LEGe GAMMA SPECTROMETRY

OF

NOPAL I SAMPLES

308 - - - Q200408170028

Supplemental Material, Technical Activity
Supporting Documentation: Experimental Data
for LEGe Gamma Spectrometry of Nopal I
Samples (03/16/1996 through 04/04/1996)

DP1B_3

Gamma spectrometry calculations for Nopal I rock powders

Sample= **BL5D_3**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source		Empty vial	Standard - DP1B		Standard - DM1B		Sample	
SRM 4275C		3/6/96	3/6/96		3/6/96		3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.78E+05	1.26679526
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.13E+06	1.07572473
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.36E+05	1.06686684
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.29E+05	1.01950164
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.12E+05	1.02093226
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.75E+06	1.01973854
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.12E+04	1.00121261
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.11E+05	1.00449104
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.27E+04	1.00657901
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.72E+04	0.98235171
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.06E+04	0.99050614

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.01808873	0.989022258
Eu154,155	42.9	1.0128895	0.965040403
Eu154,155	48.6	1.01648541	0.977017773
Eu155	86.4	1.01053226	0.990912381
Eu155	105	1.0093392	0.992956749
Eu154	123	1.01131082	1
Sb125	178	1.00484459	0.99635626
Eu154	248	1.00896873	0.995495435
Eu154	592	1.01530672	#DIV/0!
Sb125	600	1.01455148	0.997072996
Sb125	636	1.00472457	1.004724574

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.012logx+1.035
CF (DM1B) equation = y =0.030logx+0.932

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01810112	0.974247199
231Pa	27.4	1.01774699	0.975132517
210Pb	46.5	1.01499056	0.982023589
227Ac	50	1.01461236	0.9829691
234U+214Pb	53.2	1.01428906	0.983777349
234Th->238U	63.3	1.01338316	0.986042111
230Th	67.6	1.01304064	0.986898401
234Th->238U	92.6	1.01140067	0.99099833
228Ac->228Ra	129	1.00967292	0.995317691
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		3.0155		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/8/96		3/15/96		3/7/96	
231Th->235U	25.6	2.38E+04	4.96E+02	1.98E+03	1.31E+02	0	0
231Pa	27.4	2.37E+04	4.83E+02	1.97E+03	1.27E+02	0	0
210Pb	46.5	3.30E+05	7.78E+02	2.23E+04	2.04E+02	0	0
227Ac	50	3.16E+04	5.82E+02	2.40E+03	1.52E+02	0	0
234U+214Pb	53.2	8.16E+04	6.24E+02	5.52E+03	1.66E+02	0	0
234Th->238U	63.3	3.04E+05	8.20E+02	2.09E+04	2.17E+02	0	0
230Th	67.6	3.77E+04	6.34E+02	2.38E+03	9.23E+01	0	0
234Th->238U	92.6	3.75E+05	9.06E+02	2.60E+04	2.41E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	2.81E+05	8.13E+02	1.91E+04	2.17E+02	0	0
227Th->227Ac	236	1.84E+04	5.29E+02	7.14E+02	1.27E+02	0	0
212Pb->228Th	239	0.00E+00	0.00E+00	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	2.19E+05	6.98E+02	1.47E+04	1.78E+02	0	0
214Pb->226Ra	295	4.28E+05	8.29E+02	2.82E+04	2.16E+02	0	0
214Pb->226Ra	352	6.44E+05	9.69E+02	4.23E+04	2.51E+02	0	0
208Tl->228Th	583	0	0	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	3.15E+05	7.44E+02	2.11E+04	1.90E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.2975	0.02475	0	5.40683859	±	0.49588932
231Pa	27.4	0.44395	0.29625	0.024625	0	5.40956908	±	0.48900017
210Pb	46.5	9.361	4.125	0.27875	0	139.926506	±	8.49898347
227Ac	50	0.44395	0.3975	0.03	0	5.93959386	±	0.52945975
234U+214Pb	53.2	9.361	1.02	0.069	0	139.682413	±	9.43536928
234Th->238U	63.3	9.361	3.8	0.26125	0	137.318764	±	8.36977617
230Th	67.6	9.361	0.47125	0.02975	0	149.492763	±	10.9720116
234Th->238U	92.6	9.361	4.6875	0.325	0	135.697061	±	8.25708092
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	3.5125	0.23875	0	137.057202	±	8.37894803
227Th->227Ac	236	0.44395	0.205	0.008925	0	10.1481379	±	1.93290997
212Pb->228Th	239	5.5494	0	0	0.70875	0	±	#DIV/0!
214Pb->226Ra	242	9.361	2.7375	0.18375	0	138.789205	±	8.50675079
214Pb->226Ra	295	9.361	5.35	0.3525	0	141.391587	±	8.55672717
214Pb->226Ra	352	9.361	8.05	0.52875	0	141.832059	±	8.55410073
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	#DIV/0!
214Bi->226Ra	609	9.361	3.9375	0.26375	0	139.077542	±	8.44449691

U(ppb) = 11040466.2

Th(ppb) = 0

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.61606043	0.04188625	138.976863	±	8.51825282
234U(295)	53.2	9.361	0.71273705	0.0487551	138.133778	±	8.35957132
234U(352)	53.2	9.361	0.780858103	0.05329239	138.451476	±	8.35021279
235U(63.3)	186	0.44395	0.177331918	0.01219157	6.42640394	±	0.39169856
235U(92.6)	186	0.44395	0.215859375	0.01496625	6.37233564	±	0.38718196
226Ra(63.3)	186	9.361	3.33751	0.22671944	137.139553	±	8.35885296
226Ra(92.6)	186	9.361	3.296640625	0.22378375	137.237237	±	8.3385098

234U/238U =	1.00875293	±	0.063573487
230Th/234U =	1.079208789	±	0.081073606
226Ra/230Th =	0.917365829	±	0.068045385

DP1B_3

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-113-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	4.47E+05	1.1715895
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.20E+06	1.04449373
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.51E+05	1.03502892
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.38E+05	1.00589396
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.18E+05	1.00684939
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.80E+06	1.00553509
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.24E+04	0.98691465
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.13E+05	0.99556211
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.38E+04	0.98300174
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.74E+04	0.97665085
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.10E+04	0.97221742

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	0.94157446	0.914692477
Eu154,155	42.9	0.98348277	0.937022851
Eu154,155	48.6	0.98615099	0.94786117
Eu155	86.4	0.99704429	0.977686289
Eu155	105	0.99541625	0.979259774
Eu154	123	0.99722476	0.98607148
Sb125	178	0.99049476	0.982127647
Eu154	248	1	0.986646469
Eu154	592	0.99152501	#DIV/0!
Sb125	600	1.00866375	0.9912867
Sb125	636	0.98617333	0.986173328

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = 0.072logx+0.864
CF (DM1B) equation = y =0.111logx+0.758

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	0.95539328	0.914314636
231Pa	27.4	0.95751804	0.917590312
210Pb	46.5	0.97405661	0.943087278
227Ac	50	0.97632584	0.94658567
234U+214Pb	53.2	0.97826564	0.949576191
234Th->238U	63.3	0.98370107	0.957955812
230Th	67.6	0.98575616	0.961124083
234Th->238U	92.6	0.99559599	0.97629382
228Ac->228Ra	129	1.00596246	0.992275458
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		1.34		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/11/96		3/15/96		3/7/96	
231Th->235U	25.6	9.83E+03	2.56E+02	1.98E+03	1.31E+02	0	0
231Pa	27.4	8.20E+03	2.66E+02	1.97E+03	1.27E+02	0	0
210Pb	46.5	8.54E+04	3.88E+02	2.23E+04	2.04E+02	0	0
227Ac	50	8.96E+03	2.85E+02	2.40E+03	1.52E+02	0	0
234U+214Pb	53.2	2.12E+04	3.07E+02	5.52E+03	1.66E+02	0	0
234Th->238U	63.3	9.25E+04	4.06E+02	2.09E+04	2.17E+02	0	0
230Th	67.6	9.49E+03	3.07E+02	2.38E+03	9.23E+01	0	0
234Th->238U	92.6	1.01E+05	4.65E+02	2.60E+04	2.41E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	7.33E+04	4.10E+02	1.91E+04	2.17E+02	0	0
227Th->227Ac	236	4.30E+03	2.71E+02	7.14E+02	1.27E+02	0	0
212Pb->228Th	239	8.00E+02	2.13E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	5.23E+04	3.53E+02	1.47E+04	1.78E+02	0	0
214Pb->226Ra	295	1.04E+05	4.16E+02	2.82E+04	2.16E+02	0	0
214Pb->226Ra	352	1.56E+05	4.79E+02	4.23E+04	2.51E+02	0	0
208Tl->228Th	583	0	0	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	7.54E+04	3.73E+02	2.11E+04	1.90E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.122875	0.02475	0	4.7159128	±	0.43874677
231Pa	27.4	0.44395	0.1025	0.024625	0	3.96268772	±	0.37190801
210Pb	46.5	9.361	1.0675	0.27875	0	78.2025022	±	4.75965342
227Ac	50	0.44395	0.112	0.03	0	3.62398849	±	0.33652128
234U+214Pb	53.2	9.361	0.265	0.069	0	78.7656796	±	5.40797164
234Th->238U	63.3	9.361	1.03125	0.26125	0	81.4055936	±	4.97324856
230Th	67.6	9.361	0.118625	0.02975	0	82.4028435	±	6.46246263
234Th->238U	92.6	9.361	1.2625	0.325	0	81.0801619	±	4.93665346
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	0.91625	0.23875	0	80.4551872	±	4.93365801
227Th->227Ac	236	0.44395	0.05375	0.008925	0	5.98777539	±	1.1856714
212Pb->228Th	239	5.5494	0.01	0	0.70875	0.17535339	±	0.04742204
214Pb->226Ra	242	9.361	0.65375	0.18375	0	74.5877998	±	4.59316742
214Pb->226Ra	295	9.361	1.3	0.3525	0	77.3156966	±	4.68680399
214Pb->226Ra	352	9.361	1.95	0.52875	0	77.3156966	±	4.66761341
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	#DIV/0!
214Bi->226Ra	609	9.361	0.9425	0.26375	0	74.9156122	±	4.56035991

U(ppb) = 6545031.99

Th(ppb) = 43060.9676

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.168534066	0.04188625	82.5194795	±	5.08160565
234U(295)	53.2	9.361	0.190337975	0.0487551	80.0655316	±	4.85349637
234U(352)	53.2	9.361	0.207071217	0.05329239	79.6883434	±	4.81085208
235U(63.3)	186	0.44395	0.046715041	0.01183448	3.92466796	±	0.23976668
235U(92.6)	186	0.44395	0.058138125	0.01496625	3.8622758	±	0.23515884
226Ra(63.3)	186	9.361	0.868760938	0.22671944	80.3331825	±	4.90773258
226Ra(92.6)	186	9.361	0.858111875	0.22378375	80.3894037	±	4.8945959

234U/238U	=	0.992042209	±	0.063084422
230Th/234U	=	1.02037028	±	0.082024097
226Ra/230Th	=	0.974883621	±	0.07727315

DP1B_3

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-114-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.79E+05	1.26525939
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.14E+06	1.07110898
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.38E+05	1.06246935
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.29E+05	1.01950164
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.13E+05	1.01854855
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.76E+06	1.01685499
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.04E+04	1.01105681
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.12E+05	#DIV/0!
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.28E+04	1.0043732
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.71E+04	0.9852355
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.06E+04	0.99050614

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.01685439	0.987823162
Eu154,155	42.9	1.00854336	0.96089958
Eu154,155	48.6	1.01229559	0.972990636
Eu155	86.4	1.01053226	0.990912381
Eu155	105	1.00698256	0.99063836
Eu154	123	1.0084511	0.997172265
Sb125	178	1.0147245	1.00615271
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.01308178	#DIV/0!
Sb125	600	1.01752979	1
Sb125	636	1.00472457	1.004724574

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.011logx+1.030
CF (DM1B) equation = y =-0.031logx+0.928

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01450936	0.971655439
231Pa	27.4	1.01418474	0.972570267
210Pb	46.5	1.01165802	0.979691042
227Ac	50	1.01131133	0.98066807
234U+214Pb	53.2	1.01101497	0.981503261
234Th->238U	63.3	1.01018456	0.983843515
230Th	67.6	1.00987059	0.984728348
234Th->238U	92.6	1.00836728	0.988964941
228Ac->228Ra	129	1.00678351	0.993428281
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws
As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =	80000	80000	80000
Weight (g) =	2.119	3.001	2.994

Isotope	keV	Sample counts 3/12/96	Uncertainty	DP1B counts 3/15/96	Uncertainty	DM1B counts 3/7/96	Uncertainty
231Th->235U	25.6	1.23E+04	2.91E+02	1.98E+03	1.31E+02	0	0
231Pa	27.4	9.60E+03	3.07E+02	1.97E+03	1.27E+02	0	0
210Pb	46.5	1.12E+05	4.47E+02	2.23E+04	2.04E+02	0	0
227Ac	50	1.19E+04	3.29E+02	2.40E+03	1.52E+02	0	0
234U+214Pb	53.2	2.73E+04	3.63E+02	5.52E+03	1.66E+02	0	0
234Th->238U	63.3	1.07E+05	4.71E+02	2.09E+04	2.17E+02	0	0
230Th	67.6	1.28E+04	3.80E+02	2.38E+03	9.23E+01	0	0
234Th->238U	92.6	1.32E+05	5.30E+02	2.60E+04	2.41E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	9.70E+04	4.66E+02	1.91E+04	2.17E+02	0	0
227Th->227Ac	236	5.14E+03	3.08E+02	7.14E+02	1.27E+02	0	0
212Pb->228Th	239	1.18E+03	2.51E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	6.90E+04	3.96E+02	1.47E+04	1.78E+02	0	0
214Pb->226Ra	295	1.36E+05	4.72E+02	2.82E+04	2.16E+02	0	0
214Pb->226Ra	352	2.04E+05	5.52E+02	4.23E+04	2.51E+02	0	0
208Tl->228Th	583	0.00E+00	0.00E+00	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	1.01E+05	4.26E+02	2.11E+04	1.90E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.15375	0.02475	0	3.96246171	±	0.36611701
231Pa	27.4	0.44395	0.12	0.024625	0	3.1073572	±	0.29114232
210Pb	46.5	9.361	1.4	0.27875	0	67.3603246	±	4.09715498
227Ac	50	0.44395	0.14875	0.03	0	3.15275114	±	0.28853222
234U+214Pb	53.2	9.361	0.34125	0.069	0	66.2885379	±	4.53073714
234Th->238U	63.3	9.361	1.3375	0.26125	0	68.5638982	±	4.18586865
230Th	67.6	9.361	0.1575	0.02975	0	70.878839	±	5.49644933
234Th->238U	92.6	9.361	1.65	0.325	0	67.8698066	±	4.12949714
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	1.2125	0.23875	0	67.3279903	±	4.12416655
227Th->227Ac	236	0.44395	0.06425	0.008925	0	4.52620277	±	0.89188953
212Pb->228Th	239	5.5494	0.01475	0	0.70875	0.1635611	±	0.03564485
214Pb->226Ra	242	9.361	0.8625	0.18375	0	62.2284581	±	3.82568986
214Pb->226Ra	295	9.361	1.7	0.3525	0	63.9362388	±	3.8736677
214Pb->226Ra	352	9.361	2.55	0.52875	0	63.9362388	±	3.85876884
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	#DIV/0!
214Bi->226Ra	609	9.361	1.2625	0.26375	0	63.4594352	±	3.85950005

U(ppb) = 5512556.17

Th(ppb) = 40165.1734

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.213981368	0.04188625	68.4730024	±	4.20959283
234U(295)	53.2	9.361	0.243615044	0.0487551	66.9728655	±	4.05764604
234U(352)	53.2	9.361	0.265496977	0.05329239	66.7742888	±	4.03005479
235U(63.3)	186	0.44395	0.062219161	0.01215309	3.21889337	±	0.19651544
235U(92.6)	186	0.44395	0.0759825	0.01496625	3.19204998	±	0.19421834
226Ra(63.3)	186	9.361	1.150908125	0.22671944	67.2990889	±	4.10865125
226Ra(92.6)	186	9.361	1.1365175	0.22378375	67.3294186	±	4.09661756

234U/238U	=	0.983122615	±	0.062333277
230Th/234U	=	1.051509999	±	0.083503152
226Ra/230Th	=	0.949494798	±	0.0744051

DP1B-4

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-115-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	4.06E+05	1.22706107
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.17E+06	1.05757599
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.47E+05	1.04326812
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.36E+05	1.00887589
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.16E+05	1.01148579
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.79E+06	1.00833346
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.18E+04	0.99280567
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.12E+05	#DIV/0!
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.37E+04	0.98508449
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.76E+04	0.97103703
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.07E+04	0.98584842

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	0.98615545	0.958000676
Eu154,155	42.9	0.99580087	0.948759041
Eu154,155	48.6	0.99400111	0.955406484
Eu155	86.4	1	0.980584608
Eu155	105	1	0.983769129
Eu154	123	1	0.988815682
Sb125	178	0.99640715	0.987990098
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	0.99362582	#DIV/0!
Sb125	600	1.00286592	0.985588754
Sb125	636	1	1

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = 0.020logx+0.960
CF (DM1B) equation = y =0.060logx+0.861

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	0.9881648	0.945494398
231Pa	27.4	0.98875501	0.947265034
210Pb	46.5	0.99334906	0.961047177
227Ac	50	0.9939794	0.9629382
234U+214Pb	53.2	0.99451823	0.964554698
234Th->238U	63.3	0.99602807	0.969084223
230Th	67.6	0.99659893	0.970796802
234Th->238U	92.6	0.99933222	0.978996659
228Ac->228Ra	129	1.00221179	0.987635383
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =	80000	80000	80000
Weight (g) =	1.985	3.001	2.994

Isotope	keV	Sample counts 3/13/96	Uncertainty	DP1B counts 3/15/96	Uncertainty	DM1B counts 3/7/96	Uncertainty
231Th->235U	25.6	7.84E+03	2.33E+02	2.14E+03	1.44E+02	0	0
231Pa	27.4	6.05E+03	2.46E+02	1.77E+03	1.40E+02	0	0
210Pb	46.5	6.02E+04	3.70E+02	2.27E+04	2.03E+02	0	0
227Ac	50	7.67E+03	2.45E+02	2.33E+03	1.42E+02	0	0
234U+214Pb	53.2	1.85E+04	2.85E+02	5.54E+03	1.65E+02	0	0
234Th->238U	63.3	6.38E+04	3.71E+02	2.13E+04	2.13E+02	0	0
230Th	67.6	7.92E+03	3.03E+02	2.57E+03	1.15E+02	0	0
234Th->238U	92.6	7.77E+04	4.18E+02	2.63E+04	2.31E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	6.18E+04	3.79E+02	1.93E+04	2.10E+02	0	0
227Th->227Ac	236	3.42E+03	2.59E+02	1.01E+03	1.47E+02	0	0
212Pb->228Th	239	5.44E+02	1.72E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	4.58E+04	3.16E+02	1.43E+04	1.83E+02	0	0
214Pb->226Ra	295	8.91E+04	3.83E+02	2.79E+04	2.14E+02	0	0
214Pb->226Ra	352	1.34E+05	4.48E+02	4.20E+04	2.52E+02	0	0
208Tl->228Th	583	2.28E+02	1.01E+02	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	6.54E+04	3.41E+02	2.09E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.098	0.02675	0	2.45453466	±	0.23300178
231Pa	27.4	0.44395	0.075625	0.022125	0	2.29143903	±	0.24583109
210Pb	46.5	9.361	1.0025	0.28375	0	50.1736946	±	3.05246487
227Ac	50	0.44395	0.095875	0.029125	0	2.21847392	±	0.20253255
234U+214Pb	53.2	9.361	0.23125	0.06925	0	47.4788727	±	3.26341777
234Th->238U	63.3	9.361	0.7975	0.26625	0	42.6518959	±	2.60624192
230Th	67.6	9.361	0.099	0.032125	0	43.9074446	±	3.69082319
234Th->238U	92.6	9.361	0.97125	0.32875	0	42.2085902	±	2.56955921
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	0.7725	0.24125	0	45.7780039	±	2.80556139
227Th->227Ac	236	0.44395	0.04275	0.012625	0	2.29584325	±	0.40107272
212Pb->228Th	239	5.5494	0.0068	0	0.70875	0.081314	±	0.02599692
214Pb->226Ra	242	9.361	0.5725	0.17875	0	45.788364	±	2.82680478
214Pb->226Ra	295	9.361	1.11375	0.34875	0	45.6561395	±	2.76862617
214Pb->226Ra	352	9.361	1.675	0.525	0	45.6122183	±	2.75456939
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	0
214Bi->226Ra	609	9.361	0.8175	0.26125	0	44.7359998	±	2.72511771

U(ppb) = 3429224.1

Th(ppb) = 19968.0171

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.14677314	0.04287404	48.6732831	±	3.00490905
234U(295)	53.2	9.361	0.167284746	0.04922048	48.3224524	±	2.9303136
234U(352)	53.2	9.361	0.181490661	0.05365379	48.0941572	±	2.90445627
235U(63.3)	186	0.44395	0.036579007	0.01221211	2.03085341	±	0.12409519
235U(92.6)	186	0.44395	0.044726063	0.01513894	2.00310065	±	0.12194403
226Ra(63.3)	186	9.361	0.735775125	0.22898919	45.9362788	±	2.80693397
226Ra(92.6)	186	9.361	0.727773938	0.22611106	46.0151004	±	2.80129056

234U/238U =	1.133907333	±	0.072335603
230Th/234U =	0.907867057	±	0.078106668
226Ra/230Th =	1.046207065	±	0.088772123

DP1B-4

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-116-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.93E+05	1.24428767
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.16E+06	1.06203562
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.27E+05	1.08728111
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.32E+05	1.01491127
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.13E+05	1.01854855
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.77E+06	1.01399314
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.16E+04	0.99638553
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.12E+05	#DIV/0!
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.29E+04	1.00218023
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.73E+04	0.97949026
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.03E+04	1.00483873

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1	0.971449962
Eu154,155	42.9	1	0.952759807
Eu154,155	48.6	1.03593564	0.995712801
Eu155	86.4	1.00598228	0.986450737
Eu155	105	1.00698256	0.99063836
Eu154	123	1.00561291	0.994365813
Sb125	178	1	0.991552593
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.0108698	#DIV/0!
Sb125	600	1.01159623	0.994168661
Sb125	636	1.01926291	1.019262911

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.000logx+1.010
CF (DM1B) equation = y =0.041logx+0.908

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01	0.965737839
231Pa	27.4	1.01	0.966947773
210Pb	46.5	1.01	0.976365571
227Ac	50	1.01	0.97765777
234U+214Pb	53.2	1.01	0.978762377
234Th->238U	63.3	1.01	0.981857552
230Th	67.6	1.01	0.983027815
234Th->238U	92.6	1.01	0.98863105
228Ac->228Ra	129	1.01	0.994534178
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000
Weight (g) =		1.815		3.001		2.994
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/14/96		3/15/96		3/7/96	
231Th->235U	25.6	6.63E+03	2.21E+02	2.14E+03	1.44E+02	0	0
231Pa	27.4	5.07E+03	2.16E+02	1.77E+03	1.40E+02	0	0
210Pb	46.5	6.14E+04	3.23E+02	2.27E+04	2.03E+02	0	0
227Ac	50	5.05E+03	2.16E+02	2.33E+03	1.42E+02	0	0
234U+214Pb	53.2	1.35E+04	2.49E+02	5.54E+03	1.65E+02	0	0
234Th->238U	63.3	5.43E+04	3.31E+02	2.13E+04	2.13E+02	0	0
230Th	67.6	6.04E+03	2.67E+02	2.57E+03	1.15E+02	0	0
234Th->238U	92.6	6.69E+04	3.58E+02	2.63E+04	2.31E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	4.92E+04	3.29E+02	1.93E+04	2.10E+02	0	0
227Th->227Ac	236	2.67E+03	2.26E+02	1.01E+03	1.47E+02	0	0
212Pb->228Th	239	7.57E+02	1.59E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	3.30E+04	2.47E+02	1.43E+04	1.83E+02	0	0
214Pb->226Ra	295	6.47E+04	3.29E+02	2.79E+04	2.14E+02	0	0
214Pb->226Ra	352	9.59E+04	3.80E+02	4.20E+04	2.52E+02	0	0
208Tl->228Th	583	1.86E+02	1.22E+02	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	4.76E+04	2.97E+02	2.09E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.082875	0.02675	0	2.29691305	±	0.22077884
231Pa	27.4	0.44395	0.063375	0.022125	0	2.12363314	±	0.22925876
210Pb	46.5	9.361	0.7675	0.28375	0	42.283945	±	2.5746882
227Ac	50	0.44395	0.075625	0.029125	0	1.92505993	±	0.17840709
234U+214Pb	53.2	9.361	0.16875	0.06925	0	38.0940361	±	2.64596497
234Th->238U	63.3	9.361	0.67875	0.26625	0	39.8522835	±	2.43626183
230Th	67.6	9.361	0.0755	0.032125	0	36.7398011	±	3.19370316
234Th->238U	92.6	9.361	0.83625	0.32875	0	39.7652168	±	2.4207129
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	0.615	0.24125	0	39.4565769	±	2.42043132
227Th->227Ac	236	0.44395	0.033375	0.012625	0	1.94049851	±	0.346844
212Pb->228Th	239	5.5494	0.0094625	0	0.70875	0.12250342	±	0.02637773
214Pb->226Ra	242	9.361	0.4125	0.17875	0	35.7181958	±	2.20754383
214Pb->226Ra	295	9.361	0.80875	0.34875	0	35.8931595	±	2.17877393
214Pb->226Ra	352	9.361	1.21125	0.525	0	35.7096915	±	2.15781664
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	0
214Bi->226Ra	609	9.361	0.595	0.26125	0	35.2510679	±	2.15073354

U(ppb) = 3204134.49

Th(ppb) = 30082.7716

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.107882394	0.04287404	39.3359079	±	2.43113457
234U(295)	53.2	9.361	0.122301605	0.04922048	38.8435876	±	2.35786978
234U(352)	53.2	9.361	0.132767314	0.05365379	38.6833213	±	2.33750309
235U(63.3)	186	0.44395	0.031569002	0.01238342	1.87130101	±	0.11439694
235U(92.6)	186	0.44395	0.038509313	0.01513894	1.86721271	±	0.11366682
226Ra(63.3)	186	9.361	0.583743563	0.22898919	39.4565164	±	2.41206768
226Ra(92.6)	186	9.361	0.576490688	0.22611106	39.462273	±	2.40227115

234U/238U	=	0.977466504	±	0.062535084
230Th/234U	=	0.943152033	±	0.08389426
226Ra/230Th	=	1.073944749	±	0.094198902

DP1B_4

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-117-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.84E+05	1.25765712
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.14E+06	1.07110898
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.42E+05	1.05381899
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.33E+05	1.01339339
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.13E+05	1.01854855
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.77E+06	1.01399314
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.13E+04	#DIV/0!
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.11E+05	1.00449104
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.30E+04	#DIV/0!
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.76E+04	0.97103703
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.10E+04	0.97221742

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.01074466	0.981887863
Eu154,155	42.9	1.00854336	0.96089958
Eu154,155	48.6	1.00405373	0.965068789
Eu155	86.4	1.00447775	0.984975421
Eu155	105	1.00698256	0.99063836
Eu154	123	1.00561291	0.994365813
Sb125	178	#DIV/0!	#DIV/0!
Eu154	248	1.00896873	0.995495435
Eu154	592	#DIV/0!	#DIV/0!
Sb125	600	1.00286592	0.985588754
Sb125	636	0.98617333	0.986173328

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.006logx+1.018
CF (DM1B) equation = y =0.035logx+0.916

