
***** GAMMA SPECTRUM ANALYSIS *****

Filename: REGE

Report Generated On : 10/25/2019 2:29:53 PM

Sample Title : TRIGA MkF
Sample Description : Outside Pipe Scale
Sample Identification : Pipe Scale
Sample Type : Soil
Sample Geometry : Marinelli

Peak Locate Threshold : 3.00
Peak Locate Range (in channels) : 1 - 65535
Peak Area Range (in channels) : 1 - 65535
Identification Energy Tolerance : 1.000 keV

Sample Size : 5.905E+002 Grams

Sample Taken On : 10/25/2019 1:57:30 PM
Acquisition Started : 10/25/2019 1:57:30 PM

Live Time : 1800.0 seconds
Real Time : 1920.9 seconds

Dead Time : 6.30 %

Energy Calibration Used Done On : 7/16/2019
Efficiency Calibration Used Done On : 7/16/2019
Efficiency ID : Marinelli 041219

 ***** P E A K A N A L Y S I S R E P O R T *****

Detector Name: REGE

Sample Title: TRIGA MkF

Peak Analysis Performed on: 10/25/2019 2:29:54 PM

Peak Analysis From Channel: 1

Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	70-	78	73.47	36.46	1.50	4.79E+003	343.81	5.07E+004
2	145-	155	150.24	74.83	2.48	4.83E+003	360.97	5.26E+004
3	184-	193	187.80	93.60	0.69	3.36E+002	331.75	4.85E+004
4	279-	284	281.88	140.63	0.54	2.21E+002	233.66	3.07E+004
5	471-	483	477.52	238.41	2.17	4.25E+003	421.58	6.59E+004
6	511-	517	513.23	256.26	0.53	-2.15E+002	245.54	3.20E+004
7	874-	883	876.93	438.05	0.50	-1.32E+002	328.31	4.77E+004
8	1162-	1174	1167.39	583.23	1.64	1.50E+003	170.92	1.05E+004
9	1213-	1225	1218.43	608.74	1.61	4.58E+002	151.01	8.48E+003
10	1296-	1307	1303.70	651.36	1.16	2.99E+002	124.78	6.08E+003
11	1316-	1331	1324.04	661.53	2.13	1.34E+006	1167.44	7.00E+003
12	1449-	1462	1455.14	727.05	2.03	3.25E+002	39.76	4.55E+002
13	1535-	1541	1537.30	768.12	0.67	-2.38E+001	22.51	2.71E+002
14	1586-	1597	1590.28	794.60	1.66	1.73E+002	30.17	2.93E+002
15	1715-	1729	1721.75	860.31	1.17	1.89E+002	34.87	3.56E+002
16	1815-	1830	1823.02	910.93	2.14	1.15E+003	45.03	2.94E+002
M 17	1923-	1946	1929.79	964.29	2.18	1.92E+002	17.56	2.69E+002
m 18	1923-	1946	1938.61	968.70	2.18	6.84E+002	26.95	2.83E+002
19	2233-	2247	2241.38	1120.04	1.68	1.76E+002	30.69	2.66E+002
20	2638-	2655	2647.12	1322.84	2.33	4.91E+002	32.37	1.70E+002
21	2913-	2930	2922.16	1460.31	2.65	2.28E+003	49.83	6.30E+001
22	3170-	3183	3176.94	1587.66	2.45	7.13E+001	17.88	8.87E+001
23	3521-	3538	3529.45	1763.85	2.49	1.84E+002	17.26	3.52E+001

