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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: ERT01,C:\GENIE2K\CAMFILES\SMP-NFB-A01-S003-1218-01.CNF

Report Generated On              : 5/25/2017   4:34:42 PM

Sample Title                     : NFB-A01-S003-1218-01
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                      :  1.033E+003 GWET

Sample Taken On                  : 5/10/2017  12:04:00 PM
Acquisition Started              : 5/25/2017   2:30:17 PM

Live Time                        :     7200.0 seconds
Real Time                        :     7458.2 seconds

Dead Time                        :   3.46 %


            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: NFB-A01-S003-1218-01
Peak Analysis Performed on: 5/25/2017 4:34:43 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
M	1	216-	237	225.74	56.30	0.93	3.29E+003	230.65	8.90E+004
m	2	216-	237	231.04	57.63	0.93	5.57E+003	260.42	8.94E+004
M	3	244-	276	254.21	63.42	0.96	3.45E+003	248.37	9.30E+004
m	4	244-	276	261.09	65.14	0.97	4.03E+003	256.85	9.50E+004
m	5	244-	276	269.86	67.33	0.97	1.41E+003	242.74	9.76E+004
M	6	276-	320	292.52	72.99	1.03	8.29E+003	263.57	1.09E+005
m	7	276-	320	300.10	74.89	1.04	7.06E+004	377.35	1.18E+005
m	8	276-	320	309.12	77.14	1.04	1.12E+005	447.47	1.19E+005
M	9	321-	387	325.22	81.16	1.23	1.53E+003	276.16	1.03E+005
m	10	321-	387	338.13	84.39	1.24	2.08E+004	314.52	1.37E+005
m	11	321-	387	349.54	87.24	1.24	5.82E+004	400.06	1.29E+005
m	12	321-	387	360.48	89.98	1.25	5.76E+004	383.63	1.29E+005
m	13	321-	387	373.80	93.31	1.25	7.59E+004	423.34	1.38E+005
	14	387-	406	398.74	99.54	1.10	1.52E+004	786.57	1.72E+005
M	15	407-	445	422.28	105.42	1.42	2.76E+004	390.13	1.60E+005
m	16	407-	445	435.57	108.74	1.42	1.02E+004	326.48	1.62E+005
	17	455-	469	461.69	115.27	0.96	7.69E+003	629.83	1.35E+005
M	18	510-	534	516.97	129.09	0.99	3.28E+004	369.11	1.20E+005
m	19	510-	534	526.92	131.57	0.99	2.03E+003	266.42	1.29E+005
M	20	572-	588	576.71	144.02	0.96	2.74E+003	282.87	1.06E+005
m	21	572-	588	583.94	145.82	0.96	2.14E+003	273.12	1.05E+005
	22	610-	626	616.57	153.98	1.10	1.36E+004	711.81	1.57E+005
	23	661-	673	666.31	166.41	0.87	1.71E+003	547.82	1.13E+005
	24	731-	756	744.51	185.95	1.25	3.28E+004	979.99	2.18E+005
	25	757-	776	766.04	191.33	1.22	1.76E+003	761.11	1.65E+005
	26	791-	804	798.09	199.34	0.99	3.66E+003	561.90	1.13E+005
	27	812-	829	816.53	203.95	1.10	1.38E+003	688.34	1.45E+005
	28	830-	846	837.50	209.19	1.10	6.75E+004	694.66	1.32E+005
	29	855-	874	864.30	215.89	1.10	5.56E+003	719.62	1.46E+005
M	30	929-	981	934.07	233.33	1.11	1.09E+003	241.48	8.36E+004
m	31	929-	981	944.57	235.95	1.11	3.55E+003	244.77	1.02E+005
m	32	929-	981	954.88	238.53	1.12	7.96E+005	939.97	8.30E+004
m	33	929-	981	964.98	241.05	1.12	9.02E+004	368.94	6.98E+004
M	34	1003-	1048	1010.73	252.49	1.14	3.53E+003	225.17	6.92E+004
m	35	1003-	1048	1025.60	256.20	1.15	1.82E+003	199.66	6.76E+004
m	36	1003-	1048	1035.50	258.68	1.15	2.56E+003	207.64	6.65E+004
M	37	1067-	1123	1081.20	270.10	1.21	5.76E+004	324.97	6.65E+004
m	38	1067-	1123	1099.14	274.58	1.22	1.62E+003	187.16	6.53E+004
m	39	1067-	1123	1109.75	277.23	1.22	3.38E+004	275.32	6.46E+004
	40	1142-	1165	1152.79	287.99	1.16	6.47E+003	609.33	9.11E+004
	41	1168-	1192	1181.06	295.06	1.14	6.88E+004	677.02	9.44E+004
	42	1192-	1215	1200.67	299.96	1.16	5.12E+004	630.83	8.57E+004

