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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        *****
*********************************************************************


Filename: ERT01,C:\GENIE2K\CAMFILES\SMP-HTC-A02-S002-1218-01.CNF

Report Generated On              : 6/27/2017  11:20:12 PM

Sample Title                     : HTC-A02-S002-1218-01
Sample Description               : 450 cc Soil
Sample Identification            :
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :   100 -  8192
Peak Area Range (in channels)    :   100 -  8192
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :  9.750E+002 GWET

Sample Taken On                  : 5/15/2017  11:51:00 AM
Acquisition Started              : 6/27/2017   9:20:04 PM

Live Time                        :     7200.0 seconds
Real Time                        :     7203.3 seconds

Dead Time                        :   0.05 %


              Energy Calibration Used Done On       : 5/10/2017
              Efficiency Calibration Used Done On   : 12/14/2016
              Efficiency ID                         : ERT0101
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**********
***** P E A K A N A L Y S I S R E P O R T *****
**********

Detector Name: ERT01
Sample Title: HTC-A02-S002-1218-01
Peak Analysis Performed on: 6/27/2017 11:20:12 PM
Peak Analysis From Channel: 100
Peak Analysis To Channel: 8192

| | Peak No. | ROI start | ROI end | Peak centroid | Energy (keV) | FWHM (keV) | Net Peak Area | Net Area Uncert. | Continuum Counts |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 250- | 260 | 253.72 | 63.29 | 0.78 | 1.57E+002 | 46.16 | 8.25E+002 |
| M | 2 | 290- | 314 | 300.15 | 74.90 | 0.92 | 5.68E+002 | 35.60 | 1.09E+003 |
| m | 3 | 290- | 314 | 309.34 | 77.20 | 0.92 | 9.79E+002 | 42.01 | 1.01E+003 |
| M | 4 | 330- | 386 | 336.78 | 84.05 | 1.20 | 1.63E+002 | 31.05 | 1.20E+003 |
| m | 5 | 330- | 386 | 349.50 | 87.23 | 1.20 | 4.16E+002 | 35.64 | 1.24E+003 |
| m | 6 | 330- | 386 | 360.86 | 90.07 | 1.21 | 3.19E+002 | 32.64 | 1.28E+003 |
| m | 7 | 330- | 386 | 371.45 | 92.72 | 1.21 | 5.76E+002 | 38.62 | 1.16E+003 |
| | 8 | 510- | 523 | 517.13 | 129.13 | 0.86 | 1.05E+002 | 56.06 | 1.10E+003 |
| | 9 | 572- | 582 | 576.82 | 144.04 | 0.38 | 8.43E+001 | 45.27 | 8.25E+002 |
| | 10 | 738- | 752 | 745.01 | 186.08 | 1.23 | 8.09E+002 | 60.06 | 9.72E+002 |
| | 11 | 830- | 848 | 836.95 | 209.06 | 1.12 | 1.20E+002 | 60.18 | 1.03E+003 |
| M | 12 | 937- | 978 | 944.95 | 236.05 | 1.14 | 1.28E+002 | 22.67 | 6.21E+002 |
