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\*\*\*\*\* G A M M A S P E C T R U M A N A L Y S I S \*\*\*\*\*  
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Filename: C:\GENIE2K\CAMFILES\UNC 2017\IMC Samples\IMC-2123\UNC-GFLU-21

Report Generated On : 7/6/2017 10:13:14 AM

Sample Title : UNC-GFLU-2123-S-P-6

Sample Description :

Sample Identification : UNC-GFLU-2123-S-

Sample Type :

Sample Geometry : cylinder

Peak Locate Threshold : 3.00

Peak Locate Range (in channels) : 40 - 8192

Peak Area Range (in channels) : 40 - 8192

Identification Energy Tolerance : 1.000 keV

Sample Size : 3.576E+002 grams

Sample Taken On : 6/1/2017 2:00:00 PM

Acquisition Started : 6/5/2017 12:22:52 PM

Live Time : 1800.0 seconds

Real Time : 1800.4 seconds

Dead Time : 0.02 %

Energy Calibration Used Done On : 4/13/2017

Efficiency Calibration Used Done On : 7/6/2017

Efficiency ID : H-IMC-2002-S-P-5

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\*\*\*\*\* P E A K A N A L Y S I S R E P O R T \*\*\*\*\*  
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Detector Name: 8566

Sample Title: UNC-GFLU-2123-S-P-6

Peak Analysis Performed on: 7/6/2017 10:13:10 AM

Peak Analysis From Channel: 40

Peak Analysis To Channel: 8192

|   | Peak<br>No. | ROI<br>start | ROI<br>end | Peak<br>centroid | Energy<br>(keV) | FWHM<br>(keV) | Net Peak<br>Area | Net Area<br>Uncert. | Continuum<br>Counts |
|---|-------------|--------------|------------|------------------|-----------------|---------------|------------------|---------------------|---------------------|
| F | 1           | 47-          | 58         | 52.51            | 13.25           | 0.45          | 6.09E+001        | 19.67               | 9.60E+001           |
| F | 2           | 181-         | 193        | 186.28           | 46.73           | 0.61          | 6.55E+001        | 56.57               | 5.42E+001           |
|   | 3           | 295-         | 304        | 299.58           | 75.08           | 0.96          | 4.90E+001        | 45.08               | 1.80E+002           |
| F | 4           | 330-         | 343        | 337.29           | 84.51           | 0.69          | 5.07E+001        | 18.96               | 1.40E+002           |
| F | 5           | 354-         | 364        | 359.96           | 90.19           | 0.63          | 4.75E+001        | 52.61               | 7.70E+001           |
| F | 6           | 569-         | 579        | 574.33           | 143.83          | 0.73          | 8.31E+001        | 19.80               | 6.05E+001           |
| F | 7           | 648-         | 657        | 652.76           | 163.46          | 0.77          | 2.94E+001        | 13.69               | 4.00E+001           |
| F | 8           | 736-         | 750        | 741.97           | 185.78          | 0.88          | 3.36E+002        | 35.11               | 7.31E+001           |
| F | 9           | 946-         | 958        | 952.67           | 238.51          | 0.87          | 1.17E+002        | 69.30               | 6.01E+001           |
| F | 10          | 1174-        | 1183       | 1178.80          | 295.10          | 0.53          | 2.06E+001        | 11.99               | 3.20E+001           |
| F | 11          | 1397-        | 1412       | 1404.45          | 351.57          | 1.20          | 4.62E+001        | 15.96               | 3.68E+001           |
| F | 12          | 5823-        | 5849       | 5834.72          | 1460.22         | 2.75          | 1.32E+002        | 23.78               | 9.00E+000           |

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 1.960 sigma

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 \*\*\*\*\* 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 \*\*\*\*\*  
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Sample Title: UNC-GFLU-2123-S-P-6  
 Nuclide Library Used: C:\GENIE2K\CAMFILES\UNC 2017 NLB 0328201

..... IDENTIFIED NUCLIDES .....