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 1.000 sigma

 ***** N U C L I D E I D E N T I F I C A T I O N R E P O R T *****

Sample Title: TRIGA MkF
 Nuclide Library Used: C:\GENIE2K\CAMFILES\STDLIB.NLB

..... IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (uCi/Gram)	Activity Uncertainty
K-40	0.989	1460.81*	10.67	7.06360E-005	2.47032E-006
CD-109	0.856	88.03*	3.72	2.82803E-005	1.05295E-005
CS-137	1.000	661.65*	85.12	1.93651E-002	4.39631E-004
BI-212	0.660	39.86	1.10		
		727.17*	11.80	5.71434E-006	1.80856E-006
		785.42	2.00		
		1620.56*	2.75	6.56280E-006	1.16787E-006
PB-212	0.521	74.81*	9.60	3.26967E-005	4.80872E-006
		77.11	17.50		
		87.20*	6.30	1.66988E-005	6.19776E-006
		89.80	1.75		
		115.19	0.60		
		238.63*	44.60	1.13328E-005	1.63130E-006
BI-214	0.545	300.09	3.41		
		609.31*	46.30	1.58579E-006	7.42409E-007
		768.36	5.04		
		806.17	1.23		
		934.06	3.21		
		1120.29*	15.10	2.61060E-006	1.29203E-006
		1155.19	1.69		
		1238.11	5.94		
		1280.96	1.47		
		1377.67	4.11		
		1385.31	0.78		
		1401.50	1.39		
		1407.98	2.48		
		1509.19	2.19		
1661.28	1.15				
1729.60	3.05				
1764.49*	15.80	3.94539E-006	4.74787E-007		
1847.44	2.12				
2118.54	1.21				
RA-226	0.990	186.21*	3.28	4.13343E-004	2.61732E-005
U-235	0.436	89.96	1.50		
		93.35	2.50		
		105.00	1.00		
		109.14	1.50		
		143.76	10.50		
		163.35	4.70		
		185.71*	54.00	2.51068E-005	1.64038E-006
		202.12	1.00		

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (uCi/Gram)	Activity Uncertainty
U-235	0.436	205.31	4.70		

* = Energy line found in the spectrum.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 1.000 sigma

 ***** INTERFERENCE CORRECTED REPORT *****

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (uCi/Gram)	Wt mean Activity Uncertainty
K-40	0.989	7.063598E-005	2.470317E-006
CD-109	0.856	5.353634E-006	1.081721E-005
CS-137	1.000	1.936507E-002	4.396312E-004
BI-212	0.660	6.313125E-006	9.811152E-007
PB-212	0.521	1.353764E-005	1.544881E-006
BI-214	0.545	3.203710E-006	3.821066E-007
? RA-226	0.990	4.133434E-004	2.617323E-005
? U-235	0.436	2.510678E-005	1.640379E-006

? = Nuclide is part of an undetermined solution
 X = Nuclide rejected by the interference analysis
 @ = Nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

***** UNIDENTIFIED PEAKS *****

Peak Locate Performed on: 10/18/2019 7:43:43 AM
 Peak Locate From Channel: 1
 Peak Locate To Channel: 4096

Peak No.	Energy (keV)	Peak Size in Counts per Second	Peak CPS % Uncertainty	Peak Type	Tol. Nuclide
1	36.42	3.8419E+001	1.57		
6	474.19	2.2768E+001	2.97		
7	583.10	1.5028E+000	17.65		
9	651.40	1.5133E+000	14.59	Tol.	SR-91
M 11	693.39	3.6061E+000	1.97	Tol.	SB-122
m 12	697.81	1.1312E+000	4.18	Tol.	BR-82
					SB-126
14	911.11	6.4410E-001	10.40	Tol.	AC-228
M 15	964.30	1.6623E-001	14.37	Tol.	EU-152
					AC-228
m 16	968.94	5.2407E-001	5.47	Tol.	SB-124
					AC-228
18	1322.91	1.7434E+001	0.58	Sum	
19	1402.60	1.7302E-003	376.75		
21	1500.63	7.6352E-003	87.56	Tol.	KR-89
M 22	1587.93	6.5670E-002	11.12	Tol.	AC-228
m 23	1592.07	3.5800E-002	16.85		
m 25	1630.40	4.1255E-002	14.15		
26	1691.71	9.2671E-003	54.01	Tol.	I-124
					SB-124
28	1821.97	2.6806E-003	154.89		
29	1984.38	2.8521E-002	25.47		

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 1.000 sigma