| m | 13 | 937- | 978 | 955.34 | 238.64 | 1.14 | 1.79E+003 | 48.16 | 6.20E+002 |
| m | 14 | 937- | 978 | 968.45 | 241.92 | 1.15 | 9.11E+002 | 36.36 | 5.59E+002 |
| | 15 | 1107- | 1115 | 1110.10 | 277.32 | 0.48 | 5.84E+001 | 25.56 | 2.77E+002 |
| | 16 | 1172- | 1193 | 1181.68 | 295.21 | 1.06 | 1.73E+003 | 64.84 | 6.55E+002 |
| M | 17 | 1193- | 1220 | 1201.00 | 300.04 | 0.64 | 9.43E+001 | 17.39 | 2.51E+002 |
| m | 18 | 1193- | 1220 | 1216.95 | 304.03 | 0.64 | 3.27E+001 | 13.14 | 2.25E+002 |
| | 19 | 1304- | 1316 | 1311.86 | 327.75 | 0.99 | 2.70E+001 | 31.02 | 3.56E+002 |
| | 20 | 1346- | 1362 | 1353.62 | 338.18 | 1.19 | 3.20E+002 | 42.00 | 4.58E+002 |
| | 21 | 1398- | 1416 | 1408.40 | 351.87 | 1.15 | 3.01E+003 | 67.10 | 4.41E+002 |
| | 22 | 1843- | 1860 | 1852.35 | 462.83 | 1.07 | 1.24E+002 | 31.99 | 2.76E+002 |
| | 23 | 2031- | 2055 | 2044.09 | 510.74 | 1.63 | 4.67E+002 | 40.97 | 2.94E+002 |
| | 24 | 2327- | 2343 | 2333.58 | 583.09 | 1.32 | 5.74E+002 | 36.74 | 2.47E+002 |
| | 25 | 2430- | 2448 | 2438.16 | 609.23 | 1.33 | 2.31E+003 | 54.90 | 2.03E+002 |
| | 26 | 2655- | 2668 | 2662.01 | 665.18 | 0.88 | 5.35E+001 | 19.48 | 1.16E+002 |
| | 27 | 2902- | 2920 | 2909.64 | 727.06 | 1.44 | 1.34E+002 | 26.70 | 1.70E+002 |
| | 28 | 3061- | 3084 | 3074.32 | 768.22 | 1.56 | 2.80E+002 | 31.60 | 1.80E+002 |
| | 29 | 3139- | 3150 | 3143.98 | 785.63 | 0.98 | 4.86E+001 | 17.27 | 9.84E+001 |
| | 30 | 3171- | 3190 | 3181.01 | 794.88 | 0.84 | 8.09E+001 | 24.83 | 1.51E+002 |
| | 31 | 3435- | 3454 | 3443.93 | 860.59 | 0.80 | 1.18E+002 | 21.31 | 9.54E+001 |
| | 32 | 3639- | 3655 | 3646.44 | 911.20 | 1.18 | 4.62E+002 | 29.34 | 1.27E+002 |
| | 33 | 3730- | 3749 | 3737.78 | 934.03 | 1.07 | 1.79E+002 | 23.70 | 1.09E+002 |
| | 34 | 3869- | 3886 | 3877.98 | 969.07 | 1.12 | 2.11E+002 | 27.11 | 1.61E+002 |
| | 35 | 4473- | 4494 | 4483.79 | 1120.47 | 1.49 | 5.53E+002 | 32.09 | 1.27E+002 |
| | 36 | 4615- | 4629 | 4623.05 | 1155.28 | 0.81 | 5.64E+001 | 17.91 | 9.16E+001 |
| | 37 | 4949- | 4967 | 4955.65 | 1238.40 | 1.17 | 2.14E+002 | 26.96 | 1.51E+002 |
| | 38 | 5118- | 5137 | 5128.66 | 1281.64 | 1.25 | 5.18E+001 | 18.63 | 8.42E+001 |
| | 39 | 5505- | 5522 | 5514.91 | 1378.17 | 0.66 | 1.27E+002 | 18.49 | 6.56E+001 |
| | 40 | 5540- | 5555 | 5546.68 | 1386.11 | 0.78 | 2.02E+001 | 12.58 | 4.58E+001 |
| M | 41 | 5604- | 5645 | 5611.66 | 1402.35 | 1.91 | 5.61E+001 | 9.35 | 3.75E+001 |
| m | 42 | 5604- | 5645 | 5636.92 | 1408.66 | 1.91 | 7.46E+001 | 10.74 | 4.41E+001 |

