A	LA2
ZR 95	3	2.25	0.45	0.56	2.30	0.98	A	LA2

Evaluation by Software

EG&G Ortec Gammavision

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	3	10.07	3.76	0.79	10.00	1.01	A	LA1
BE 7	2	5.31	2.01	0.43	5.10	1.04	A	LA1
CE 144	1	127.49	8.92	1.12	128.00	1.00	A	LA1
CE 144	2	8.77	1.58	0.25	8.00	1.10	W	LA1
CE 144	3				3.00		ND	LA1
CO 57	1	12.83	0.91	0.46	12.00	1.07	A	LA1
CS 134	3	5.10	0.73	0.19	5.40	0.94	A	LA1
CS 136	3	3.56	0.58	0.07	3.60	0.99	A	LA1
CS 137	1	21.71	1.80	0.15	21.00	1.03	A	LA1
CS 137	3	5.44	1.10	0.34	5.90	0.92	W	LA1
DY 166	3	4.97	2.67	1.00	7.20	0.69	W	LA1
I 131	3	15.99	1.44	0.17	16.20	0.99	A	LA1
MN 54	1	17.88	1.51	0.04	17.00	1.05	A	LA1
NB 95	2	4.93	0.63	0.01	4.70	1.05	A	LA1
NB 95	3	7.34	0.85	0.07	7.40	0.99	A	LA1
PB 210	2				3.30		ND	LA1
RU 103	2	4.83	0.59	0.06	4.70	1.03	A	LA1
RU 103	3	5.78	0.79	0.14	6.00	0.96	A	LA1
SB 125	3	1.63	1.00	0.33	2.00	0.81	A	LA1
SB 126	3	2.65	0.51	0.19	3.10	0.85	A	LA1
TE 132	3	23.33	1.55	0.14	23.00	1.01	A	LA1
XE 133	3				6.40		ND	LA1
ZR 95	2	2.19	0.45	0.02	2.00	1.10	A	LA1
ZR 95	3	2.15	0.56	0.12	2.30	0.93	A	LA1

Evaluation by Software

EG&G Ortec Maestro

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	3				10.00		ND	UK
BE 7	2	5.24	1.30	1.34	5.10	1.03	A	UK
CD 109	1	10.70	0.34	2.81			FP	UK
CE 141	3				1.30		ND	UK
CE 144	1	132.00	3.00	0.86	128.00	1.03	A	UK
CE 144	2	7.93	0.96	0.85	8.00	0.99	A	UK
CE 144	3				3.00		ND	UK
CO 57	1	12.00	0.34	0.79	12.00	1.00	A	UK
CS 134	3				5.40		ND	UK
CS 136	3				3.60		ND	UK
CS 137	1	21.00	0.80	0.18	21.00	1.00	A	UK
CS 137	3				5.90		ND	UK
DY 166	3				7.20		ND	UK
I 131	3				16.20		ND	UK
MN 54	1	17.40	0.73	0.22	17.00	1.02	A	UK
NB 95	2	4.77	0.37	0.19	4.70	1.01	A	UK
NB 95	3				7.40		ND	UK
NP 237	1	3.51	1.00	0.95			FP	UK
PB 208	1	0.41	0.25	0.06			FP	UK
PB 210	2	5.15	4.70	3.54	3.30	1.56	N	UK
RU 103	2	4.71	0.33	0.14	4.70	1.00	A	UK
RU 103	3				6.00		ND	UK
SB 125	3				2.00		ND	UK
SB 126	3				3.10		ND	UK
TE 132	3				23.00		ND	UK
TE125M	1	12.70	2.30	3.03			FP	UK
TE125M	2	4.79	2.80	3.03			FP	UK
TH 234	1	7.00	2.30	1.86			FP	UK
XE 133	3				6.40		ND	UK
ZR 95	2	2.05	0.28	0.34	2.00	1.03	A	UK
ZR 95	3				2.30		ND	UK