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1277-	1293	1286.49	321.40	1.02	1.87E+003	424.40	5.69E+004
M	44	1300-	1343	1312.11	327.81	1.16	4.34E+004	291.29	4.95E+004
m	45	1300-	1343	1329.56	332.17	1.16	5.16E+003	180.30	4.88E+004
M	46	1343-	1373	1353.39	338.12	1.17	1.70E+005	458.63	4.55E+004
m	47	1343-	1373	1363.91	340.75	1.17	5.06E+003	174.12	4.35E+004
	48	1397-	1418	1407.79	351.72	1.20	1.26E+005	591.40	5.98E+004
M	49	1540-	1569	1547.66	386.68	1.08	9.88E+002	153.20	3.52E+004
m	50	1540-	1569	1555.84	388.72	1.08	9.43E+002	150.45	3.50E+004
M	51	1602-	1652	1607.17	401.55	1.19	8.45E+002	148.43	3.19E+004
m	52	1602-	1652	1620.65	404.92	1.19	5.03E+002	142.36	3.59E+004
m	53	1602-	1652	1637.77	409.20	1.19	2.41E+004	228.59	3.43E+004
	54	1752-	1769	1761.60	440.14	0.83	1.51E+003	337.14	3.45E+004
M	55	1790-	1817	1796.55	448.88	1.04	4.13E+002	119.25	2.46E+004
m	56	1790-	1817	1811.13	452.52	1.04	3.91E+003	158.22	2.68E+004
	57	1835-	1861	1851.91	462.71	1.27	5.15E+004	513.79	4.81E+004
M	58	1904-	1927	1913.17	478.03	0.96	1.56E+003	130.74	2.07E+004
m	59	1904-	1927	1922.23	480.29	0.96	8.77E+002	118.17	2.06E+004
	60	1942-	1957	1947.91	486.71	1.27	7.54E+002	284.83	2.67E+004
	61	2008-	2021	2015.09	503.50	1.21	1.72E+003	254.21	2.28E+004
	62	2028-	2064	2042.73	510.40	1.37	1.00E+005	661.01	5.91E+004
	63	2086-	2102	2092.08	522.74	1.20	4.01E+002	292.38	2.72E+004
M	64	2177-	2204	2185.64	546.12	1.21	1.72E+003	136.74	2.28E+004
m	65	2177-	2204	2198.70	549.38	1.21	1.22E+003	128.40	2.13E+004
	66	2243-	2258	2249.79	562.15	1.39	8.50E+003	282.69	2.37E+004
	67	2273-	2297	2286.42	571.31	2.50	2.93E+003	391.02	3.63E+004
	68	2315-	2350	2332.51	582.83	1.37	2.96E+005	757.26	5.04E+004
	69	2426-	2448	2436.99	608.94	1.36	9.94E+004	460.84	2.91E+004
	70	2455-	2472	2465.02	615.94	0.97	5.27E+002	271.73	2.25E+004
	71	2555-	2565	2560.02	639.68	0.49	3.02E+002	178.39	1.32E+004
	72	2600-	2610	2605.13	650.96	0.70	2.21E+002	180.82	1.36E+004
	73	2650-	2672	2661.69	665.09	1.64	3.08E+003	332.65	2.77E+004
M	74	2694-	2714	2697.50	674.04	0.50	3.15E+002	77.55	8.53E+003
m	75	2694-	2714	2707.50	676.54	0.50	2.37E+002	73.55	8.56E+003
	76	2744-	2760	2750.98	687.41	1.12	5.27E+002	254.45	2.05E+004
M	77	2800-	2849	2808.73	701.84	2.00	2.24E+003	157.10	2.59E+004
m	78	2800-	2849	2829.75	707.09	2.00	1.47E+003	143.05	2.97E+004
M	79	2867-	2923	2878.79	719.35	1.45	7.29E+002	109.20	1.90E+004
m	80	2867-	2923	2888.88	721.87	1.45	5.45E+002	107.05	1.88E+004
m	81	2867-	2923	2908.91	726.88	1.45	6.72E+004	290.27	1.81E+004
	82	2960-	2978	2970.42	742.25	1.48	7.64E+002	249.72	1.82E+004
	83	3005-	3035	3021.12	754.92	1.40	8.25E+003	391.00	2.97E+004
M	84	3044-	3100	3053.13	762.92	1.45	4.77E+003	123.48	1.63E+004
m	85	3044-	3100	3073.22	767.94	1.46	9.13E+003	141.02	1.54E+004
m	86	3044-	3100	3088.92	771.87	1.46	1.21E+004	153.32	1.46E+004
M	87	3114-	3159	3128.40	781.73	1.52	4.44E+003	115.45	1.41E+004
m	88	3114-	3159	3142.21	785.19	1.52	1.12E+004	149.71	1.39E+004
	89	3168-	3192	3179.61	794.53	1.50	3.51E+004	324.33	1.70E+004
	90	3213-	3238	3224.70	805.80	1.59	2.44E+003	265.72	1.60E+004
	91	3260-	3271	3265.60	816.02	0.34	1.51E+002	136.47	7.36E+003
M	92	3312-	3382	3322.15	830.16	1.58	4.51E+003	109.15	1.17E+004