| Nuclide<br>Name | Id<br>Confidence | Energy<br>(keV) | Yield<br>(%) | Activity<br>(pCi/gram) | Activity<br>Uncertainty |
|-----------------|------------------|-----------------|--------------|------------------------|-------------------------|
| K-40            | 0.943            | 1460.82*        | 10.66        | 6.10906E+000           | 1.18509E+000            |
| Pb-210          | 0.994            | 46.54*          | 4.25         | 1.93067E+000           | 1.72725E+000            |
| Pb-212          | 0.997            | 74.82*          | 10.28        | 2.99644E-001           | 2.78610E-001            |
|                 |                  | 77.11           | 17.10        |                        |                         |
|                 |                  | 86.83           | 2.07         |                        |                         |
|                 |                  | 87.35           | 3.97         |                        |                         |
|                 |                  | 89.78*          | 1.46         | 1.84443E+000           | 2.05747E+000            |
|                 |                  | 115.18          | 0.60         |                        |                         |
|                 |                  | 238.63*         | 43.60        | 2.30089E-001           | 1.38493E-001            |
|                 |                  | 300.09          | 3.30         |                        |                         |
| PB-214          | 0.989            | 74.82*          | 5.80         | 5.31093E-001           | 4.96094E-001            |
|                 |                  | 77.11           | 9.70         |                        |                         |
|                 |                  | 86.83           | 1.70         |                        |                         |
|                 |                  | 87.35           | 2.24         |                        |                         |
|                 |                  | 89.78*          | 0.82         | 3.28399E+000           | 3.67435E+000            |
|                 |                  | 241.99          | 7.25         |                        |                         |
|                 |                  | 258.76          | 0.53         |                        |                         |
|                 |                  | 295.22*         | 18.42        | 1.18545E-001           | 6.97008E-002            |
|                 |                  | 351.93*         | 35.60        | 1.64881E-001           | 5.85710E-002            |
|                 |                  | 785.96          | 1.06         |                        |                         |
|                 |                  | 839.07          | 0.58         |                        |                         |
| Ra-226          | 0.968            | 81.07           | 0.20         |                        |                         |
|                 |                  | 83.79*          | 0.32         | 9.15374E+000           | 3.61811E+000            |
|                 |                  | 186.21*         | 3.64         | 6.40451E+000           | 9.53598E-001            |
| U-235           | 0.741            | 89.96*          | 3.43         | 7.85089E-001           | 8.76129E-001            |
|                 |                  | 93.35           | 5.54         |                        |                         |
|                 |                  | 104.82          | 0.69         |                        |                         |
|                 |                  | 105.60          | 1.31         |                        |                         |
|                 |                  | 108.58          | 0.50         |                        |                         |
|                 |                  | 109.19          | 1.66         |                        |                         |
|                 |                  | 143.76*         | 10.96        | 4.49682E-001           | 1.17075E-001            |
|                 |                  | 163.36*         | 5.08         | 3.68262E-001           | 1.75743E-001            |
|                 |                  | 194.94          | 0.63         |                        |                         |
|                 |                  | 202.12          | 1.08         |                        |                         |
|                 |                  | 205.32          | 5.02         |                        |                         |

\* = Energy line found in the spectrum.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.10

Errors quoted at 1.960 sigma

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 \*\*\*\*\* I N T E R F E R E N C E C O R R E C T E D R E P O R T \*\*\*\*\*  
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| Nuclide<br>Name | Nuclide<br>Id<br>Confidence | Wt mean<br>Activity<br>(pCi/gram) | Wt mean<br>Activity<br>Uncertainty |
|-----------------|-----------------------------|-----------------------------------|------------------------------------|
| K-40            | 0.943                       | 6.109063E+000                     | 1.185088E+000                      |
| Pb-210          | 0.994                       | 1.930666E+000                     | 1.727251E+000                      |
| Pb-212          | 0.997                       | 2.295040E-001                     | 1.237965E-001                      |
| PB-214          | 0.989                       | 1.456692E-001                     | 4.468906E-002                      |
| Ra-226          | 0.968                       | 6.583082E+000                     | 9.221081E-001                      |
| U-235           | 0.741                       | 4.275444E-001                     | 9.649634E-002                      |

? = 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 1.960 sigma

\*\*\*\*\* U N I D E N T I F I E D P E A K S \*\*\*\*\*

Peak Locate Performed on: 7/6/2017 10:13:10 AM  
 Peak Locate From Channel: 40  
 Peak Locate To Channel: 8192

| Peak<br>No. | Energy<br>(keV) | Peak Size in<br>Counts per Second | Peak CPS<br>% Uncertainty | Peak<br>Type | Tol.<br>Nuclide |
|-------------|-----------------|-----------------------------------|---------------------------|--------------|-----------------|
| F 1         | 13.25           | 3.3812E-002                       | 32.32                     |              |                 |