| | Peak No. | ROI start | ROI end | Peak centroid | Energy (keV) | FWHM (keV) | Net Peak Area | Net Area Uncert. | Continuum Counts |
|---|---|---|---|---|---|---|---|---|---|
| | 43 | 5833- | 5863 | 5848.46 | 1461.53 | 1.69 | 2.59E+003 | 54.43 | 7.72E+001 |
| | 44 | 6033- | 6049 | 6041.19 | 1509.70 | 0.55 | 4.77E+001 | 13.65 | 4.43E+001 |
| M | 45 | 6334- | 6366 | 6339.98 | 1584.37 | 1.23 | 1.59E+001 | 6.05 | 2.66E+001 |
| m | 46 | 6334- | 6366 | 6359.96 | 1589.36 | 1.23 | 3.47E+001 | 7.13 | 1.72E+001 |
| | 47 | 6916- | 6935 | 6926.03 | 1730.84 | 2.08 | 9.50E+001 | 12.15 | 1.50E+001 |
| | 48 | 7054- | 7079 | 7065.94 | 1765.80 | 1.73 | 4.70E+002 | 23.46 | 1.91E+001 |
| | 49 | 7357- | 7370 | 7363.63 | 1840.20 | 0.33 | 1.20E+001 | 7.15 | 1.40E+001 |
| | 50 | 7391- | 7407 | 7398.04 | 1848.80 | 1.96 | 5.66E+001 | 10.88 | 1.94E+001 |

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet

Errors quoted at 1.000 sigma

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***** N U C L I D E M D A R E P O R T *****
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Detector Name: ERT01
Sample Geometry:
Sample Title: HTC-A02-S002-1218-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

| | Nuclide Name | Energy (keV) | Yield (%) | Line MDA (pCi/GWET) | Nuclide MDA (pCi/GWET) | Activity (pCi/GWET) |
|---|---|---|---|---|---|---|
| + | K-40 | 1460.82* | 10.55 | 6.1307E-001 | 6.13E-001 | 1.6483E+001 |
| | Co-60 | 1173.23 | 99.85 | 7.0335E-002 | 6.04E-002 | -1.9038E-002 |
| | | 1332.49 | 99.98 | 6.0350E-002 | | -1.2002E-003 |
| > | | 2505.71 | 0.10 | 0.0000E+000 | | 0.0000E+000 |
| | Cs-137 | 32.06 | 5.54 | 3.7551E+003 | 6.08E-002 | -1.2991E+003 |
| | | 661.66 | 84.99 | 6.0794E-002 | | 1.3320E-002 |
| + | Tl-208 | 72.80 | 2.02 | 6.8747E+000 | 5.67E-002 | 1.0151E+000 |
| | | 74.97* | 3.41 | 2.3083E+000 | | 5.9633E+000 |
| | | 84.90* | 1.51 | 4.0838E+000 | | 2.8992E+000 |
| | | 277.36* | 6.31 | 4.4323E-001 | | 2.2297E-001 |
| | | 510.77* | 22.60 | 2.6211E-001 | | 4.3830E-001 |
| | | 583.19* | 84.50 | 5.6709E-002 | | 2.4105E-001 |
| | | 763.13 | 1.81 | 3.7400E+000 | | 1.4242E-002 |
| | | 860.56* | 12.42 | 3.3230E-001 | | 4.4386E-001 |
| + | Bi-212 | 39.86 | 1.06 | 7.1716E+002 | 7.05E-001 | 2.4274E+002 |
| | | 727.33* | 6.74 | 7.0502E-001 | | 8.2574E-001 |
| | | 785.37* | 1.11 | 3.0069E+000 | | 1.9172E+000 |
| | | 1620.74 | 1.51 | 3.5925E+000 | | 1.2481E+000 |
| | | 1806.00 | 0.09 | 4.1062E+001 | | -1.5476E+001 |
| + | Pb-212 | 74.81* | 10.40 | 7.5686E-001 | 8.66E-002 | 1.9553E+000 |
| | | 77.11* | 17.50 | 3.9790E-001 | | 1.8357E+000 |
| | | 87.30* | 7.81 | 7.4804E-001 | | 1.3302E+000 |
| | | 115.18 | 0.59 | 9.3772E+000 | | 3.3556E+000 |
| | | 238.63* | 43.30 | 8.6550E-002 | | 9.0661E-001 |
| | | 300.09* | 3.28 | 8.1921E-001 | | 7.2237E-001 |
| + | Bi-214 | 76.86* | 0.43 | 1.5657E+001 | 9.77E-002 | 7.2233E+001 |
| | | 89.81* | 0.24 | 2.2058E+001 | | 2.9525E+001 |
| | | 386.77 | 0.30 | 1.6790E+001 | | 8.8689E+000 |
| | | 454.77 | 0.29 | 1.7268E+001 | | 9.0966E+000 |
| | | 609.31* | 45.49 | 9.7727E-002 | | 1.7985E+000 |
| | | 665.45* | 1.53 | 2.1180E+000 | | 1.3076E+000 |
| | | 703.11 | 0.48 | 1.1240E+001 | | -2.2240E+000 |
| | | 719.86 | 0.39 | 1.3275E+001 | | 2.7263E+000 |
| | | 768.36* | 4.89 | 1.0746E+000 | | 2.3675E+000 |
| | | 786.10* | 0.31 | 1.0313E+001 | | 6.5757E+000 |
| | | 806.17 | 1.26 | 4.4756E+000 | | -4.1245E-001 |
| | | 934.06* | 3.10 | 1.4462E+000 | | 2.7694E+000 |
| | | 964.08 | 0.36 | 2.3215E+001 | | 1.0240E+001 |
| | | 1051.96 | 0.31 | 2.0036E+001 | | -1.1393E+001 |
| | | 1120.29* | 14.91 | 3.8763E-001 | | 2.0575E+000 |