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
m 93	3312-	3382	3342.66	835.28	1.58	1.36E+004	152.15	1.13E+004
m 94	3312-	3382	3361.04	839.88	1.58	8.08E+003	124.34	1.09E+004
95	3429-	3455	3442.11	860.14	1.52	3.64E+004	309.11	1.35E+004
96	3474-	3487	3480.53	869.74	1.62	2.13E+002	139.65	6.96E+003
97	3563-	3581	3573.75	893.03	1.60	2.73E+003	180.40	8.83E+003
98	3606-	3630	3616.72	903.77	1.45	5.47E+003	230.67	1.15E+004
99	3630-	3658	3644.86	910.81	1.55	2.14E+005	523.21	1.29E+004
M100	3669-	3696	3674.36	918.18	1.05	2.02E+002	60.22	4.66E+003
m101	3669-	3696	3688.90	921.81	1.05	2.38E+002	62.19	5.35E+003
102	3726-	3753	3736.36	933.68	1.53	5.17E+003	225.36	1.01E+004
M103	3767-	3816	3776.75	943.77	1.35	6.12E+002	66.90	6.12E+003
m104	3767-	3816	3791.88	947.55	1.35	5.81E+002	65.58	6.48E+003
m105	3767-	3816	3808.52	951.71	1.35	1.06E+003	75.34	6.12E+003
M106	3824-	3890	3834.63	958.24	1.58	2.02E+003	80.24	7.07E+003
m107	3824-	3890	3859.20	964.38	1.58	3.87E+004	210.65	6.95E+003
m108	3824-	3890	3876.04	968.58	1.59	1.27E+005	365.16	6.56E+003
109	3893-	3913	3903.63	975.48	1.37	1.90E+002	155.41	6.60E+003
M110	3923-	3963	3930.45	982.18	1.64	4.03E+002	65.87	5.74E+003
m111	3923-	3963	3952.84	987.78	1.65	1.10E+003	79.11	6.43E+003
112	3993-	4013	4004.51	1000.69	1.17	1.90E+003	158.32	6.39E+003
113	4055-	4071	4065.45	1015.92	0.75	1.14E+002	124.76	4.93E+003
114	4122-	4145	4133.26	1032.87	1.69	1.31E+003	166.52	6.60E+003
115	4153-	4174	4161.08	1039.82	1.91	9.12E+002	150.05	5.75E+003
116	4200-	4214	4208.02	1051.55	0.98	3.72E+002	111.19	4.15E+003
M117	4246-	4326	4260.98	1064.79	1.68	2.12E+003	76.38	5.81E+003
m118	4246-	4326	4280.12	1069.57	1.69	5.31E+002	58.98	5.46E+003
m119	4246-	4326	4296.65	1073.70	1.69	2.55E+002	58.25	5.41E+003
m120	4246-	4326	4315.29	1078.36	1.69	3.93E+003	91.54	5.32E+003
121	4362-	4396	4376.14	1093.57	1.92	4.45E+003	224.25	8.51E+003
122	4431-	4460	4442.91	1110.26	1.82	3.17E+003	194.95	7.29E+003
123	4460-	4503	4481.87	1119.99	1.71	2.36E+004	310.87	1.12E+004
124	4527-	4541	4534.11	1133.05	0.67	3.47E+002	105.83	3.77E+003
125	4561-	4578	4572.41	1142.62	0.45	1.59E+002	119.24	4.32E+003
126	4602-	4634	4621.09	1154.79	2.64	3.37E+003	212.46	8.15E+003
M127	4652-	4685	4659.58	1164.40	1.51	3.31E+002	60.40	4.27E+003
m128	4652-	4685	4675.96	1168.50	1.51	3.12E+002	59.52	4.93E+003
129	4820-	4841	4831.96	1207.49	0.95	6.36E+002	140.70	5.10E+003
130	4943-	4969	4953.71	1237.91	1.76	8.12E+003	194.08	6.67E+003
M131	4973-	5029	4988.81	1246.69	2.34	3.53E+003	96.76	6.99E+003
m132	4973-	5029	5013.99	1252.98	2.35	4.01E+002	66.85	7.20E+003
M133	5115-	5163	5125.54	1280.86	1.96	2.10E+003	81.67	5.34E+003
m134	5115-	5163	5150.54	1287.11	1.96	7.03E+002	64.13	5.74E+003
135	5429-	5448	5435.35	1358.29	0.26	1.34E+002	128.66	4.68E+003
136	5460-	5476	5465.42	1365.80	1.14	2.70E+002	108.75	3.68E+003
M137	5490-	5525	5498.35	1374.03	1.75	1.03E+003	62.31	4.13E+003
m138	5490-	5525	5512.64	1377.60	1.75	6.02E+003	101.11	4.93E+003
139	5530-	5552	5543.65	1385.35	1.46	1.02E+003	142.85	5.00E+003
M140	5597-	5651	5608.14	1401.47	1.82	1.95E+003	71.53	4.67E+003
m141	5597-	5651	5634.20	1407.98	1.82	3.20E+003	82.63	4.62E+003
142	5720-	5744	5728.10	1431.45	1.81	5.14E+002	143.71	4.87E+003