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 1.960 sigma

\*\*\*\*\*  
\*\*\*\*\* N U C L I D E M D A R E P O R T \*\*\*\*\*  
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Detector Name: 8566  
Sample Geometry: cylinder  
Sample Title: UNC-GFLU-2123-S-P-6  
Nuclide Library Used: C:\GENIE2K\CAMFILES\UNC 2017 NLB 0328201

|   | Nuclide Name | Energy (keV) | Yield (%) | Line MDA (pCi/gram) | Nuclide MDA (pCi/gram) | Activity (pCi/gram) | Dec. Leve (pCi/gram) |
|---|--------------|--------------|-----------|---------------------|------------------------|---------------------|----------------------|
| + | K-40         | 1460.82*     | 10.66     | 8.456E-001          | 8.46E-001              | 6.109E+000          | 3.603E-00            |
| + | Pb-210       | 46.54*       | 4.25      | 1.350E+000          | 1.35E+000              | 1.931E+000          | 6.349E-00            |
|   | BI-212       | 727.33       | 6.67      | 1.523E+000          | 1.52E+000              | 3.595E-001          | 7.076E-00            |
|   |              | 785.37       | 1.10      | 9.248E+000          |                        | 2.579E+000          | 4.272E+00            |
|   |              | 1078.62      | 0.56      | 2.087E+001          |                        | -1.472E+000         | 9.523E+00            |
|   |              | 1620.50      | 1.47      | 6.659E+000          |                        | -7.692E+000         | 2.833E+00            |
| + | Pb-212       | 74.82*       | 10.28     | 4.573E-001          | 8.68E-002              | 2.996E-001          | 2.204E-00            |
|   |              | 77.11        | 17.10     | 3.301E-001          |                        | 2.703E-001          | 1.602E-00            |
|   |              | 86.83        | 2.07      | 2.004E+000          |                        | 3.524E-001          | 9.644E-00            |
|   |              | 87.35        | 3.97      | 9.745E-001          |                        | 1.833E-001          | 4.677E-00            |
|   |              | 89.78*       | 1.46      | 1.994E+000          |                        | 1.844E+000          | 9.444E-00            |
|   |              | 115.18       | 0.60      | 5.275E+000          |                        | 1.858E+000          | 2.512E+00            |
|   |              | 238.63*      | 43.60     | 8.676E-002          |                        | 2.301E-001          | 4.072E-00            |
|   |              | 300.09       | 3.30      | 1.614E+000          |                        | -9.398E-001         | 7.629E-00            |
|   | BI-214       | 76.86        | 0.55      | 1.060E+001          | 2.45E-001              | 8.311E+000          | 5.146E+00            |
|   |              | 79.29        | 0.91      | 4.718E+000          |                        | -1.567E+000         | 2.269E+00            |
|   |              | 609.32       | 45.49     | 2.452E-001          |                        | 9.622E-002          | 1.159E-00            |
|   |              | 665.45       | 1.53      | 6.335E+000          |                        | 1.484E+000          | 2.951E+00            |
|   |              | 768.36       | 4.89      | 2.186E+000          |                        | 2.906E+000          | 1.015E+00            |
|   |              | 806.18       | 1.26      | 8.847E+000          |                        | 3.314E+000          | 4.110E+00            |
|   |              | 934.06       | 3.11      | 4.142E+000          |                        | 2.283E+000          | 1.925E+00            |
|   |              | 1120.29      | 14.92     | 1.049E+000          |                        | 6.800E-001          | 4.891E-00            |
|   |              | 1155.21      | 1.63      | 8.859E+000          |                        | 4.114E+000          | 4.096E+00            |
|   |              | 1238.11      | 5.83      | 2.815E+000          |                        | 1.725E+000          | 1.308E+00            |
|   |              | 1280.98      | 1.43      | 8.244E+000          |                        | -6.747E+000         | 3.707E+00            |
|   |              | 1377.67      | 3.99      | 3.502E+000          |                        | 2.680E+000          | 1.592E+00            |
|   |              | 1385.31      | 0.79      | 1.512E+001          |                        | 3.196E+000          | 6.759E+00            |
|   |              | 1401.52      | 1.33      | 9.916E+000          |                        | 2.381E+000          | 4.475E+00            |
|   |              | 1407.99      | 2.39      | 5.531E+000          |                        | 5.866E-001          | 2.496E+00            |
|   |              | 1509.21      | 2.13      | 4.785E+000          |                        | 2.418E+000          | 2.071E+00            |
|   |              | 1583.20      | 0.70      | 1.947E+001          |                        | -4.915E+000         | 8.721E+00            |
|   |              | 1661.27      | 1.05      | 1.093E+001          |                        | 5.984E+000          | 4.750E+00            |
|   |              | 1729.59      | 2.88      | 3.746E+000          |                        | 9.354E-001          | 1.604E+00            |
|   |              | 1764.49      | 15.30     | 9.164E-001          |                        | 6.617E-001          | 4.066E-00            |
|   |              | 1847.43      | 2.03      | 5.459E+000          |                        | 2.152E+000          | 2.322E+00            |
| > |              | 2118.51      | 1.16      | 0.000E+000          |                        | 0.000E+000          | 0.000E+00            |
| > |              | 2204.06      | 4.92      | 0.000E+000          |                        | 0.000E+000          | 0.000E+00            |
| > |              | 2447.70      | 1.55      | 0.000E+000          |                        | 0.000E+000          | 0.000E+00            |
| + | PB-214       | 74.82*       | 5.80      | 8.106E-001          | 1.24E-001              | 5.311E-001          | 3.906E-00            |
|   |              | 77.11        | 9.70      | 5.819E-001          |                        | 4.765E-001          | 2.824E-00            |
|   |              | 86.83        | 1.70      | 2.440E+000          |                        | 4.291E-001          | 1.174E+00            |
|   |              | 87.35        | 2.24      | 1.727E+000          |                        | 3.249E-001          | 8.289E-00            |