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.00955056	0.965288399
231Pa	27.4	1.0093735	0.96632127
210Pb	46.5	1.00799528	0.974360853
227Ac	50	1.00780618	0.97546395
234U+214Pb	53.2	1.00764453	0.976406907
234Th->238U	63.3	1.00719158	0.97904913
230Th	67.6	1.00702032	0.980048134
234Th->238U	92.6	1.00620033	0.984831385
228Ac->228Ra	129	1.00533646	0.98987064
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		2.923		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/18/96		3/15/96		3/7/96	
231Th->235U	25.6	3.94E+03	1.92E+02	2.14E+03	1.44E+02	0	0
231Pa	27.4	3.28E+03	1.88E+02	1.77E+03	1.40E+02	0	0
210Pb	46.5	4.84E+04	2.87E+02	2.27E+04	2.03E+02	0	0
227Ac	50	4.20E+03	1.91E+02	2.33E+03	1.42E+02	0	0
234U+214Pb	53.2	1.07E+04	2.20E+02	5.54E+03	1.65E+02	0	0
234Th->238U	63.3	3.52E+04	2.84E+02	2.13E+04	2.13E+02	0	0
230Th	67.6	4.32E+03	2.38E+02	2.57E+03	1.15E+02	0	0
234Th->238U	92.6	4.26E+04	3.14E+02	2.63E+04	2.31E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	3.58E+04	2.82E+02	1.93E+04	2.10E+02	0	0
227Th->227Ac	236	2.19E+03	1.61E+02	1.01E+03	1.47E+02	0	0
212Pb->228Th	239	1.57E+03	1.91E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	2.72E+04	2.50E+02	1.43E+04	1.83E+02	0	0
214Pb->226Ra	295	5.35E+04	2.95E+02	2.79E+04	2.14E+02	0	0
214Pb->226Ra	352	8.05E+04	3.41E+02	4.20E+04	2.52E+02	0	0
208Tl->228Th	583	3.65E+02	1.36E+02	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	3.95E+04	2.66E+02	2.09E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.04925	0.02675	0	0.84719184	±	0.08682213
231Pa	27.4	0.44395	0.041	0.022125	0	0.85255757	±	0.09773386
210Pb	46.5	9.361	0.605	0.28375	0	20.6555817	±	1.258997
227Ac	50	0.44395	0.0525	0.029125	0	0.82802153	±	0.08020396
234U+214Pb	53.2	9.361	0.13375	0.06925	0	18.7042712	±	1.31060694
234Th->238U	63.3	9.361	0.44	0.26625	0	15.9968536	±	0.98157293
230Th	67.6	9.361	0.054	0.032125	0	16.2685289	±	1.51196657
234Th->238U	92.6	9.361	0.5325	0.32875	0	15.6638218	±	0.9568372
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	0.4475	0.24125	0	17.8272824	±	1.09611565
227Th->227Ac	236	0.44395	0.027375	0.012625	0	0.9883118	±	0.17171563
212Pb->228Th	239	5.5494	0.019625	0	0.70875	0.15776106	±	0.02059812
214Pb->226Ra	242	9.361	0.34	0.17875	0	18.2806777	±	1.13402783
214Pb->226Ra	295	9.361	0.66875	0.34875	0	18.429307	±	1.11937935
214Pb->226Ra	352	9.361	1.00625	0.525	0	18.4206951	±	1.11349162
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	0
214Bi->226Ra	609	9.361	0.49375	0.26125	0	18.1639474	±	1.1091713

U(ppb) = 1286151.41

Th(ppb) = 38740.8756

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.083580337	0.04287404	18.8788924	±	1.17113762
234U(295)	53.2	9.361	0.095342131	0.04922048	18.7588333	±	1.13939448
234U(352)	53.2	9.361	0.103857263	0.05365379	18.7457685	±	1.13314161
235U(63.3)	186	0.44395	0.020407716	0.01234899	0.75324161	±	0.04621919
235U(92.6)	186	0.44395	0.024521625	0.01513894	0.73828678	±	0.04509884
226Ra(63.3)	186	9.361	0.427238	0.22898919	17.9314051	±	1.10027773
226Ra(92.6)	186	9.361	0.422978375	0.22611106	17.9785962	±	1.09823707

234U/238U	=	1.17488717	±	0.075746268
230Th/234U	=	0.865600603	±	0.082249924
226Ra/230Th	=	1.102214297	±	0.103412085

DP1B-4

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-118-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.57E+05	1.30030044
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.11E+06	1.08511965
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.41E+05	1.05596379
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.31E+05	1.01643525
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.15E+05	1.01382547
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.79E+06	1.00833346
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.16E+04	0.99638553
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.13E+05	0.99556211
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.30E+04	0.98300174
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.77E+04	0.96826207
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.13E+04	0.95907552

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.04501593	1.015180685
Eu154,155	42.9	1.02173564	0.973468654
Eu154,155	48.6	1.00609724	0.967032954
Eu155	86.4	1.00749284	0.987931976
Eu155	105	1.00231311	0.9860447
Eu154	123	1	0.988815682
Sb125	178	1	0.991552593
Eu154	248	1	0.986646469
Eu154	592	0.99152501	#DIV/0!
Sb125	600	1	0.982772205
Sb125	636	0.97284277	0.972842773

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.059logx+1.120
CF (DM1B) equation = y =-0.016logx+1.016

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.03691384	0.993468161
231Pa	27.4	1.03517272	0.992995991
210Pb	46.5	1.02162028	0.989320753
227Ac	50	1.01976077	0.98881648
234U+214Pb	53.2	1.01817121	0.988385414
234Th->238U	63.3	1.01371718	0.987177541
230Th	67.6	1.01203314	0.986720853
234Th->238U	92.6	1.00396995	0.984534224
228Ac->228Ra	129	0.99547521	0.982230565
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		2.741		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/19/96		3/15/96		3/7/96	
231Th->235U	25.6	2.62E+03	1.43E+02	2.14E+03	1.44E+02	0	0
231Pa	27.4	1.97E+03	1.51E+02	1.77E+03	1.40E+02	0	0
210Pb	46.5	2.53E+04	2.19E+02	2.27E+04	2.03E+02	0	0
227Ac	50	2.80E+03	1.53E+02	2.33E+03	1.42E+02	0	0
234U+214Pb	53.2	6.98E+03	1.76E+02	5.54E+03	1.65E+02	0	0
234Th->238U	63.3	2.43E+04	2.30E+02	2.13E+04	2.13E+02	0	0
230Th	67.6	3.43E+03	1.78E+02	2.57E+03	1.15E+02	0	0
234Th->238U	92.6	2.97E+04	2.48E+02	2.63E+04	2.31E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	2.38E+04	2.28E+02	1.93E+04	2.10E+02	0	0
227Th->227Ac	236	1.24E+03	1.24E+02	1.01E+03	1.47E+02	0	0
212Pb->228Th	239	1.62E+03	1.51E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	1.75E+04	1.98E+02	1.43E+04	1.83E+02	0	0
214Pb->226Ra	295	3.41E+04	2.35E+02	2.79E+04	2.14E+02	0	0
214Pb->226Ra	352	5.04E+04	2.75E+02	4.20E+04	2.52E+02	0	0
208Tl->228Th	583	1.92E+02	1.00E+02	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	2.49E+04	2.06E+02	2.09E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.03275	0.02675	0	0.61705121	±	0.06503058
231Pa	27.4	0.44395	0.024625	0.022125	0	0.56001131	±	0.07023928
210Pb	46.5	9.361	0.31625	0.28375	0	11.6697989	±	0.71509315
227Ac	50	0.44395	0.035	0.029125	0	0.59565039	±	0.06045202
234U+214Pb	53.2	9.361	0.08725	0.06925	0	13.1475756	±	0.94102496
234Th->238U	63.3	9.361	0.30375	0.26625	0	11.8528471	±	0.72965674
230Th	67.6	9.361	0.042875	0.032125	0	13.8431504	±	1.26082126
234Th->238U	92.6	9.361	0.37125	0.32875	0	11.6198526	±	0.71127083
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	0.2975	0.24125	0	12.6385966	±	0.78013683
227Th->227Ac	236	0.44395	0.0155	0.012625	0	0.59674849	±	0.11129514
212Pb->228Th	239	5.5494	0.02025	0	0.70875	0.17359409	±	0.01815298
214Pb->226Ra	242	9.361	0.21875	0.17875	0	12.5424164	±	0.78244792
214Pb->226Ra	295	9.361	0.42625	0.34875	0	12.5264896	±	0.76260765
214Pb->226Ra	352	9.361	0.63	0.525	0	12.2987352	±	0.74463451
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	0
214Bi->226Ra	609	9.361	0.31125	0.26125	0	12.2104668	±	0.7479308

U(ppb) = 952972.15

Th(ppb) = 42628.944

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.054971724	0.04287404	13.3796575	±	0.83467848
234U(295)	53.2	9.361	0.062769471	0.04922048	13.30769	±	0.81016682
234U(352)	53.2	9.361	0.068534547	0.05365379	13.329356	±	0.80703408
235U(63.3)	186	0.44395	0.014179559	0.012429	0.55452061	±	0.03413608
235U(92.6)	186	0.44395	0.017096063	0.01513894	0.54889809	±	0.03359898
226Ra(63.3)	186	9.361	0.283512313	0.22898919	12.6892558	±	0.78114575
226Ra(92.6)	186	9.361	0.280403938	0.22611106	12.7098815	±	0.77799334

234U/238U =	1.125375282	±	0.073395396	
230Th/234U =	1.037802908	±	0.097129014	
226Ra/230Th =	0.916645087	±	0.084435818	

DP1B-4

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-119-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.52E+05	1.30864969
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.11E+06	1.08511965
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.36E+05	1.06686684
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.27E+05	1.02259291
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.11E+05	1.02333095
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.75E+06	1.01973854
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.09E+04	1.00487411
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.10E+05	1.00903631
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.35E+04	0.98928544
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.77E+04	0.96826207
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.10E+04	0.97221742

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.05172599	1.021699174
Eu154,155	42.9	1.02173564	0.973468654
Eu154,155	48.6	1.01648541	0.977017773
Eu155	86.4	1.01359633	0.993916964
Eu155	105	1.01171066	0.995289715
Eu154	123	1.01131082	1
Sb125	178	1.00851937	1
Eu154	248	1.01353426	1
Eu154	592	0.9978632	#DIV/0!
Sb125	600	1	0.982772205
Sb125	636	0.98617333	0.986173328

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.051logx+1.113
CF (DM1B) equation = y =-0.006logx+1.009

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.04117976	0.99773408
231Pa	27.4	1.03967472	0.997497995
210Pb	46.5	1.0279599	0.995660376
227Ac	50	1.02635253	0.99540824
234U+214Pb	53.2	1.02497851	0.995192707
234Th->238U	63.3	1.02112841	0.99458877
230Th	67.6	1.01967272	0.994360426
234Th->238U	92.6	1.01270284	0.993267112
228Ac->228Ra	129	1.00535992	0.992115282
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		2.82		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/20/96		3/15/96		3/7/96	
231Th->235U	25.6	2.41E+03	1.34E+02	2.14E+03	1.44E+02	0	0
231Pa	27.4	1.97E+03	1.43E+02	1.77E+03	1.40E+02	0	0
210Pb	46.5	2.52E+04	2.14E+02	2.27E+04	2.03E+02	0	0
227Ac	50	2.58E+03	1.46E+02	2.33E+03	1.42E+02	0	0
234U+214Pb	53.2	6.16E+03	1.50E+02	5.54E+03	1.65E+02	0	0
234Th->238U	63.3	2.15E+04	2.10E+02	2.13E+04	2.13E+02	0	0
230Th	67.6	2.66E+03	1.74E+02	2.57E+03	1.15E+02	0	0
234Th->238U	92.6	2.60E+04	2.34E+02	2.63E+04	2.31E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	2.10E+04	2.17E+02	1.93E+04	2.10E+02	0	0
227Th->227Ac	236	1.14E+03	1.55E+02	1.01E+03	1.47E+02	0	0
212Pb->228Th	239	1.20E+03	1.28E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	1.54E+04	1.88E+02	1.43E+04	1.83E+02	0	0
214Pb->226Ra	295	3.02E+04	2.21E+02	2.79E+04	2.14E+02	0	0
214Pb->226Ra	352	4.53E+04	2.59E+02	4.20E+04	2.52E+02	0	0
208Tl->228Th	583	2.35E+02	9.32E+01	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	2.28E+04	1.94E+02	2.09E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.030125	0.02675	0	0.55396195	±	0.05867671
231Pa	27.4	0.44395	0.024625	0.022125	0	0.54669033	±	0.06723474
210Pb	46.5	9.361	0.315	0.28375	0	11.3681551	±	0.69634823
227Ac	50	0.44395	0.03225	0.029125	0	0.53692211	±	0.05506143
234U+214Pb	53.2	9.361	0.077	0.06925	0	11.3533712	±	0.8092019
234Th->238U	63.3	9.361	0.26875	0.26625	0	10.2678224	±	0.63318508
230Th	67.6	9.361	0.03325	0.032125	0	10.5135273	±	1.04509071
234Th->238U	92.6	9.361	0.325	0.32875	0	9.97329717	±	0.6114002
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	0.2625	0.24125	0	10.839297	±	0.67038842
227Th->227Ac	236	0.44395	0.01425	0.012625	0	0.53325437	±	0.11092418
212Pb->228Th	239	5.5494	0.015	0	0.70875	0.12498592	±	0.01458907
214Pb->226Ra	242	9.361	0.1925	0.17875	0	10.7281248	±	0.6710696
214Pb->226Ra	295	9.361	0.3775	0.34875	0	10.7830563	±	0.65700447
214Pb->226Ra	352	9.361	0.56625	0.525	0	10.7445454	±	0.65079394
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	0
214Bi->226Ra	609	9.361	0.285	0.26125	0	10.8674511	±	0.66601749

U(ppb) = 825535.73

Th(ppb) = 30692.3918

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.048595117	0.04287404	11.5731649	±	0.72392886
234U(295)	53.2	9.361	0.055319297	0.04922048	11.4758465	±	0.69921572
234U(352)	53.2	9.361	0.060178373	0.05365379	11.452332	±	0.69366437
235U(63.3)	186	0.44395	0.012637421	0.01251986	0.47688076	±	0.02940777
235U(92.6)	186	0.44395	0.01496625	0.01513894	0.46705556	±	0.02863224
226Ra(63.3)	186	9.361	0.250124063	0.22898919	10.8812711	±	0.67101457
226Ra(92.6)	186	9.361	0.24753375	0.22611106	10.9056547	±	0.66855718

234U/238U	=	1.120047404	±	0.073418078
230Th/234U	=	0.914184163	±	0.093117201
226Ra/230Th	=	1.034978158	±	0.103931813

DP1B-5

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-120-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	4.28E+05	1.19581102
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.20E+06	1.04449373
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.51E+05	1.03502892
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.37E+05	1.00738198
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.18E+05	1.00684939
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.81E+06	1.00275736
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.20E+04	0.99161998
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.13E+05	0.99556211
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.34E+04	0.99140387
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.77E+04	0.96826207
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.10E+04	0.97221742

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	0.96104064	0.933602896
Eu154,155	42.9	0.98348277	0.937022851
Eu154,155	48.6	0.98615099	0.94786117
Eu155	86.4	0.99851923	0.979132585
Eu155	105	0.99541625	0.979259774
Eu154	123	0.99446998	0.983347511
Sb125	178	0.99521716	0.986810158
Eu154	248	1	0.986646469
Eu154	592	1	#DIV/0!
Sb125	600	1	0.982772205
Sb125	636	0.98617333	0.986173328

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = 0.048logx+0.699
CF (DM1B) equation = y =0.088logx+0.802

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	0.96659552	0.925925117
231Pa	27.4	0.96801203	0.92852205
210Pb	46.5	0.97903774	0.94873586
227Ac	50	0.98055056	0.95150936
234U+214Pb	53.2	0.98184376	0.953880224
234Th->238U	63.3	0.98546738	0.960523526
230Th	67.6	0.98683744	0.963035309
234Th->238U	92.6	0.99339733	0.975061767
228Ac->228Ra	129	1.00030831	0.987731895
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000
Weight (g) =		3.001		3.001		2.994
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/22/96		3/15/96		3/7/96	
231Th->235U	25.6	2.68E+03	1.47E+02	2.07E+03	1.44E+02	0	0
231Pa	27.4	1.89E+03	1.44E+02	1.86E+03	1.38E+02	0	0
210Pb	46.5	2.36E+04	2.06E+02	2.28E+04	2.05E+02	0	0
227Ac	50	2.73E+03	1.44E+02	1.94E+03	1.46E+02	0	0
234U+214Pb	53.2	5.93E+03	1.65E+02	5.43E+03	1.64E+02	0	0
234Th->238U	63.3	2.41E+04	2.26E+02	2.16E+04	2.14E+02	0	0
230Th	67.6	3.28E+03	1.77E+02	2.57E+03	1.78E+02	0	0
234Th->238U	92.6	2.97E+04	2.45E+02	2.54E+04	2.40E+02	0	0
228Ac->228Ra	129	2.39E+02	1.06E+02	0	0	4.68E+03	1.18E+02
235U+226Ra	186	2.12E+04	2.20E+02	1.99E+04	2.14E+02	0	0
227Th->227Ac	236	1.18E+03	1.51E+02	1.06E+03	1.48E+02	0	0
212Pb->228Th	239	1.29E+03	1.22E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	1.39E+04	1.86E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	2.78E+04	2.18E+02	2.84E+04	2.15E+02	0	0
214Pb->226Ra	352	4.17E+04	2.50E+02	4.32E+04	2.48E+02	0	0
208Tl->228Th	583	2.02E+02	8.43E+01	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	2.06E+04	1.91E+02	2.12E+04	1.92E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.03325	0.025875	0		0.55142967	±	0.05911711
231Pa	27.4	0.44395	0.024875	0.02325	0		0.45978516	±	0.05506091
210Pb	46.5	9.361	0.295	0.285	0		9.48634326	±	0.58146211
227Ac	50	0.44395	0.034125	0.02425	0		0.61258304	±	0.0672336
234U+214Pb	53.2	9.361	0.074125	0.067875	0		10.0373598	±	0.72979304
234Th->238U	63.3	9.361	0.30125	0.27	0		10.2926638	±	0.63332058
230Th	67.6	9.361	0.041	0.032125	0		11.7898583	±	1.25378337
234Th->238U	92.6	9.361	0.37125	0.3175	0		10.8734651	±	0.66651137
228Ac->228Ra	129	5.5494	0.0029875	0	0.0585		0.28348622	±	0.12663618
235U+226Ra	186	9.361	0.265	0.24875	0		9.97252261	±	0.61663206
227Th->227Ac	236	0.44395	0.01475	0.01325	0		0.49420849	±	0.09818445
212Pb->228Th	239	5.5494	0.016125	0	0.70875		0.12625619	±	0.0133565
214Pb->226Ra	242	9.361	0.17375	0.18125	0		8.97364828	±	0.56278164
214Pb->226Ra	295	9.361	0.3475	0.355	0		9.16323239	±	0.55879221
214Pb->226Ra	352	9.361	0.52125	0.54	0		9.03596528	±	0.54732137
208Tl->228Th	583	5.5494	0	0	0.110875		0	±	0
214Bi->226Ra	609	9.361	0.2575	0.265	0		9.09606604	±	0.55835245

U(ppb) = 827532.988

Th(ppb) = 31004.3271

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)		As (Bq/g)		
234U(242)	53.2	9.361	0.048486826	0.04113014		10.8349815	±	0.67951501
234U(295)	53.2	9.361	0.054167266	0.04748652		10.4841003	±	0.63934138
234U(352)	53.2	9.361	0.058640191	0.05183318		10.3980553	±	0.62982512
235U(63.3)	186	0.44395	0.013670958	0.01225281		0.4953331	±	0.03047847
235U(92.6)	186	0.44395	0.017096063	0.01462088		0.51910689	±	0.03181972
226Ra(63.3)	186	9.361	0.251127438	0.2363165		9.94769279	±	0.61209407
226Ra(92.6)	186	9.361	0.247903938	0.23412913		9.91174746	±	0.60756092

234U/238U =	1.027176169	±	0.067410934	
230Th/234U =	1.115156602	±	0.121290692	
226Ra/230Th =	0.843749989	±	0.090463184	

DP1B-5

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-121-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.83E+05	1.2591674
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.14E+06	1.07110898
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.41E+05	1.05596379
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.28E+05	1.02104414
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.10E+05	1.0257448
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.76E+06	1.01685499
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.09E+04	1.00487411
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.10E+05	1.00903631
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.28E+04	1.0043732
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.74E+04	0.97665085
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.03E+04	1.00483873

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.01195843	0.983066976
Eu154,155	42.9	1.00854336	0.96089958
Eu154,155	48.6	1.00609724	0.967032954
Eu155	86.4	1.01206119	0.99241163
Eu155	105	1.01409709	0.997637413
Eu154	123	1.0084511	0.997172265
Sb125	178	1.00851937	1
Eu154	248	1.01353426	1
Eu154	592	1.01308178	#DIV/0!
Sb125	600	1.00866375	0.9912867
Sb125	636	1.01926291	1.019262911

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = 0.002logx+1.006
CF (DM1B) equation = y =0.043logx+0.905

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01444944	0.965554319
231Pa	27.4	1.0146265	0.966823274
210Pb	46.5	1.01600472	0.976700477
227Ac	50	1.01619382	0.97805571
234U+214Pb	53.2	1.01635547	0.9792142
234Th->238U	63.3	1.01680842	0.98246036
230Th	67.6	1.01697968	0.983687708
234Th->238U	92.6	1.01779967	0.989564272
228Ac->228Ra	129	1.01866354	0.995755358
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws
As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		3.003		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/21/96		3/15/96		3/7/96	
231Th->235U	25.6	1.28E+02	5.54E+01	2.07E+03	1.44E+02	0	0
231Pa	27.4	7.95E+01	5.49E+01	1.86E+03	1.38E+02	0	0
210Pb	46.5	3.84E+03	8.28E+01	2.28E+04	2.05E+02	0	0
227Ac	50	1.86E+02	5.52E+01	1.94E+03	1.46E+02	0	0
234U+214Pb	53.2	5.39E+02	5.56E+01	5.43E+03	1.64E+02	0	0
234Th->238U	63.3	1.85E+03	6.99E+01	2.16E+04	2.14E+02	0	0
230Th	67.6	2.86E+02	5.98E+01	2.57E+03	1.78E+02	0	0
234Th->238U	92.6	1.92E+03	8.91E+01	2.54E+04	2.40E+02	0	0
228Ac->228Ra	129	1.74E+02	5.27E+01	0	0	4.68E+03	1.18E+02
235U+226Ra	186	1.68E+03	8.21E+01	1.99E+04	2.14E+02	0	0
227Th->227Ac	236	0.00E+00	0.00E+00	1.06E+03	1.48E+02	0	0
212Pb->228Th	239	1.50E+03	7.49E+01	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	1.49E+03	6.53E+01	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	2.63E+03	7.53E+01	2.84E+04	2.15E+02	0	0
214Pb->226Ra	352	3.62E+03	8.31E+01	4.32E+04	2.48E+02	0	0
208Tl->228Th	583	2.56E+02	4.52E+01	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	2.03E+03	6.28E+01	2.12E+04	1.92E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.001575	0.025875	0		0.02739525	±	0.01230532
231Pa	27.4	0.44395	0.00099375	0.02325	0		0.01924	±	0.01341273
210Pb	46.5	9.361	0.048	0.285	0		1.60075553	±	0.10302725
227Ac	50	0.44395	0.002325	0.02425	0		0.04322475	±	0.01348575
234U+214Pb	53.2	9.361	0.0067375	0.067875	0		0.94377284	±	0.11617587
234Th->238U	63.3	9.361	0.020625	0.27	0		0.72661145	±	0.05385183
230Th	67.6	9.361	0.003575	0.032125	0		1.05871263	±	0.24169288
234Th->238U	92.6	9.361	0.024	0.3175	0		0.7197186	±	0.0550141
228Ac->228Ra	129	5.5494	0.002175	0	0.0585		0.2100346	±	0.06459277
235U+226Ra	186	9.361	0.021	0.24875	0		0.78974905	±	0.06170072
227Th->227Ac	236	0.44395	0	0.01325	0		0	±	#DIV/0!
212Pb->228Th	239	5.5494	0.019875	0	0.70875		0.15551445	±	0.01039293
214Pb->226Ra	242	9.361	0.018625	0.18125	0		0.96128281	±	0.07241451
214Pb->226Ra	295	9.361	0.031625	0.355	0		0.83336468	±	0.05617112
214Pb->226Ra	352	9.361	0.04525	0.54	0		0.78389471	±	0.05055923
208Tl->228Th	583	5.5494	0	0	0.110875		0	±	0
214Bi->226Ra	609	9.361	0.025375	0.265	0		0.89576293	±	0.06101096

U(ppb) = 58419.7592

Th(ppb) = 38189.1848

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)		As (Bq/g)		
234U(242)	53.2	9.361	0.003989235	0.04113014		0.92216361	±	0.06946761
234U(295)	53.2	9.361	0.004921203	0.04748652		0.98532479	±	0.06641366
234U(352)	53.2	9.361	0.005393255	0.05183318		0.98928546	±	0.06380642
235U(63.3)	186	0.44395	0.000965746	0.01264249		0.03389026	±	0.00251173
235U(92.6)	186	0.44395	0.0011052	0.01462088		0.03353608	±	0.00256344
226Ra(63.3)	186	9.361	0.020050219	0.2363165		0.79370292	±	0.05882423
226Ra(92.6)	186	9.361	0.0198948	0.23412913		0.79490832	±	0.06076147

234U/238U =	1.328896325	±	0.126564205
230Th/234U =	1.096439712	±	0.258754878
226Ra/230Th =	0.749686834	±	0.174225813

DP1B-5

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-122-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/7/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.57E+05	1.30030044
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.11E+06	1.08511965
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.36E+05	1.06686684
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.25E+05	1.0257094
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.08E+05	1.03061857
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.74E+06	1.02264407
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.03E+04	1.01230558
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.09E+05	1.01363693
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.36E+04	0.98717902
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.70E+04	0.98814192
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.09E+04	0.97670525

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.04501593	1.015180685
Eu154,155	42.9	1.02173564	0.973468654
Eu154,155	48.6	1.01648541	0.977017773
Eu155	86.4	1.0166854	0.996946057
Eu155	105	1.01891552	1.002377638
Eu154	123	1.01419234	1.002849291
Sb125	178	1.0159778	1.007395423
Eu154	248	1.01815539	1.004559417
Eu154	592	0.99573851	#DIV/0!
Sb125	600	1.02053148	1.002949973
Sb125	636	0.99072558	0.990725576

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.035logx+1.085
CF (DM1B) equation = y =0.008logx+0.981

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.0357116	0.99226592
231Pa	27.4	1.03467873	0.992502005
210Pb	46.5	1.02663915	0.994339624
227Ac	50	1.02553605	0.99459176
234U+214Pb	53.2	1.02459309	0.994807293
234Th->238U	63.3	1.02195087	0.99541123
230Th	67.6	1.02095187	0.995639574
234Th->238U	92.6	1.01616862	0.996732888
228Ac->228Ra	129	1.01112936	0.997884718
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		2.928		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/25/96		3/15/96		3/7/96	
231Th->235U	25.6	4.29E+02	6.27E+01	2.07E+03	1.44E+02	0	0
231Pa	27.4	1.42E+02	6.86E+01	1.86E+03	1.38E+02	0	0
210Pb	46.5	7.21E+03	1.07E+02	2.28E+04	2.05E+02	0	0
227Ac	50	2.12E+02	6.78E+01	1.94E+03	1.46E+02	0	0
234U+214Pb	53.2	9.78E+02	7.21E+01	5.43E+03	1.64E+02	0	0
234Th->238U	63.3	3.15E+03	9.40E+01	2.16E+04	2.14E+02	0	0
230Th	67.6	4.87E+02	7.72E+01	2.57E+03	1.78E+02	0	0
234Th->238U	92.6	3.98E+03	1.06E+02	2.54E+04	2.40E+02	0	0
228Ac->228Ra	129	7.87E+01	6.66E+01	0	0	4.68E+03	1.18E+02
235U+226Ra	186	3.34E+03	9.97E+01	1.99E+04	2.14E+02	0	0
227Th->227Ac	236	1.46E+02	4.80E+01	1.06E+03	1.48E+02	0	0
212Pb->228Th	239	1.75E+03	6.32E+01	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	2.78E+03	8.46E+01	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	5.02E+03	9.89E+01	2.84E+04	2.15E+02	0	0
214Pb->226Ra	352	7.54E+03	1.06E+02	4.32E+04	2.48E+02	0	0
208Tl->228Th	583	2.43E+02	4.85E+01	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	3.73E+03	8.70E+01	2.12E+04	1.92E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.0053625	0.025875	0		0.09766856	±	0.01686028
231Pa	27.4	0.44395	0.001775	0.02325	0		0.03594263	±	0.01769929
210Pb	46.5	9.361	0.090125	0.285	0		3.11483758	±	0.19454854
227Ac	50	0.44395	0.00265	0.02425	0		0.05099341	±	0.01703081
234U+214Pb	53.2	9.361	0.012225	0.067875	0		1.77054764	±	0.17658594
234Th->238U	63.3	9.361	0.039375	0.27	0		1.42989448	±	0.09686053
230Th	67.6	9.361	0.0060875	0.032125	0		1.85617224	±	0.33986777
234Th->238U	92.6	9.361	0.04975	0.3175	0		1.52767968	±	0.10131875
228Ac->228Ra	129	5.5494	0.00098375	0	0.0585		0.09671115	±	0.08200435
235U+226Ra	186	9.361	0.04175	0.24875	0		1.61031396	±	0.10929613
227Th->227Ac	236	0.44395	0.001825	0.01325	0		0.06267235	±	0.02269936
212Pb->228Th	239	5.5494	0.021875	0	0.70875		0.17554802	±	0.01178583
214Pb->226Ra	242	9.361	0.03475	0.18125	0		1.83947531	±	0.125842
214Pb->226Ra	295	9.361	0.06275	0.355	0		1.695909	±	0.10786632
214Pb->226Ra	352	9.361	0.09425	0.54	0		1.67457563	±	0.10364248
208Tl->228Th	583	5.5494	0	0	0.110875		0	±	0
214Bi->226Ra	609	9.361	0.046625	0.265	0		1.68806878	±	0.1097381