| | Nuclide Name | Energy (keV) | Yield (%) | Line MDA (pCi/GWET) | Nuclide MDA (pCi/GWET) | Activity (pCi/GWET) |
|---|---|---|---|---|---|---|
| + | Bi-214 | 1133.66 | 0.25 | 2.6109E+001 | 9.77E-002 | 1.0321E+001 |
| | | 1155.19* | 1.63 | 2.7224E+000 | | 1.9599E+000 |
| | | 1207.68 | 0.45 | 1.6682E+001 | | 4.0975E+000 |
| | | 1238.11* | 5.79 | 1.1202E+000 | | 2.2225E+000 |
| | | 1280.96* | 1.43 | 3.5622E+000 | | 2.2344E+000 |
| | | 1377.67* | 4.00 | 1.1523E+000 | | 2.0725E+000 |
| | | 1385.31* | 0.76 | 4.9466E+000 | | 1.7432E+000 |
| | | 1401.50* | 1.27 | 2.2279E+000 | | 2.9068E+000 |
| | | 1407.98* | 2.15 | 1.4253E+000 | | 2.2935E+000 |
| | | 1509.23* | 2.11 | 1.8815E+000 | | 1.5617E+000 |
| | | 1538.50 | 0.38 | 1.4864E+001 | | 9.6077E-001 |
| | | 1543.32 | 0.20 | 2.7587E+001 | | 1.0563E+001 |
| | | 1583.22 | 0.69 | 8.9977E+000 | | 2.0664E+000 |
| | | 1594.73 | 0.25 | 2.2625E+001 | | 6.4266E+000 |
| | | 1599.31 | 0.23 | 2.1445E+001 | | 1.3400E+001 |
| | | 1661.28 | 1.15 | 4.3875E+000 | | 3.2860E+000 |
| | | 1683.99 | 0.22 | 1.9675E+001 | | 2.6319E+000 |
| | | 1729.59 | 2.92 | 2.0212E+000 | | 1.5221E+000 |
| | | 1764.49 | 15.40 | 7.3058E-001 | | 2.0821E+000 |
| | | 1847.42 | 2.11 | 2.7577E+000 | | 2.0407E+000 |
| | | 1873.16 | 0.22 | 1.7096E+001 | | -3.4417E+000 |
| > | | 2118.55 | 1.14 | 0.0000E+000 | | 0.0000E+000 |
| > | | 2204.21 | 5.08 | 0.0000E+000 | | 0.0000E+000 |
| + | Pb-214 | 53.28 | 1.20 | 3.7539E+001 | 1.28E-001 | 8.8919E+000 |
| | | 74.81* | 6.44 | 1.1708E+000 | | 3.0246E+000 |
| | | 77.11* | 10.80 | 6.1760E-001 | | 2.8492E+000 |
| | | 87.30* | 4.84 | 1.1562E+000 | | 2.0561E+000 |
| | | 242.00* | 7.43 | 4.5651E-001 | | 2.6291E+000 |
| | | 258.87 | 0.52 | 9.9469E+000 | | 5.0354E+000 |
| | | 274.80 | 0.47 | 1.1096E+001 | | -1.5677E+001 |
| | | 295.22* | 19.30 | 2.8925E-001 | | 2.1343E+000 |
| | | 351.93* | 37.60 | 1.2756E-001 | | 2.0878E+000 |
| | | 462.00* | 0.22 | 1.9437E+001 | | 1.6909E+001 |
| | | 533.66 | 0.19 | 2.5846E+001 | | 4.5268E+000 |
| | | 785.96* | 1.07 | 2.9880E+000 | | 1.9051E+000 |
| | | 839.04 | 0.59 | 1.0129E+001 | | 1.3376E+000 |
| + | Ra-224 | 81.07 | 0.13 | 6.9151E+001 | 8.64E-001 | -6.0392E+001 |
| | | 83.78* | 0.22 | 2.8417E+001 | | 2.0174E+001 |
| | | 240.99* | 4.10 | 8.6366E-001 | | 4.9739E+000 |
| + | Ra-226 | 81.07 | 0.20 | 4.4047E+001 | 1.32E+000 | -3.8468E+001 |
| | | 83.78* | 0.33 | 1.8008E+001 | | 1.2785E+001 |
| | | 94.90 | 0.15 | 4.7507E+001 | | -2.2420E+000 |
| | | 186.21* | 3.59 | 1.3187E+000 | | 3.9760E+000 |
| + | Ac-228 | 99.50 | 1.26 | 4.7990E+000 | 1.81E-001 | -2.3107E-001 |
| | | 129.07* | 2.50 | 1.8672E+000 | | 7.5933E-001 |
| | | 209.25* | 3.97 | 1.4518E+000 | | 6.2756E-001 |
| | | 270.24 | 3.55 | 1.6350E+000 | | 1.3309E+000 |
| | | 328.00* | 3.04 | 1.2538E+000 | | 2.3395E-001 |
| | | 338.32* | 11.40 | 4.2084E-001 | | 7.5171E-001 |
| | | 409.46 | 2.02 | 2.6422E+000 | | 2.5637E-001 |