|   | Nuclide Name | Energy (keV) | Yield (%) | Line MDA (pCi/gram) | Nuclide MDA (pCi/gram) | Activity (pCi/gram) | Dec. Leve (pCi/gram) |
|---|--------------|--------------|-----------|---------------------|------------------------|---------------------|----------------------|
| + | PB-214       | 89.78*       | 0.82      | 3.550E+000          | 1.24E-001              | 3.284E+000          | 1.682E+00            |
|   |              | 241.99       | 7.25      | 9.282E-001          |                        | -3.828E-001         | 4.479E-00            |
|   |              | 258.76       | 0.53      | 8.444E+000          |                        | -1.644E+000         | 3.985E+00            |
|   |              | 295.22*      | 18.42     | 1.668E-001          |                        | 1.185E-001          | 7.563E-00            |
|   |              | 351.93*      | 35.60     | 1.244E-001          |                        | 1.649E-001          | 5.738E-00            |
|   |              | 785.96       | 1.06      | 9.441E+000          |                        | 1.737E-001          | 4.355E+00            |
|   |              | 839.07       | 0.58      | 1.989E+001          |                        | -7.750E+000         | 9.242E+00            |
| + | Ra-226       | 81.07        | 0.20      | 1.782E+001          | 9.62E-001              | 2.435E+000          | 8.496E+00            |
|   |              | 83.79*       | 0.32      | 1.332E+001          |                        | 9.154E+000          | 6.416E+00            |
|   |              | 186.21*      | 3.64      | 9.619E-001          |                        | 6.405E+000          | 4.551E-00            |
|   | AC-228       | 89.96        | 1.90      | 9.167E+004          | 2.23E+004              | -1.588E+005         | 4.410E+00            |
|   |              | 93.35        | 3.10      | 5.769E+004          |                        | 8.692E+004          | 2.780E+00            |
|   |              | 99.51        | 1.26      | 1.015E+005          |                        | 3.674E+004          | 4.822E+00            |
|   |              | 105.60       | 0.74      | 1.953E+005          |                        | 7.609E+004          | 9.335E+00            |
|   |              | 129.07       | 2.42      | 5.484E+004          |                        | -2.515E+003         | 2.606E+00            |
|   |              | 153.98       | 0.72      | 2.053E+005          |                        | 1.316E+005          | 9.773E+00            |
|   |              | 209.25       | 3.89      | 4.779E+004          |                        | -1.147E+004         | 2.275E+00            |
|   |              | 214.85       | 0.76      | 2.299E+005          |                        | 1.785E+005          | 1.090E+00            |
|   |              | 270.24       | 3.46      | 6.285E+004          |                        | 2.520E+004          | 2.980E+00            |
|   |              | 328.00       | 2.95      | 7.820E+004          |                        | 2.572E+004          | 3.678E+00            |
|   |              | 338.32       | 11.27     | 2.261E+004          |                        | 1.298E+004          | 1.068E+00            |
|   |              | 409.46       | 1.92      | 1.404E+005          |                        | 5.989E+003          | 6.568E+00            |
|   |              | 463.00       | 4.40      | 7.859E+004          |                        | 3.510E+004          | 3.706E+00            |
|   |              | 562.50       | 0.87      | 4.576E+005          |                        | 3.776E+005          | 2.150E+00            |
|   |              | 674.75       | 2.10      | 1.961E+005          |                        | 6.578E+004          | 9.118E+00            |
|   |              | 726.86       | 0.62      | 7.074E+005          |                        | 3.128E+005          | 3.288E+00            |
|   |              | 755.32       | 1.00      | 3.757E+005          |                        | -5.576E+004         | 1.718E+00            |
|   |              | 772.29       | 1.49      | 3.116E+005          |                        | 9.435E+004          | 1.448E+00            |
|   |              | 794.95       | 4.25      | 1.086E+005          |                        | -9.463E+004         | 5.035E+00            |
|   |              | 830.49       | 0.54      | 8.896E+005          |                        | 3.569E+005          | 4.125E+00            |
|   |              | 835.71       | 1.61      | 3.026E+005          |                        | -7.719E+004         | 1.404E+00            |
|   |              | 840.38       | 0.91      | 5.513E+005          |                        | -1.465E+005         | 2.562E+00            |
|   |              | 904.20       | 0.77      | 7.013E+005          |                        | -6.206E+005         | 3.262E+00            |
|   |              | 911.20       | 25.80     | 2.234E+004          |                        | 9.208E+003          | 1.043E+00            |
|   |              | 964.77       | 4.99      | 1.264E+005          |                        | 7.136E+004          | 5.920E+00            |
|   |              | 968.97       | 15.80     | 4.107E+004          |                        | 1.301E+004          | 1.927E+00            |
|   |              | 1247.08      | 0.50      | 1.128E+006          |                        | -7.044E+005         | 5.141E+00            |
|   |              | 1459.14      | 0.83      | 1.605E+006          |                        | 4.009E+006          | 7.681E+00            |
|   |              | 1495.91      | 0.86      | 5.192E+005          |                        | 9.603E+004          | 2.257E+00            |
|   |              | 1588.20      | 3.22      | 1.896E+005          |                        | -4.311E+003         | 8.527E+00            |
|   |              | 1630.63      | 1.51      | 3.372E+005          |                        | -1.155E+004         | 1.477E+00            |
|   | TH-230       | 67.67        | 0.38      | 1.153E+001          | 1.15E+001              | 1.546E+000          | 5.518E+00            |
|   | PA-234       | 742.81       | 0.11      | 9.644E+001          | 1.45E+001              | -1.256E+001         | 4.477E+00            |
|   |              | 766.42       | 0.32      | 3.200E+001          |                        | 2.018E+001          | 1.481E+00            |
|   |              | 1001.03      | 0.84      | 1.448E+001          |                        | -1.637E+000         | 6.667E+00            |
|   | TH-234       | 63.29        | 3.70      | 1.331E+000          | 1.33E+000              | 4.741E-001          | 6.383E-00            |
|   |              | 92.38        | 2.13      | 2.108E+000          |                        | 2.441E+000          | 1.018E+00            |
|   |              | 92.80        | 2.10      | 2.074E+000          |                        | 2.508E+000          | 1.001E+00            |
|   |              | 112.81       | 0.21      | 1.429E+001          |                        | -1.930E+000         | 6.789E+00            |
|   | U-234        | 53.20        | 0.12      | 4.308E+001          | 4.31E+001              | 2.257E+001          | 2.048E+00            |
|   |              | 120.90       | 0.04      | 8.731E+001          |                        | 2.194E+000          | 4.150E+00            |