U(ppb) = 114963.907

Th(ppb) = 43108.7641

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)		As (Bq/g)		
234U(242)	53.2	9.361	0.007097365	0.04113014		1.69631122	±	0.11604787
234U(295)	53.2	9.361	0.008621121	0.04748652		1.78468666	±	0.11351292
234U(352)	53.2	9.361	0.009425109	0.05183318		1.78750426	±	0.11063184
235U(63.3)	186	0.44395	0.00185302	0.01270643		0.06635685	±	0.00449499
235U(92.6)	186	0.44395	0.002290988	0.01462088		0.07129816	±	0.00472864
226Ra(63.3)	186	9.361	0.039936781	0.2363165		1.62142245	±	0.10983456
226Ra(92.6)	186	9.361	0.039459013	0.23412913		1.61699225	±	0.10724214

234U/238U = 1.228179706 ± 0.097830414
230Th/234U = 1.056944949 ± 0.198532302
226Ra/230Th = 0.873530169 ± 0.162285797

DP1B-5

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-123-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/7/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.63E+05	1.29047582
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.12E+06	1.08039459
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.36E+05	1.06686684
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.25E+05	1.0257094
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.10E+05	1.0257448
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.76E+06	1.01973854
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.09E+04	1.00487411
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.09E+05	1.01363693
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.33E+04	0.99353442
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.74E+04	0.97665085
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.06E+04	0.99050614

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.03712015	1.007510331
Eu154,155	42.9	1.01728659	0.96922977
Eu154,155	48.6	1.01648541	0.977017773
Eu155	86.4	1.0166854	0.996946057
Eu155	105	1.01409709	0.997637413
Eu154	123	1.01131082	1
Sb125	178	1.00851937	1
Eu154	248	1.01815539	1.004559417
Eu154	592	1.00214903	#DIV/0!
Sb125	600	1.00866375	0.9912867
Sb125	636	1.00472457	1.004724574

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.030logx+1.072
CF (DM1B) equation = y =0.013logx+0.969

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.0297528	0.98730712
231Pa	27.4	1.02886748	0.987690757
210Pb	46.5	1.02197641	0.990676888
227Ac	50	1.0210309	0.99108661
234U+214Pb	53.2	1.02022265	0.991436851
234Th->238U	63.3	1.01795789	0.992418248
230Th	67.6	1.0171016	0.992789307
234Th->238U	92.6	1.01300167	0.994565943
228Ac->228Ra	129	1.00868231	0.996437666
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		2.834		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/26/96		3/15/96		3/7/96	
231Th->235U	25.6	2.47E+02	7.04E+01	2.07E+03	1.44E+02	0	0
231Pa	27.4	3.06E+02	6.96E+01	1.86E+03	1.38E+02	0	0
210Pb	46.5	8.29E+03	1.19E+02	2.28E+04	2.05E+02	0	0
227Ac	50	3.78E+02	7.39E+01	1.94E+03	1.46E+02	0	0
234U+214Pb	53.2	1.81E+03	8.89E+01	5.43E+03	1.64E+02	0	0
234Th->238U	63.3	2.55E+03	1.04E+02	2.16E+04	2.14E+02	0	0
230Th	67.6	5.49E+02	8.78E+01	2.57E+03	1.78E+02	0	0
234Th->238U	92.6	3.46E+03	1.15E+02	2.54E+04	2.40E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	4.55E+03	1.20E+02	1.99E+04	2.14E+02	0	0
227Th->227Ac	236	7.72E+01	4.38E+01	1.06E+03	1.48E+02	0	0
212Pb->228Th	239	1.53E+03	8.04E+01	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	4.59E+03	1.03E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	8.95E+03	1.23E+02	2.84E+04	2.15E+02	0	0
214Pb->226Ra	352	1.28E+04	1.42E+02	4.32E+04	2.48E+02	0	0
208Tl->228Th	583	3.17E+02	5.85E+01	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	6.49E+03	1.08E+02	2.12E+04	1.92E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.0030875	0.025875	0		0.05776434	±	0.01729807
231Pa	27.4	0.44395	0.003825	0.02325	0		0.07957344	±	0.01962718
210Pb	46.5	9.361	0.103625	0.285	0		3.68340056	±	0.22964158
227Ac	50	0.44395	0.004725	0.02425	0		0.09352531	±	0.02038015
234U+214Pb	53.2	9.361	0.020125	0.067875	0		2.99853694	±	0.2607375
234Th->238U	63.3	9.361	0.031875	0.27	0		1.19125473	±	0.08722651
230Th	67.6	9.361	0.0068625	0.032125	0		2.15373345	±	0.3969754
234Th->238U	92.6	9.361	0.04325	0.3175	0		1.36785776	±	0.0947085
228Ac->228Ra	129	5.5494	0	0	0.0585		0	±	#DIV/0!
235U+226Ra	186	9.361	0.056875	0.24875	0		2.26645299	±	0.1505309
227Th->227Ac	236	0.44395	0.000965	0.01325	0		0.03423826	±	0.0201101
212Pb->228Th	239	5.5494	0.019125	0	0.70875		0.15856983	±	0.01122211
214Pb->226Ra	242	9.361	0.057375	0.18125	0		3.1378565	±	0.20474748
214Pb->226Ra	295	9.361	0.111875	0.355	0		3.12387099	±	0.19373496
214Pb->226Ra	352	9.361	0.16	0.54	0		2.93707217	±	0.18000269
208Tl->228Th	583	5.5494	0	0	0.110875		0	±	0
214Bi->226Ra	609	9.361	0.081125	0.265	0		3.03457049	±	0.19093561

U(ppb) = 95777.2058

Th(ppb) = 38939.4829

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)		As (Bq/g)		
234U(242)	53.2	9.361	0.011658869	0.04113014		2.86668236	±	0.18705316
234U(295)	53.2	9.361	0.013699758	0.04748652		2.91760091	±	0.18094258
234U(352)	53.2	9.361	0.015371869	0.05183318		2.99917739	±	0.1838089
235U(63.3)	186	0.44395	0.001494203	0.01265678		0.05549919	±	0.00406378
235U(92.6)	186	0.44395	0.001991663	0.01462088		0.06403871	±	0.00443395
226Ra(63.3)	186	9.361	0.055407156	0.2363165		2.32412889	±	0.17017825
226Ra(92.6)	186	9.361	0.054883338	0.23412913		2.32366473	±	0.1608872

234U/238U	=	2.457761683	±	0.19694917
230Th/234U	=	0.73560987	±	0.137686054
226Ra/230Th	=	1.07911631	±	0.203993665

DP1B_3 + 4 + 5 = average

Gamma spectrometry calculations for Nopal I rock powders

Sample= **BL5D_3**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.78E+05	1.26679526
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.13E+06	1.07572473
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.36E+05	1.06686684
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.29E+05	1.01950164
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.12E+05	1.02093226
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.75E+06	1.01973854
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.12E+04	1.00121261
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.11E+05	1.00449104
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.27E+04	1.00657901
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.72E+04	0.98235171
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.06E+04	0.99050614

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.01808873	0.989022258
Eu154,155	42.9	1.0128895	0.965040403
Eu154,155	48.6	1.01648541	0.977017773
Eu155	86.4	1.01053226	0.990912381
Eu155	105	1.0093392	0.992956749
Eu154	123	1.01131082	1
Sb125	178	1.00484459	0.99635626
Eu154	248	1.00896873	0.995495435
Eu154	592	1.01530672	#DIV/0!
Sb125	600	1.01455148	0.997072996
Sb125	636	1.00472457	1.004724574

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.012logx+1.035
CF (DM1B) equation = y =0.030logx+0.932

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01810112	0.974247199
231Pa	27.4	1.01774699	0.975132517
210Pb	46.5	1.01499056	0.982023589
227Ac	50	1.01461236	0.9829691
234U+214Pb	53.2	1.01428906	0.983777349
234Th->238U	63.3	1.01338316	0.986042111
230Th	67.6	1.01304064	0.986898401
234Th->238U	92.6	1.01140067	0.99099833
228Ac->228Ra	129	1.00967292	0.995317691
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000
Weight (g) =		3.0155		3.001		2.994
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/8/96		3/15/96		3/7/96	
231Th->235U	25.6	2.38E+04	4.96E+02	2.06E+03	1.40E+02	0	0
231Pa	27.4	2.37E+04	4.83E+02	1.87E+03	1.35E+02	0	0
210Pb	46.5	3.30E+05	7.76E+02	2.26E+04	2.04E+02	0	0
227Ac	50	3.18E+04	5.82E+02	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	8.16E+04	6.24E+02	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	3.04E+05	6.20E+02	2.13E+04	2.15E+02	0	0
230Th	67.6	3.77E+04	6.34E+02	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	3.75E+05	9.06E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	2.81E+05	8.13E+02	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	1.64E+04	5.29E+02	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	0.00E+00	0.00E+00	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	2.19E+05	6.98E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	4.28E+05	8.29E+02	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	6.44E+05	9.89E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	0	0	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	3.15E+05	7.44E+02	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.2975	0.02575	0		5.19686428	±	0.48342123
231Pa	27.4	0.44395	0.29625	0.023375	0		5.69885085	±	0.54741884
210Pb	46.5	9.361	4.125	0.2825	0		138.069074	±	8.3836563
227Ac	50	0.44395	0.3975	0.02775	0		6.42118255	±	0.585686
234U+214Pb	53.2	9.361	1.02	0.06875	0		140.19035	±	9.46516146
234Th->238U	63.3	9.361	3.8	0.26625	0		134.740008	±	8.20605649
230Th	67.6	9.361	0.47125	0.031125	0		142.888665	±	12.831012
234Th->238U	92.6	9.361	4.6875	0.32375	0		136.42176	±	8.28650762
228Ac->228Ra	129	5.5494	0	0	0.0585		0	±	#DIV/0!
235U+226Ra	186	9.361	3.5125	0.2425	0		134.93776	±	8.24120946
227Th->227Ac	236	0.44395	0.205	0.0116	0		7.80794229	±	1.300113
212Pb->228Th	239	5.5494	0	0	0.70875		0	±	#DIV/0!
214Pb->226Ra	242	9.361	2.7375	0.18125	0		140.703539	±	8.63266447
214Pb->226Ra	295	9.361	5.35	0.3525	0		141.391587	±	8.55609403
214Pb->226Ra	352	9.361	8.05	0.53125	0		141.164614	±	8.51345921
208Tl->228Th	583	5.5494	0	0	0.110875		0	±	#DIV/0!
214Bi->226Ra	609	9.361	3.9375	0.26375	0		139.077542	±	8.44547695

U(ppb) = 10833133.5

Th(ppb) = 0

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.61606043	0.04200514	138.583492	±	8.50259203
234U(295)	53.2	9.361	0.71273705	0.0485051	138.845733	±	8.40203562
234U(352)	53.2	9.361	0.780858103	0.05296812	139.299068	±	8.40095049
235U(63.3)	186	0.44395	0.177331918	0.0124249	6.3057203	±	0.38403662
235U(92.6)	186	0.44395	0.215859375	0.01490869	6.39693925	±	0.38856181
226Ra(63.3)	186	9.361	3.33751	0.23023919	135.04305	±	8.22451264
226Ra(92.6)	186	9.361	3.296640625	0.22759131	134.941283	±	8.19658072

234U/238U	=	1.030944209	±	0.064977669
230Th/234U	=	1.028646249	±	0.093865492
226Ra/230Th	=	0.945092813	±	0.085439277

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-113-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	4.47E+05	1.1715895
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.20E+06	1.04449373
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.51E+05	1.03502892
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.38E+05	1.00589396
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.18E+05	1.00684939
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.80E+06	1.00553509
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.24E+04	0.98691465
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.13E+05	0.99556211
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.38E+04	0.98300174
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.74E+04	0.97665085
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.10E+04	0.97221742

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	0.94157446	0.914692477
Eu154,155	42.9	0.98348277	0.937022851
Eu154,155	48.6	0.98615099	0.94786117
Eu155	86.4	0.99704429	0.977686289
Eu155	105	0.99541625	0.979259774
Eu154	123	0.99722476	0.98607148
Sb125	178	0.99049476	0.982127647
Eu154	248	1	0.986646469
Eu154	592	0.99152501	#DIV/0!
Sb125	600	1.00866375	0.9912867
Sb125	636	0.98617333	0.986173328

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = 0.072logx+0.854
CF (DM1B) equation = y =0.111logx+0.758

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	0.95539328	0.914314636
231Pa	27.4	0.95751804	0.917590312
210Pb	46.5	0.97405661	0.943087278
227Ac	50	0.97632584	0.94658567
234U+214Pb	53.2	0.97826564	0.949576191
234Th->238U	63.3	0.98370107	0.957955812
230Th	67.6	0.98575616	0.961124083
234Th->238U	92.6	0.99559599	0.97629382
228Ac->228Ra	129	1.00596246	0.992275458
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000
Weight (g) =		1.34		3.001		2.994
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/11/96		3/15/96		3/7/96	
231Th->235U	25.6	9.83E+03	2.56E+02	2.06E+03	1.40E+02	0	0
231Pa	27.4	8.20E+03	2.66E+02	1.87E+03	1.35E+02	0	0
210Pb	46.5	8.54E+04	3.88E+02	2.26E+04	2.04E+02	0	0
227Ac	50	8.96E+03	2.85E+02	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	2.12E+04	3.07E+02	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	8.25E+04	4.08E+02	2.13E+04	2.15E+02	0	0
230Th	67.6	9.49E+03	3.07E+02	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	1.01E+05	4.65E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	7.33E+04	4.10E+02	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	4.30E+03	2.71E+02	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	8.00E+02	2.13E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	5.23E+04	3.53E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	1.04E+05	4.16E+02	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	1.56E+05	4.79E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	0	0	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	7.54E+04	3.73E+02	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.122875	0.02575	0		4.53277055	±	0.42754729
231Pa	27.4	0.44395	0.1025	0.023375	0		4.17459615	±	0.41461221
210Pb	46.5	9.361	1.0675	0.2825	0		77.1644159	±	4.69507292
227Ac	50	0.44395	0.112	0.02775	0		3.91782539	±	0.37160194
234U+214Pb	53.2	9.361	0.265	0.06875	0		79.0521002	±	5.4251304
234Th->238U	63.3	9.361	1.03125	0.26625	0		79.87685	±	4.87598564
230Th	67.6	9.361	0.118625	0.031125	0		78.7625572	±	7.4000142
234Th->238U	92.6	9.361	1.2625	0.32375	0		81.3932127	±	4.95425285
228Ac->228Ra	129	5.5494	0	0	0.0585		0	±	#DIV/0!
235U+226Ra	186	9.361	0.91625	0.2425	0		79.2110348	±	4.85258467
227Th->227Ac	236	0.44395	0.05375	0.0116	0		4.60697374	±	0.80664926
212Pb->228Th	239	5.5494	0.01	0	0.70875		0.17535339	±	0.04742204
214Pb->226Ra	242	9.361	0.65375	0.18125	0		75.616597	±	4.66111052
214Pb->226Ra	295	9.361	1.3	0.3525	0		77.3156966	±	4.68645835
214Pb->226Ra	352	9.361	1.95	0.53125	0		76.9518581	±	4.64543746
208Tl->228Th	583	5.5494	0	0	0.110875		0	±	#DIV/0!
214Bi->226Ra	609	9.361	0.9425	0.26375	0		74.9156122	±	4.56088648

U(ppb) = 6422120.59

Th(ppb) = 43060.9676

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)		As (Bq/g)		
234U(242)	53.2	9.361	0.168534066	0.04200514		82.28591	±	5.0722161
234U(295)	53.2	9.361	0.190337975	0.0485051		80.4781971	±	4.87815198
234U(352)	53.2	9.361	0.207071217	0.05296812		80.1761906	±	4.84008429
235U(63.3)	186	0.44395	0.046715041	0.01206097		3.85096527	±	0.23507751
235U(92.6)	186	0.44395	0.058138125	0.01490869		3.87718806	±	0.2359972
226Ra(63.3)	186	9.361	0.868760938	0.23023919		79.1050999	±	4.82887509
226Ra(92.6)	186	9.361	0.858111875	0.22759131		79.0445031	±	4.81129129

234U/238U	=	1.013811877	±	0.064474268
230Th/234U	=	0.97261621	±	0.093012546
226Ra/230Th	=	1.004349055	±	0.095034963

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-114-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.79E+05	1.26525939
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.14E+06	1.07110898
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.38E+05	1.06246935
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.29E+05	1.01950164
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.13E+05	1.01854855
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.76E+06	1.01685499
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.04E+04	1.01105681
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.12E+05	#DIV/0!
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.28E+04	1.0043732
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.71E+04	0.9852355
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.06E+04	0.99050614

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.01685439	0.987823162
Eu154,155	42.9	1.00854336	0.96089958
Eu154,155	48.6	1.01229559	0.972990636
Eu155	86.4	1.01053226	0.990912381
Eu155	105	1.00698256	0.99063836
Eu154	123	1.0084511	0.997172265
Sb125	178	1.0147245	1.00615271
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.01308178	#DIV/0!
Sb125	600	1.01752979	1
Sb125	636	1.00472457	1.004724574

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.011logx+1.030
CF (DM1B) equation = y =0.031logx+0.928

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01450936	0.971655439
231Pa	27.4	1.01418474	0.972570267
210Pb	46.5	1.01165802	0.979691042
227Ac	50	1.01131133	0.98066807
234U+214Pb	53.2	1.01101497	0.981503261
234Th->238U	63.3	1.01018456	0.983843515
230Th	67.6	1.00987059	0.984728348
234Th->238U	92.6	1.00836728	0.988964941
228Ac->228Ra	129	1.00678351	0.993428281
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		2.119		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/12/96		3/15/96		3/7/96	
231Th->235U	25.6	1.23E+04	2.91E+02	2.06E+03	1.40E+02	0	0
231Pa	27.4	9.60E+03	3.07E+02	1.87E+03	1.35E+02	0	0
210Pb	46.5	1.12E+05	4.47E+02	2.26E+04	2.04E+02	0	0
227Ac	50	1.19E+04	3.29E+02	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	2.73E+04	3.53E+02	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	1.07E+05	4.71E+02	2.13E+04	2.15E+02	0	0
230Th	67.6	1.28E+04	3.80E+02	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	1.32E+05	5.30E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	9.70E+04	4.86E+02	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	5.14E+03	3.09E+02	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	1.18E+03	2.61E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	6.90E+04	3.96E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	1.36E+05	4.72E+02	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	2.04E+05	5.52E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	0.00E+00	0.00E+00	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	1.01E+05	4.26E+02	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.15375	0.02575	0		3.8085797	±	0.35683864
231Pa	27.4	0.44395	0.12	0.023375	0		3.27352603	±	0.32463124
210Pb	46.5	9.361	1.4	0.2825	0		66.466161	±	4.04156193
227Ac	50	0.44395	0.14875	0.02775	0		3.40837961	±	0.31880554
234U+214Pb	53.2	9.361	0.34125	0.06875	0		66.5295872	±	4.54509345
234Th->238U	63.3	9.361	1.3375	0.26625	0		67.2763133	±	4.10400025
230Th	67.6	9.361	0.1575	0.031125	0		67.7476453	±	6.31555164
234Th->238U	92.6	9.361	1.65	0.32375	0		68.1318522	±	4.14421731
228Ac->228Ra	129	5.5494	0	0	0.0585		0	±	#DIV/0!
235U+226Ra	186	9.361	1.2125	0.2425	0		66.2868358	±	4.0563866
227Th->227Ac	236	0.44395	0.06425	0.0116	0		3.48244481	±	0.60594866
212Pb->228Th	239	5.5494	0.01475	0	0.70875		0.1635611	±	0.03564485
214Pb->226Ra	242	9.361	0.8625	0.18125	0		63.0867816	±	3.88229302
214Pb->226Ra	295	9.361	1.7	0.3525	0		63.9362388	±	3.87338172
214Pb->226Ra	352	9.361	2.55	0.53125	0		63.6353623	±	3.84043563
208Tl->228Th	583	5.5494	0	0	0.110875		0	±	#DIV/0!
214Bi->226Ra	609	9.361	1.2625	0.26375	0		63.4594352	±	3.85994649

U(ppb) = 5409033.99

Th(ppb) = 40165.1734

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)		As (Bq/g)		
234U(242)	53.2	9.361	0.213981368	0.04200514		68.2791912	±	4.20182835
234U(295)	53.2	9.361	0.243615044	0.0485051		67.3180502	±	4.07825843
234U(352)	53.2	9.361	0.265496977	0.05296812		67.183077	±	4.05454253
235U(63.3)	186	0.44395	0.062219161	0.01238568		3.15844467	±	0.19267194
235U(92.6)	186	0.44395	0.0759825	0.01490869		3.20437449	±	0.19491066
226Ra(63.3)	186	9.361	1.150908125	0.23023919		66.2702633	±	4.04262903
226Ra(92.6)	186	9.361	1.1365175	0.22759131		66.2030093	±	4.02689269

234U/238U =	1.004713787	±	0.063707699	
230Th/234U =	1.002281373	±	0.095030341	
226Ra/230Th =	0.978192866	±	0.091822831	

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-115-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source		Empty vial	Standard - DP1B		Standard - DM1B		Sample	
SRM 4275C		3/6/96	3/6/96		3/6/96		3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	4.05E+05	1.22706107
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.17E+06	1.05757599
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.47E+05	1.04326812
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.36E+05	1.00887589
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.16E+05	1.01148579
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.79E+06	1.00833346
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.19E+04	0.99280567
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.12E+05	#DIV/0!
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.37E+04	0.98508449
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.76E+04	0.97103703
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.07E+04	0.98584842

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	0.98615545	0.958000676
Eu154,155	42.9	0.99580087	0.948759041
Eu154,155	48.6	0.99400111	0.955406484
Eu155	86.4	1	0.980584608
Eu155	105	1	0.983769129
Eu154	123	1	0.988815682
Sb125	178	0.99640715	0.987990098
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	0.99362582	#DIV/0!
Sb125	600	1.00286592	0.985588754
Sb125	636	1	1

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = 0.020logx+0.960
CF (DM1B) equation = y =0.060logx+0.861

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	0.9881648	0.945494398
231Pa	27.4	0.98875501	0.947265034
210Pb	46.5	0.99334906	0.961047177
227Ac	50	0.9939794	0.9629382
234U+214Pb	53.2	0.99451823	0.964554698
234Th->238U	63.3	0.99602807	0.969084223
230Th	67.6	0.99659893	0.970796802
234Th->238U	92.6	0.99933222	0.978996659
228Ac->228Ra	129	1.00221179	0.987635383
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		1.965		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/13/96		3/15/96		3/7/96	
231Th->235U	25.6	7.84E+03	2.33E+02	2.06E+03	1.40E+02	0	0
231Pa	27.4	6.05E+03	2.46E+02	1.87E+03	1.35E+02	0	0
210Pb	46.5	8.02E+04	3.70E+02	2.26E+04	2.04E+02	0	0
227Ac	50	7.67E+03	2.45E+02	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	1.95E+04	2.85E+02	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	6.38E+04	3.71E+02	2.13E+04	2.15E+02	0	0
230Th	67.6	7.92E+03	3.03E+02	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	7.77E+04	4.18E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	6.18E+04	3.79E+02	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	3.42E+03	2.69E+02	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	5.44E+02	1.72E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	4.58E+04	3.16E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	8.91E+04	3.83E+02	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	1.34E+05	4.46E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	2.28E+02	1.01E+02	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	6.54E+04	3.41E+02	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.098	0.02575	0	2.5498564	±	0.24326702
231Pa	27.4	0.44395	0.075625	0.023375	0	2.16890219	±	0.22187656
210Pb	46.5	9.361	1.0025	0.2825	0	50.3957021	±	3.0665951
227Ac	50	0.44395	0.095875	0.02775	0	2.3283983	±	0.22095162
234U+214Pb	53.2	9.361	0.23125	0.06875	0	47.8241736	±	3.29165366
234Th->238U	63.3	9.361	0.7975	0.26625	0	42.6518959	±	2.60690032
230Th	67.6	9.361	0.099	0.031125	0	45.3181256	±	4.35723376
234Th->238U	92.6	9.361	0.97125	0.32375	0	42.8604603	±	2.61156135
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	0.7725	0.2425	0	45.5420348	±	2.79232147
227Th->227Ac	236	0.44395	0.04275	0.0116	0	2.49870871	±	0.44991221
212Pb->228Th	239	5.5494	0.0068	0	0.70875	0.081314	±	0.02599692
214Pb->226Ra	242	9.361	0.5725	0.18125	0	45.1568003	±	2.784277
214Pb->226Ra	295	9.361	1.11375	0.3525	0	45.1704359	±	2.73890988
214Pb->226Ra	352	9.361	1.675	0.53125	0	45.0756039	±	2.72174448
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	0
214Bi->226Ra	609	9.361	0.8175	0.26375	0	44.3119619	±	2.69871403

U(ppb) = 3429224.1

Th(ppb) = 19968.0171

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.14677314	0.04200514	49.680111	±	3.06317519
234U(295)	53.2	9.361	0.167284746	0.0485051	49.0351298	±	2.97324564
234U(352)	53.2	9.361	0.181490661	0.05296812	48.7167332	±	2.94160228
235U(63.3)	186	0.44395	0.036579007	0.01221211	2.03085341	±	0.12412654
235U(92.6)	186	0.44395	0.044726063	0.01490869	2.03403656	±	0.12393734
226Ra(63.3)	186	9.361	0.735775125	0.23023919	45.6868845	±	2.79239999
226Ra(92.6)	186	9.361	0.727773938	0.22759131	45.715819	±	2.78554326

234U/238U =	1.15221118	±	0.073416467	
230Th/234U =	0.922149877	±	0.090204215	
226Ra/230Th =	1.008137116	±	0.097638913	

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-116-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source		Empty vial	Standard - DP1B		Standard - DM1B		Sample	
SRM 4275C		3/6/96	3/6/96		3/6/96		3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.93E+05	1.24428767
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.16E+06	1.06203562
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.27E+05	1.08728111
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.32E+05	1.01491127
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.13E+05	1.01854855
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.77E+06	1.01399314
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.16E+04	0.99638553
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.12E+05	#DIV/0!
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.29E+04	1.00218023
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.73E+04	0.97949026
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.03E+04	1.00483873

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1	0.971449962
Eu154,155	42.9	1	0.952759807
Eu154,155	48.6	1.03593564	0.995712801
Eu155	86.4	1.00598228	0.986450737
Eu155	105	1.00698256	0.99063836
Eu154	123	1.00561291	0.994365813
Sb125	178	1	0.991552593
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.0108698	#DIV/0!
Sb125	600	1.01159623	0.994168661
Sb125	636	1.01926291	1.019262911

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.000logx+1.010
CF (DM1B) equation = y =0.041logx+0.908

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01	0.965737839
231Pa	27.4	1.01	0.966947773
210Pb	46.5	1.01	0.976365571
227Ac	50	1.01	0.97765777
234U+214Pb	53.2	1.01	0.978762377
234Th->238U	63.3	1.01	0.981857552
230Th	67.6	1.01	0.983027815
234Th->238U	92.6	1.01	0.98863105
228Ac->228Ra	129	1.01	0.994534178
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		1.815		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/14/96		3/15/96		3/7/96	
231Th->235U	25.6	6.63E+03	2.21E+02	2.06E+03	1.40E+02	0	0
231Pa	27.4	5.07E+03	2.15E+02	1.87E+03	1.35E+02	0	0
210Pb	46.5	5.14E+04	3.23E+02	2.26E+04	2.04E+02	0	0
227Ac	50	6.05E+03	2.16E+02	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	1.35E+04	2.48E+02	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	5.43E+04	3.31E+02	2.13E+04	2.15E+02	0	0
230Th	67.6	6.04E+03	2.67E+02	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	6.69E+04	3.58E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	4.92E+04	3.29E+02	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	2.67E+03	2.26E+02	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	7.57E+02	1.59E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	3.30E+04	2.47E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	6.47E+04	3.29E+02	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	9.59E+04	3.80E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	1.88E+02	1.22E+02	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	4.76E+04	2.97E+02	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.082875	0.02575	0		2.38611356	±	0.23047722
231Pa	27.4	0.44395	0.063375	0.023375	0		2.01006987	±	0.20704748
210Pb	46.5	9.361	0.7675	0.2825	0		42.4710421	±	2.58660584
227Ac	50	0.44395	0.075625	0.02775	0		2.02044578	±	0.19441743
234U+214Pb	53.2	9.361	0.16875	0.06875	0		38.3710836	±	2.6687828
234Th->238U	63.3	9.361	0.67875	0.26625	0		39.8522835	±	2.43687674
230Th	67.6	9.361	0.0755	0.031125	0		37.9201963	±	3.74140869
234Th->238U	92.6	9.361	0.83625	0.32375	0		40.3793514	±	2.46028217
228Ac->228Ra	129	5.5494	0	0	0.0585		0	±	#DIV/0!
235U+226Ra	186	9.361	0.615	0.2425	0		39.2531925	±	2.40900691
227Th->227Ac	236	0.44395	0.033375	0.0116	0		2.11196497	±	0.38856883
212Pb->228Th	239	5.5494	0.0094625	0	0.70875		0.12250342	±	0.02637773
214Pb->226Ra	242	9.361	0.4125	0.18125	0		35.225531	±	2.17433859
214Pb->226Ra	295	9.361	0.80875	0.3525	0		35.5113174	±	2.15538907
214Pb->226Ra	352	9.361	1.21125	0.53125	0		35.2895775	±	2.13210333
208Tl->228Th	583	5.5494	0	0	0.110875		0	±	0
214Bi->226Ra	609	9.361	0.595	0.26375	0		34.9169345	±	2.12989649