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
143	5823-	5855	5838.95	1459.15	1.89	5.23E+003	188.91	5.94E+003
144	5914-	5933	5922.45	1480.02	0.32	1.58E+002	111.15	3.48E+003
M145	5973-	6025	5986.05	1495.92	1.92	5.56E+003	93.32	3.84E+003
m146	5973-	6025	6008.80	1501.60	1.92	2.98E+003	75.58	3.91E+003
M147	6028-	6065	6039.54	1509.28	1.84	2.75E+003	73.88	3.72E+003
m148	6028-	6065	6054.04	1512.91	1.84	2.27E+003	69.73	3.88E+003
149	6107-	6126	6119.16	1529.18	0.80	2.22E+002	107.73	3.24E+003
M150	6145-	6206	6155.82	1538.35	2.13	8.81E+002	62.73	3.71E+003
m151	6145-	6206	6175.86	1543.35	2.13	5.90E+002	56.28	3.92E+003
m152	6145-	6206	6199.57	1549.28	2.13	2.34E+002	50.12	3.10E+003
153	6222-	6242	6230.92	1557.11	1.31	9.64E+002	111.83	3.18E+003
M154	6288-	6343	6295.45	1573.24	1.78	1.28E+002	45.55	2.86E+003
m155	6288-	6343	6325.19	1580.67	1.78	2.97E+003	79.41	3.84E+003
M156	6344-	6412	6355.83	1588.33	1.91	1.84E+004	147.60	3.97E+003
m157	6344-	6412	6373.39	1592.72	1.91	1.01E+004	113.24	3.67E+003
m158	6344-	6412	6401.37	1599.71	1.91	4.07E+002	50.05	3.48E+003
M159	6469-	6572	6486.36	1620.95	1.89	8.65E+003	106.55	3.28E+003
m160	6469-	6572	6503.33	1625.19	1.89	1.54E+003	58.91	3.32E+003
m161	6469-	6572	6525.90	1630.84	1.89	9.95E+003	114.79	3.19E+003
m162	6469-	6572	6556.55	1638.49	1.90	2.68E+003	68.76	2.91E+003
M163	6635-	6679	6648.83	1661.56	1.81	1.14E+003	57.98	3.06E+003
m164	6635-	6679	6669.82	1666.80	1.81	1.00E+003	56.33	2.95E+003
M165	6704-	6783	6719.36	1679.19	2.90	6.79E+002	61.73	4.14E+003
m166	6704-	6783	6744.21	1685.40	2.91	6.92E+002	62.28	4.66E+003
m167	6704-	6783	6776.91	1693.57	2.91	2.29E+002	53.76	3.35E+003
168	6802-	6821	6813.26	1702.65	1.13	2.26E+002	96.18	2.58E+003
M169	6887-	6941	6902.52	1724.96	1.98	3.61E+002	45.61	3.00E+003
m170	6887-	6941	6922.67	1730.00	1.98	4.00E+003	81.20	3.02E+003
171	7049-	7075	7062.61	1764.97	1.96	1.90E+004	182.43	3.25E+003
172	7214-	7243	7228.96	1806.54	1.78	5.65E+002	135.08	3.72E+003
173	7289-	7307	7296.78	1823.49	0.90	1.98E+002	93.42	2.51E+003
M174	7353-	7410	7359.90	1839.27	1.93	4.29E+001	36.49	2.89E+003
m175	7353-	7410	7373.25	1842.60	1.93	4.51E+001	35.75	3.53E+003
m176	7353-	7410	7395.07	1848.06	1.93	2.64E+003	62.26	3.20E+003
177	7543-	7563	7553.64	1887.69	1.11	4.44E+002	105.58	2.94E+003
178	7804-	7829	7814.27	1952.82	1.54	3.87E+002	121.01	3.35E+003
179	7931-	7947	7940.68	1984.42	0.32	5.94E+001	82.99	2.18E+003

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: NFB-A01-S003-1218-01
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	4.9164E+000	4.92E+000	3.2913E+001
	Co-60	1173.23	99.85	4.1016E-001	4.10E-001	1.8922E-001
		1332.49	99.98	4.4388E-001		1.7358E-001
>		2505.71	0.10	0.0000E+000		0.0000E+000
	Cs-137	32.06	5.54	3.8183E+004	6.25E-001	1.2800E+004
		661.66	84.99	6.2543E-001		-5.8356E-002
+	Tl-208	72.80*	2.02	3.8216E+001	9.56E-001	1.4597E+002
		74.97*	3.41	2.1777E+001		6.7998E+002
		84.90*	1.51	3.9379E+001		3.3681E+002
		277.36*	6.31	5.8642E+000		1.1821E+002
		510.77*	22.60	3.6521E+000		1.3484E+002
		583.19*	84.50	9.5619E-001		1.1568E+002
		763.13*	1.81	1.8309E+001		1.0377E+002
		860.56*	12.42	3.9272E+000		1.2615E+002
+	Bi-212	39.86	1.06	7.1501E+003	5.00E+000	6.0437E+002
		727.33*	6.74	5.0047E+000		3.7975E+002
		785.37*	1.11	2.8151E+001		4.0515E+002
		1620.74*	1.51	1.7298E+001		3.9414E+002
		1806.00*	0.09	4.9492E+002		4.4993E+002
+	Pb-212	74.81*	10.40	7.1402E+000	8.93E-001	2.2296E+002
		77.11*	17.50	3.9197E+000		1.9342E+002
		87.30*	7.81	6.9191E+000		1.7065E+002
		115.18*	0.59	8.3583E+001		2.2155E+002
		238.63*	43.30	8.9350E-001		3.7474E+002
		300.09*	3.28	1.9255E+001		3.5976E+002
+	Bi-214	76.86*	0.43	1.5863E+002	1.15E+000	7.8275E+003
		89.81*	0.24	2.0711E+002		5.0448E+003
		386.77*	0.30	1.0832E+002		8.6520E+001
		454.77	0.29	1.7420E+002		-7.3476E+001
		609.31*	45.49	1.1482E+000		7.2947E+001
		665.45*	1.53	3.5256E+001		7.1099E+001
		703.11	0.48	1.1661E+002		4.6521E+000
		719.86*	0.39	8.6006E+001		6.9030E+001
		768.36*	4.89	6.5218E+000		7.2705E+001
		786.10*	0.31	9.9299E+001		1.4291E+003
		806.17*	1.26	3.8906E+001		7.7873E+001
		934.06*	3.10	1.4515E+001		7.5390E+001
		964.08*	0.36	7.0361E+001		4.9481E+003
		1051.96*	0.31	8.0777E+001		5.8764E+001
		1120.29*	14.91	4.4213E+000		8.2813E+001