|   | Nuclide<br>Name | Energy<br>(keV) | Yield<br>(%) | Line MDA<br>(pCi/gram) | Nuclide MDA<br>(pCi/gram) | Activity<br>(pCi/gram) | Dec. Leve<br>(pCi/gram) |
|---|-----------------|-----------------|--------------|------------------------|---------------------------|------------------------|-------------------------|
| + | U-235           | 89.96*          | 3.43         | 8.488E-001             | 2.28E-001                 | 7.851E-001             | 4.020E-00               |
|   |                 | 93.35           | 5.54         | 7.534E-001             |                           | 1.135E+000             | 3.630E-00               |
|   |                 | 104.82          | 0.69         | 4.821E+000             |                           | -1.878E-001            | 2.301E+00               |
|   |                 | 105.60          | 1.31         | 2.575E+000             |                           | 1.003E+000             | 1.231E+00               |
|   |                 | 108.58          | 0.50         | 6.726E+000             |                           | 8.270E-001             | 3.214E+00               |
|   |                 | 109.19          | 1.66         | 1.932E+000             |                           | -1.522E+000            | 9.208E-00               |
|   |                 | 143.76*         | 10.96        | 2.279E-001             |                           | 4.497E-001             | 1.066E-00               |
|   |                 | 163.36*         | 5.08         | 4.245E-001             |                           | 3.683E-001             | 1.953E-00               |
|   |                 | 194.94          | 0.63         | 6.166E+000             |                           | -1.917E+000            | 2.928E+00               |
|   |                 | 202.12          | 1.08         | 3.860E+000             |                           | -1.392E+000            | 1.837E+00               |
|   |                 | 205.32          | 5.02         | 8.885E-001             |                           | 3.708E-001             | 4.240E-00               |