U(ppb) = 3204134.49

Th(ppb) = 30082.7716

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.107882394	0.04200514	40.1495882	±	2.47828198
234U(295)	53.2	9.361	0.122301605	0.0485051	39.4164672	±	2.3924154
234U(352)	53.2	9.361	0.132767314	0.05296812	39.1840746	±	2.36739858
235U(63.3)	186	0.44395	0.031569002	0.01238342	1.87130101	±	0.11442581
235U(92.6)	186	0.44395	0.038509313	0.01490869	1.89604998	±	0.11552484
226Ra(63.3)	186	9.361	0.583743563	0.23023919	39.2423016	±	2.39957773
226Ra(92.6)	186	9.361	0.576490688	0.22759131	39.2056111	±	2.38876709

234U/238U =	0.99325241	±	0.063470406	
230Th/234U =	0.957982858	±	0.096176971	
226Ra/230Th =	1.034865467	±	0.102831955	

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-117-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.84E+05	1.25765712
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.14E+06	1.07110898
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.42E+05	1.05381899
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.33E+05	1.01339339
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.13E+05	1.01854855
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.77E+06	1.01399314
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.13E+04	#DIV/0!
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.11E+05	1.00449104
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.30E+04	#DIV/0!
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.76E+04	0.97103703
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.10E+04	0.97221742

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.01074466	0.981887863
Eu154,155	42.9	1.00854336	0.96089958
Eu154,155	48.6	1.00405373	0.965068789
Eu155	86.4	1.00447775	0.984975421
Eu155	105	1.00698256	0.99063836
Eu154	123	1.00561291	0.994365813
Sb125	178	#DIV/0!	#DIV/0!
Eu154	248	1.00896873	0.995495435
Eu154	592	#DIV/0!	#DIV/0!
Sb125	600	1.00286592	0.985588754
Sb125	636	0.98617333	0.986173328

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.006logx+1.018
CF (DM1B) equation = y =0.035logx+0.916

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.00955056	0.965288399
231Pa	27.4	1.0093735	0.96632127
210Pb	46.5	1.00799528	0.974360853
227Ac	50	1.00780618	0.97546395
234U+214Pb	53.2	1.00764453	0.976406907
234Th->238U	63.3	1.00719158	0.97904913
230Th	67.6	1.00702032	0.980048134
234Th->238U	92.6	1.00620033	0.984831385
228Ac->228Ra	129	1.00533646	0.98987064
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000
Weight (g) =		2.923		3.001		2.994
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/18/96		3/15/96		3/7/96	
231Th->235U	25.6	3.94E+03	1.92E+02	2.06E+03	1.40E+02	0	0
231Pa	27.4	3.28E+03	1.88E+02	1.87E+03	1.35E+02	0	0
210Pb	46.5	4.84E+04	2.87E+02	2.26E+04	2.04E+02	0	0
227Ac	50	4.20E+03	1.91E+02	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	1.07E+04	2.20E+02	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	3.52E+04	2.84E+02	2.13E+04	2.15E+02	0	0
230Th	67.6	4.32E+03	2.38E+02	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	4.26E+04	3.14E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	3.58E+04	2.82E+02	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	2.19E+03	1.61E+02	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	1.57E+03	1.91E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	2.72E+04	2.50E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	5.35E+04	2.95E+02	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	8.05E+04	3.41E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	3.65E+02	1.36E+02	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	3.95E+04	2.66E+02	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.04925	0.02575	0	0.88009249	±	0.09058297
231Pa	27.4	0.44395	0.041	0.023375	0	0.80696626	±	0.0887553
210Pb	46.5	9.361	0.605	0.2825	0	20.746978	±	1.26482409
227Ac	50	0.44395	0.0525	0.02775	0	0.86904962	±	0.08713353
234U+214Pb	53.2	9.361	0.13375	0.06875	0	18.8403022	±	1.3218784
234Th->238U	63.3	9.361	0.44	0.26625	0	15.9968536	±	0.98181884
230Th	67.6	9.361	0.054	0.031125	0	16.7912125	±	1.74628068
234Th->238U	92.6	9.361	0.5325	0.32375	0	15.9057341	±	0.97247184
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	0.4475	0.2425	0	17.7353891	±	1.09093981
227Th->227Ac	236	0.44395	0.027375	0.0116	0	1.07564108	±	0.1926877
212Pb->228Th	239	5.5494	0.019625	0	0.70875	0.15776106	±	0.02059812
214Pb->226Ra	242	9.361	0.34	0.18125	0	18.0285304	±	1.11698058
214Pb->226Ra	295	9.361	0.66875	0.3525	0	18.2332505	±	1.10736514
214Pb->226Ra	352	9.361	1.00625	0.53125	0	18.2039811	±	1.10022298
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	0
214Bi->226Ra	609	9.361	0.49375	0.26375	0	17.9917773	±	1.09842567

U(ppb) = 1286151.41

Th(ppb) = 38740.8756

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.083580337	0.04200514	19.2694105	±	1.19386089
234U(295)	53.2	9.361	0.095342131	0.0485051	19.0354955	±	1.15608811
234U(352)	53.2	9.361	0.103857263	0.05296812	18.9884314	±	1.14763405
235U(63.3)	186	0.44395	0.020407716	0.01234899	0.75324161	±	0.04623077
235U(92.6)	186	0.44395	0.024521625	0.01490869	0.74968889	±	0.04583576
226Ra(63.3)	186	9.361	0.427238	0.23023919	17.8340531	±	1.09457833
226Ra(92.6)	186	9.361	0.422978375	0.22759131	17.8616637	±	1.0920568

234U/238U	=	1.193845964	±	0.076879575
230Th/234U	=	0.879223308	±	0.093031082
226Ra/230Th	=	1.062106326	±	0.11130811

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-118-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.57E+05	1.30030044
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.11E+06	1.08511965
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.41E+05	1.05596379
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.31E+05	1.01643525
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.15E+05	1.01382547
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.78E+06	1.00833346
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.16E+04	0.99638553
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.13E+05	0.99556211
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.30E+04	0.98300174
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.77E+04	0.96826207
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.13E+04	0.95907552

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.04501593	1.015180685
Eu154,155	42.9	1.02173564	0.973468654
Eu154,155	48.6	1.00609724	0.967032954
Eu155	86.4	1.00749284	0.987931976
Eu155	105	1.00231311	0.9860447
Eu154	123	1	0.988815682
Sb125	178	1	0.991552593
Eu154	248	1	0.986646469
Eu154	592	0.99152501	#DIV/0!
Sb125	600	1	0.982772205
Sb125	636	0.97284277	0.972842773

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.059logx+1.120
CF (DM1B) equation = y =-0.016logx+1.016

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.03691384	0.993468161
231Pa	27.4	1.03517272	0.992995991
210Pb	46.5	1.02162028	0.989320753
227Ac	50	1.01976077	0.98881648
234U+214Pb	53.2	1.01817121	0.988385414
234Th->238U	63.3	1.01371718	0.987177541
230Th	67.6	1.01203314	0.986720853
234Th->238U	92.6	1.00396995	0.984534224
228Ac->228Ra	129	0.99547521	0.982230565
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		2.741		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/19/96		3/15/96		3/7/96	
231Th->235U	25.6	2.62E+03	1.43E+02	2.06E+03	1.40E+02	0	0
231Pa	27.4	1.97E+03	1.51E+02	1.87E+03	1.35E+02	0	0
210Pb	46.5	2.53E+04	2.19E+02	2.26E+04	2.04E+02	0	0
227Ac	50	2.90E+03	1.53E+02	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	6.98E+03	1.76E+02	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	2.43E+04	2.30E+02	2.13E+04	2.15E+02	0	0
230Th	67.6	3.43E+03	1.78E+02	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	2.97E+04	2.48E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	2.38E+04	2.28E+02	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	1.24E+03	1.24E+02	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	1.62E+03	1.51E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	1.75E+04	1.98E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	3.41E+04	2.35E+02	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	5.04E+04	2.76E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	1.92E+02	1.00E+02	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	2.49E+04	2.06E+02	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.03275	0.02575	0	0.64101437	±	0.06783166
231Pa	27.4	0.44395	0.024625	0.023375	0	0.53006418	±	0.06423832
210Pb	46.5	9.361	0.31625	0.2825	0	11.7214352	±	0.71840131
227Ac	50	0.44395	0.035	0.02775	0	0.6251646	±	0.06547963
234U+214Pb	53.2	9.361	0.08725	0.06875	0	13.2431943	±	0.94906603
234Th->238U	63.3	9.361	0.30375	0.26625	0	11.8528471	±	0.72983836
230Th	67.6	9.361	0.042875	0.031125	0	14.2879103	±	1.4622498
234Th->238U	92.6	9.361	0.37125	0.32375	0	11.7993098	±	0.72289032
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	0.2975	0.2425	0	12.5734492	±	0.7764504
227Th->227Ac	236	0.44395	0.0155	0.0116	0	0.64947843	±	0.12439785
212Pb->228Th	239	5.5494	0.02025	0	0.70875	0.17359409	±	0.01815298
214Pb->226Ra	242	9.361	0.21875	0.18125	0	12.3694176	±	0.77069664
214Pb->226Ra	295	9.361	0.42625	0.3525	0	12.393229	±	0.75442298
214Pb->226Ra	352	9.361	0.63	0.53125	0	12.1540442	±	0.73576163
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	0
214Bi->226Ra	609	9.361	0.31125	0.26375	0	12.0947278	±	0.74068582

U(ppb) = 952972.15

Th(ppb) = 42628.944

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.054971724	0.04200514	13.6564215	±	0.85088551
234U(295)	53.2	9.361	0.062769471	0.0485051	13.5039568	±	0.8220372
234U(352)	53.2	9.361	0.068534547	0.05296812	13.5019037	±	0.81735614
235U(63.3)	186	0.44395	0.014179559	0.012429	0.55452061	±	0.03414457
235U(92.6)	186	0.44395	0.017096063	0.01490869	0.55737528	±	0.03414786
226Ra(63.3)	186	9.361	0.283512313	0.23023919	12.6203641	±	0.77709818
226Ra(92.6)	186	9.361	0.280403938	0.22759131	12.6272167	±	0.77361243

234U/238U =	1.143530652	±	0.074495205
230Th/234U =	1.054139826	±	0.110187723
226Ra/230Th =	0.88328971	±	0.091219959

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-119-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.52E+05	1.30864969
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.11E+06	1.08511965
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.36E+05	1.06686684
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.27E+05	1.02259291
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.11E+05	1.02333095
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.75E+06	1.01973854
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.09E+04	1.00487411
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.10E+05	1.00903631
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.35E+04	0.98928544
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.77E+04	0.96826207
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.10E+04	0.97221742

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.05172599	1.021699174
Eu154,155	42.9	1.02173564	0.973468654
Eu154,155	48.6	1.01648541	0.977017773
Eu155	86.4	1.01359633	0.993916964
Eu155	105	1.01171066	0.995289715
Eu154	123	1.01131082	1
Sb125	178	1.00851937	1
Eu154	248	1.01353426	1
Eu154	592	0.9978632	#DIV/0!
Sb125	600	1	0.982772205
Sb125	636	0.98617333	0.986173328

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.051logx+1.113
CF (DM1B) equation = y =-0.008logx+1.009

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.04117976	0.99773408
231Pa	27.4	1.03967472	0.997497995
210Pb	46.5	1.0279599	0.995660376
227Ac	50	1.02635253	0.99540824
234U+214Pb	53.2	1.02497851	0.995192707
234Th->238U	63.3	1.02112841	0.99458877
230Th	67.6	1.01967272	0.994360426
234Th->238U	92.6	1.01270284	0.993267112
228Ac->228Ra	129	1.00535992	0.992115282
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws
As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		2.82		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/20/96		3/15/96		3/7/96	
231Th->235U	25.6	2.41E+03	1.34E+02	2.06E+03	1.40E+02	0	0
231Pa	27.4	1.97E+03	1.43E+02	1.87E+03	1.35E+02	0	0
210Pb	46.5	2.52E+04	2.14E+02	2.26E+04	2.04E+02	0	0
227Ac	50	2.58E+03	1.46E+02	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	6.16E+03	1.50E+02	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	2.15E+04	2.18E+02	2.13E+04	2.15E+02	0	0
230Th	67.6	2.66E+03	1.74E+02	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	2.60E+04	2.34E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	2.10E+04	2.17E+02	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	1.14E+03	1.55E+02	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	1.20E+03	1.28E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	1.54E+04	1.88E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	3.02E+04	2.21E+02	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	4.53E+04	2.59E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	2.35E+02	9.32E+01	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	2.28E+04	1.94E+02	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.030125	0.02575	0		0.57547503	±	0.06120161
231Pa	27.4	0.44395	0.024625	0.023375	0		0.51745555	±	0.06140281
210Pb	46.5	9.361	0.315	0.2825	0		11.4184566	±	0.69956978
227Ac	50	0.44395	0.03225	0.02775	0		0.56352636	±	0.05960319
234U+214Pb	53.2	9.361	0.077	0.06875	0		11.4359412	±	0.81612521
234Th->238U	63.3	9.361	0.26875	0.26625	0		10.2678224	±	0.63334214
230Th	67.6	9.361	0.03325	0.031125	0		10.8513113	±	1.19165331
234Th->238U	92.6	9.361	0.325	0.32375	0		10.1273249	±	0.62138654
228Ac->228Ra	129	5.5494	0	0	0.0585		0	±	#DIV/0!
235U+226Ra	186	9.361	0.2625	0.2425	0		10.7834244	±	0.66721946
227Th->227Ac	236	0.44395	0.01425	0.0116	0		0.58037383	±	0.1233511
212Pb->228Th	239	5.5494	0.015	0	0.70875		0.12498592	±	0.01458907
214Pb->226Ra	242	9.361	0.1925	0.18125	0		10.5801506	±	0.66099549
214Pb->226Ra	295	9.361	0.3775	0.3525	0		10.6683429	±	0.64995328
214Pb->226Ra	352	9.361	0.56625	0.53125	0		10.618139	±	0.64303931
208Tl->228Th	583	5.5494	0	0	0.110875		0	±	0
214Bi->226Ra	609	9.361	0.285	0.26375	0		10.764442	±	0.65956612

U(ppb) = 825535.73

Th(ppb) = 30692.3918

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)		As (Bq/g)		
234U(242)	53.2	9.361	0.048595117	0.04200514		11.8125609	±	0.73799039
234U(295)	53.2	9.361	0.055319297	0.0485051		11.6450965	±	0.70946058
234U(352)	53.2	9.361	0.060178373	0.05296812		11.6005818	±	0.7025365
235U(63.3)	186	0.44395	0.012637421	0.01251986		0.47688076	±	0.02941507
235U(92.6)	186	0.44395	0.01496625	0.01490869		0.47426877	±	0.02909991
226Ra(63.3)	186	9.361	0.250124063	0.23023919		10.8221952	±	0.66753708
226Ra(92.6)	186	9.361	0.24753375	0.22759131		10.8347245	±	0.66479075

234U/238U =	1.138126399	±	0.074519702	
230Th/234U =	0.92856728	±	0.103991447	
226Ra/230Th =	0.997316813	±	0.110447451	

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-120-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source		Empty vial	Standard - DP1B		Standard - DM1B		Sample	
SRM 4275C		3/6/96	3/6/96		3/6/96		3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	4.28E+05	1.19581102
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.20E+06	1.04449373
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.51E+05	1.03502892
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.37E+05	1.00738198
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.18E+05	1.00684939
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.81E+06	1.00275736
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.20E+04	0.99161998
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.13E+05	0.99556211
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.34E+04	0.99140387
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.77E+04	0.96826207
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.10E+04	0.97221742

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	0.96104064	0.933602896
Eu154,155	42.9	0.98348277	0.937022851
Eu154,155	48.6	0.98615099	0.94786117
Eu155	86.4	0.99851923	0.979132585
Eu155	105	0.99541625	0.979259774
Eu154	123	0.99446998	0.983347511
Sb125	178	0.99521716	0.986810158
Eu154	248	1	0.986646469
Eu154	592	1	#DIV/0!
Sb125	600	1	0.982772205
Sb125	636	0.98617333	0.986173328

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = 0.048logx+0.899
CF (DM1B) equation = y =0.08logx+0.802

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	0.96659552	0.925925117
231Pa	27.4	0.96801203	0.92852205
210Pb	46.5	0.97903774	0.94873586
227Ac	50	0.98055056	0.95150936
234U+214Pb	53.2	0.98184376	0.953880224
234Th->238U	63.3	0.98546738	0.960523526
230Th	67.6	0.98683744	0.963035309
234Th->238U	92.6	0.99339733	0.975061767
228Ac->228Ra	129	1.00030831	0.987731895
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		3.001		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/22/96		3/15/96		3/7/96	
231Th->235U	25.6	2.66E+03	1.47E+02	2.06E+03	1.40E+02	0	0
231Pa	27.4	1.99E+03	1.44E+02	1.87E+03	1.35E+02	0	0
210Pb	46.5	2.36E+04	2.06E+02	2.26E+04	2.04E+02	0	0
227Ac	50	2.73E+03	1.44E+02	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	5.93E+03	1.65E+02	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	2.41E+04	2.26E+02	2.13E+04	2.15E+02	0	0
230Th	67.6	3.28E+03	1.77E+02	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	2.97E+04	2.45E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	2.39E+02	1.06E+02	0	0	4.68E+03	1.18E+02
235U+226Ra	186	2.12E+04	2.20E+02	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	1.18E+03	1.61E+02	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	1.29E+03	1.22E+02	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	1.39E+04	1.86E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	2.78E+04	2.18E+02	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	4.17E+04	2.50E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	2.02E+02	8.43E+01	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	2.06E+04	1.91E+02	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.03325	0.02575	0	0.55410651	±	0.05883123
231Pa	27.4	0.44395	0.024875	0.023375	0	0.45732641	±	0.05420426
210Pb	46.5	9.361	0.295	0.2825	0	9.5702932	±	0.58665747
227Ac	50	0.44395	0.034125	0.02775	0	0.53532032	±	0.0555467
234U+214Pb	53.2	9.361	0.074125	0.06875	0	9.90961159	±	0.71967319
234Th->238U	63.3	9.361	0.30125	0.26625	0	10.4376309	±	0.64255687
230Th	67.6	9.361	0.041	0.031125	0	12.1686489	±	1.25831062
234Th->238U	92.6	9.361	0.37125	0.32375	0	10.6635527	±	0.65316168
228Ac->228Ra	129	5.5494	0.0029875	0	0.0585	0.28348622	±	0.12663618
235U+226Ra	186	9.361	0.265	0.2425	0	10.2295464	±	0.63302388
227Th->227Ac	236	0.44395	0.01475	0.0116	0	0.56450539	±	0.1171413
212Pb->228Th	239	5.5494	0.016125	0	0.70875	0.12625619	±	0.0133565
214Pb->226Ra	242	9.361	0.17375	0.18125	0	8.97364828	±	0.56278164
214Pb->226Ra	295	9.361	0.3475	0.3525	0	9.22821986	±	0.562817
214Pb->226Ra	352	9.361	0.52125	0.53125	0	9.18479294	±	0.55648188
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	0
214Bi->226Ra	609	9.361	0.2575	0.26375	0	9.13917536	±	0.56099265

U(ppb) = 839188.383

Th(ppb) = 31004.3271

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.048486826	0.04200514	10.6092803	±	0.66536018
234U(295)	53.2	9.361	0.054167266	0.0485051	10.2639399	±	0.62598421
234U(352)	53.2	9.361	0.058640191	0.05296812	10.1752583	±	0.61649151
235U(63.3)	186	0.44395	0.013670958	0.01208263	0.50230962	±	0.03092297
235U(92.6)	186	0.44395	0.017096063	0.01490869	0.50908552	±	0.0311824
226Ra(63.3)	186	9.361	0.251127438	0.23023919	10.2102686	±	0.62856009
226Ra(92.6)	186	9.361	0.247903938	0.22759131	10.1964734	±	0.62455224

234U/238U	=	0.991555738	±	0.065122109
230Th/234U	=	1.175772482	±	0.124523089
226Ra/230Th	=	0.839063455	±	0.08753091

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-121-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source		Empty vial	Standard - DP1B		Standard - DM1B		Sample	
SRM 4275C		3/6/96	3/6/96		3/6/96		3/6/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.83E+05	1.2591674
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.14E+06	1.07110898
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.41E+05	1.05596379
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.28E+05	1.02104414
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.10E+05	1.0257448
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.76E+06	1.01685499
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.09E+04	1.00487411
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.10E+05	1.00903631
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.28E+04	1.0043732
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.74E+04	0.97665085
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.03E+04	1.00483873

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.01195843	0.983066976
Eu154,155	42.9	1.00854336	0.96089958
Eu154,155	48.6	1.00609724	0.967032954
Eu155	86.4	1.01206119	0.99241163
Eu155	105	1.01409709	0.997637413
Eu154	123	1.0084511	0.997172265
Sb125	178	1.00851937	1
Eu154	248	1.01353426	1
Eu154	592	1.01308178	#DIV/0!
Sb125	600	1.00866375	0.9912867
Sb125	636	1.01926291	1.019262911

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = 0.002logx+1.006
CF (DM1B) equation = y =0.043logx+0.905

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01444944	0.965554319
231Pa	27.4	1.0146265	0.966823274
210Pb	46.5	1.01600472	0.976700477
227Ac	50	1.01619382	0.97805571
234U+214Pb	53.2	1.01635547	0.9792142
234Th->238U	63.3	1.01680842	0.98246036
230Th	67.6	1.01697968	0.983687708
234Th->238U	92.6	1.01779967	0.989564272
228Ac->228Ra	129	1.01866354	0.995755358
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		3.003		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/21/96		3/15/96		3/7/96	
231Th->235U	25.6	1.26E+02	5.54E+01	2.06E+03	1.40E+02	0	0
231Pa	27.4	7.95E+01	5.49E+01	1.87E+03	1.35E+02	0	0
210Pb	46.5	3.84E+03	8.28E+01	2.26E+04	2.04E+02	0	0
227Ac	50	1.86E+02	5.52E+01	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	5.39E+02	5.56E+01	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	1.65E+03	6.99E+01	2.13E+04	2.15E+02	0	0
230Th	67.6	2.86E+02	5.98E+01	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	1.92E+03	8.91E+01	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	1.74E+02	5.27E+01	0	0	4.68E+03	1.18E+02
235U+226Ra	186	1.68E+03	8.21E+01	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	0.00E+00	0.00E+00	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	1.59E+03	7.49E+01	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	1.49E+03	6.53E+01	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	2.53E+03	7.53E+01	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	3.62E+03	8.31E+01	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	2.58E+02	4.52E+01	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	2.03E+03	8.28E+01	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.001575	0.02575	0		0.02752824	±	0.01235829
231Pa	27.4	0.44395	0.00099375	0.023375	0		0.01913711	±	0.01333698
210Pb	46.5	9.361	0.048	0.2825	0		1.61492151	±	0.10394698
227Ac	50	0.44395	0.002325	0.02775	0		0.03777298	±	0.01170716
234U+214Pb	53.2	9.361	0.0067375	0.06875	0		0.93176118	±	0.1146511
234Th->238U	63.3	9.361	0.020625	0.26625	0		0.73684541	±	0.05462885
230Th	67.6	9.361	0.003575	0.031125	0		1.09272749	±	0.24797872
234Th->238U	92.6	9.361	0.024	0.32375	0		0.70582442	±	0.05392643
228Ac->228Ra	129	5.5494	0.002175	0	0.0585		0.2100346	±	0.06459277
235U+226Ra	186	9.361	0.021	0.2425	0		0.81010341	±	0.06332224
227Th->227Ac	236	0.44395	0	0.0116	0		0	±	#DIV/0!
212Pb->228Th	239	5.5494	0.019875	0	0.70875		0.15551445	±	0.01039293
214Pb->226Ra	242	9.361	0.018625	0.18125	0		0.96128281	±	0.07241451
214Pb->226Ra	295	9.361	0.031625	0.3525	0		0.83927507	±	0.05657457
214Pb->226Ra	352	9.361	0.04525	0.53125	0		0.79680591	±	0.05140385
208Tl->228Th	583	5.5494	0	0	0.110875		0	±	0
214Bi->226Ra	609	9.361	0.025375	0.26375	0		0.90000825	±	0.06129958

U(ppb) = 59242.5727

Th(ppb) = 38189.1848

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)		As (Bq/g)		
234U(242)	53.2	9.361	0.003989235	0.04200514		0.90295422	±	0.06802055
234U(295)	53.2	9.361	0.004921203	0.0485051		0.9646335	±	0.06502484
234U(352)	53.2	9.361	0.005393255	0.05296812		0.96808824	±	0.06245368
235U(63.3)	186	0.44395	0.000965746	0.0124669		0.03436759	±	0.00254797
235U(92.6)	186	0.44395	0.0011052	0.01490869		0.03288866	±	0.00251276
226Ra(63.3)	186	9.361	0.020050219	0.23023919		0.81465322	±	0.06039743
226Ra(92.6)	186	9.361	0.0198948	0.22759131		0.81774294	±	0.06247724

234U/238U	=	1.282800036	±	0.122217549
230Th/234U	=	1.156049746	±	0.271315607
226Ra/230Th	=	0.745522765	±	0.172272731

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-122-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source SRM 4275C		Empty vial 3/6/96	Standard - DP1B 3/6/96		Standard - DM1B 3/6/96		Sample 3/7/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.57E+05	1.30030044
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.11E+06	1.08511965
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.36E+05	1.06686684
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.25E+05	1.0257094
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.08E+05	1.03061857
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.74E+06	1.02264407
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.03E+04	1.01230558
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.09E+05	1.01363693
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.36E+04	0.98717902
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.70E+04	0.98814192
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.09E+04	0.97670525

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.04501593	1.015180685
Eu154,155	42.9	1.02173564	0.973468654
Eu154,155	48.6	1.01648541	0.977017773
Eu155	86.4	1.0166854	0.996946057
Eu155	105	1.01891552	1.002377638
Eu154	123	1.01419234	1.002849291
Sb125	178	1.0159778	1.007395423
Eu154	248	1.01815539	1.004559417
Eu154	592	0.99573851	#DIV/0!
Sb125	600	1.02053148	1.002949973
Sb125	636	0.99072558	0.990725576

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.035logx+1.085
CF (DM1B) equation = y =0.008logx+0.981

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.0357116	0.99226592
231Pa	27.4	1.03467873	0.992502005
210Pb	46.5	1.02663915	0.994339624
227Ac	50	1.02553605	0.99459176
234U+214Pb	53.2	1.02459309	0.994807293
234Th->238U	63.3	1.02195087	0.99541123
230Th	67.6	1.02095187	0.995639574
234Th->238U	92.6	1.01616862	0.996732888
228Ac->228Ra	129	1.01112936	0.997884718
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000	
Weight (g) =		2.928		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/25/96		3/15/96		3/7/96	
231Th->235U	25.6	4.29E+02	6.27E+01	2.06E+03	1.40E+02	0	0
231Pa	27.4	1.42E+02	6.86E+01	1.87E+03	1.35E+02	0	0
210Pb	46.5	7.21E+03	1.07E+02	2.26E+04	2.04E+02	0	0
227Ac	50	2.12E+02	6.78E+01	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	9.78E+02	7.21E+01	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	3.15E+03	9.40E+01	2.13E+04	2.15E+02	0	0
230Th	67.6	4.87E+02	7.72E+01	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	3.98E+03	1.06E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	7.87E+01	6.66E+01	0	0	4.68E+03	1.18E+02
235U+226Ra	186	3.34E+03	9.97E+01	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	1.46E+02	4.80E+01	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	1.75E+03	8.32E+01	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	2.78E+03	8.46E+01	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	5.02E+03	9.89E+01	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	7.54E+03	1.06E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	2.43E+02	4.85E+01	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	3.73E+03	8.70E+01	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.0053625	0.02575	0		0.09814268	±	0.0168793
231Pa	27.4	0.44395	0.001775	0.023375	0		0.03575043	±	0.01759401
210Pb	46.5	9.361	0.090125	0.2825	0		3.14240252	±	0.19628622
227Ac	50	0.44395	0.00265	0.02775	0		0.04456181	±	0.0147972
234U+214Pb	53.2	9.361	0.012225	0.06875	0		1.7480134	±	0.17423157
234Th->238U	63.3	9.361	0.039375	0.26625	0		1.45003384	±	0.09826468
230Th	67.6	9.361	0.0060875	0.031125	0		1.9158083	±	0.34754803
234Th->238U	92.6	9.361	0.04975	0.32375	0		1.49818779	±	0.09930012
228Ac->228Ra	129	5.5494	0.00098375	0	0.0585		0.09671115	±	0.08200435
235U+226Ra	186	9.361	0.04175	0.2425	0		1.6518169	±	0.11218648
227Th->227Ac	236	0.44395	0.001825	0.0116	0		0.07158695	±	0.02628065
212Pb->228Th	239	5.5494	0.021875	0	0.70875		0.17554802	±	0.01178583
214Pb->226Ra	242	9.361	0.03475	0.18125	0		1.83947531	±	0.125842
214Pb->226Ra	295	9.361	0.06275	0.3525	0		1.70793673	±	0.10864229
214Pb->226Ra	352	9.361	0.09425	0.53125	0		1.70215688	±	0.10537598
208Tl->228Th	583	5.5494	0	0	0.110875		0	±	0
214Bi->226Ra	609	9.361	0.046625	0.26375	0		1.69606911	±	0.11025713