Evaluation by Software

IN HOUSE

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	1			1.10				JP
BA 140	2			0.70				JP
BA 140	3	7.80	2.40	1.20	10.00	0.78	W	JP
BA 140	3	7.80	2.00	0.32	10.00	0.78	W	RE
BA 140	3	7.80	1.80	1.00	10.00	0.78	W	WN
BE 7	1			2.70				JP
BE 7	2	5.20	2.30	1.60	5.10	1.02	A	JP
BE 7	2	5.01	1.85	0.85	5.10	0.98	A	RE
BE 7	2	5.50	0.60	1.30	5.10	1.08	A	WN
BE 7	3			2.90				JP
CE 141	1			0.25				JP
CE 141	2			0.22				JP
CE 141	3	1.30	0.50	0.45	1.30	1.00	A	JP
CE 141	3	1.32	0.49	0.16	1.30	1.02	A	RE
CE 141	3	1.30	1.80	0.40	1.30	1.00	A	WN
CE 144	1	130.00	22.00	1.20	128.00	1.02	A	JP
CE 144	1	132.00	12.40	0.68	128.00	1.03	A	RE
CE 144	1	135.00	18.30	0.90	128.00	1.05	A	WN
CE 144	2	8.30	2.30	0.95	8.00	1.04	A	JP
CE 144	2	8.14	1.55	0.68	8.00	1.02	A	RE
CE 144	2	8.30	1.10	0.70	8.00	1.04	A	WN
CE 144	3	2.90	1.60	2.00	3.00	0.97	A	JP
CE 144	3	2.98	1.93	0.68	3.00	0.99	A	RE
CE 144	3	3.00	0.40	1.80	3.00	1.00	A	WN
CO 57	1	13.00	2.10	0.22	12.00	1.08	W	JP
CO 57	1	12.40	1.23	0.09	12.00	1.03	A	RE
CO 57	1				12.00		ND	WN
CO 57	2			0.12				JP
CO 57	3			0.26				JP
CO 58	1	12.50	1.30	0.10			FP	WN
CS 134	1			0.28				JP
CS 134	2			0.20				JP
CS 134	3	5.20	1.30	0.31	5.40	0.96	A	JP
CS 134	3	5.32	0.83	0.11	5.40	0.99	A	RE
CS 134	3	5.40	0.60	0.20	5.40	1.00	A	WN
CS 136	1			0.20				JP
CS 136	2			0.17				JP
CS 136	3	3.50	0.96	0.23	3.60	0.97	A	JP
CS 136	3	3.64	0.64	0.16	3.60	1.01	A	RE
CS 136	3	3.40	0.40	0.20	3.60	0.94	A	WN
CS 137	1	21.00	4.00	0.35	21.00	1.00	A	JP
CS 137	1	22.20	2.42	0.15	21.00	1.06	A	RE
CS 137	1	21.80	2.80	0.30	21.00	1.04	A	WN
CS 137	2			0.21				JP
CS 137	3	5.60	1.40	0.31	5.90	0.95	W	JP
CS 137	3	5.83	0.93	0.15	5.90	0.99	A	RE
CS 137	3	5.40	0.60	0.30	5.90	0.92	W	WN
DY 166	3				7.20		ND	JP
DY 166	3				7.20		ND	RE
DY 166	3				7.20		ND	WN

Evaluation by Software

IN HOUSE

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
I 131	1			0.20				JP
I 131	2			0.17				JP
I 131	3	16.00	2.90	0.31	16.20	0.99	A	JP
I 131	3	15.70	1.66	0.10	16.20	0.97	A	RE
I 131	3	15.60	1.90	0.20	16.20	0.96	A	WN
MN 54	1	18.00	3.30	0.24	17.00	1.06	A	JP
MN 54	1	18.00	2.01	0.17	17.00	1.06	A	RE
MN 54	1	17.50	2.20	0.10	17.00	1.03	A	WN
MN 54	2			0.18				JP
MN 54	3			0.23				JP
NB 95	1			0.22				JP
NB 95	2	4.80	1.20	0.18	4.70	1.02	A	JP
NB 95	2	4.95	0.73	0.16	4.70	1.05	A	RE
NB 95	2	4.90	0.60	0.10	4.70	1.04	A	WN
NB 95	3	7.10	1.60	0.23	7.40	0.96	A	JP
NB 95	3	7.35	1.00	0.16	7.40	0.99	A	RE
NB 95	3	7.30	0.20	0.90	7.40	0.99	A	WN
PB 210	2				3.30		ND	JP
PB 210	2				3.30		ND	RE
PB 210	2				3.30		ND	WN
RU 103	1			0.31				JP
RU 103	2	4.60	1.10	0.22	4.70	0.98	A	JP
RU 103	2	4.54	0.64	0.11	4.70	0.97	A	RE
RU 103	2	4.80	0.80	0.20	4.70	1.02	A	WN
RU 103	3	5.80	1.20	0.36	6.00	0.97	A	JP
RU 103	3	5.48	0.84	0.11	6.00	0.91	A	RE
RU 103	3	5.70	0.80	0.30	6.00	0.95	A	WN
SB 125	1			0.70				JP
SB 125	2			0.51				JP
SB 125	3	2.00	0.95	0.84	2.00	1.00	A	JP
SB 125	3	1.79	0.90	0.30	2.00	0.90	A	RE
SB 125	3				2.00		ND	WN
SB 126	1			0.23				JP
SB 126	2			0.17				JP
SB 126	3	3.10	0.80	0.30	3.10	1.00	A	JP
SB 126	3	4.14	0.68	0.14	3.10	1.34	W	RE
SB 126	3	3.10	0.30	0.30	3.10	1.00	A	WN
TE 132	1			0.14				JP
TE 132	2			0.12				JP
TE 132	3	27.00	4.30	0.34	23.00	1.17	A	JP
TE 132	3	28.50	2.62	0.09	23.00	1.24	W	RE
TE 132	3	25.50	3.50	0.20	23.00	1.11	A	WN
XE 133	3				6.40		ND	JP
XE 133	3	8.52	1.24	0.38	6.40	1.33	W	RE
XE 133	3				6.40		ND	WN
ZR 95	1			0.38				JP
ZR 95	2	2.10	0.08	0.32	2.00	1.05	A	JP
ZR 95	2	2.22	0.54	0.28	2.00	1.11	A	RE
ZR 95	2	2.30	0.20	0.20	2.00	1.15	A	WN
ZR 95	3	2.20	0.85	0.40	2.30	0.96	A	JP