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Bi-214	1133.66*	0.25	1.0132E+002	1.15E+000	7.2200E+001
		1155.19*	1.63	3.1269E+001		1.1068E+002
		1207.68*	0.45	7.9660E+001		7.8343E+001
		1238.11*	5.79	7.8497E+000		7.9470E+001
		1280.96*	1.43	1.9658E+001		8.5350E+001
		1377.67*	4.00	7.1345E+000		9.2485E+001
		1385.31*	0.76	5.2934E+001		8.3239E+001
		1401.50*	1.27	2.2121E+001		9.5446E+001
		1407.98*	2.15	1.3047E+001		9.2912E+001
		1509.23*	2.11	1.2472E+001		8.5015E+001
		1538.50*	0.38	7.0683E+001		1.5458E+002
		1543.32*	0.20	1.3704E+002		1.9499E+002
		1583.22	0.69	1.1270E+002		1.9781E+003
		1594.73	0.25	3.3272E+002		4.6808E+003
		1599.31*	0.23	1.1452E+002		1.1911E+002
		1661.28*	1.15	2.1860E+001		6.7867E+001
		1683.99	0.22	1.9599E+002		4.1867E+002
		1729.59*	2.92	8.6986E+000		9.5638E+001
		1764.49*	15.40	2.5422E+000		8.6807E+001
		1847.42*	2.11	1.2605E+001		8.8852E+001
		1873.16	0.22	1.9862E+002		2.6455E+002
>		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	3.7558E+002	1.45E+000	-1.2540E+002
		74.81*	6.44	1.1359E+001		3.5470E+002
		77.11*	10.80	6.2569E+000		3.0875E+002
		87.30*	4.84	1.0999E+001		2.7127E+002
		242.00*	7.43	4.7318E+000		2.4513E+002
		258.87*	0.52	6.7999E+001		1.0236E+002
		274.80*	0.47	7.6923E+001		7.3885E+001
		295.22*	19.30	3.3872E+000		8.0249E+001
		351.93*	37.60	1.4469E+000		8.2387E+001
		462.00*	0.22	2.7678E+002		6.6379E+003
		533.66	0.19	2.6844E+002		1.6043E+002
		785.96*	1.07	2.8769E+001		4.1405E+002
		839.04*	0.59	4.8937E+001		5.7285E+002
+	Ra-224	81.07*	0.13	4.2778E+002	8.70E+000	3.1050E+002
		83.78*	0.22	2.7402E+002		2.3437E+003
		240.99*	4.10	8.7044E+000		4.5093E+002
+	Ra-226	81.07*	0.20	2.8024E+002	2.21E+001	2.0340E+002
		83.78*	0.33	1.7859E+002		1.5275E+003
		94.90	0.15	4.7461E+002		7.3625E+003
		186.21*	3.59	2.2138E+001		1.6176E+002
+	Ac-228	99.50*	1.26	5.4462E+001	1.59E+000	2.2913E+002
		129.07*	2.50	1.5097E+001		2.1715E+002
		209.25*	3.97	1.4386E+001		3.2360E+002
		270.24*	3.55	1.0427E+001		3.5360E+002
		328.00*	3.04	1.1648E+001		3.4462E+002
		338.32*	11.40	3.0264E+000		3.6530E+002
		409.46*	2.02	1.6381E+001		3.2398E+002

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Ac-228	463.00*	4.45	1.3953E+001	1.59E+000	3.3463E+002
		755.31*	1.03	6.7170E+001		3.1287E+002
		772.29*	1.52	2.0793E+001		3.1657E+002
		794.94*	4.31	1.1603E+001		3.3016E+002
		835.70*	1.70	1.7362E+001		3.3771E+002
		911.20*	26.20	1.9553E+000		3.6739E+002
		964.79*	4.99	5.1956E+000		3.6538E+002
		968.96*	15.90	1.5895E+000		3.7725E+002
		1588.20*	3.06	9.2896E+000		4.1026E+002
		1630.62*	1.52	1.6981E+001		4.5191E+002
+	Th-228	84.37*	1.26	4.7192E+001	4.72E+001	4.0364E+002
		131.61*	0.13	2.9916E+002		2.5710E+002
		166.41*	0.10	4.2247E+002		2.8454E+002
		215.98*	0.25	2.5377E+002		4.2384E+002
+	Pa-234m	258.23*	0.07	4.8280E+002	4.01E+001	7.2680E+002
		742.81*	0.09	4.6805E+002		3.0928E+002
		766.36	0.32	1.9225E+002		-1.4493E+003
		786.27	0.05	1.0682E+003		8.4030E+001
		1001.03*	0.85	4.0064E+001		1.0676E+002
		1737.77	0.02	1.9769E+003		1.2543E+003
+	Th-234	63.30*	3.75	3.2485E+001	1.14E+001	5.5281E+001
		92.59*	4.33	1.1421E+001		3.5435E+002
		112.81	0.22	2.5124E+002		1.7806E+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

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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 *****
****

Sample Title: NFB-A01-S003-1218-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