U(ppb) = 116583.117

Th(ppb) = 43108.7641

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)		As (Bq/g)		
234U(242)	53.2	9.361	0.007097365	0.04200514		1.66097573	±	0.1136305
234U(295)	53.2	9.361	0.008621121	0.0485051		1.74720921	±	0.11114042
234U(352)	53.2	9.361	0.009425109	0.05296812		1.74920378	±	0.10828853
235U(63.3)	186	0.44395	0.00185302	0.01252995		0.06729146	±	0.00456015
235U(92.6)	186	0.44395	0.002290988	0.01490869		0.06992175	±	0.00463442
226Ra(63.3)	186	9.361	0.039936781	0.23023919		1.66422095	±	0.11277953
226Ra(92.6)	186	9.361	0.039459013	0.22759131		1.66344214	±	0.1102532

234U/238U	=	1.185578935	±	0.094485189
230Th/234U	=	1.114405992	±	0.207497467
226Ra/230Th	=	0.868678223	±	0.159945842

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-123-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source		Empty vial	Standard - DP1B		Standard - DM1B		Sample	
SRM 4275C		3/6/96	3/6/96		3/6/96		3/7/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.63E+05	1.29047582
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.12E+06	1.08039459
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.36E+05	1.06686684
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.25E+05	1.0257094
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.10E+05	1.0257448
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.75E+06	1.01973854
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.09E+04	1.00487411
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.09E+05	1.01363693
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.33E+04	0.99353442
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.74E+04	0.97665085
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.06E+04	0.99050614

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.03712015	1.007510331
Eu154,155	42.9	1.01728659	0.96922977
Eu154,155	48.6	1.01648541	0.977017773
Eu155	86.4	1.0166854	0.996946057
Eu155	105	1.01409709	0.997637413
Eu154	123	1.01131082	1
Sb125	178	1.00851937	1
Eu154	248	1.01815539	1.004559417
Eu154	592	1.00214903	#DIV/0!
Sb125	600	1.00866375	0.9912867
Sb125	636	1.00472457	1.004724574

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.030logx+1.072
CF (DM1B) equation = y =0.013logx+0.969

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.0297528	0.98730712
231Pa	27.4	1.02886748	0.987690757
210Pb	46.5	1.02197641	0.990676888
227Ac	50	1.0210309	0.99108661
234U+214Pb	53.2	1.02022265	0.991436851
234Th->238U	63.3	1.01795789	0.992418248
230Th	67.6	1.0171016	0.992789307
234Th->238U	92.6	1.01300167	0.994565943
228Ac->228Ra	129	1.00868231	0.996437666
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000
Weight (g) =		2.834		3.001		2.994
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/26/96		3/15/96		3/7/96	
231Th->235U	25.6	2.47E+02	7.04E+01	2.06E+03	1.40E+02	0	0
231Pa	27.4	3.06E+02	6.96E+01	1.87E+03	1.35E+02	0	0
210Pb	46.5	8.29E+03	1.19E+02	2.26E+04	2.04E+02	0	0
227Ac	50	3.78E+02	7.39E+01	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	1.61E+03	8.89E+01	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	2.55E+03	1.04E+02	2.13E+04	2.15E+02	0	0
230Th	67.6	5.49E+02	8.78E+01	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	3.46E+03	1.15E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.68E+03	1.18E+02
235U+226Ra	186	4.55E+03	1.20E+02	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	7.72E+01	4.38E+01	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	1.53E+03	9.04E+01	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	4.59E+03	1.03E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	6.95E+03	1.23E+02	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	1.28E+04	1.42E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	3.17E+02	5.85E+01	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	6.49E+03	1.08E+02	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.0030875	0.02575	0	0.05804475	±	0.01736065
231Pa	27.4	0.44395	0.003825	0.023375	0	0.07914791	±	0.01947517
210Pb	46.5	9.361	0.103625	0.2825	0	3.71599703	±	0.23169277
227Ac	50	0.44395	0.004725	0.02775	0	0.08172933	±	0.01756817
234U+214Pb	53.2	9.361	0.020125	0.06875	0	2.96037374	±	0.25721134
234Th->238U	63.3	9.361	0.031875	0.26625	0	1.20803296	±	0.08848581
230Th	67.6	9.361	0.0068625	0.031125	0	2.2229297	±	0.40599624
234Th->238U	92.6	9.361	0.04325	0.32375	0	1.34145124	±	0.0928264
228Ac->228Ra	129	5.5494	0	0	0.0585	0	±	#DIV/0!
235U+226Ra	186	9.361	0.056875	0.2425	0	2.32486672	±	0.1545162
227Th->227Ac	236	0.44395	0.000965	0.0116	0	0.03910835	±	0.02308984
212Pb->228Th	239	5.5494	0.019125	0	0.70875	0.15856983	±	0.01122211
214Pb->226Ra	242	9.361	0.057375	0.18125	0	3.1378565	±	0.20474748
214Pb->226Ra	295	9.361	0.111875	0.3525	0	3.1460261	±	0.19512966
214Pb->226Ra	352	9.361	0.16	0.53125	0	2.98544747	±	0.18301428
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	0
214Bi->226Ra	609	9.361	0.081125	0.26375	0	3.04895234	±	0.19183856

U(ppb) = 97126.1805

Th(ppb) = 38939.4829

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.011658869	0.04200514	2.80696712	±	0.1831567
234U(295)	53.2	9.361	0.013699758	0.0485051	2.85633287	±	0.17716167
234U(352)	53.2	9.361	0.015371869	0.05296812	2.93491464	±	0.17991651
235U(63.3)	186	0.44395	0.001494203	0.01248099	0.05628087	±	0.00412245
235U(92.6)	186	0.44395	0.001991663	0.01490869	0.06280244	±	0.00434583
226Ra(63.3)	186	9.361	0.055407156	0.23023919	2.38547578	±	0.17473096
226Ra(92.6)	186	9.361	0.054883338	0.22759131	2.39041457	±	0.16541308

234U/238U	=	2.372511048	±	0.190213476
230Th/234U	=	0.77560161	±	0.143894558
226Ra/230Th	=	1.073122454	±	0.20111436

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-123-GAM4**

Self attenuation correction

A/O = [ln(T/I)]/[(T/I)-1]
T = transmitted intensity through sample or standards
I = intensity through empty vial

Point source		Empty vial	Standard - DP1B		Standard - DM1B		Sample	
SRM 4275C		3/6/96	3/6/96		3/6/96		3/7/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.19E+05	3.93E+05	1.24428767	3.69E+05	1.28085616	3.63E+05	1.29047582
Eu154,155	42.9	1.31E+06	1.16E+06	1.06203562	1.05E+06	1.11469398	1.12E+06	1.08039459
Eu154,155	48.6	2.69E+05	2.44E+05	1.04956434	2.25E+05	1.09196257	2.36E+05	1.06686684
Eu155	86.4	3.42E+05	3.36E+05	1.00887589	3.23E+05	1.02885145	3.25E+05	1.0257094
Eu155	105	2.21E+05	2.16E+05	1.01148579	2.09E+05	1.02817395	2.10E+05	1.0257448
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.75E+06	1.01973854	1.75E+06	1.01973854
Sb125	178	4.13E+04	4.16E+04	0.99638553	4.09E+04	1.00487411	4.09E+04	1.00487411
Eu154	248	1.12E+05	1.13E+05	0.99556211	1.10E+05	1.00903631	1.09E+05	1.01363693
Eu154	592	2.30E+04	2.34E+04	0.99140387	2.30E+04	#DIV/0!	2.33E+04	0.99353442
Sb125	600	1.66E+04	1.77E+04	0.96826207	1.71E+04	0.9852355	1.74E+04	0.97665085
Sb125	636	1.04E+04	1.07E+04	0.98584842	1.07E+04	0.98584842	1.06E+04	0.99050614

Sample correction factor (CF) relative to each normalization standard

CF= (A/O of sample)/(A/O of DP1B and DM1B)

Isotope	keV	CF (DP1B)	CF (DM1B)
Sb125	27.3	1.03712015	1.007510331
Eu154,155	42.9	1.01728659	0.96922977
Eu154,155	48.6	1.01648541	0.977017773
Eu155	86.4	1.0166854	0.996946057
Eu155	105	1.01409709	0.997637413
Eu154	123	1.01131082	1
Sb125	178	1.00851937	1
Eu154	248	1.01815539	1.004559417
Eu154	592	1.00214903	#DIV/0!
Sb125	600	1.00866375	0.9912867
Sb125	636	1.00472457	1.004724574

Fit a polynomial curve through plot of CF versus keV for peaks < 200 keV using cricket graph.
Calculate CFs for natural series gamma peaks using polynomial equation.

CF (DP1B) equation = y = -0.030logx+1.072
CF (DM1B) equation = y =0.013logx+0.969

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.0297528	0.98730712
231Pa	27.4	1.02886748	0.987690757
210Pb	46.5	1.02197641	0.990676888
227Ac	50	1.0210309	0.99108661
234U+214Pb	53.2	1.02022265	0.991436851
234Th->238U	63.3	1.01795789	0.992418248
230Th	67.6	1.0171016	0.992789307
234Th->238U	92.6	1.01300167	0.994565943
228Ac->228Ra	129	1.00868231	0.996437666
235U+226Ra	186	1	1
227Th->227Ac	236	1	1
212Pb->228Th	239	1	1
214Pb->226Ra	242	1	1
214Pb->226Ra	295	1	1
214Pb->226Ra	352	1	1
208Tl->228Th	583	1	1
214Bi->226Ra	609	1	1

Sample activity calculations

As (Bq/g) = Is * CFs * An * Wn / In * Ws

As = radionuclide activity of sample (Bq/g)
Is = peak intensity (cps)
CFs = correction factor relative to normalization standard n
Ws = weight of sample (g)
An = nominal radionuclide activity of the normalization standard (Bq/g)
In = peak intensity (cps)
Wn = weight of normalization standard (g)
* note Is and In should be background-corrected values

Counting time (sec) =		80000		80000		80000
Weight (g) =		2.834		3.001		2.994
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	3/26/96		3/15/96		3/7/96	
231Th->235U	25.6	2.88E+02	7.79E+01	2.06E+03	1.40E+02	0	0
231Pa	27.4	2.99E+02	7.47E+01	1.87E+03	1.35E+02	0	0
210Pb	46.5	8.16E+03	1.20E+02	2.26E+04	2.04E+02	0	0
227Ac	50	3.36E+02	7.83E+01	2.22E+03	1.47E+02	0	0
234U+214Pb	53.2	1.77E+03	8.15E+01	5.50E+03	1.65E+02	0	0
234Th->238U	63.3	2.63E+03	1.03E+02	2.13E+04	2.15E+02	0	0
230Th	67.6	3.53E+02	9.03E+01	2.49E+03	1.61E+02	0	0
234Th->238U	92.6	3.44E+03	1.09E+02	2.59E+04	2.37E+02	0	0
228Ac->228Ra	129	1.68E+02	1.06E+02	0	0	4.68E+03	1.18E+02
235U+226Ra	186	4.52E+03	1.19E+02	1.94E+04	2.14E+02	0	0
227Th->227Ac	236	1.23E+02	5.39E+01	9.28E+02	1.41E+02	0	0
212Pb->228Th	239	1.52E+03	8.67E+01	0	0	5.67E+04	3.50E+02
214Pb->226Ra	242	4.40E+03	1.05E+02	1.45E+04	1.80E+02	0	0
214Pb->226Ra	295	8.71E+03	1.21E+02	2.82E+04	2.15E+02	0	0
214Pb->226Ra	352	1.28E+04	1.40E+02	4.25E+04	2.51E+02	0	0
208Tl->228Th	583	3.22E+02	5.18E+01	0	0	8.87E+03	1.26E+02
214Bi->226Ra	609	6.45E+03	1.05E+02	2.11E+04	1.91E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.0036	0.02575	0	0.06767971	±	0.01930728
231Pa	27.4	0.44395	0.0037375	0.023375	0	0.07733734	±	0.02064026
210Pb	46.5	9.361	0.102	0.2825	0	3.65772446	±	0.22835867
227Ac	50	0.44395	0.0042	0.02775	0	0.07264829	±	0.01813157
234U+214Pb	53.2	9.361	0.022125	0.06875	0	3.25457237	±	0.26480622
234Th->238U	63.3	9.361	0.032875	0.26625	0	1.24593203	±	0.09015303
230Th	67.6	9.361	0.0044125	0.031125	0	1.42931546	±	0.38675635
234Th->238U	92.6	9.361	0.043	0.32375	0	1.33369719	±	0.09131433
228Ac->228Ra	129	5.5494	0.0021	0	0.0585	0.21277961	±	0.13473262
235U+226Ra	186	9.361	0.0565	0.2425	0	2.30953793	±	0.15345511
227Th->227Ac	236	0.44395	0.0015375	0.0116	0	0.06230994	±	0.02914047
212Pb->228Th	239	5.5494	0.019	0	0.70875	0.15753342	±	0.01168363
214Pb->226Ra	242	9.361	0.055	0.18125	0	3.00796701	±	0.19778556
214Pb->226Ra	295	9.361	0.108875	0.3525	0	3.06166339	±	0.18999877
214Pb->226Ra	352	9.361	0.16	0.53125	0	2.98544747	±	0.18293044
208Tl->228Th	583	5.5494	0	0	0.110875	0	±	0
214Bi->226Ra	609	9.361	0.080625	0.26375	0	3.03016065	±	0.19036909

U(ppb) = 100173.276

Th(ppb) = 38684.9765

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.014009319	0.04200514	3.37285694	±	0.2217785
234U(295)	53.2	9.361	0.015872055	0.0485051	3.30924621	±	0.20536311
234U(352)	53.2	9.361	0.017371869	0.05296812	3.31676991	±	0.2032319
235U(63.3)	186	0.44395	0.00154108	0.01248099	0.05804654	±	0.00420013
235U(92.6)	186	0.44395	0.00198015	0.01490869	0.06243942	±	0.00427504
226Ra(63.3)	186	9.361	0.054986106	0.23023919	2.36734808	±	0.17129635
226Ra(92.6)	186	9.361	0.05451985	0.22759131	2.37458307	±	0.16258073

234U/238U	=	2.675071832	±	0.213417543
230Th/234U	=	0.428842965	±	0.116931368
226Ra/230Th	=	1.656281029	±	0.453148966

```
*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************

Report Generated On              :  3-08-96 11:40:53 AM

Sample Title                     : Attenuation empty vial
Spectrum Description             : Attenuation empty vial + 4275C
Sample Identification            : JDPATT_3
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-06-96  9:00:42 AM

Live Time                        :     1800.0 seconds
Real Time                        :     1999.3 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
```

****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: Attenuation empty vial
Peak Locate Performed on: 3-08-96 11:40:47 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	46.11	0.4115	8.05	4.23
2	101.83	0.1130	17.31	37.07
3	116.14	0.3645	20.03	5.21
4	122.45	0.2114	21.15	10.90
5	158.89	0.0478	27.45	206.30
6	191.84	0.1538	31.35	25.59
7	205.54	0.0709	35.57	97.59
8	248.95	0.0389	42.82	348.30
9	262.07	0.1112	45.40	39.75
10	281.35	0.0499	48.72	181.92
11	289.05	0.0710	50.05	92.94
12	316.75	0.1648	54.75	13.66
13	336.87	0.2257	58.37	5.78
14	346.93	0.0963	60.08	49.56
15	442.71	0.3182	76.77	4.22
16	500.07	0.0371	86.64	314.94
17	608.35	0.0385	105.42	245.07
18	653.60	0.2239	112.95	7.73
19	681.59	0.3218	117.80	3.43
20	710.83	0.0221	123.21	740.67
21	759.74	0.2609	131.68	5.32
22	778.82	0.3534	135.00	3.48
23	843.22	0.3090	146.10	3.65
24	867.93	0.2873	150.12	3.46
25	956.97	0.1990	165.89	5.25
26	990.63	0.3763	171.75	3.31
27	997.59	0.2133	172.92	7.42
28	1018.20	0.0545	176.50	104.02
29	1087.11	0.1068	188.44	28.06
30	1179.07	0.1865	204.21	8.69
31	1201.57	0.2196	208.60	6.50
32	1431.69	0.0392	248.21	174.15
33	1678.98	0.1504	291.02	9.87
34	1712.03	0.2523	296.80	4.93
35	1740.55	0.2742	301.72	3.32
36	1761.62	0.2803	305.53	3.43
37	1854.41	0.2041	321.99	6.64
38	2142.24	0.0999	371.44	24.35
39	2196.99	0.1241	381.03	14.65
40	2317.05	0.1577	401.67	9.89
41	2470.85	0.0457	428.42	102.49

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2566.65	0.1061	444.95	18.17
43	2628.60	0.1316	455.77	11.26
44	2649.15	0.2112	459.35	5.36
45	2675.68	0.0618	463.96	54.10
46	2761.48	0.1541	479.02	8.97
47	3220.12	0.1511	558.22	8.95
48	3360.84	0.0909	582.78	22.31
49	3417.27	0.0521	592.54	66.72
50	3468.18	0.0577	601.41	54.43
51	3503.67	0.0884	607.50	23.93
52	3610.17	0.1540	626.03	8.50
53	3626.41	0.1809	628.75	6.06
54	3672.23	0.0682	636.74	38.35
55	3751.83	0.2233	650.26	4.26
56	3877.85	0.1406	672.42	9.60
57	3907.85	0.2040	677.54	4.00
58	3998.32	0.0746	693.36	30.98
59	4028.56	0.0984	698.41	19.03

Errors quoted at 0.000 sigma

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

Detector Name: DET01
Sample Title: Attenuation empty vial
Peak Analysis Performed on: 3-08-96 11:40:51 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	43-	52	46.94	8.05	7.55E+02	0.00	2.29E+04
	2	88-	109	100.29	17.31	3.49E+04	0.00	4.86E+04
M	3	111-	130	116.00	20.03	5.73E+02	0.00	1.83E+04
m	4	111-	130	122.44	21.15	3.43E+03	0.00	2.05E+04
	5	156-	167	158.77	27.45	6.19E+05	0.00	5.80E+04
	6	170-	196	181.27	31.35	1.68E+05	0.00	8.39E+04
	7	196-	210	205.58	35.57	4.81E+04	0.00	6.18E+04
	8	241-	258	247.40	42.82	1.31E+06	0.00	1.07E+05
	9	258-	266	262.25	45.40	1.13E+04	0.00	2.77E+04
M	10	271-	299	281.43	48.72	2.69E+05	0.00	2.40E+04
m	11	271-	299	289.07	50.05	7.38E+04	0.00	1.66E+04
	12	306-	325	316.20	54.75	5.47E+03	0.00	2.99E+04
	13	332-	353	337.08	58.37	2.38E+03	0.00	1.44E+04
	14	332-	353	346.90	60.08	1.38E+04	0.00	1.43E+04
	15	440-	448	443.13	76.77	5.28E+02	0.00	1.65E+04
	16	491-	512	500.04	86.64	3.42E+05	0.00	5.57E+04
	17	595-	621	608.34	105.42	2.21E+05	0.00	6.15E+04
	18	639-	660	651.79	112.95	2.93E+03	0.00	4.93E+04
	19	661-	695	679.76	117.80	1.10E+04	0.00	8.48E+04
	20	696-	724	710.90	123.21	1.82E+06	0.00	6.20E+04
	21	756-	764	759.76	131.68	5.34E+02	0.00	1.31E+04
	22	772-	787	778.89	135.00	3.62E+02	0.00	2.21E+04
	23	833-	848	842.94	146.10	5.48E+02	0.00	2.16E+04
	24	856-	874	866.07	150.12	1.10E+03	0.00	2.46E+04
	25	950-	967	957.05	165.89	2.55E+03	0.00	2.15E+04
M	26	986-	1003	990.84	171.75	4.86E+02	0.00	1.20E+04
m	27	986-	1003	997.54	172.92	1.10E+03	0.00	1.20E+04
	28	1012-	1025	1018.21	176.50	4.13E+04	0.00	1.50E+04
	29	1076-	1096	1087.06	188.44	5.58E+03	0.00	2.24E+04
	30	1168-	1184	1177.98	204.21	1.57E+03	0.00	1.86E+04
	31	1194-	1216	1203.30	208.60	1.61E+03	0.00	2.49E+04
	32	1424-	1447	1431.71	248.21	1.12E+05	0.00	2.47E+04
	33	1670-	1686	1678.52	291.02	2.67E+03	0.00	1.32E+04
	34	1706-	1717	1711.87	296.80	2.44E+02	0.00	9.25E+03
	35	1735-	1746	1740.23	301.72	3.49E+02	0.00	8.49E+03
	36	1756-	1769	1762.19	305.53	3.28E+02	0.00	9.79E+03
	37	1849-	1867	1857.13	321.99	1.71E+03	0.00	1.25E+04
	38	2132-	2154	2142.26	371.44	4.33E+03	0.00	1.49E+04
	39	2186-	2213	2197.53	381.03	3.53E+03	0.00	1.74E+04
	40	2308-	2323	2316.57	401.67	1.14E+03	0.00	1.08E+04
	41	2459-	2483	2470.81	428.42	4.44E+04	0.00	1.55E+04
	42	2552-	2576	2566.09	444.95	4.15E+03	0.00	1.52E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	43	2618-	2656	2628.51	455.77	2.27E+03	0.00	1.28E+04
m	44	2618-	2656	2649.14	459.35	4.59E+02	0.00	1.32E+04
	45	2662-	2690	2675.72	463.96	1.55E+04	0.00	1.66E+04
	46	2754-	2777	2762.56	479.02	1.51E+03	0.00	1.34E+04
	47	3204-	3234	3219.20	558.22	1.38E+03	0.00	1.48E+04
	48	3351-	3372	3360.86	582.78	3.91E+03	0.00	1.03E+04
	49	3401-	3435	3417.11	592.54	2.30E+04	0.00	1.55E+04
	50	3452-	3487	3468.29	601.41	1.66E+04	0.00	1.55E+04
	51	3487-	3513	3503.38	607.50	4.40E+03	0.00	1.14E+04
M	52	3599-	3636	3610.23	626.03	1.33E+03	0.00	9.45E+03
m	53	3599-	3636	3625.92	628.75	8.40E+02	0.00	1.24E+04
	54	3656-	3685	3671.96	636.74	1.04E+04	0.00	1.27E+04
	55	3740-	3758	3749.95	650.26	5.34E+02	0.00	7.60E+03
	56	3859-	3892	3877.71	672.42	1.52E+03	0.00	1.42E+04
	57	3892-	3917	3907.25	677.54	6.59E+02	0.00	1.02E+04
	58	3982-	4013	3998.44	693.36	7.11E+03	0.00	1.19E+04
	59	4019-	4035	4027.58	698.41	2.92E+03	0.00	2.34E+03

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

Errors quoted at 0.000 sigma

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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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Report Generated On              :  3-08-96 11:44:09 AM

Sample Title                     : Attenuation DP1B
Spectrum Description             : DP1B attenuation
Sample Identification            : DP1BAT_3
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-06-96  9:35:15 AM

Live Time                        :     1800.0 seconds
Real Time                        :     1993.4 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
* ** P E A K L O C A T E R E P O R T *****
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Detector Name: DET01
Sample Title: Attenuation DP1B
Peak Locate Performed on: 3-08-96 11:44:04 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	95.41	0.3682	16.44	4.34
2	101.84	0.1301	17.54	28.47
3	115.81	0.4234	20.01	4.35
4	122.44	0.2344	21.14	10.23
5	158.85	0.0539	27.44	162.51
6	191.66	0.1643	31.36	22.42
7	205.43	0.0753	35.55	87.23
8	224.29	0.2901	38.21	5.44
9	248.90	0.0404	42.80	322.15
10	262.06	0.1141	45.37	37.33
11	281.26	0.0513	48.71	176.23
12	289.01	0.0725	50.04	89.70
13	316.96	0.2510	54.71	7.17
14	346.93	0.0993	60.08	46.41
15	443.71	0.2998	76.99	3.40
16	500.03	0.0373	86.62	312.27
17	523.78	0.4093	90.83	3.45
18	608.29	0.0389	105.40	243.96
19	631.68	0.3663	109.53	3.51
20	653.68	0.2126	113.04	8.16
21	675.49	0.2510	117.27	5.57
22	682.63	0.2816	118.44	4.21
23	710.75	0.0222	123.19	728.48
24	759.15	0.2737	131.74	4.31
25	843.26	0.3317	145.81	3.24
26	956.85	0.2092	165.73	4.75
27	997.62	0.2228	172.98	7.12
28	1018.15	0.0545	176.49	104.98
29	1087.05	0.1068	188.45	27.40
30	1178.93	0.1954	204.56	7.76
31	1201.43	0.2195	208.48	6.63
32	1315.23	0.2485	227.96	4.82
33	1418.26	0.3198	246.05	3.50
34	1431.62	0.0391	248.20	174.24
35	1678.46	0.1574	290.91	9.05
36	1854.44	0.2063	321.85	5.79
37	2142.09	0.0984	371.40	24.30
38	2196.91	0.1176	380.89	16.67
39	2316.77	0.1484	401.71	10.78
40	2470.73	0.0455	428.40	102.97
41	2566.61	0.1121	445.00	15.48

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2628.28	0.1617	455.75	8.30
43	2675.63	0.0614	463.95	55.66
44	2702.24	0.2282	468.65	4.39
45	2761.62	0.1618	478.63	9.35
46	3220.39	0.1556	558.39	7.69
47	3360.95	0.0944	582.71	20.69
48	3417.07	0.0519	592.55	67.18
49	3468.13	0.0567	601.40	57.00
50	3503.36	0.0864	607.53	24.45
51	3611.00	0.1583	626.13	8.23
52	3625.33	0.2555	628.57	3.59
53	3672.26	0.0670	636.70	40.07
54	3877.13	0.1257	672.40	11.94
55	3906.11	0.2186	677.21	3.24
56	3998.19	0.0732	693.27	31.55
57	4028.42	0.0991	698.58	18.73