| | Nuclide Name | Energy (keV) | Yield (%) | Line MDA (pCi/GWET) | Nuclide MDA (pCi/GWET) | Activity (pCi/GWET) |
|---|---|---|---|---|---|---|
| + | Ac-228 | 463.00* | 4.45 | 1.0077E+000 | 1.81E-001 | 8.7664E-001 |
| | | 755.31 | 1.03 | 5.6168E+000 | | 3.4748E+000 |
| | | 772.29 | 1.52 | 4.7020E+000 | | -9.3656E-001 |
| | | 794.94* | 4.31 | 1.1313E+000 | | 8.2909E-001 |
| | | 835.70 | 1.70 | 3.6602E+000 | | 1.8054E+000 |
| | | 911.20* | 26.20 | 1.8081E-001 | | 8.5418E-001 |
| | | 964.79 | 4.99 | 1.7917E+000 | | 1.1100E+000 |
| | | 968.96* | 15.90 | 3.5364E-001 | | 6.8241E-001 |
| | | 1588.20 | 3.06 | 2.0900E+000 | | 1.4751E+000 |
| | | 1630.62 | 1.52 | 3.3555E+000 | | 3.5838E-001 |
| | Th-228 | 84.37* | 1.26 | 4.8940E+000 | 4.89E+000 | 3.4744E+000 |
| | | 131.61 | 0.13 | 4.4331E+001 | | -2.1086E+000 |
| | | 166.41 | 0.10 | 5.2653E+001 | | 1.3288E+001 |
| | | 215.98 | 0.25 | 2.2364E+001 | | 1.0797E+001 |
| | Pa-234m | 258.23 | 0.07 | 7.0286E+001 | 7.35E+000 | 1.3752E+001 |
| | | 742.81 | 0.09 | 5.7000E+001 | | 1.1513E+001 |
| | | 766.36 | 0.32 | 2.1244E+001 | | 1.9031E+001 |
| | | 786.27 | 0.05 | 1.0347E+002 | | 1.6550E+001 |
| | | 1001.03 | 0.85 | 7.3518E+000 | | 5.1523E+000 |
| | | 1737.77 | 0.02 | 2.5204E+002 | | -1.0782E+002 |
| + | Th-234 | 63.30* | 3.75 | 3.7099E+000 | 1.16E+000 | 2.1244E+000 |
| | | 92.59* | 4.33 | 1.1597E+000 | | 2.5010E+000 |
| | | 112.81 | 0.22 | 2.4697E+001 | | -2.5583E+000 |