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

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Be-7	0.972	477.60*	10.44	5.27525E+000	4.74930E-001
Ce-139	0.952	165.86*	79.89	3.92309E-001	1.25966E-001
Ce-141	0.969	40.82 @	2.67		
		145.44*	48.29	1.00148E+000	1.30517E-001
Eu-152m	0.997	89.85*	69.90	1.76468E+001	5.02168E-001
Eu-155	0.931	45.30	1.31		
		60.01	1.22		
		86.55*	30.70	4.30256E+001	1.27251E+000
		105.31*	21.10	2.33535E+001	9.19369E-001
Tl-208	0.980	72.80* @	2.02	1.45971E+002	6.42429E+000
		74.97* @	3.41	6.79982E+002	2.08335E+001
		84.90* @	1.51	3.36815E+002	1.06720E+001
		277.36*	6.31	1.18211E+002	4.27393E+000
		510.77* @	22.60	1.34838E+002	4.39796E+000
		583.19*	84.50	1.15682E+002	3.61627E+000
		763.13* @	1.81	1.03767E+002	3.70779E+000
		860.56*	12.42	1.26152E+002	3.26018E+000
TL-208e	0.994	1592.53*	99.16	6.92793E+000	4.32202E-001
Bi-211	0.927	351.03*	13.00	2.38597E+002	8.68253E+000
Bi-212	0.955	39.86 @	1.06		
		727.33*	6.74	3.79749E+002	1.19421E+001
		785.37*	1.11	4.05148E+002	1.17652E+001
		1620.74*	1.51	3.94138E+002	1.38895E+001
		1806.00* @	0.09	4.49931E+002	1.47794E+002
Pb-212	0.999	74.81*	10.40	2.22956E+002	9.38218E+000
		77.11*	17.50	1.93419E+002	8.01296E+000
		87.30*	7.81	1.70650E+002	7.24788E+000
		115.18* @	0.59	2.21547E+002	1.90631E+001
		238.63*	43.30	3.74738E+002	1.23358E+001
		300.09*	3.28	3.59759E+002	1.29257E+001
Bi-214	0.954	76.86* @	0.43	7.82753E+003	3.34960E+002
		89.81* @	0.24	5.04478E+003	2.30995E+002
		386.77* @	0.30	8.65203E+001	1.37987E+001
		454.77 @	0.29		
		609.31*	45.49	7.29471E+001	2.17998E+000
		665.45* @	1.53	7.10993E+001	7.92653E+000
		703.11 @	0.48		
		719.86* @	0.39	6.90304E+001	1.06398E+001
		768.36*	4.89	7.27053E+001	2.12024E+000
		786.10* @	0.31	1.42913E+003	2.33857E+002
		806.17* @	1.26	7.78733E+001	8.70298E+000

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Bi-214	0.954	934.06*	3.10	7.53898E+001	3.71473E+000
		964.08* @	0.36	4.94808E+003	2.00728E+002
		1051.96* @	0.31	5.87641E+001	1.77195E+001
		1120.29*	14.91	8.28130E+001	2.28878E+000
		1133.66* @	0.25	7.21995E+001	2.21995E+001
		1155.19* @	1.63	1.10684E+002	7.49586E+000
		1207.68* @	0.45	7.83431E+001	1.76695E+001
		1238.11*	5.79	7.94696E+001	2.96404E+000
		1280.96* @	1.43	8.53503E+001	4.13496E+000
		1377.67*	4.00	9.24855E+001	3.12544E+000
		1385.31* @	0.76	8.32391E+001	1.19834E+001
		1401.50* @	1.27	9.54455E+001	4.50323E+000
		1407.98* @	2.15	9.29121E+001	3.98374E+000
		1509.23* @	2.11	8.50148E+001	3.51559E+000
		1538.50* @	0.38	1.54584E+002	1.30146E+001
		1543.32* @	0.20	1.94988E+002	5.24078E+001
		1583.22 @	0.69		
		1594.73 @	0.25		
		1599.31* @	0.23	1.19106E+002	3.44950E+001
		1661.28* @	1.15	6.78671E+001	4.31115E+000
		1683.99 @	0.22		
		1729.59* @	2.92	9.56381E+001	3.74248E+000
		1764.49*	15.40	8.68074E+001	3.16226E+000
		1847.42* @	2.11	8.88521E+001	4.26226E+000
		1873.16 @	0.22		
		2118.55 @	1.14		
		2204.21 @	5.08		
Pb-214	0.971	53.28 @	1.20		
		74.81*	6.44	3.54701E+002	1.58708E+001
		77.11*	10.80	3.08752E+002	1.47158E+001
		87.30*	4.84	2.71275E+002	1.26145E+001
		242.00*	7.43	2.45132E+002	8.61856E+000
		258.87* @	0.52	1.02363E+002	9.18630E+000
		274.80* @	0.47	7.38853E+001	9.04071E+000
		295.22*	19.30	8.02488E+001	2.84387E+000
		351.93*	37.60	8.23868E+001	2.88211E+000
		462.00* @	0.22	6.63786E+003	3.53191E+002
		533.66 @	0.19		
		785.96* @	1.07	4.14047E+002	3.29996E+001
		839.04* @	0.59	5.72850E+002	1.87209E+001
Rn-220	0.981	549.73*	0.11	3.41013E+002	6.31226E+001
Ra-223	0.595	81.07*	15.30	2.62239E+000	4.78828E-001
		83.78*	25.40	1.97513E+001	7.36765E-001
		94.90	11.50		
		122.32 @	1.21		
		144.24*	3.27	1.36688E+001	1.50542E+000
		154.21*	5.70	3.94530E+001	2.60258E+000
		158.63 @	0.69		
		179.54 @	0.15		
		269.46*	13.90	8.90830E+001	3.87376E+000