Errors quoted at 0.000 sigma

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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: DET01
Sample Title: Attenuation DP1B
Peak Analysis Performed on: 3-08-96 11:44:07 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	1	88-	109	95.26	16.44	4.24E+03	0.00	2.30E+04
m	2	88-	109	101.62	17.54	1.79E+04	0.00	2.30E+04
M	3	112-	130	115.90	20.01	4.59E+02	0.00	1.70E+04
m	4	112-	130	122.38	21.14	2.51E+03	0.00	1.72E+04
	5	156-	167	158.72	27.44	3.93E+05	0.00	5.02E+04
	6	170-	196	181.30	31.36	1.28E+05	0.00	8.33E+04
	7	196-	211	205.50	35.55	3.77E+04	0.00	6.55E+04
	8	214-	228	220.82	38.21	6.78E+03	0.00	7.53E+04
	9	234-	258	247.28	42.80	1.16E+06	0.00	1.46E+05
	10	258-	267	262.09	45.37	8.99E+03	0.00	3.11E+04
M	11	271-	299	281.38	48.71	2.44E+05	0.00	2.47E+04
m	12	271-	299	289.02	50.04	6.81E+04	0.00	1.64E+04
	13	306-	327	315.94	54.71	2.18E+03	0.00	3.18E+04
	14	341-	353	346.94	60.08	1.15E+04	0.00	2.00E+04
	15	438-	450	444.40	76.99	9.42E+02	0.00	2.56E+04
	16	487-	512	499.96	86.62	3.36E+05	0.00	6.73E+04
	17	516-	530	524.19	90.83	5.27E+02	0.00	3.99E+04
	18	595-	619	608.25	105.40	2.16E+05	0.00	6.40E+04
	19	626-	638	632.04	109.53	9.17E+02	0.00	3.23E+04
	20	640-	659	652.28	113.04	2.26E+03	0.00	5.20E+04
M	21	669-	696	676.70	117.27	5.48E+03	0.00	5.15E+04
m	22	669-	696	683.42	118.44	5.49E+03	0.00	6.40E+04
	23	700-	724	710.84	123.19	1.79E+06	0.00	5.64E+04
	24	755-	773	760.12	131.74	8.97E+02	0.00	2.70E+04
	25	833-	848	841.23	145.81	6.19E+02	0.00	2.16E+04
	26	948-	963	956.08	165.73	2.72E+03	0.00	1.95E+04
	27	993-	1002	997.89	172.98	8.37E+02	0.00	1.17E+04
	28	1010-	1025	1018.13	176.49	4.16E+04	0.00	1.79E+04
	29	1080-	1098	1087.13	188.45	5.38E+03	0.00	2.13E+04
	30	1172-	1193	1179.98	204.56	1.36E+03	0.00	2.54E+04
	31	1193-	1213	1202.61	208.48	1.03E+03	0.00	2.42E+04
	32	1309-	1321	1314.94	227.96	7.70E+02	0.00	1.40E+04
M	33	1414-	1442	1419.22	246.05	6.25E+02	0.00	1.46E+04
m	34	1414-	1442	1431.61	248.20	1.13E+05	0.00	1.58E+04
	35	1667-	1686	1677.89	290.91	2.14E+03	0.00	1.61E+04
	36	1846-	1870	1856.30	321.85	1.23E+03	0.00	1.75E+04
	37	2132-	2151	2142.01	371.40	3.91E+03	0.00	1.35E+04
	38	2189-	2204	2196.75	380.89	2.61E+03	0.00	1.08E+04
	39	2310-	2325	2316.75	401.71	1.46E+03	0.00	1.10E+04
	40	2454-	2482	2470.66	428.40	4.62E+04	0.00	1.89E+04
	41	2555-	2579	2566.42	445.00	3.72E+03	0.00	1.57E+04
	42	2620-	2639	2628.39	455.75	1.44E+03	0.00	1.24E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	2661-	2692	2675.66	463.95	1.54E+04	0.00	1.89E+04
	44	2692-	2712	2702.74	468.65	3.40E+02	0.00	1.26E+04
	45	2748-	2772	2760.31	478.63	1.54E+03	0.00	1.47E+04
	46	3209-	3229	3220.22	558.39	1.33E+03	0.00	1.03E+04
	47	3346-	3374	3360.46	582.71	4.34E+03	0.00	1.34E+04
	48	3405-	3435	3417.18	592.55	2.34E+04	0.00	1.39E+04
	49	3451-	3491	3468.19	601.40	1.77E+04	0.00	1.78E+04
	50	3491-	3515	3503.56	607.53	4.83E+03	0.00	1.08E+04
M	51	3597-	3631	3610.82	626.13	1.23E+03	0.00	1.06E+04
m	52	3597-	3631	3624.87	628.57	4.87E+02	0.00	1.07E+04
	53	3649-	3685	3671.76	636.70	1.07E+04	0.00	1.59E+04
	54	3869-	3889	3877.62	672.40	1.91E+03	0.00	8.80E+03
	55	3889-	3913	3905.31	677.21	3.28E+02	0.00	1.04E+04
	56	3983-	4010	3997.92	693.27	7.13E+03	0.00	1.06E+04
	57	4022-	4035	4028.53	698.58	2.30E+03	0.00	1.79E+03

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

Errors quoted at 0.000 sigma

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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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Report Generated On	:	3-08-96 11:44:54 AM
Sample Title	:	Attenuation DM1B
Spectrum Description	:	DM1B attenuation
Sample Identification	:	DM1BAT_3
Sample Type	:	
Sample Geometry	:	
Peak Locate Threshold	:	3.00
Peak Locate Range (in channels)	:	1 - 4096
Peak Area Range (in channels)	:	1 - 4096
Identification Energy Tolerance	:	1.000 keV
Sample Size	:	0.000E+00 Unit
Sample Taken On	:	
Acquisition Started	:	3-06-96 10:09:45 AM
Live Time	:	1800.0 seconds
Real Time	:	1986.4 seconds

Energy Calibration Used Done On	:	1-16-96
Efficiency Calibration Used Done On	:	????????

****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: Attenuation DM1B
Peak Locate Performed on: 3-08-96 11:44:48 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	95.28	0.3817	16.38	4.39
2	101.86	0.1369	17.54	27.34
3	122.39	0.2507	21.16	7.63
4	158.84	0.0557	27.40	152.66
5	184.00	0.2332	31.05	18.39
6	191.96	0.1592	33.19	19.14
7	205.49	0.0791	35.54	80.86
8	248.89	0.0413	42.80	308.72
9	262.01	0.1177	45.37	35.74
10	281.26	0.0523	48.71	170.03
11	288.99	0.0742	50.04	85.13
12	316.28	0.2634	54.85	5.63
13	346.93	0.0992	60.08	46.71
14	443.89	0.3220	76.90	4.33
15	500.04	0.0377	86.62	306.32
16	539.34	0.3130	93.61	4.61
17	608.29	0.0393	105.41	239.10
18	631.36	0.3458	109.37	3.01
19	653.53	0.2213	113.03	7.45
20	675.30	0.2655	117.22	6.16
21	682.42	0.2488	118.39	3.81
22	710.75	0.0224	123.19	718.54
23	957.01	0.2215	165.62	4.74
24	997.38	0.2380	172.98	6.45
25	1018.15	0.0548	176.49	103.65
26	1086.96	0.1075	188.43	27.41
27	1178.36	0.1934	204.23	7.25
28	1200.95	0.2325	208.56	5.13
29	1315.76	0.2436	228.23	4.64
30	1340.30	0.2548	232.48	4.95
31	1377.33	0.3202	238.31	3.44
32	1431.61	0.0393	248.20	171.37
33	1521.40	0.2961	263.81	3.67
34	1678.24	0.1735	290.93	6.98
35	1856.03	0.2052	321.70	3.15
36	2142.10	0.0999	371.41	23.86
37	2196.71	0.1191	381.07	17.98
38	2316.97	0.1582	401.72	9.30
39	2470.76	0.0458	428.41	101.99
40	2566.45	0.1080	444.94	17.08
41	2628.69	0.1759	455.75	6.93

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2647.16	0.2759	459.10	3.44
43	2675.70	0.0623	463.96	52.44
44	2761.66	0.1527	478.83	8.19
45	3219.93	0.1484	558.22	9.23
46	3360.59	0.0935	582.76	21.59
47	3417.07	0.0520	592.54	67.76
48	3468.21	0.0569	601.39	56.53
49	3503.45	0.0885	607.51	23.40
50	3542.00	0.2348	614.07	3.87
51	3610.54	0.1411	626.35	9.97
52	3672.37	0.0674	636.69	38.63
53	3750.39	0.2551	650.54	3.68
54	3876.76	0.1341	672.36	9.83
55	3906.07	0.2428	676.97	3.38
56	3998.29	0.0737	693.33	31.35
57	4028.23	0.1001	698.26	18.19

Errors quoted at 0.000 sigma

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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: DET01
Sample Title: Attenuation DM1B
Peak Analysis Performed on: 3-08-96 11:44:52 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	1	88-	109	94.94	16.38	4.00E+03	0.00	2.24E+04
m	2	88-	109	101.63	17.54	1.51E+04	0.00	2.25E+04
	3	119-	130	122.49	21.16	2.16E+03	0.00	2.55E+04
	4	150-	167	158.49	27.40	3.69E+05	0.00	6.53E+04
M	5	170-	211	179.51	31.05	8.36E+04	0.00	3.21E+04
m	6	170-	211	191.85	33.19	1.13E+04	0.00	3.50E+04
m	7	170-	211	205.43	35.54	4.68E+04	0.00	3.37E+04
	8	234-	258	247.27	42.80	1.05E+06	0.00	1.42E+05
	9	258-	267	262.09	45.37	8.38E+03	0.00	2.95E+04
M	10	271-	299	281.36	48.71	2.25E+05	0.00	2.34E+04
m	11	271-	299	289.00	50.04	6.23E+04	0.00	1.56E+04
	12	311-	324	316.78	54.85	1.32E+03	0.00	1.97E+04
	13	341-	357	346.94	60.08	1.07E+04	0.00	2.53E+04
	14	438-	448	443.90	76.90	6.35E+02	0.00	2.13E+04
	15	487-	508	499.95	86.62	3.23E+05	0.00	5.67E+04
	16	535-	546	540.23	93.61	6.16E+02	0.00	3.10E+04
	17	599-	617	608.27	105.41	2.09E+05	0.00	4.77E+04
	18	626-	636	631.14	109.37	4.55E+02	0.00	2.70E+04
	19	643-	658	652.21	113.03	2.26E+03	0.00	4.11E+04
M	20	661-	696	676.39	117.22	4.91E+03	0.00	6.17E+04
m	21	661-	696	683.12	118.39	5.98E+03	0.00	6.34E+04
	22	696-	724	710.83	123.19	1.75E+06	0.00	6.86E+04
	23	943-	972	955.47	165.62	2.55E+03	0.00	3.54E+04
	24	993-	1008	997.91	172.98	4.33E+02	0.00	1.85E+04
	25	1008-	1029	1018.16	176.49	4.09E+04	0.00	2.38E+04
	26	1081-	1093	1087.00	188.43	5.51E+03	0.00	1.42E+04
	27	1168-	1186	1178.08	204.23	1.17E+03	0.00	2.15E+04
	28	1194-	1213	1203.09	208.56	1.73E+03	0.00	2.20E+04
	29	1308-	1325	1316.46	228.23	7.22E+02	0.00	1.89E+04
	30	1336-	1348	1340.96	232.48	3.76E+02	0.00	1.34E+04
	31	1363-	1386	1374.58	238.31	1.31E+03	0.00	2.57E+04
	32	1422-	1444	1431.64	248.20	1.10E+05	0.00	2.47E+04
	33	1518-	1525	1521.62	263.81	2.71E+02	0.00	7.22E+03
	34	1670-	1687	1678.02	290.93	1.66E+03	0.00	1.44E+04
	35	1840-	1866	1855.46	321.70	1.29E+03	0.00	1.87E+04
	36	2134-	2151	2142.06	371.41	4.20E+03	0.00	1.18E+04
	37	2189-	2212	2197.76	381.07	2.75E+03	0.00	1.58E+04
	38	2309-	2325	2316.82	401.72	1.36E+03	0.00	1.16E+04
	39	2460-	2483	2470.71	428.41	4.55E+04	0.00	1.53E+04
	40	2557-	2578	2566.08	444.94	4.00E+03	0.00	1.33E+04
M	41	2616-	2658	2628.36	455.75	1.65E+03	0.00	1.45E+04
m	42	2616-	2658	2647.72	459.10	3.94E+02	0.00	1.77E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2664-	2691	2675.72	463.96	1.54E+04	0.00	1.64E+04
44	2752-	2771	2761.46	478.83	1.17E+03	0.00	1.15E+04
45	3208-	3229	3219.26	558.22	1.30E+03	0.00	1.05E+04
46	3349-	3372	3360.74	582.76	4.04E+03	0.00	1.12E+04
47	3402-	3432	3417.15	592.54	2.30E+04	0.00	1.39E+04
48	3454-	3483	3468.15	601.39	1.71E+04	0.00	1.33E+04
49	3491-	3515	3503.44	607.51	4.86E+03	0.00	1.05E+04
50	3534-	3552	3541.29	614.07	4.25E+02	0.00	7.68E+03
51	3597-	3632	3612.07	626.35	1.37E+03	0.00	1.51E+04
52	3651-	3688	3671.72	636.69	1.07E+04	0.00	1.58E+04
53	3745-	3762	3751.55	650.54	2.01E+02	0.00	7.47E+03
54	3865-	3893	3877.36	672.36	1.32E+03	0.00	1.23E+04
55	3893-	3914	3903.96	676.97	3.68E+02	0.00	8.97E+03
56	3984-	4014	3998.27	693.33	7.14E+03	0.00	1.15E+04
57	4017-	4035	4026.72	698.26	3.28E+03	0.00	2.75E+03

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

Errors quoted at 0.000 sigma

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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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Report Generated On              :  3-08-96 11:45:38 AM

Sample Title                     : Attenuation BL5D
Spectrum Description             : BL5D attenuation
Sample Identification            : BL5DAT_3
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-06-96 10:44:33 AM

Live Time                        :     1800.0 seconds
Real Time                        :     1994.5 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
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Detector Name: DET01
Sample Title: Attenuation BL5D
Peak Locate Performed on: 3-08-96 11:45:31 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	75.99	0.5511	13.19	3.25
2	94.85	0.2949	16.36	4.92
3	101.62	0.1328	17.50	24.29
4	122.35	0.2542	20.88	10.13
5	158.89	0.0542	27.45	161.03
6	184.00	0.2248	31.06	19.79
7	191.83	0.1640	33.13	22.59
8	205.52	0.0768	35.55	84.55
9	248.94	0.0406	42.81	320.47
10	262.06	0.1180	45.37	35.99
11	269.10	0.1895	46.61	12.96
12	281.33	0.0516	48.72	171.01
13	289.03	0.0730	50.05	88.24
14	307.88	0.2530	53.32	7.99
15	316.92	0.2546	54.85	6.94
16	346.95	0.0985	60.10	47.51
17	365.89	0.1595	63.27	17.65
18	420.73	0.2845	72.80	6.18
19	432.53	0.1275	74.92	24.25
20	445.44	0.1121	77.18	29.61
21	500.05	0.0376	86.64	306.83
22	518.92	0.3141	90.06	4.97
23	534.83	0.1777	92.68	8.66
24	546.69	0.1979	94.74	10.10
25	568.50	0.1579	98.53	13.92
26	608.30	0.0391	105.41	240.40
27	653.57	0.2206	113.29	7.02
28	675.50	0.2504	117.33	6.40
29	682.65	0.2516	118.55	4.25
30	710.76	0.0224	123.20	720.56
31	830.23	0.2931	143.94	4.55
32	890.28	0.3353	154.35	3.54
33	957.15	0.2265	165.89	4.58
34	997.51	0.2161	172.89	6.79
35	1018.14	0.0544	176.49	105.20
36	1074.14	0.1583	186.20	10.42
37	1087.03	0.1118	188.44	25.18
38	1178.60	0.1858	204.38	7.44
39	1201.43	0.2036	208.24	7.88
40	1316.58	0.2718	227.84	3.91
41	1397.25	0.1511	242.28	12.50

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1431.59	0.0392	248.20	171.66
43	1678.24	0.1746	290.91	6.09
44	1704.48	0.1008	295.71	24.25
45	1855.31	0.2074	321.67	5.25
46	2032.08	0.0833	352.36	34.14
47	2141.91	0.1014	371.40	23.08
48	2196.92	0.1211	381.00	15.87
49	2317.10	0.1669	401.59	8.44
50	2470.67	0.0456	428.39	101.78
51	2566.43	0.1104	444.92	17.18
52	2628.78	0.1523	455.79	9.65
53	2675.48	0.0624	463.88	52.82
54	2700.76	0.2577	468.37	3.21
55	2761.66	0.1600	478.83	8.61
56	3219.70	0.1558	558.24	7.48
57	3360.60	0.0901	582.80	23.27
58	3416.91	0.0519	592.50	67.99
59	3467.93	0.0569	601.35	56.70
60	3503.25	0.0893	607.50	25.02
61	3518.51	0.0960	610.07	21.72
62	3610.20	0.1510	625.85	8.77
63	3672.07	0.0681	636.67	37.87
64	3751.26	0.2460	650.11	3.08
65	3827.26	0.2592	664.58	3.74
66	3877.21	0.1277	672.31	10.60
67	3906.16	0.2227	677.13	3.68
68	3998.06	0.0739	693.29	32.31
69	4028.58	0.0968	698.43	20.04

Errors quoted at 0.000 sigma

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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: DET01
Sample Title: Attenuation BL5D
Peak Analysis Performed on: 3-08-96 11:45:36 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	69-	82	76.56	13.19	5.01E+03	0.00	3.09E+04
M	2	87-	108	94.81	16.36	8.72E+03	0.00	2.78E+04
m	3	87-	108	101.40	17.50	1.93E+04	0.00	2.82E+04
	4	108-	130	120.90	20.88	1.70E+03	0.00	5.53E+04
	5	156-	167	158.77	27.45	3.78E+05	0.00	5.02E+04
M	6	170-	198	179.59	31.06	8.98E+04	0.00	3.41E+04
m	7	170-	198	191.51	33.13	9.89E+03	0.00	3.50E+04
	8	198-	210	205.49	35.55	4.66E+04	0.00	4.36E+04
	9	234-	258	247.31	42.81	1.13E+06	0.00	1.45E+05
M	10	258-	273	262.07	45.37	8.64E+03	0.00	2.74E+04
m	11	258-	273	269.27	46.61	1.96E+03	0.00	2.66E+04
M	12	273-	299	281.43	48.72	2.36E+05	0.00	3.07E+04
	13	273-	299	289.07	50.05	6.54E+04	0.00	1.86E+04
M	14	305-	321	307.93	53.32	1.09E+03	0.00	1.24E+04
m	15	305-	321	316.76	54.85	1.65E+03	0.00	1.68E+04
	16	341-	355	347.01	60.10	1.15E+04	0.00	2.42E+04
	17	355-	370	365.32	63.27	4.14E+03	0.00	2.45E+04
	18	414-	425	420.26	72.80	4.78E+02	0.00	2.33E+04
	19	425-	438	432.51	74.92	5.55E+03	0.00	2.94E+04
	20	438-	452	445.49	77.18	7.59E+03	0.00	3.40E+04
	21	489-	512	500.08	86.64	3.29E+05	0.00	6.79E+04
	22	512-	524	519.78	90.06	1.36E+03	0.00	3.52E+04
M	23	528-	556	534.90	92.68	5.04E+03	0.00	4.04E+04
m	24	528-	556	546.77	94.74	3.93E+03	0.00	4.27E+04
	25	562-	574	568.64	98.53	4.44E+03	0.00	3.42E+04
	26	600-	618	608.30	105.41	2.12E+05	0.00	4.87E+04
	27	647-	658	653.72	113.29	1.69E+03	0.00	3.26E+04
M	28	671-	696	677.00	117.33	5.32E+03	0.00	5.10E+04
m	29	671-	696	684.04	118.55	6.52E+03	0.00	7.14E+04
	30	698-	724	710.85	123.20	1.75E+06	0.00	6.24E+04
	31	825-	838	830.47	143.94	3.30E+02	0.00	1.96E+04
	32	886-	894	890.46	154.35	3.23E+02	0.00	1.17E+04
	33	952-	967	957.03	165.89	1.55E+03	0.00	2.04E+04
	34	992-	1002	997.39	172.89	9.70E+02	0.00	1.31E+04
	35	1010-	1028	1018.15	176.49	4.12E+04	0.00	2.19E+04
M	36	1066-	1097	1074.11	186.20	2.92E+03	0.00	1.73E+04
m	37	1066-	1097	1087.04	188.44	5.65E+03	0.00	1.84E+04
	38	1170-	1189	1178.98	204.38	1.26E+03	0.00	2.35E+04
	39	1194-	1205	1201.23	208.24	8.42E+02	0.00	1.43E+04
	40	1306-	1323	1314.25	227.84	1.16E+03	0.00	1.93E+04
	41	1390-	1406	1397.50	242.28	2.13E+03	0.00	1.98E+04
	42	1423-	1450	1431.61	248.20	1.11E+05	0.00	3.05E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1666-	1686	1677.88	290.91	2.39E+03	0.00	1.70E+04
	44	1697-	1724	1705.59	295.71	5.68E+03	0.00	2.20E+04
	45	1843-	1865	1855.28	321.67	1.42E+03	0.00	1.63E+04
	46	2023-	2042	2032.25	352.36	7.54E+03	0.00	1.35E+04
	47	2133-	2152	2141.99	371.40	3.81E+03	0.00	1.39E+04
	48	2186-	2209	2197.35	381.00	2.90E+03	0.00	1.60E+04
	49	2303-	2325	2316.11	401.59	1.38E+03	0.00	1.61E+04
	50	2460-	2484	2470.63	428.39	4.60E+04	0.00	1.65E+04
	51	2554-	2579	2565.92	444.92	4.51E+03	0.00	1.58E+04
	52	2620-	2637	2628.59	455.79	1.46E+03	0.00	1.10E+04
	53	2657-	2685	2675.24	463.88	1.51E+04	0.00	1.75E+04
	54	2693-	2711	2701.17	468.37	2.78E+02	0.00	1.14E+04
	55	2751-	2771	2761.44	478.83	1.23E+03	0.00	1.26E+04
	56	3210-	3230	3219.33	558.24	1.30E+03	0.00	1.06E+04
	57	3349-	3375	3360.95	582.80	4.19E+03	0.00	1.26E+04
	58	3401-	3431	3416.91	592.50	2.27E+04	0.00	1.44E+04
	59	3451-	3487	3467.95	601.35	1.72E+04	0.00	1.64E+04
M	60	3490-	3530	3503.36	607.50	4.89E+03	0.00	1.09E+04
m	61	3490-	3530	3518.20	610.07	4.06E+03	0.00	1.21E+04
	62	3599-	3618	3609.19	625.85	8.32E+02	0.00	8.93E+03
	63	3655-	3683	3671.58	636.67	1.06E+04	0.00	1.25E+04
	64	3740-	3762	3749.10	650.11	4.73E+02	0.00	9.55E+03
	65	3818-	3843	3832.50	664.58	4.93E+02	0.00	1.11E+04
	66	3868-	3885	3877.07	672.31	1.49E+03	0.00	7.65E+03
	67	3893-	3913	3904.87	677.13	4.83E+02	0.00	8.54E+03
	68	3982-	4010	3998.03	693.29	6.91E+03	0.00	1.12E+04
	69	4019-	4035	4027.70	698.43	2.97E+03	0.00	2.48E+03

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

Errors quoted at 0.000 sigma

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

Report Generated On                 :  3-08-96 11:46:22 AM

Sample Title                        : Attenuation NOPI-113-GAM4
Spectrum Description                : NOPI-113-GAM4 attenuation
Sample Identification               : NP113AT2
Sample Type                         :
Sample Geometry                     :

Peak Locate Threshold               :  3.00
Peak Locate Range (in channels)     :     1 -  4096
Peak Area Range (in channels)       :     1 -  4096
Identification Energy Tolerance     :    1.000 keV

Sample Size                         :   0.000E+00 Unit

Sample Taken On                     :
Acquisition Started                 :  3-06-96 11:20:58 AM

Live Time                           :     1800.0 seconds
Real Time                           :     1995.4 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: Attenuation NOPI-113-GAM4
Peak Locate Performed on: 3-08-96 11:46:17 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	95.33	0.3150	16.40	4.76
2	101.60	0.1257	17.50	27.71
3	122.30	0.2470	20.91	9.95
4	158.77	0.0524	27.43	171.08
5	191.70	0.1612	31.34	22.66
6	205.34	0.0723	35.53	94.69
7	224.03	0.2611	38.16	7.09
8	248.79	0.0403	42.79	323.74
9	269.37	0.3452	45.35	4.11
10	281.19	0.0500	48.70	185.60
11	288.95	0.0725	50.02	88.53
12	316.44	0.2056	54.84	8.66
13	336.30	0.2562	58.26	6.03
14	346.88	0.0976	60.06	48.00
15	365.56	0.2866	63.19	4.91
16	432.03	0.2289	74.83	8.81
17	445.00	0.2036	77.04	8.34
18	499.97	0.0373	86.60	312.40
19	568.28	0.3019	98.54	4.04
20	608.15	0.0394	105.38	249.52
21	653.63	0.2198	113.33	7.74
22	675.48	0.2679	117.28	5.52
23	682.92	0.2313	118.44	5.40
24	710.62	0.0220	123.17	715.43
25	760.03	0.3151	131.81	4.29
26	956.89	0.1891	165.62	5.70
27	997.11	0.2374	172.62	6.26
28	1017.94	0.0542	176.47	105.38
29	1086.82	0.1084	188.43	26.81
30	1178.29	0.1943	204.24	7.12
31	1201.31	0.1952	208.21	8.44
32	1315.00	0.2735	228.17	3.43
33	1396.34	0.2790	242.20	4.55
34	1431.32	0.0391	248.16	175.49
35	1456.08	0.2677	252.59	3.46
36	1678.34	0.1593	290.87	8.40
37	1704.01	0.1929	295.44	7.46
38	1855.17	0.1808	321.82	6.26
39	2031.70	0.1448	352.34	10.69
40	2141.61	0.1001	371.37	23.70
41	2196.60	0.1193	380.83	16.28

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2316.91	0.1589	401.69	9.13
43	2470.31	0.0458	428.34	101.95
44	2566.09	0.1110	444.81	16.42
45	2627.50	0.1398	455.59	10.35
46	2649.14	0.2119	459.35	4.23
47	2675.12	0.0626	463.87	53.04
48	2761.19	0.1586	478.67	8.66
49	3219.26	0.1605	558.46	7.96
50	3360.33	0.0918	582.71	22.37
51	3416.50	0.0516	592.42	67.93
52	3467.59	0.0571	601.30	56.03
53	3502.75	0.0895	607.42	22.96
54	3518.99	0.2081	610.02	5.09
55	3609.61	0.1461	625.91	8.12
56	3624.64	0.2299	628.52	4.66
57	3671.66	0.0678	636.56	38.27
58	3876.93	0.1470	671.97	8.51
59	3997.57	0.0750	693.21	29.96
60	4028.92	0.0989	698.53	20.72

Errors quoted at 0.000 sigma

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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: DET01
Sample Title: Attenuation NOPI-113-GAM4
Peak Analysis Performed on: 3-08-96 11:46:20 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	1	88-	108	95.07	16.40	6.57E+03	0.00	2.60E+04
m	2	88-	108	101.40	17.50	2.15E+04	0.00	2.39E+04
	3	110-	129	121.05	20.91	4.38E+03	0.00	4.41E+04
	4	156-	167	158.65	27.43	4.47E+05	0.00	5.29E+04
	5	170-	197	181.18	31.34	1.39E+05	0.00	8.65E+04
	6	197-	210	205.38	35.53	4.80E+04	0.00	5.00E+04
	7	214-	227	220.53	38.16	7.90E+03	0.00	6.85E+04
	8	234-	258	247.20	42.79	1.20E+06	0.00	1.47E+05
	9	258-	272	261.97	45.35	7.20E+03	0.00	4.83E+04
M	10	272-	299	281.29	48.70	2.51E+05	0.00	2.61E+04
m	11	272-	299	288.93	50.02	6.81E+04	0.00	1.71E+04
	12	311-	326	316.70	54.84	2.19E+03	0.00	2.39E+04
	13	326-	353	336.44	58.26	1.76E+03	0.00	1.45E+04
	14	326-	353	346.82	60.06	1.36E+04	0.00	1.43E+04
	15	354-	369	364.85	63.19	9.18E+02	0.00	2.35E+04
	16	426-	438	431.97	74.83	9.76E+02	0.00	2.45E+04
	17	438-	452	444.72	77.04	2.11E+03	0.00	2.94E+04
	18	487-	512	499.86	86.60	3.38E+05	0.00	6.78E+04
	19	564-	573	568.71	98.54	1.24E+03	0.00	2.50E+04
	20	594-	621	608.14	105.38	2.18E+05	0.00	6.75E+04
	21	649-	659	653.96	113.33	1.46E+03	0.00	2.75E+04
M	22	661-	696	676.72	117.28	4.70E+03	0.00	5.53E+04
m	23	661-	696	683.45	118.44	6.53E+03	0.00	5.94E+04
	24	696-	724	710.68	123.17	1.80E+06	0.00	6.68E+04
	25	755-	769	760.53	131.81	7.97E+02	0.00	2.12E+04
	26	944-	969	955.45	165.62	3.38E+03	0.00	3.13E+04
	27	986-	1009	995.80	172.62	9.30E+02	0.00	2.76E+04
	28	1009-	1029	1018.00	176.47	4.24E+04	0.00	2.29E+04
	29	1079-	1095	1087.00	188.43	5.08E+03	0.00	1.93E+04
	30	1161-	1188	1178.14	204.24	1.36E+03	0.00	3.17E+04
	31	1195-	1206	1201.03	208.21	7.41E+02	0.00	1.39E+04
	32	1310-	1325	1316.11	228.17	7.07E+02	0.00	1.70E+04
	33	1393-	1403	1397.03	242.20	6.13E+02	0.00	1.25E+04
	34	1423-	1444	1431.41	248.16	1.13E+05	0.00	2.35E+04
	35	1452-	1466	1456.95	252.59	6.02E+02	0.00	1.44E+04
	36	1665-	1689	1677.66	290.87	2.81E+03	0.00	1.97E+04
	37	1698-	1710	1703.99	295.44	8.29E+02	0.00	1.06E+04
	38	1848-	1866	1856.10	321.82	1.54E+03	0.00	1.33E+04
	39	2024-	2040	2032.11	352.34	1.77E+03	0.00	1.13E+04
	40	2133-	2155	2141.86	371.37	4.58E+03	0.00	1.49E+04
	41	2185-	2208	2196.38	380.83	3.13E+03	0.00	1.55E+04
	42	2309-	2327	2316.67	401.69	1.10E+03	0.00	1.34E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	2460-	2485	2470.32	428.34	4.56E+04	0.00	1.68E+04
	44	2549-	2575	2565.27	444.81	4.19E+03	0.00	1.66E+04
M	45	2618-	2657	2627.47	455.59	1.63E+03	0.00	1.18E+04
m	46	2618-	2657	2649.14	459.35	7.31E+02	0.00	1.26E+04
	47	2657-	2688	2675.19	463.87	1.47E+04	0.00	1.96E+04
	48	2751-	2771	2760.56	478.67	1.20E+03	0.00	1.24E+04
	49	3212-	3233	3220.62	558.46	1.38E+03	0.00	1.08E+04
	50	3350-	3371	3360.42	582.71	4.08E+03	0.00	1.03E+04
	51	3402-	3436	3416.44	592.42	2.38E+04	0.00	1.55E+04
	52	3451-	3483	3467.62	601.30	1.74E+04	0.00	1.46E+04
M	53	3491-	3531	3502.91	607.42	4.71E+03	0.00	1.04E+04
m	54	3491-	3531	3517.93	610.02	1.01E+03	0.00	1.32E+04
M	55	3591-	3639	3609.54	625.91	1.51E+03	0.00	1.30E+04
m	56	3591-	3639	3624.59	628.52	5.74E+02	0.00	1.40E+04
	57	3650-	3689	3670.96	636.56	1.10E+04	0.00	1.69E+04
	58	3855-	3893	3875.12	671.97	2.16E+03	0.00	1.62E+04
	59	3985-	4011	3997.61	693.21	7.01E+03	0.00	1.01E+04
	60	4021-	4035	4028.24	698.53	2.56E+03	0.00	2.02E+03