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = Calculated MDA is zero due to zero counts in the region, or the region is outside the spectrum, or has not been calculated
@ = Half-life too short to be able to perform the decay correction

**********
***** 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: HTC-A02-S002-1218-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

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

| Nuclide Name | Id Confidence | Energy (keV) | | Yield (%) | Activity (pCi/GWET) | Activity Uncertainty |
|---|---|---|---|---|---|---|
| K-40 | 0.923 | 1460.82* | | 10.55 | 1.64829E+001 | 5.67620E-001 |
| Eu-152m | 0.992 | 89.85* | | 69.90 | 1.03687E-001 | 1.10047E-002 |
| Tl-208 | 0.955 | 72.80 | @ | 2.02 | | |
| | | 74.97* | @ | 3.41 | 5.96328E+000 | 4.14564E-001 |
| | | 84.90* | @ | 1.51 | 2.89916E+000 | 5.57058E-001 |
| | | 277.36* | | 6.31 | 2.22970E-001 | 9.78729E-002 |
| | | 510.77* | @ | 22.60 | 4.38299E-001 | 6.26313E-002 |
| | | 583.19* | | 84.50 | 2.41050E-001 | 1.73671E-002 |
| | | 763.13 | @ | 1.81 | | |
| | | 860.56* | | 12.42 | 4.43862E-001 | 8.11818E-002 |
| Bi-211 | 0.892 | 351.03* | | 13.00 | 6.06127E+000 | 2.57360E-001 |
| Bi-212 | 0.761 | 39.86 | @ | 1.06 | | |
| | | 727.33* | | 6.74 | 8.25743E-001 | 1.66298E-001 |
| | | 785.37* | | 1.11 | 1.91721E+000 | 6.83413E-001 |
| | | 1620.74 | | 1.51 | | |
| | | 1806.00 | @ | 0.09 | | |
| Pb-212 | 0.986 | 74.81* | | 10.40 | 1.95527E+000 | 1.47166E-001 |
| | | 77.11* | | 17.50 | 1.83567E+000 | 1.09259E-001 |
| | | 87.30* | | 7.81 | 1.33023E+000 | 1.26758E-001 |
| | | 115.18 | @ | 0.59 | | |
| | | 238.63* | | 43.30 | 9.06605E-001 | 3.87790E-002 |
| | | 300.09* | | 3.28 | 7.22368E-001 | 1.35353E-001 |
| Bi-214 | 0.687 | 76.86* | @ | 0.43 | 7.22330E+001 | 4.36850E+000 |
| | | 89.81* | @ | 0.24 | 2.95251E+001 | 3.30776E+000 |
| | | 386.77 | @ | 0.30 | | |
| | | 454.77 | @ | 0.29 | | |
| | | 609.31* | | 45.49 | 1.79855E+000 | 6.81050E-002 |
| | | 665.45* | @ | 1.53 | 1.30763E+000 | 4.77470E-001 |
| | | 703.11 | @ | 0.48 | | |
| | | 719.86 | @ | 0.39 | | |
| | | 768.36* | | 4.89 | 2.36750E+000 | 2.73082E-001 |
| | | 786.10* | @ | 0.31 | 6.57573E+000 | 2.57210E+000 |
| | | 806.17 | @ | 1.26 | | |
| | | 934.06* | | 3.10 | 2.76941E+000 | 3.71551E-001 |
| | | 964.08 | @ | 0.36 | | |
| | | 1051.96 | @ | 0.31 | | |
| | | 1120.29* | | 14.91 | 2.05750E+000 | 1.29399E-001 |
| | | 1133.66 | @ | 0.25 | | |
| | | 1155.19* | @ | 1.63 | 1.95992E+000 | 6.24486E-001 |
| | | 1207.68 | @ | 0.45 | | |
| | | 1238.11* | | 5.79 | 2.22248E+000 | 2.86822E-001 |