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Ra-223	0.595	288.18* @	0.16	8.99295E+002	9.38646E+001
		323.87	3.99		
		328.38* @	0.21	4.94460E+003	2.51409E+002
		338.32*	2.84	1.44644E+003	5.95690E+001
		342.87 @	0.22		
		371.68 @	0.49		
		445.03 @	1.29		
Ra-224	0.996	81.07* @	0.13	3.10496E+002	5.79196E+001
		83.78* @	0.22	2.34374E+003	1.13933E+002
		240.99*	4.10	4.50929E+002	1.53957E+001
Ra-226	0.932	81.07* @	0.20	2.03403E+002	3.78366E+001
		83.78* @	0.33	1.52753E+003	7.39308E+001
		94.90 @	0.15		
		186.21*	3.59	1.61763E+002	7.31718E+000
Ac-228	0.983	99.50* @	1.26	2.29131E+002	1.49614E+001
		129.07* @	2.50	2.17152E+002	8.32674E+000
		209.25*	3.97	3.23600E+002	1.49074E+001
		270.24*	3.55	3.53604E+002	1.52350E+001
		328.00*	3.04	3.44619E+002	1.69858E+001
		338.32*	11.40	3.65299E+002	1.75940E+001
		409.46* @	2.02	3.23976E+002	1.47444E+001
		463.00*	4.45	3.34626E+002	2.13780E+001
		755.31* @	1.03	3.12873E+002	2.06847E+001
		772.29* @	1.52	3.16568E+002	1.52313E+001
		794.94*	4.31	3.30159E+002	1.36711E+001
		835.70* @	1.70	3.37714E+002	1.64175E+001
		911.20*	26.20	3.67389E+002	1.40255E+001
		964.79*	4.99	3.65378E+002	1.51245E+001
		968.96*	15.90	3.77245E+002	1.47142E+001
		1588.20*	3.06	4.10255E+002	1.95255E+001
		1630.62* @	1.52	4.51910E+002	2.21347E+001
Th-228	1.000	84.37*	1.26	4.03643E+002	1.43046E+001
		131.61* @	0.13	2.57105E+002	3.44893E+001
		166.41* @	0.10	2.84544E+002	9.14567E+001
		215.98*	0.25	4.23837E+002	5.65955E+001
Pa-234m	0.520	258.23* @	0.07	7.26796E+002	6.39020E+001
		742.81* @	0.09	3.09280E+002	1.01819E+002
		766.36	0.32		
		786.27 @	0.05		
		1001.03*	0.85	1.06756E+002	9.31589E+000
		1737.77 @	0.02		
Th-234	0.901	63.30*	3.75	5.52815E+001	4.50262E+000
		92.59*	4.33	3.54352E+002	1.80814E+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
	Be-7		0.972	5.275249E+000	4.749302E-001
X	Mn-54		0.969		
X	Cd-109		0.905		
	Ce-139		0.952	1.645616E-001	1.277087E-001
	Ce-141	@	0.969	1.001479E+000	1.305171E-001
	Eu-152m		0.997	1.736939E+001	4.787900E-001
	Eu-155		0.931	1.772527E+001	5.888217E-001
X	Tm-170		0.997		
	Tl-208	@	0.980	1.203864E+002	1.986147E+000
	TL-208e		0.994	6.927930E+000	4.322018E-001
	Bi-211		0.927	5.136893E+001	1.099814E+001
	Bi-212	@	0.955	3.653525E+002	6.263032E+000
	Pb-212	@	0.999	1.393365E+002	3.483490E+000
	Bi-214	@	0.954	7.931075E+001	9.626650E-001
	Pb-214	@	0.971	6.464927E+001	2.623641E+000
	Rn-220		0.981	3.410134E+002	6.312264E+001
	Ra-223	@	0.595	6.658374E-001	4.557902E-001
	Ra-224	@	0.996	3.090145E+002	1.508900E+001
	Ra-226	@	0.932	1.539115E+002	6.782568E+000
	Ac-228	@	0.983	3.562887E+002	3.141054E+000
	Th-228	@	1.000	1.651867E+002	1.525021E+001
X	Th-231		0.996		
	Pa-234m	@	0.520	1.067560E+002	9.315888E+000
	Th-234	@	0.901	7.274413E+001	4.369194E+000