Evaluation by Software

IN HOUSE

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
ZR 95	3	2.35	0.64	0.28	2.30	1.02	A	RE
ZR 95	3	2.30	0.30	0.30	2.30	1.00	A	WN

Evaluation by Software

Nuclear Data ASAP

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	3	6.36	0.62	1.54	10.00	0.64	W	TM
BE 7	2	5.62	0.88	2.07	5.10	1.10	A	TM
CE 141	3	1.32	0.21	0.64	1.30	1.02	A	TM
CE 144	1	124.00	1.51	0.98	128.00	0.97	A	TM
CE 144	2	7.91	0.50	0.95	8.00	0.99	A	TM
CE 144	3	2.91	0.92	2.87	3.00	0.97	A	TM
CO 57	1	11.60	0.18	0.19	12.00	0.97	A	TM
CS 134	3	5.25	0.24	0.45	5.40	0.97	A	TM
CS 136	3				3.60		ND	TM
CS 137	1	21.30	0.43	0.43	21.00	1.01	A	TM
CS 137	3	5.72	0.23	0.32	5.90	0.97	W	TM
DY 166	3				7.20		ND	TM
I 131	3				16.20		ND	TM
MN 54	1	17.40	0.37	0.17	17.00	1.02	A	TM
NB 95	2	5.02	0.20	0.14	4.70	1.07	A	TM
NB 95	3	7.46	0.26	0.25	7.40	1.01	A	TM
PB 210	2				3.30		ND	TM
PR 144	3	268.00	11.30	21.90			FP	TM
RU 103	2	4.92	0.18	0.21	4.70	1.05	A	TM
RU 103	3	5.92	0.26	0.50	6.00	0.99	A	TM
SB 125	3				2.00		ND	TM
SB 126	3				3.10		ND	TM
TE 132	3				23.00		ND	TM
XE 133	3				6.40		ND	TM
ZR 95	2	2.21	0.20	0.26	2.00	1.11	A	TM
ZR 95	3	2.32	0.25	0.47	2.30	1.01	A	TM

Evaluation by Software

Vertechs GDR/P 3.1

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	3	8.59	0.51	1.59	10.00	0.86	A	YA
BE 7	2	5.93	0.74	1.79	5.10	1.16	A	YA
CE 141	3	1.36	0.18	0.59	1.30	1.05	A	YA
CE 144	1	137.90	1.56	1.03	128.00	1.08	A	YA
CE 144	2	8.57	0.46	0.80	8.00	1.07	A	YA
CE 144	3	3.02	0.82	2.96	3.00	1.01	A	YA
CO 57	1	12.75	0.17	0.20	12.00	1.06	A	YA
CS 134	3	5.48	0.15	0.29	5.40	1.01	A	YA
CS 136	3	3.60	0.10	0.16	3.60	1.00	A	YA
CS 137	1	22.10	0.42	0.46	21.00	1.05	A	YA
CS 137	3	5.87	0.23	0.34	5.90	0.99	A	YA
DY 166	3				7.20		ND	YA
I 131	3	16.29	0.27	0.96	16.20	1.01	A	YA
MN 54	1	17.94	0.38	0.18	17.00	1.06	A	YA
NB 95	2	4.98	0.19	0.13	4.70	1.06	A	YA
NB 95	3	7.40	0.24	0.22	7.40	1.00	A	YA
PB 210	2				3.30		ND	YA
PB 210	3	35.25	2.33	6.16			FP	YA
RU 103	2	5.43	0.19	0.23	4.70	1.16	A	YA
RU 103	3	6.52	0.24	0.48	6.00	1.09	A	YA
SB 125	3	2.24	0.27	0.96	2.00	1.12	A	YA
SB 126	3	3.22	0.08	0.24	3.10	1.04	A	YA
TE 132	3	25.55	0.25	0.30	23.00	1.11	A	YA
XE 133	3	8.71	0.36	1.02	6.40	1.36	W	YA
ZR 95	2	2.15	0.13	0.24	2.00	1.08	A	YA
ZR 95	3	2.45	0.16	0.42	2.30	1.07	A	YA