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

Errors quoted at 0.000 sigma

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

Report Generated On              :  3-08-96 11:47:01 AM

Sample Title                     : Attenuation NOPI-114-GAM4
Spectrum Description             : NOPI-114-GAM4 attenuation
Sample Identification            : NP114AT2
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-06-96 11:56:10 AM

Live Time                        :     1800.0 seconds
Real Time                        :     1990.4 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
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Detector Name: DET01
Sample Title: Attenuation NOPI-114-GAM4
Peak Locate Performed on: 3-08-96 11:46:55 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	94.95	0.3414	16.41	4.69
2	101.69	0.1311	17.50	27.00
3	122.27	0.2486	20.89	7.88
4	158.85	0.0543	27.44	161.80
5	184.00	0.2196	31.06	20.74
6	191.79	0.1628	33.09	21.71
7	205.44	0.0755	35.55	86.98
8	248.87	0.0407	42.79	319.24
9	269.09	0.3285	45.35	6.18
10	281.24	0.0513	48.71	176.48
11	288.98	0.0730	50.03	88.00
12	316.68	0.2428	54.84	6.42
13	336.20	0.2763	58.21	4.00
14	346.90	0.1009	60.08	44.82
15	365.63	0.2585	63.24	6.60
16	432.51	0.2294	74.90	7.55
17	445.30	0.1742	77.12	12.81
18	500.01	0.0375	86.62	308.87
19	534.44	0.2828	92.48	4.15
20	546.63	0.3237	94.75	3.32
21	568.44	0.2302	98.48	7.50
22	608.23	0.0392	105.40	245.35
23	631.41	0.3160	109.43	3.32
24	653.67	0.2171	113.30	8.42
25	675.16	0.2675	117.24	6.45
26	682.69	0.2329	118.49	4.10
27	710.69	0.0222	123.18	719.64
28	759.68	0.2659	131.82	5.24
29	843.01	0.3227	145.97	3.64
30	957.21	0.2092	165.73	4.46
31	997.47	0.2256	173.01	6.53
32	1018.04	0.0547	176.47	103.84
33	1073.74	0.2816	186.13	4.20
34	1086.87	0.1088	188.41	26.41
35	1178.68	0.1737	204.33	9.98
36	1201.42	0.2330	208.58	5.53
37	1316.29	0.2530	227.91	3.87
38	1397.17	0.2591	242.00	4.55
39	1418.86	0.3602	246.08	3.76
40	1431.44	0.0391	248.17	172.89
41	1457.51	0.2470	252.58	4.77

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1678.23	0.1708	290.88	7.57
43	1704.45	0.1727	295.50	8.42
44	1853.53	0.2246	321.90	5.36
45	2032.16	0.1313	352.35	14.41
46	2141.84	0.0999	371.35	24.51
47	2196.76	0.1238	380.90	15.35
48	2317.15	0.1533	401.75	9.28
49	2470.39	0.0455	428.35	103.63
50	2566.03	0.1081	444.93	18.18
51	2628.44	0.1531	455.74	8.74
52	2675.33	0.0617	463.89	54.55
53	2761.33	0.1493	478.91	9.63
54	2990.74	0.2821	518.99	3.20
55	3219.28	0.1620	558.18	8.28
56	3360.56	0.0933	582.67	21.77
57	3416.66	0.0517	592.46	69.06
58	3467.62	0.0568	601.34	56.25
59	3503.04	0.0890	607.46	23.66
60	3519.08	0.1662	610.09	8.12
61	3609.42	0.1550	625.94	7.44
62	3625.88	0.2014	628.59	5.34
63	3671.90	0.0663	636.63	40.59
64	3829.27	0.2211	664.23	4.26
65	3876.99	0.1439	672.28	9.07
66	3906.42	0.2002	677.64	4.50
67	3997.78	0.0730	693.24	31.86
68	4028.36	0.0994	698.18	18.86

Errors quoted at 0.000 sigma

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

Detector Name: DET01
Sample Title: Attenuation NOPI-114-GAM4
Peak Analysis Performed on: 3-08-96 11:46:59 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	1	87-	108	95.14	16.41	6.08E+03	0.00	2.53E+04
m	2	87-	108	101.42	17.50	1.86E+04	0.00	2.36E+04
	3	109-	129	120.95	20.89	3.99E+03	0.00	4.55E+04
	4	156-	167	158.71	27.44	3.79E+05	0.00	4.98E+04
M	5	170-	195	179.58	31.06	9.22E+04	0.00	3.29E+04
m	6	170-	195	191.32	33.09	1.07E+04	0.00	3.02E+04
	7	196-	210	205.50	35.55	3.74E+04	0.00	5.98E+04
	8	234-	258	247.24	42.79	1.14E+06	0.00	1.42E+05
	9	258-	273	261.99	45.35	4.75E+03	0.00	5.29E+04
M	10	273-	299	281.35	48.71	2.38E+05	0.00	2.62E+04
m	11	273-	299	288.99	50.03	6.60E+04	0.00	1.65E+04
	12	311-	323	316.71	54.84	1.57E+03	0.00	1.90E+04
	13	332-	340	336.16	58.21	9.07E+02	0.00	1.37E+04
	14	340-	354	346.94	60.08	1.07E+04	0.00	2.34E+04
	15	354-	371	365.12	63.24	9.54E+02	0.00	2.66E+04
	16	427-	436	432.35	74.90	1.54E+03	0.00	1.86E+04
	17	438-	452	445.14	77.12	3.14E+03	0.00	2.94E+04
	18	487-	512	499.93	86.62	3.29E+05	0.00	6.77E+04
M	19	524-	559	533.73	92.48	2.05E+03	0.00	4.69E+04
m	20	524-	559	546.82	94.75	1.57E+03	0.00	4.61E+04
	21	559-	573	568.31	98.48	1.78E+03	0.00	3.79E+04
	22	598-	621	608.22	105.40	2.13E+05	0.00	5.82E+04
	23	626-	636	631.44	109.43	4.93E+02	0.00	2.63E+04
	24	651-	659	653.81	113.30	1.27E+03	0.00	2.32E+04
M	25	661-	696	676.49	117.24	4.56E+03	0.00	6.54E+04
m	26	661-	696	683.72	118.49	6.86E+03	0.00	6.74E+04
	27	700-	724	710.76	123.18	1.76E+06	0.00	5.60E+04
	28	756-	769	760.55	131.82	6.17E+02	0.00	1.95E+04
	29	837-	849	842.15	145.97	4.12E+02	0.00	1.73E+04
	30	947-	965	956.08	165.73	2.77E+03	0.00	2.28E+04
	31	994-	1007	998.07	173.01	9.25E+02	0.00	1.58E+04
	32	1007-	1030	1018.04	176.47	4.04E+04	0.00	2.67E+04
M	33	1063-	1095	1073.73	186.13	8.54E+02	0.00	1.55E+04
m	34	1063-	1095	1086.86	188.41	5.58E+03	0.00	1.55E+04
	35	1169-	1186	1178.69	204.33	1.88E+03	0.00	2.01E+04
	36	1193-	1218	1203.17	208.58	1.41E+03	0.00	2.87E+04
	37	1303-	1322	1314.64	227.91	8.00E+02	0.00	2.11E+04
	38	1386-	1404	1395.86	242.00	5.85E+02	0.00	2.12E+04
	39	1415-	1450	1419.42	246.08	4.50E+02	0.00	1.35E+04
m	40	1415-	1450	1431.45	248.17	1.12E+05	0.00	1.57E+04
	41	1450-	1461	1456.87	252.58	6.57E+02	0.00	1.12E+04
	42	1661-	1695	1677.75	290.88	2.17E+03	0.00	2.77E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1695-	1709	1704.36	295.50	9.26E+02	0.00	1.22E+04
	44	1845-	1870	1856.58	321.90	1.55E+03	0.00	1.79E+04
	45	2018-	2044	2032.17	352.35	2.67E+03	0.00	1.75E+04
	46	2132-	2149	2141.71	371.35	4.10E+03	0.00	1.19E+04
	47	2186-	2211	2196.79	380.90	3.07E+03	0.00	1.68E+04
	48	2308-	2324	2317.00	401.75	1.56E+03	0.00	1.15E+04
	49	2455-	2480	2470.40	428.35	4.55E+04	0.00	1.68E+04
	50	2554-	2582	2566.00	444.93	3.96E+03	0.00	1.77E+04
	51	2619-	2637	2628.31	455.74	1.37E+03	0.00	1.16E+04
	52	2662-	2689	2675.29	463.89	1.55E+04	0.00	1.64E+04
	53	2749-	2778	2761.92	478.91	1.71E+03	0.00	1.72E+04
	54	2976-	3005	2993.03	518.99	3.57E+02	0.00	1.84E+04
	55	3209-	3232	3219.02	558.18	1.20E+03	0.00	1.17E+04
	56	3348-	3373	3360.19	582.67	4.12E+03	0.00	1.19E+04
	57	3402-	3431	3416.69	592.46	2.28E+04	0.00	1.37E+04
	58	3455-	3489	3467.88	601.34	1.71E+04	0.00	1.54E+04
M	59	3489-	3527	3503.18	607.46	4.75E+03	0.00	1.10E+04
m	60	3489-	3527	3518.31	610.09	1.30E+03	0.00	1.16E+04
M	61	3597-	3633	3609.70	625.94	1.38E+03	0.00	1.03E+04
m	62	3597-	3633	3624.99	628.59	6.60E+02	0.00	1.25E+04
	63	3654-	3686	3671.32	636.63	1.06E+04	0.00	1.41E+04
	64	3822-	3842	3830.52	664.23	2.77E+02	0.00	9.00E+03
	65	3864-	3894	3876.91	672.28	1.89E+03	0.00	1.28E+04
	66	3901-	3918	3907.81	677.64	4.67E+02	0.00	7.05E+03
	67	3981-	4015	3997.77	693.24	7.16E+03	0.00	1.30E+04
	68	4015-	4035	4026.27	698.18	3.58E+03	0.00	3.15E+03

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

Errors quoted at 0.000 sigma

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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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Report Generated On              :  3-08-96 11:47:45 AM

Sample Title                     : Attenuation NOPI-115-GAM4
Spectrum Description             : NOPI-115-GAM4 attenuation
Sample Identification            : NP115AT2
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-06-96 12:30:31 PM

Live Time                        :     1800.0 seconds
Real Time                        :     1994.0 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: Attenuation NOPI-115-GAM4
Peak Locate Performed on: 3-08-96 11:47:38 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	47.00	0.5206	8.21	3.69
2	95.13	0.3423	16.41	3.40
3	101.64	0.1285	17.51	27.20
4	122.32	0.2444	21.18	8.19
5	158.78	0.0539	27.43	164.17
6	184.00	0.2164	31.05	21.35
7	191.69	0.1657	33.10	21.38
8	205.38	0.0736	35.54	91.64
9	224.24	0.2726	38.13	7.64
10	248.80	0.0405	42.79	321.63
11	269.31	0.3356	45.35	4.72
12	281.21	0.0505	48.70	182.26
13	288.97	0.0726	50.03	88.30
14	307.80	0.4303	53.41	3.31
15	316.52	0.2151	54.79	8.21
16	336.14	0.2735	58.16	4.09
17	346.90	0.0993	60.08	46.28
18	432.37	0.2595	74.86	6.58
19	445.20	0.2088	77.07	7.80
20	499.99	0.0374	86.61	310.80
21	535.06	0.3447	92.75	3.32
22	568.87	0.2887	98.40	5.13
23	608.18	0.0392	105.39	248.80
24	631.30	0.3535	109.18	3.27
25	653.70	0.2225	113.32	7.46
26	674.83	0.2644	117.30	6.79
27	682.81	0.2360	118.50	4.77
28	710.66	0.0221	123.17	719.03
29	779.05	0.3864	134.72	3.19
30	842.93	0.2835	146.10	4.10
31	956.44	0.2168	165.77	4.92
32	997.78	0.2152	172.97	8.11
33	1018.02	0.0545	176.47	105.02
34	1073.76	0.2540	186.17	3.55
35	1086.88	0.1100	188.40	26.12
36	1178.60	0.1887	204.16	9.39
37	1201.08	0.2004	208.20	8.00
38	1316.76	0.2564	228.30	4.37
39	1397.86	0.2836	242.43	3.55
40	1431.40	0.0391	248.17	173.34
41	1678.48	0.1757	291.05	7.75

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1704.06	0.2277	295.93	5.41
43	1856.51	0.1968	321.99	4.53
44	2032.19	0.1567	352.32	8.41
45	2141.74	0.0991	371.37	24.42
46	2196.49	0.1204	380.98	15.76
47	2316.56	0.1531	401.65	9.67
48	2470.44	0.0455	428.36	102.07
49	2566.29	0.1096	444.96	16.91
50	2627.96	0.1583	455.69	8.34
51	2675.32	0.0619	463.93	53.24
52	2761.24	0.1475	478.79	9.61
53	3219.15	0.1499	558.28	7.97
54	3360.27	0.0910	582.73	23.37
55	3416.65	0.0522	592.44	66.96
56	3467.68	0.0570	601.32	55.66
57	3503.00	0.0847	607.47	26.10
58	3518.95	0.1999	610.11	5.99
59	3610.10	0.1446	626.02	9.04
60	3626.13	0.2335	628.77	3.20
61	3671.66	0.0665	636.61	40.58
62	3750.05	0.2308	650.19	3.01
63	3876.70	0.1404	672.02	8.80
64	3906.75	0.2243	677.56	4.12
65	3997.88	0.0741	693.24	31.26
66	4028.87	0.1019	698.62	19.32

Errors quoted at 0.000 sigma

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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: DET01
Sample Title: Attenuation NOPI-115-GAM4
Peak Analysis Performed on: 3-08-96 11:47:43 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	44-	52	47.83	8.21	7.12E+02	0.00	1.83E+04
M	2	87-	108	95.12	16.41	5.77E+03	0.00	2.32E+04
m	3	87-	108	101.43	17.51	1.92E+04	0.00	2.36E+04
	4	119-	130	122.60	21.18	1.74E+03	0.00	2.73E+04
	5	156-	167	158.66	27.43	4.05E+05	0.00	5.17E+04
M	6	170-	197	179.51	31.05	9.65E+04	0.00	3.40E+04
m	7	170-	197	191.34	33.10	1.04E+04	0.00	3.45E+04
	8	197-	211	205.40	35.54	4.47E+04	0.00	5.52E+04
	9	214-	227	220.37	38.13	7.61E+03	0.00	6.89E+04
	10	234-	258	247.20	42.79	1.17E+06	0.00	1.47E+05
	11	258-	272	261.98	45.35	6.89E+03	0.00	4.87E+04
M	12	272-	299	281.30	48.70	2.47E+05	0.00	2.64E+04
	13	272-	299	288.95	50.03	6.77E+04	0.00	1.71E+04
M	14	304-	323	308.44	53.41	4.19E+02	0.00	1.49E+04
m	15	304-	323	316.41	54.79	2.33E+03	0.00	1.76E+04
	16	331-	340	335.82	58.16	1.21E+03	0.00	1.53E+04
	17	340-	354	346.92	60.08	1.11E+04	0.00	2.38E+04
	18	425-	438	432.17	74.86	6.11E+02	0.00	2.65E+04
	19	438-	449	444.90	77.07	2.39E+03	0.00	2.32E+04
	20	487-	512	499.89	86.61	3.36E+05	0.00	6.81E+04
	21	531-	539	535.30	92.75	5.02E+02	0.00	2.41E+04
	22	562-	575	567.87	98.40	8.47E+02	0.00	3.56E+04
	23	599-	621	608.19	105.39	2.16E+05	0.00	5.64E+04
	24	623-	634	630.06	109.18	6.15E+02	0.00	2.89E+04
	25	649-	658	653.90	113.32	1.65E+03	0.00	2.59E+04
M	26	661-	696	676.88	117.30	4.47E+03	0.00	6.92E+04
m	27	661-	696	683.77	118.50	6.88E+03	0.00	6.79E+04
	28	696-	724	710.72	123.17	1.79E+06	0.00	6.83E+04
	29	771-	782	777.29	134.72	4.24E+02	0.00	1.67E+04
	30	839-	848	842.94	146.10	4.43E+02	0.00	1.35E+04
	31	948-	968	956.34	165.77	2.41E+03	0.00	2.58E+04
	32	994-	1002	997.82	172.97	7.12E+02	0.00	1.06E+04
	33	1011-	1029	1018.01	176.47	4.19E+04	0.00	2.07E+04
M	34	1067-	1093	1073.96	186.17	7.88E+02	0.00	1.55E+04
m	35	1067-	1093	1086.84	188.40	5.33E+03	0.00	1.57E+04
	36	1168-	1186	1177.66	204.16	1.62E+03	0.00	2.15E+04
	37	1196-	1207	1200.98	208.20	9.17E+02	0.00	1.38E+04
	38	1313-	1324	1316.89	228.30	3.51E+02	0.00	1.30E+04
	39	1391-	1405	1398.37	242.43	3.68E+02	0.00	1.71E+04
	40	1423-	1450	1431.46	248.17	1.12E+05	0.00	2.95E+04
	41	1668-	1690	1678.72	291.05	2.22E+03	0.00	1.83E+04
	42	1692-	1724	1706.82	295.93	1.80E+03	0.00	2.52E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1848-	1867	1857.10	321.99	1.49E+03	0.00	1.38E+04
	44	2025-	2039	2032.00	352.32	1.43E+03	0.00	9.93E+03
	45	2130-	2151	2141.82	371.37	4.18E+03	0.00	1.46E+04
	46	2190-	2213	2197.23	380.98	2.95E+03	0.00	1.60E+04
	47	2309-	2323	2316.42	401.65	1.21E+03	0.00	1.05E+04
	48	2458-	2485	2470.43	428.36	4.61E+04	0.00	1.81E+04
	49	2556-	2583	2566.14	444.96	4.59E+03	0.00	1.72E+04
	50	2617-	2640	2628.04	455.69	1.40E+03	0.00	1.48E+04
	51	2663-	2692	2675.57	463.93	1.61E+04	0.00	1.75E+04
	52	2751-	2772	2761.22	478.79	1.36E+03	0.00	1.29E+04
	53	3209-	3231	3219.59	558.28	1.44E+03	0.00	1.13E+04
	54	3349-	3374	3360.56	582.73	4.02E+03	0.00	1.20E+04
	55	3397-	3430	3416.52	592.44	2.37E+04	0.00	1.52E+04
	56	3450-	3483	3467.74	601.32	1.76E+04	0.00	1.48E+04
M	57	3492-	3529	3503.19	607.47	4.79E+03	0.00	9.44E+03
m	58	3492-	3529	3518.41	610.11	9.84E+02	0.00	1.13E+04
M	59	3601-	3634	3610.16	626.02	1.35E+03	0.00	8.81E+03
m	60	3601-	3634	3626.01	628.77	5.93E+02	0.00	1.18E+04
	61	3655-	3687	3671.24	636.61	1.07E+04	0.00	1.43E+04
	62	3739-	3759	3749.55	650.19	3.19E+02	0.00	8.79E+03
	63	3861-	3887	3875.42	672.02	1.57E+03	0.00	1.16E+04
	64	3895-	3915	3907.38	677.56	4.29E+02	0.00	8.54E+03
	65	3982-	4011	3997.74	693.24	6.96E+03	0.00	1.12E+04
	66	4022-	4035	4028.80	698.62	2.17E+03	0.00	1.94E+03

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

Errors quoted at 0.000 sigma

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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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Report Generated On              :  3-08-96 11:48:21 AM

Sample Title                     : Attenuation NOPI-116-GAM4
Spectrum Description             : NOPI-116-GAM4 attenuation
Sample Identification            : NP116AT2
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-06-96  2:12:38 PM

Live Time                        :     1800.0 seconds
Real Time                        :     1991.0 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
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Detector Name: DET01
Sample Title: Attenuation NOPI-116-GAM4
Peak Locate Performed on: 3-08-96 11:48:15 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	95.14	0.3810	16.43	3.91
2	101.76	0.1327	17.52	27.52
3	122.28	0.2361	20.95	9.73
4	158.85	0.0541	27.44	161.56
5	191.80	0.1631	31.35	21.54
6	205.45	0.0750	35.54	88.58
7	224.42	0.2838	38.21	5.98
8	248.89	0.0405	42.80	322.28
9	281.26	0.0513	48.72	175.66
10	289.01	0.0728	50.04	88.01
11	316.74	0.2400	54.86	6.21
12	346.94	0.0979	60.10	48.22
13	432.38	0.2715	74.94	7.00
14	444.91	0.2422	77.08	4.73
15	500.04	0.0374	86.63	311.17
16	568.23	0.3381	98.52	3.43
17	608.28	0.0389	105.41	245.14
18	653.54	0.2218	112.88	7.14
19	675.07	0.2481	117.17	6.77
20	683.39	0.2333	118.52	4.24
21	710.75	0.0223	123.20	728.30
22	759.47	0.2620	131.79	5.65
23	843.20	0.2848	146.11	3.53
24	956.86	0.2178	165.78	3.44
25	997.61	0.2130	173.11	6.86
26	1018.14	0.0543	176.49	106.06
27	1074.01	0.2532	186.16	4.50
28	1087.07	0.1085	188.44	26.88
29	1179.13	0.1939	204.42	8.37
30	1201.19	0.2148	208.19	6.80
31	1316.28	0.2525	228.22	4.16
32	1431.65	0.0391	248.21	175.73
33	1678.96	0.1653	291.07	9.94
34	1704.34	0.2345	295.50	5.94
35	1853.95	0.2186	321.81	5.43
36	2032.35	0.1901	352.50	7.06
37	2142.27	0.1004	371.41	24.04
38	2196.89	0.1199	380.94	15.66
39	2316.70	0.1676	401.63	7.00
40	2470.75	0.0452	428.40	105.22
41	2566.55	0.1048	444.96	19.23

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2628.88	0.1441	455.81	10.32
43	2649.14	0.2615	459.45	3.83
44	2675.66	0.0617	463.94	53.88
45	2702.32	0.2106	468.60	4.54
46	2761.93	0.1501	478.91	9.49
47	3220.52	0.1524	558.32	8.15
48	3360.75	0.0922	582.78	21.83
49	3417.12	0.0515	592.52	69.73
50	3468.20	0.0565	601.40	57.53
51	3503.28	0.0865	607.49	24.28
52	3520.11	0.2483	610.26	3.59
53	3540.33	0.2389	614.02	4.26
54	3610.31	0.1410	626.08	9.38
55	3625.51	0.2432	628.63	3.82
56	3672.25	0.0670	636.73	39.49
57	3877.48	0.1351	672.39	9.96
58	3907.40	0.2062	677.61	4.30
59	3998.32	0.0732	693.32	31.68
60	4028.43	0.0989	698.41	18.79

Errors quoted at 0.000 sigma

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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: DET01
Sample Title: Attenuation NOPI-116-GAM4
Peak Analysis Performed on: 3-08-96 11:48:19 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	1	87-	109	95.21	16.43	5.32E+03	0.00	2.49E+04
m	2	87-	109	101.49	17.52	1.86E+04	0.00	2.29E+04
	3	114-	129	121.30	20.95	3.52E+03	0.00	3.43E+04
	4	156-	167	158.72	27.44	3.93E+05	0.00	4.99E+04
	5	170-	196	181.27	31.35	1.27E+05	0.00	8.12E+04
	6	198-	210	205.44	35.54	4.85E+04	0.00	4.32E+04
	7	215-	227	220.82	38.21	7.57E+03	0.00	6.45E+04
	8	234-	258	247.27	42.80	1.15E+06	0.00	1.44E+05
M	9	279-	299	281.39	48.72	2.27E+05	0.00	2.17E+04
m	10	279-	299	289.04	50.04	6.59E+04	0.00	1.82E+04
	11	311-	327	316.80	54.86	1.69E+03	0.00	2.47E+04
	12	341-	352	347.00	60.10	1.19E+04	0.00	1.80E+04
	13	430-	438	432.61	74.94	8.14E+02	0.00	1.68E+04
	14	438-	450	444.92	77.08	1.73E+03	0.00	2.47E+04
	15	487-	512	500.01	86.63	3.32E+05	0.00	6.70E+04
	16	558-	577	568.57	98.52	1.11E+03	0.00	4.98E+04
	17	599-	618	608.28	105.41	2.13E+05	0.00	4.93E+04
	18	639-	658	651.39	112.88	2.07E+03	0.00	5.01E+04
M	19	663-	694	676.12	117.17	3.95E+03	0.00	6.05E+04
m	20	663-	694	683.86	118.52	6.14E+03	0.00	5.97E+04
	21	698-	724	710.84	123.20	1.77E+06	0.00	6.17E+04
	22	752-	767	760.41	131.79	6.81E+02	0.00	2.28E+04
	23	838-	848	842.99	146.11	5.15E+02	0.00	1.46E+04
	24	948-	964	956.37	165.78	2.65E+03	0.00	2.06E+04
	25	992-	1008	998.67	173.11	1.22E+03	0.00	1.90E+04
	26	1010-	1026	1018.16	176.49	4.16E+04	0.00	1.85E+04
M	27	1069-	1100	1073.89	186.16	6.42E+02	0.00	1.30E+04
m	28	1069-	1100	1087.08	188.44	5.55E+03	0.00	1.52E+04
	29	1168-	1188	1179.22	204.42	1.43E+03	0.00	2.37E+04
	30	1195-	1205	1200.96	208.19	7.68E+02	0.00	1.26E+04
	31	1311-	1323	1316.44	228.22	5.70E+02	0.00	1.37E+04
	32	1423-	1443	1431.66	248.21	1.12E+05	0.00	2.23E+04
	33	1669-	1690	1678.82	291.07	2.67E+03	0.00	1.71E+04
	34	1700-	1709	1704.39	295.50	3.85E+02	0.00	8.02E+03
	35	1845-	1867	1856.08	321.81	1.72E+03	0.00	1.56E+04
	36	2023-	2045	2033.06	352.50	1.15E+03	0.00	1.51E+04
	37	2131-	2154	2142.07	371.41	4.12E+03	0.00	1.57E+04
	38	2190-	2205	2197.05	380.94	2.68E+03	0.00	1.06E+04
	39	2307-	2323	2316.30	401.63	1.20E+03	0.00	1.16E+04
	40	2455-	2486	2470.70	428.40	4.65E+04	0.00	2.00E+04
	41	2552-	2578	2566.19	444.96	4.12E+03	0.00	1.64E+04
M	42	2618-	2660	2628.70	455.81	1.49E+03	0.00	1.23E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
m	43	2618-	2660	2649.69	459.45	4.16E+02	0.00	1.18E+04
	44	2660-	2685	2675.62	463.94	1.54E+04	0.00	1.53E+04
	45	2696-	2710	2702.45	468.60	4.13E+02	0.00	8.86E+03
	46	2751-	2771	2761.92	478.91	1.50E+03	0.00	1.22E+04
	47	3206-	3231	3219.82	558.32	1.60E+03	0.00	1.25E+04
	48	3349-	3375	3360.86	582.78	4.18E+03	0.00	1.23E+04
	49	3403-	3432	3416.98	592.52	2.29E+04	0.00	1.37E+04
	50	3449-	3487	3468.18	601.40	1.73E+04	0.00	1.71E+04
M	51	3487-	3557	3503.34	607.49	4.93E+03	0.00	1.18E+04
m	52	3487-	3557	3519.28	610.26	6.79E+02	0.00	1.24E+04
m	53	3487-	3557	3541.00	614.02	4.90E+02	0.00	1.26E+04
M	54	3600-	3636	3610.50	626.08	1.43E+03	0.00	9.25E+03
m	55	3600-	3636	3625.21	628.63	5.89E+02	0.00	1.26E+04
	56	3655-	3685	3671.95	636.73	1.03E+04	0.00	1.34E+04
	57	3866-	3889	3877.56	672.39	1.36E+03	0.00	1.05E+04
	58	3900-	3918	3907.65	677.61	6.34E+02	0.00	7.36E+03
	59	3985-	4009	3998.20	693.32	6.74E+03	0.00	9.72E+03
	60	4019-	4035	4027.60	698.41	2.83E+03	0.00	2.40E+03