? = 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: 5/25/2017 4:34:43 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
M 1	56.30	4.5753E-001	7.00	Tol.	Np-237
m 2	57.63	7.7299E-001	4.68	Tol.	Np-237
m 4	65.14	5.5986E-001	6.37	Tol.	Ta-182
m 5	67.33	1.9640E-001	17.17	Tol.	Ta-182
m 16	108.74	1.4144E+000	3.21		
25	191.33	2.4442E-001	43.25		
26	199.34	5.0871E-001	15.34	Sum	
27	203.95	1.9194E-001	49.81	Sum	
M 30	233.33	1.5198E-001	22.07	Sum	
m 31	235.95	4.9360E-001	6.89	Sum	
M 34	252.49	4.9026E-001	6.38	Tol.	Sb-127
m 35	256.20	2.5304E-001	10.96	Sum	
43	321.40	2.6008E-001	22.66	Sum	
m 45	332.17	7.1640E-001	3.50	Sum	
m 47	340.75	7.0306E-001	3.44	Sum	
m 50	388.72	1.3090E-001	15.96	Sum	
M 51	401.55	1.1732E-001	17.57	Sum	
m 52	404.92	6.9884E-002	28.29	Sum	
54	440.14	2.0980E-001	22.32	Sum	
M 55	448.88	5.7296E-002	28.91	Sum	
m 56	452.52	5.4332E-001	4.04	Sum	
m 59	480.29	1.2184E-001	13.47	Sum	
60	486.71	1.0467E-001	37.80	D-Esc.	
61	503.50	2.3849E-001	14.80	Sum	
63	522.74	5.5653E-002	72.97		
M 64	546.12	2.3899E-001	7.95	Sum	
66	562.15	1.1807E+000	3.33	Sum	
67	571.31	4.0688E-001	13.35	D-Esc.	
70	615.94	7.3239E-002	51.53	Sum	
71	639.68	4.1902E-002	59.13	D-Esc.	
72	650.96	3.0709E-002	81.78	Sum	
M 74	674.04	4.3706E-002	24.64	Sum	
m 75	676.54	3.2884E-002	31.06	Sum	
76	687.41	7.3174E-002	48.30	Sum	
M 77	701.84	3.1047E-001	7.03	Sum	
m 78	707.09	2.0473E-001	9.70	D-Esc.	
m 80	721.87	7.5678E-002	19.65	Sum	
M 87	781.73	6.1646E-001	2.60	Tol.	Sb-127
91	816.02	2.0924E-002	90.59	Sum	
M 92	830.16	6.2596E-001	2.42	Sum	
96	869.74	2.9648E-002	65.42	Sum	
97	893.03	3.7884E-001	6.61	Sum	
98	903.77	7.5911E-001	4.22	Sum	
M100	918.18	2.8097E-002	29.77	Sum	

Peak No.	Energy (keV)	Peak Size in Counts per Second	Peak CPS % Uncertainty	Peak Type	Tol. Nuclide
m101	921.81	3.3050E-002	26.13	Sum	
M103	943.77	8.5069E-002	10.92	Sum	
m104	947.55	8.0678E-002	11.29	Sum	
m105	951.71	1.4788E-001	7.08	Sum	
M106	958.24	2.8091E-001	3.97	Sum	
109	975.48	2.6322E-002	82.00	Sum	
M110	982.18	5.6022E-002	16.33		
m111	987.78	1.5226E-001	7.22	Sum	
113	1015.92	1.5828E-002	109.47	Sum	
114	1032.87	1.8148E-001	12.74	S-Esc.	
115	1039.82	1.2666E-001	16.45	Sum	
M117	1064.79	2.9464E-001	3.60	Sum	
m118	1069.57	7.3792E-002	11.10	Sum	
m119	1073.70	3.5433E-002	22.83	Sum	
m120	1078.36	5.4545E-001	2.33	Sum	
121	1093.57	6.1843E-001	5.04	Sum	
122	1110.26	4.4063E-001	6.14	S-Esc.	
125	1142.62	2.2038E-002	75.15	Sum	
M127	1164.40	4.5997E-002	18.24	Sum	
m128	1168.50	4.3380E-002	19.06	Sum	
M131	1246.69	4.9019E-001	2.74	Sum	
m132	1252.98	5.5661E-002	16.68	S-Esc.	
m134	1287.11	9.7705E-002	9.12	Sum	
135	1358.29	1.8676E-002	95.68	Sum	
136	1365.80	3.7564E-002	40.21	Sum	
M137	1374.03	1.4364E-001	6.03	Sum	
142	1431.45	7.1408E-002	27.95	Sum	
143	1459.15	7.2675E-001	3.61	Sum	
144	1480.02	2.1934E-002	70.39	Sum	
M145	1495.92	7.7287E-001	1.68	Sum	
m146	1501.60	4.1384E-001	2.54	Sum	
m148	1512.91	3.1522E-001	3.07	Sum	
149	1529.18	3.0818E-002	48.55	Sum	
m152	1549.28	3.2463E-002	21.44	Sum	
153	1557.11	1.3395E-001	11.60	Sum	
M154	1573.24	1.7841E-002	35.46	Sum	
m155	1580.67	4.1244E-001	2.67	Sum	
m160	1625.19	2.1394E-001	3.82	Sum	
m162	1638.49	3.7211E-001	2.57	Sum	
m164	1666.80	1.3955E-001	5.61	Sum	
M165	1679.19	9.4287E-002	9.09	Sum	
m166	1685.40	9.6173E-002	8.99	Sum	
m167	1693.57	3.1780E-002	23.50	Sum	
168	1702.65	3.1363E-002	42.59	Sum	
M169	1724.96	5.0188E-002	12.62	Sum	
173	1823.49	2.7515E-002	47.16	Sum	
M174	1839.27	5.9536E-003	85.12	Sum	
m175	1842.60	6.2678E-003	79.22	Sum	
177	1887.69	6.1705E-002	23.76	Sum	
178	1952.82	5.3804E-002	31.24	Sum	

Peak No.	Energy (keV)	Peak Size in Counts per Second	Peak CPS % Uncertainty	Peak Type	Tol. Nuclide
179	1984.42	8.2435E-003	139.82	Sum	

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

Errors quoted at 1.000 sigma