+ = Nuclide identified during the nuclide identification

\* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction



\*\*\*\*\*  
 \*\*\* LINE ACTIVITY CONSISTENCY EVALUATOR \*\*\*  
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=====  
 Analysis using Key Line Activities  
 =====

Filename: C:\GENIE2K\CAMFILES\UNC 2017\IMC Samples\IMC-2123\UNC-GFLU-21

Equation used to calculate plot:  $\ln(\text{Ratio}) = A + B \cdot \ln(\text{Energy})$

where: Ratio = Activity/KL Activity

Notes:

'^' Denotes Key Line energy

\* All uncertainties quoted at 1.96 sigma

| Nuclide | Energy<br>(keV) |   | Activity<br>(pCi/gram) | Activity<br>%Uncert* | Ratio[%Uncert] | A     | B<br>[uncert] |
|---------|-----------------|---|------------------------|----------------------|----------------|-------|---------------|
| -----   | -----           |   | -----                  | -----                | -----          | ----- | -----         |
| K-40    | 1460.8          | ^ | 6.11E+000              | 19.399               |                |       |               |
| Pb-210  | 46.5            | ^ | 1.93E+000              | 89.464               |                |       |               |
| Pb-212  | 74.8            |   | 3.00E-001              | 92.980               | 1.302[110.76]  | 4.57  | -0.818        |
|         | 89.8            |   | 1.84E+000              | 111.55               | 8.016[126.75]  |       | [ 1.095]      |
|         | 238.6           | ^ | 2.30E-001              | 60.191               | 1.000[85.123]  |       |               |
| PB-214  | 74.8            |   | 5.31E-001              | 93.410               | 3.221[99.937]  | 7.71  | -1.343        |
|         | 89.8            |   | 3.28E+000              | 111.88               | 19.917[117.39] |       | [ 0.605]      |
|         | 295.2           |   | 1.19E-001              | 58.797               | 0.719[68.695]  |       |               |
|         | 351.9           | ^ | 1.65E-001              | 35.523               | 1.000[50.237]  |       |               |
| Ra-226  | 83.8            |   | 9.15E+000              | 39.526               | 1.429[42.237]  | 2.34  | -0.447        |
|         | 186.2           | ^ | 6.40E+000              | 14.889               | 1.000[21.057]  |       | [ 0.591]      |
| U-235   | 90.0            |   | 7.85E-001              | 111.59               | 1.746[114.59]  | 6.33  | -1.277        |
|         | 143.8           | ^ | 4.50E-001              | 26.035               | 1.000[36.819]  |       | [ 2.122]      |
|         | 163.4           |   | 3.68E-001              | 47.722               | 0.819[54.362]  |       |               |