| Nuclide Name | Id Confidence | Energy (keV) | | Yield (%) | Activity (pCi/GWET) | Activity Uncertainty |
|---|---|---|---|---|---|---|
| Bi-214 | 0.687 | 1280.96* | @ | 1.43 | 2.23439E+000 | 8.05915E-001 |
| | | 1377.67* | | 4.00 | 2.07254E+000 | 3.06933E-001 |
| | | 1385.31* | @ | 0.76 | 1.74324E+000 | 1.08684E+000 |
| | | 1401.50* | @ | 1.27 | 2.90676E+000 | 4.92284E-001 |
| | | 1407.98* | @ | 2.15 | 2.29349E+000 | 3.39205E-001 |
| | | 1509.23* | @ | 2.11 | 1.56166E+000 | 4.49667E-001 |
| | | 1538.50 | @ | 0.38 | | |
| | | 1543.32 | @ | 0.20 | | |
| | | 1583.22 | @ | 0.69 | | |
| | | 1594.73 | @ | 0.25 | | |
| | | 1599.31 | @ | 0.23 | | |
| | | 1661.28 | @ | 1.15 | | |
| | | 1683.99 | @ | 0.22 | | |
| | | 1729.59 | @ | 2.92 | | |
| | | 1764.49 | | 15.40 | | |
| | | 1847.42 | @ | 2.11 | | |
| | | 1873.16 | @ | 0.22 | | |
| | | 2118.55 | @ | 1.14 | | |
| | | 2204.21 | @ | 5.08 | | |
| Pb-214 | 0.961 | 53.28 | @ | 1.20 | | |
| | | 74.81* | | 6.44 | 3.02458E+000 | 2.32250E-001 |
| | | 77.11* | | 10.80 | 2.84919E+000 | 1.82394E-001 |
| | | 87.30* | | 4.84 | 2.05611E+000 | 1.99757E-001 |
| | | 242.00* | | 7.43 | 2.62911E+000 | 1.39444E-001 |
| | | 258.87 | @ | 0.52 | | |
| | | 274.80 | @ | 0.47 | | |
| | | 295.22* | | 19.30 | 2.13430E+000 | 1.08156E-001 |
| | | 351.93* | | 37.60 | 2.08785E+000 | 8.61446E-002 |
| | | 462.00* | @ | 0.22 | 1.69088E+001 | 4.46139E+000 |
| | | 533.66 | @ | 0.19 | | |
| | | 785.96* | @ | 1.07 | 1.90512E+000 | 6.93667E-001 |
| | | 839.04 | @ | 0.59 | | |
| Ra-224 | 0.837 | 81.07 | @ | 0.13 | | |
| | | 83.78* | @ | 0.22 | 2.01739E+001 | 3.94701E+000 |
| | | 240.99* | | 4.10 | 4.97395E+000 | 2.60485E-001 |
| Ra-226 | 0.881 | 81.07 | @ | 0.20 | | |
| | | 83.78* | @ | 0.33 | 1.27846E+001 | 2.50063E+000 |
| | | 94.90 | @ | 0.15 | | |
| | | 186.21* | | 3.59 | 3.97595E+000 | 3.43087E-001 |
| Ac-228 | 0.650 | 99.50 | @ | 1.26 | | |
| | | 129.07* | @ | 2.50 | 7.59335E-001 | 4.05140E-001 |
| | | 209.25* | | 3.97 | 6.27565E-001 | 3.15681E-001 |
| | | 270.24 | | 3.55 | | |
| | | 328.00* | | 3.04 | 2.33950E-001 | 2.68631E-001 |
| | | 338.32* | | 11.40 | 7.51710E-001 | 1.04954E-001 |
| | | 409.46 | @ | 2.02 | | |
| | | 463.00* | | 4.45 | 8.76641E-001 | 2.33370E-001 |
| | | 755.31 | @ | 1.03 | | |
| | | 772.29 | @ | 1.52 | | |
| | | 794.94* | | 4.31 | 8.29087E-001 | 2.56779E-001 |