Evaluation by Software

Vertechs GDR/P 3.1c

<u>Nuclide</u>	<u>Sample</u>	<u>Value</u>	<u>Error</u>	<u>MDA</u>	<u>EML Value</u>	<u>Ratio</u>	<u>Evaluation</u>	<u>Lab</u>
BA 140	3	8.16	0.65	1.49	10.00	0.82	A	ES
BE 7	2	5.25	0.66	1.59	5.10	1.03	A	ES
CE 141	3	1.34	0.18	0.58	1.30	1.03	A	ES
CE 144	1	133.00	10.60	0.99	128.00	1.04	A	ES
CE 144	2	8.24	0.66	0.77	8.00	1.03	A	ES
CE 144	3	3.11	0.85	3.05	3.00	1.04	A	ES
CO 57	1	12.20	0.98	0.21	12.00	1.02	A	ES
CS 134	3	5.20	0.42	0.28	5.40	0.96	A	ES
CS 136	3	3.58	0.29	0.18	3.60	1.44	W	ES
CS 137	1	20.90	1.67	0.43	21.00	0.99	A	ES
CS 137	3	5.47	0.44	0.34	5.90	0.93	W	ES
DY 166	3				7.20		ND	ES
I 131	3	17.30	1.38	0.22	16.20	1.07	A	ES
MN 54	1	17.40	1.39	0.19	17.00	1.02	A	ES
NB 95	2	4.79	0.38	0.13	4.70	1.02	A	ES
NB 95	3	7.09	0.57	0.21	7.40	0.96	A	ES
PB 210	2				3.30		ND	ES
RU 103	2	4.64	0.37	0.19	4.70	0.99	A	ES
RU 103	3	5.56	0.45	0.41	6.00	0.93	A	ES
SB 125	3	2.15	0.27	0.93	2.00	1.08	A	ES
SB 126	3	3.06	0.24	0.23	3.10	0.99	A	ES
TE 132	3	29.50	2.36	0.42	23.00	1.28	W	ES
XE 133	3				6.40		ND	ES
ZR 95	2	2.06	0.17	0.23	2.00	1.03	A	ES
ZR 95	3	2.04	0.16	0.40	2.30	0.89	A	ES

Labs Reporting Data

Laboratory

Labcode

ORISE EESD/ESSAP, Oak Ridge	AU
Barringer Laboratories Inc., Golden, CO	BL
Battelle Pacific Northwest Laboratory	BP
B&W Nuclear Envir. Services, Lynchburg, VA	BX
Atomic Energy Control Board, Ottawa, Canada	CA
California State Dept. Health Serv. Sanitation & Radiation Laboratory	CH
Environmental Measurements Laboratory, NY, NY	EML
Environmental Sci. & Engr., Inc., Gainesville, FL	ES
Florida Dept of Health & Rehab. Serv., Orlando	FL
Florida Mobile Emergency Radiological Laboratory, Orlando	FM
Lockheed Martin, Pikton, OH	GA
Lawrence Livermore Laboratory, California	HC
Heritage Laboratories, Inc., Romeoville, IL	HL
Japan Chemical Analysis Center	JP
Los Alamos National Lab	LA1
Los Alamos National Lab	LA2
Lawrence Berkeley Lab UCB	LB
FERMCO, Cincinnati, OH	NL
ORNL, Radiobioassay Lab	OD
ORNL Radioactive Material Analysis Lab	OT
Bechtel Nevada, Mercury, NV	RE
Sandia Labs Radioactive Sample Diag. Prog., NM	SA
(QAP labcode IS) Quanterra Incorporated, Earth City, MO	SI
Stanford Linear Accelerator, Menlow Park, CA	SL
Savannah River Plant	SR
TMA/Eberline-Albuquerque Lab, NM	TM
Lockheed Martin Energy Systems, Oak Ridge	UK
Lockheed Martin Energy Systems, Y-12 Plant, Oak Ridge	UP
Lockheed Martin Energy Systems, Y-12 Plant, Oak Ridge	UY
Environmental Radiation Lab, Off. of Public Health Labs. Seattle	WA
Westinghouse Hanford Co.	WC
WINCO, Idaho Chemical Processing Plant, Scoville	WN
Yankee Atomic Electric Company, Westboro, MA	YA