| Nuclide Name | Id Confidence | Energy (keV) | | Yield (%) | Activity (pCi/GWET) | Activity Uncertainty |
|---|---|---|---|---|---|---|
| Ac-228 | 0.650 | 835.70 | @ | 1.70 | | |
| | | 911.20* | | 26.20 | 8.54179E-001 | 6.39168E-002 |
| | | 964.79 | | 4.99 | | |
| | | 968.96* | | 15.90 | 6.82406E-001 | 9.17326E-002 |
| | | 1588.20 | | 3.06 | | |
| | | 1630.62 | @ | 1.52 | | |
| Th-231 | 0.834 | 81.23 | @ | 0.90 | | |
| | | 84.21* | | 6.60 | 6.35323E-001 | 1.28003E-001 |
| | | 89.95* | @ | 1.00 | 7.20375E+000 | 8.76097E-001 |
| Th-234 | 0.943 | 63.30* | | 3.75 | 2.12440E+000 | 8.14469E-001 |
| | | 92.59* | | 4.33 | 2.50098E+000 | 2.32971E-001 |
| | | 112.81 | @ | 0.22 | | |

* = Energy line found in the spectrum.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.45
Errors quoted at 1.000 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 Name | | Nuclide Id Confidence | Wt mean Activity (pCi/GWET) | Wt mean Activity Uncertainty |
|---|---|---|---|---|---|
| | K-40 | | 0.923 | 1.648286E+001 | 5.676197E-001 |
| X | Cd-109 | | 0.902 | | |
| | Eu-152m | | 0.992 | 9.224792E-002 | 1.111368E-002 |
| X | Tm-170 | | 0.993 | | |
| | Tl-208 | @ | 0.955 | 2.488528E-001 | 1.661722E-002 |
| | Bi-211 | | 0.892 | 1.135888E+000 | 3.306406E-001 |
| | Bi-212 | @ | 0.761 | 7.605568E-001 | 1.610439E-001 |
| | Pb-212 | @ | 0.986 | 8.177724E-001 | 3.399804E-002 |
| | Bi-214 | @ | 0.687 | 1.914390E+000 | 5.573326E-002 |
| | Pb-214 | @ | 0.961 | 1.696583E+000 | 7.774131E-002 |
| | Ra-224 | @ | 0.837 | 1.764219E+000 | 2.929245E-001 |
| | Ra-226 | @ | 0.881 | 3.975953E+000 | 3.365906E-001 |
| | Ac-228 | @ | 0.650 | 7.775337E-001 | 4.171298E-002 |
| X | Th-228 | | 0.492 | | |
| | Th-231 | @ | 0.834 | 3.276471E-001 | 1.236147E-001 |
| | Th-234 | @ | 0.943 | 2.472500E+000 | 2.239881E-001 |

? = 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

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

Peak Locate Performed on: 6/27/2017 11:20:12 PM
Peak Locate From Channel: 100
Peak Locate To Channel: 8192

| Peak No. | Energy (keV) | Peak Size in Counts per Second | Peak CPS % Uncertainty | Peak Type | Tol. Nuclide |
|---|---|---|---|---|---|
| 9 | 144.04 | 1.0506E-002 | 59.91 | Tol. | Ra-223 |
| M 12 | 236.05 | 1.7724E-002 | 17.76 | Tol. | Th-227 |
| m 18 | 304.03 | 4.5485E-003 | 40.13 | Tol. | Ba-140 |
| | | | | | Th-227 |
| M 45 | 1584.37 | 2.2127E-003 | 37.95 | Sum | |
| m 46 | 1589.36 | 4.8183E-003 | 20.54 | Sum | |
| 47 | 1730.84 | 1.3195E-002 | 12.79 | Sum | |
| 48 | 1765.80 | 6.4529E-002 | 5.06 | | |
| 49 | 1840.20 | 1.6613E-003 | 59.81 | Sum | |
| 50 | 1848.80 | 7.8628E-003 | 19.23 | Sum | |

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet

Errors quoted at 1.000 sigma