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

Errors quoted at 0.000 sigma

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

Report Generated On              :  3-08-96 11:48:58 AM

Sample Title                     : Attenuation NOPI-117-GAM4
Spectrum Description             : NOPI-117-GAM4 attenuation
Sample Identification            : NP117AT2
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-06-96  2:59:12 PM

Live Time                        :     1800.0 seconds
Real Time                        :     1991.1 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: Attenuation NOPI-117-GAM4
Peak Locate Performed on: 3-08-96 11:48:51 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	30.00	0.5256	5.28	3.62
2	101.67	0.1334	17.21	27.19
3	122.41	0.2379	21.01	10.51
4	158.82	0.0544	27.44	160.21
5	184.00	0.2237	31.06	19.99
6	191.79	0.1686	33.06	20.49
7	205.40	0.0746	35.54	88.79
8	224.38	0.2847	38.19	6.11
9	248.84	0.0406	42.79	320.14
10	262.00	0.1159	45.36	35.85
11	281.24	0.0512	48.71	176.32
12	288.99	0.0730	50.03	87.73
13	316.50	0.2429	54.82	6.65
14	346.92	0.0994	60.08	46.12
15	432.75	0.2443	74.97	5.89
16	444.52	0.2526	77.06	5.82
17	500.01	0.0373	86.62	312.05
18	608.22	0.0392	105.39	246.54
19	653.76	0.2089	113.08	9.33
20	675.17	0.2222	117.19	9.28
21	683.09	0.2340	118.57	4.66
22	710.68	0.0221	123.18	724.87
23	759.49	0.2706	131.73	4.63
24	843.01	0.2844	146.07	4.07
25	956.91	0.2297	165.54	4.70
26	997.53	0.2379	172.95	5.61
27	1018.03	0.0544	176.46	105.88
28	1086.83	0.1088	188.48	26.75
29	1178.56	0.1985	204.35	7.35
30	1201.37	0.2206	208.29	6.79
31	1431.44	0.0390	248.17	175.15
32	1678.52	0.1791	290.95	6.77
33	1704.02	0.2624	295.49	4.35
34	1712.07	0.3565	296.76	3.18
35	1856.41	0.1992	321.71	3.49
36	2031.61	0.1945	352.36	6.09
37	2141.81	0.1006	371.33	23.96
38	2196.82	0.1213	380.89	14.89
39	2316.33	0.1602	401.66	8.25
40	2470.48	0.0452	428.36	103.79
41	2566.43	0.1079	444.95	17.48

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2628.38	0.1504	455.75	8.47
43	2675.31	0.0619	463.90	53.73
44	2701.93	0.2569	468.84	3.50
45	2761.12	0.1493	478.77	9.67
46	2992.76	0.2559	518.96	3.26
47	3218.49	0.1511	558.37	8.83
48	3360.59	0.0904	582.74	23.74
49	3416.79	0.0514	592.48	69.72
50	3467.78	0.0567	601.34	57.06
51	3503.12	0.0857	607.47	25.52
52	3519.40	0.2449	610.19	4.11
53	3542.09	0.2393	614.11	3.77
54	3609.76	0.1515	625.81	8.03
55	3671.90	0.0665	636.68	40.40
56	3712.05	0.2568	643.61	3.66
57	3876.88	0.1377	672.38	9.57
58	3907.32	0.2042	677.47	3.98
59	3997.92	0.0730	693.20	31.48
60	4028.12	0.0991	698.57	18.06

Errors quoted at 0.000 sigma

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

Detector Name: DET01
Sample Title: Attenuation NOPI-117-GAM4
Peak Analysis Performed on: 3-08-96 11:48:56 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	27-	35	30.93	5.28	4.60E+02	0.00	2.02E+04
	2	88-	108	99.72	17.21	2.28E+04	0.00	4.35E+04
	3	114-	130	121.61	21.01	3.40E+03	0.00	3.63E+04
	4	156-	167	158.69	27.44	3.84E+05	0.00	4.95E+04
M	5	170-	197	179.57	31.06	9.42E+04	0.00	3.32E+04
m	6	170-	197	191.13	33.06	1.03E+04	0.00	3.72E+04
	7	197-	210	205.42	35.54	4.46E+04	0.00	5.00E+04
	8	215-	227	220.68	38.19	6.22E+03	0.00	6.48E+04
	9	234-	258	247.22	42.79	1.14E+06	0.00	1.44E+05
	10	258-	266	262.05	45.36	8.99E+03	0.00	2.78E+04
M	11	271-	299	281.33	48.71	2.42E+05	0.00	2.51E+04
m	12	271-	299	288.98	50.03	6.69E+04	0.00	1.63E+04
	13	312-	326	316.60	54.82	1.50E+03	0.00	2.21E+04
	14	341-	351	346.94	60.08	1.18E+04	0.00	1.71E+04
	15	427-	438	432.79	74.97	1.14E+03	0.00	2.25E+04
	16	438-	451	444.83	77.06	8.29E+02	0.00	2.78E+04
	17	487-	512	499.92	86.62	3.33E+05	0.00	6.77E+04
	18	598-	618	608.20	105.39	2.13E+05	0.00	5.27E+04
	19	645-	658	652.53	113.08	1.90E+03	0.00	3.56E+04
M	20	664-	696	676.21	117.19	4.82E+03	0.00	6.56E+04
m	21	664-	696	684.18	118.57	7.11E+03	0.00	7.04E+04
	22	700-	724	710.75	123.18	1.77E+06	0.00	5.63E+04
	23	754-	769	760.07	131.73	6.14E+02	0.00	2.25E+04
	24	839-	847	842.77	146.07	4.58E+02	0.00	1.22E+04
	25	941-	965	955.02	165.54	2.87E+03	0.00	3.05E+04
	26	994-	1006	997.74	172.95	5.35E+02	0.00	1.49E+04
	27	1006-	1027	1017.99	176.46	4.13E+04	0.00	2.44E+04
	28	1079-	1098	1087.28	188.48	5.53E+03	0.00	2.21E+04
	29	1173-	1186	1178.78	204.35	1.16E+03	0.00	1.62E+04
	30	1195-	1207	1201.48	208.29	6.37E+02	0.00	1.52E+04
	31	1424-	1443	1431.48	248.17	1.11E+05	0.00	2.10E+04
	32	1668-	1689	1678.14	290.95	2.26E+03	0.00	1.73E+04
M	33	1698-	1722	1704.33	295.49	5.47E+02	0.00	1.02E+04
m	34	1698-	1722	1711.64	296.76	3.70E+02	0.00	1.02E+04
	35	1842-	1864	1855.47	321.71	1.41E+03	0.00	1.60E+04
	36	2025-	2041	2032.20	352.36	8.12E+02	0.00	1.11E+04
	37	2131-	2152	2141.63	371.33	4.56E+03	0.00	1.42E+04
	38	2187-	2205	2196.71	380.89	2.73E+03	0.00	1.25E+04
	39	2308-	2327	2316.48	401.66	1.34E+03	0.00	1.37E+04
	40	2459-	2483	2470.44	428.36	4.61E+04	0.00	1.60E+04
	41	2553-	2582	2566.12	444.95	4.20E+03	0.00	1.84E+04
M	42	2622-	2688	2628.36	455.75	1.42E+03	0.00	1.05E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
m	43	2622-	2688	2675.35	463.90	1.55E+04	0.00	1.38E+04
	44	2694-	2715	2703.87	468.84	4.55E+02	0.00	1.30E+04
	45	2752-	2769	2761.10	478.77	1.54E+03	0.00	1.05E+04
	46	2984-	3001	2992.86	518.96	5.62E+02	0.00	1.09E+04
	47	3210-	3234	3220.09	558.37	1.24E+03	0.00	1.22E+04
	48	3348-	3377	3360.63	582.74	4.29E+03	0.00	1.36E+04
	49	3402-	3430	3416.77	592.48	2.30E+04	0.00	1.30E+04
	50	3449-	3488	3467.87	601.34	1.76E+04	0.00	1.74E+04
M	51	3488-	3549	3503.21	607.47	4.78E+03	0.00	1.11E+04
m	52	3488-	3549	3518.87	610.19	5.19E+02	0.00	1.18E+04
m	53	3488-	3549	3541.48	614.11	4.39E+02	0.00	1.08E+04
	54	3594-	3619	3608.94	625.81	5.59E+02	0.00	1.15E+04
	55	3654-	3689	3671.62	636.68	1.10E+04	0.00	1.51E+04
	56	3705-	3720	3711.61	643.61	2.06E+02	0.00	6.47E+03
	57	3859-	3894	3877.47	672.38	1.79E+03	0.00	1.48E+04
	58	3894-	3918	3906.81	677.47	7.95E+02	0.00	9.68E+03
	59	3979-	4010	3997.56	693.20	7.09E+03	0.00	1.18E+04
	60	4021-	4035	4028.48	698.57	2.33E+03	0.00	2.15E+03

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

Errors quoted at 0.000 sigma

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

Report Generated On                 :  3-08-96 11:49:36 AM

Sample Title                        : Attenuation NOPI-118-GAM4
Spectrum Description                : NOPI-118-GAM4 attenuation
Sample Identification               : NP118AT2
Sample Type                         :
Sample Geometry                     :

Peak Locate Threshold               :  3.00
Peak Locate Range (in channels)     :     1 -  4096
Peak Area Range (in channels)       :     1 -  4096
Identification Energy Tolerance     :    1.000 keV

Sample Size                         :   0.000E+00 Unit

Sample Taken On                     :
Acquisition Started                 :  3-06-96  3:33:36 PM

Live Time                           :     1800.0 seconds
Real Time                           :     1991.7 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: Attenuation NOPI-118-GAM4
Peak Locate Performed on: 3-08-96 11:49:30 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	101.82	0.1347	17.38	26.88
2	122.36	0.2493	21.18	7.40
3	158.86	0.0553	27.44	154.06
4	184.00	0.2234	31.06	20.04
5	191.77	0.1634	33.10	22.30
6	205.43	0.0758	35.55	86.68
7	248.90	0.0407	42.82	318.89
8	262.02	0.1168	45.37	35.73
9	281.27	0.0515	48.71	174.42
10	289.03	0.0728	50.04	88.37
11	316.82	0.2661	54.69	5.97
12	346.95	0.0986	60.09	47.20
13	500.04	0.0373	86.63	312.76
14	608.30	0.0389	105.41	244.24
15	653.52	0.2411	113.15	5.93
16	675.58	0.2283	117.26	8.44
17	683.59	0.2356	118.56	4.10
18	710.76	0.0222	123.20	733.30
19	760.15	0.3061	131.65	4.06
20	843.06	0.3083	146.14	3.26
21	957.40	0.2327	165.71	3.48
22	997.15	0.2259	172.98	7.84
23	1018.20	0.0546	176.50	104.96
24	1087.01	0.1089	188.46	26.68
25	1178.97	0.1884	204.36	8.07
26	1201.50	0.2023	208.23	7.80
27	1247.25	0.3506	216.53	3.19
28	1340.80	0.3314	232.48	3.04
29	1417.70	0.2948	245.84	3.61
30	1431.66	0.0390	248.20	176.38
31	1457.33	0.2940	252.88	3.90
32	1678.84	0.1830	290.79	6.06
33	1855.41	0.1983	321.89	5.40
34	2032.03	0.2650	352.40	3.76
35	2142.27	0.0994	371.43	24.77
36	2197.19	0.1174	380.99	17.32
37	2316.89	0.1474	401.68	9.87
38	2470.83	0.0452	428.41	104.98
39	2566.42	0.1041	445.05	18.95
40	2628.83	0.1571	455.90	9.18
41	2675.73	0.0617	463.96	55.63

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2702.41	0.2484	468.80	3.84
43	2762.20	0.1483	478.88	10.19
44	3219.51	0.1493	558.41	9.10
45	3360.91	0.0925	582.74	22.46
46	3417.31	0.0511	592.56	70.24
47	3468.27	0.0563	601.41	57.41
48	3503.58	0.0849	607.45	26.00
49	3610.60	0.1400	626.10	9.33
50	3628.58	0.2208	629.09	4.14
51	3672.38	0.0664	636.73	41.22
52	3751.59	0.2348	650.36	3.19
53	3876.83	0.1367	672.27	9.05
54	3906.49	0.1702	677.53	6.80
55	3998.37	0.0733	693.32	32.03
56	4028.33	0.0978	698.33	18.32

Errors quoted at 0.000 sigma

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

Detector Name: DET01
Sample Title: Attenuation NOPI-118-GAM4
Peak Analysis Performed on: 3-08-96 11:49:34 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	94-	109	100.73	17.38	1.73E+04	0.00	3.53E+04
	2	119-	130	122.64	21.18	1.88E+03	0.00	2.64E+04
	3	156-	167	158.72	27.44	3.57E+05	0.00	4.94E+04
M	4	170-	197	179.58	31.06	8.83E+04	0.00	3.37E+04
m	5	170-	197	191.34	33.10	1.03E+04	0.00	3.43E+04
	6	197-	209	205.47	35.55	4.43E+04	0.00	4.58E+04
	7	242-	258	247.37	42.82	1.11E+06	0.00	1.03E+05
	8	258-	267	262.11	45.37	9.01E+03	0.00	3.07E+04
M	9	271-	299	281.38	48.71	2.41E+05	0.00	2.44E+04
m	10	271-	299	289.03	50.04	6.66E+04	0.00	1.63E+04
	11	306-	321	315.83	54.69	1.90E+03	0.00	2.32E+04
	12	342-	353	346.96	60.09	1.21E+04	0.00	1.81E+04
	13	487-	512	499.99	86.63	3.31E+05	0.00	6.96E+04
	14	599-	621	608.30	105.41	2.15E+05	0.00	5.83E+04
	15	639-	659	652.91	113.15	1.37E+03	0.00	5.47E+04
M	16	661-	697	676.61	117.26	4.27E+03	0.00	5.98E+04
m	17	661-	697	684.13	118.56	6.11E+03	0.00	6.48E+04
	18	697-	724	710.85	123.20	1.79E+06	0.00	6.68E+04
	19	752-	766	759.58	131.65	8.26E+02	0.00	2.13E+04
	20	835-	850	843.13	146.14	6.49E+02	0.00	2.13E+04
	21	947-	966	955.98	165.71	2.66E+03	0.00	2.43E+04
	22	993-	1007	997.91	172.98	8.49E+02	0.00	1.72E+04
	23	1007-	1028	1018.18	176.50	4.16E+04	0.00	2.45E+04
	24	1081-	1097	1087.14	188.46	5.77E+03	0.00	1.87E+04
	25	1173-	1184	1178.87	204.36	1.18E+03	0.00	1.40E+04
	26	1194-	1205	1201.16	208.23	8.95E+02	0.00	1.40E+04
	27	1244-	1256	1249.00	216.53	4.01E+02	0.00	1.41E+04
	28	1337-	1344	1341.01	232.48	2.78E+02	0.00	8.40E+03
M	29	1412-	1445	1418.01	245.84	4.72E+02	0.00	1.61E+04
m	30	1412-	1445	1431.65	248.20	1.13E+05	0.00	1.63E+04
	31	1453-	1467	1458.62	252.88	5.20E+02	0.00	1.44E+04
	32	1664-	1688	1677.22	290.79	2.57E+03	0.00	1.97E+04
	33	1847-	1866	1856.53	321.89	1.61E+03	0.00	1.37E+04
	34	2028-	2039	2032.47	352.40	4.17E+02	0.00	8.13E+03
	35	2130-	2150	2142.17	371.43	4.07E+03	0.00	1.41E+04
	36	2185-	2208	2197.29	380.99	3.23E+03	0.00	1.58E+04
	37	2309-	2324	2316.61	401.68	1.49E+03	0.00	1.12E+04
	38	2454-	2485	2470.74	428.41	4.68E+04	0.00	2.07E+04
	39	2557-	2582	2566.70	445.05	4.39E+03	0.00	1.61E+04
	40	2621-	2638	2629.27	455.90	1.40E+03	0.00	1.11E+04
	41	2662-	2692	2675.74	463.96	1.56E+04	0.00	1.84E+04
	42	2695-	2716	2703.65	468.80	7.12E+02	0.00	1.29E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	2753-	2770	2761.76	478.88	1.15E+03	0.00	1.08E+04
	44	3210-	3234	3220.34	558.41	9.85E+02	0.00	1.26E+04
	45	3343-	3374	3360.61	582.74	4.70E+03	0.00	1.46E+04
	46	3404-	3431	3417.23	592.56	2.38E+04	0.00	1.24E+04
	47	3455-	3483	3468.28	601.41	1.77E+04	0.00	1.28E+04
	48	3486-	3514	3503.11	607.45	4.58E+03	0.00	1.30E+04
M	49	3589-	3636	3610.63	626.10	1.62E+03	0.00	1.32E+04
m	50	3589-	3636	3627.86	629.09	5.94E+02	0.00	1.21E+04
	51	3656-	3685	3671.94	636.73	1.13E+04	0.00	1.24E+04
	52	3743-	3760	3750.50	650.36	2.46E+02	0.00	7.67E+03
	53	3866-	3888	3876.85	672.27	1.67E+03	0.00	9.72E+03
	54	3898-	3918	3907.20	677.53	5.22E+02	0.00	8.54E+03
	55	3985-	4015	3998.23	693.32	7.16E+03	0.00	1.16E+04
	56	4018-	4035	4027.11	698.33	3.21E+03	0.00	2.55E+03

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

Errors quoted at 0.000 sigma

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

Report Generated On              :  3-08-96 11:50:17 AM

Sample Title                     : Attenuation NOPI-119-GAM4
Spectrum Description             : NOPI-119-GAM4 attenuation
Sample Identification            : NP119AT2
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-06-96  4:09:43 PM

Live Time                        :     1800.0 seconds
Real Time                        :     1987.7 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
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Detector Name: DET01
Sample Title: Attenuation NOPI-119-GAM4
Peak Locate Performed on: 3-08-96 11:50:11 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	95.14	0.3555	16.44	4.97
2	101.80	0.1338	17.53	24.98
3	115.59	0.4237	20.00	3.29
4	122.49	0.2418	21.14	8.70
5	158.84	0.0556	27.44	152.29
6	191.76	0.1677	31.35	21.02
7	205.44	0.0763	35.54	85.46
8	224.38	0.2891	38.17	6.03
9	248.86	0.0409	42.79	317.18
10	262.03	0.1153	45.37	37.63
11	281.25	0.0515	48.71	174.29
12	289.01	0.0733	50.04	86.91
13	316.90	0.2481	54.58	6.94
14	335.82	0.3069	58.15	5.20
15	346.87	0.0996	60.08	46.36
16	432.99	0.3460	75.04	3.83
17	444.08	0.3647	76.93	3.05
18	500.02	0.0376	86.62	308.01
19	608.26	0.0392	105.40	244.60
20	646.86	0.3817	112.18	4.07
21	653.80	0.2040	113.29	9.23
22	675.25	0.2421	117.25	7.13
23	683.29	0.2525	118.60	3.91
24	710.72	0.0222	123.19	724.85
25	759.53	0.2670	131.70	4.58
26	956.87	0.2036	165.66	5.97
27	997.38	0.2229	172.93	6.86
28	1018.11	0.0544	176.48	105.96
29	1086.94	0.1096	188.44	26.53
30	1178.58	0.1915	204.40	9.29
31	1201.55	0.2247	208.64	5.85
32	1316.89	0.2286	228.31	4.95
33	1431.54	0.0391	248.19	173.05
34	1457.80	0.2505	252.83	4.16
35	1678.71	0.1675	290.93	7.48
36	1855.26	0.1787	321.80	5.15
37	2031.72	0.2163	352.30	5.58
38	2141.94	0.1008	371.37	24.41
39	2196.76	0.1185	380.88	16.42
40	2316.79	0.1546	401.77	9.39
41	2470.62	0.0453	428.39	103.82

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2566.57	0.1069	444.92	18.64
43	2628.61	0.1623	455.87	8.04
44	2675.53	0.0615	463.93	54.67
45	2762.25	0.1491	478.77	10.22
46	3219.42	0.1604	558.25	6.45
47	3360.77	0.0920	582.71	22.28
48	3416.95	0.0512	592.50	71.33
49	3468.00	0.0565	601.37	58.03
50	3503.22	0.0855	607.43	25.85
51	3542.70	0.2191	614.24	4.83
52	3610.12	0.1502	625.80	8.69
53	3672.23	0.0674	636.59	39.73
54	3876.85	0.1284	672.26	10.17
55	3906.33	0.1915	677.60	4.90
56	3998.09	0.0716	693.24	33.66
57	4028.70	0.0989	698.35	19.81

Errors quoted at 0.000 sigma

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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: DET01
Sample Title: Attenuation NOPI-119-GAM4
Peak Analysis Performed on: 3-08-96 11:50:15 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	1	87-	109	95.27	16.44	4.04E+03	0.00	2.25E+04
m	2	87-	109	101.56	17.53	1.60E+04	0.00	2.25E+04
M	3	109-	130	115.79	20.00	5.33E+02	0.00	1.66E+04
m	4	109-	130	122.41	21.14	2.40E+03	0.00	1.90E+04
	5	156-	167	158.71	27.44	3.52E+05	0.00	4.83E+04
	6	170-	197	181.28	31.35	1.17E+05	0.00	8.41E+04
	7	197-	211	205.44	35.54	4.09E+04	0.00	5.33E+04
	8	215-	227	220.61	38.17	6.57E+03	0.00	6.37E+04
	9	234-	258	247.25	42.79	1.11E+06	0.00	1.43E+05
	10	258-	267	262.08	45.37	8.84E+03	0.00	3.03E+04
M	11	271-	299	281.35	48.71	2.36E+05	0.00	2.43E+04
m	12	271-	299	289.00	50.04	6.54E+04	0.00	1.59E+04
	13	306-	322	315.18	54.58	2.07E+03	0.00	2.40E+04
	14	325-	340	335.78	58.15	4.94E+02	0.00	2.38E+04
	15	340-	352	346.90	60.08	1.14E+04	0.00	1.95E+04
M	16	426-	449	433.16	75.04	1.09E+03	0.00	2.68E+04
m	17	426-	449	444.09	76.93	1.11E+03	0.00	2.43E+04
	18	487-	512	499.93	86.62	3.27E+05	0.00	6.69E+04
	19	600-	621	608.26	105.40	2.11E+05	0.00	5.42E+04
M	20	644-	657	647.33	112.18	5.10E+02	0.00	2.28E+04
m	21	644-	657	653.72	113.29	2.10E+03	0.00	2.55E+04
M	22	661-	697	676.57	117.25	5.61E+03	0.00	7.16E+04
m	23	661-	697	684.37	118.60	6.83E+03	0.00	7.45E+04
	24	697-	724	710.80	123.19	1.75E+06	0.00	6.54E+04
	25	755-	769	759.88	131.70	6.51E+02	0.00	2.04E+04
	26	946-	968	955.69	165.66	2.64E+03	0.00	2.71E+04
	27	993-	1005	997.60	172.93	7.47E+02	0.00	1.48E+04
	28	1005-	1028	1018.08	176.48	4.09E+04	0.00	2.64E+04
	29	1076-	1098	1087.05	188.44	5.55E+03	0.00	2.53E+04
	30	1175-	1185	1179.05	204.40	1.17E+03	0.00	1.24E+04
	31	1195-	1214	1203.52	208.64	1.73E+03	0.00	2.20E+04
	32	1313-	1323	1316.95	228.31	7.87E+02	0.00	1.14E+04
	33	1422-	1442	1431.56	248.19	1.10E+05	0.00	2.28E+04
	34	1453-	1467	1458.30	252.83	7.14E+02	0.00	1.41E+04
	35	1670-	1687	1678.01	290.93	1.76E+03	0.00	1.43E+04
	36	1848-	1865	1856.04	321.80	1.80E+03	0.00	1.21E+04
	37	2024-	2038	2031.90	352.30	3.83E+02	0.00	9.72E+03
	38	2130-	2154	2141.84	371.37	3.91E+03	0.00	1.64E+04
	39	2186-	2207	2196.67	380.88	3.17E+03	0.00	1.42E+04
	40	2312-	2325	2317.12	401.77	1.35E+03	0.00	9.60E+03
	41	2457-	2487	2470.62	428.39	4.59E+04	0.00	1.97E+04
	42	2554-	2577	2565.95	444.92	4.20E+03	0.00	1.46E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2617-	2642	2629.05	455.87	1.40E+03	0.00	1.54E+04
44	2663-	2688	2675.54	463.93	1.54E+04	0.00	1.54E+04
45	2750-	2769	2761.12	478.77	1.41E+03	0.00	1.15E+04
46	3211-	3235	3219.42	558.25	8.23E+02	0.00	1.24E+04
47	3347-	3372	3360.47	582.71	4.49E+03	0.00	1.18E+04
48	3403-	3434	3416.89	592.50	2.35E+04	0.00	1.41E+04
49	3448-	3489	3468.03	601.37	1.77E+04	0.00	1.78E+04
50	3489-	3515	3502.98	607.43	4.38E+03	0.00	1.19E+04
51	3537-	3550	3542.26	614.24	2.77E+02	0.00	5.75E+03
52	3593-	3617	3608.90	625.80	1.40E+03	0.00	1.02E+04
53	3639-	3688	3671.14	636.59	1.10E+04	0.00	2.02E+04
54	3867-	3885	3876.80	672.26	1.67E+03	0.00	7.84E+03
55	3897-	3921	3907.56	677.60	5.11E+02	0.00	9.80E+03
56	3982-	4010	3997.78	693.24	7.02E+03	0.00	1.06E+04
57	4018-	4035	4027.24	698.35	3.05E+03	0.00	2.51E+03

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

Errors quoted at 0.000 sigma

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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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Report Generated On              :  3-08-96 11:54:19 AM

Sample Title                     : Attenuation NOPI-120-GAM4
Spectrum Description             : NOPI-120-GAM4 attenuation
Sample Identification            : NP120AT2
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-06-96  4:44:33 PM

Live Time                        :     1800.0 seconds
Real Time                        :     1995.4 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: Attenuation NOPI-120-GAM4
Peak Locate Performed on: 3-08-96 11:54:13 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	21.00	0.5520	3.23	3.28
2	47.00	0.5634	8.25	3.15
3	101.75	0.1289	17.27	29.83
4	122.46	0.2218	21.21	11.04
5	158.84	0.0529	27.44	170.37
6	191.83	0.1619	31.35	22.50
7	205.43	0.0737	35.53	91.37
8	248.85	0.0401	42.79	329.42
9	262.00	0.1136	45.36	38.44
10	281.23	0.0507	48.71	180.37
11	289.00	0.0719	50.03	91.23
12	316.28	0.2197	54.82	8.35
13	336.53	0.2623	58.31	5.50
14	346.90	0.0984	60.07	47.19
15	443.89	0.3284	76.99	3.40
16	500.01	0.0372	86.61	314.54
17	608.23	0.0389	105.40	249.75
18	631.47	0.3242	109.49	3.44
19	653.60	0.2089	113.29	7.92
20	675.66	0.2352	117.24	7.98
21	683.76	0.2117	118.54	6.03
22	710.70	0.0220	123.18	732.86
23	759.78	0.2821	131.65	4.89
24	842.91	0.2934	146.03	4.96
25	956.77	0.2035	165.37	4.76
26	997.78	0.2168	173.02	7.49
27	1018.06	0.0541	176.47	107.56
28	1086.93	0.1096	188.50	25.66
29	1178.57	0.1949	204.36	8.67
30	1201.48	0.2151	208.18	7.04
31	1341.33	0.2925	232.35	3.58
32	1431.49	0.0389	248.18	173.60
33	1457.72	0.2807	252.89	3.79
34	1678.47	0.1637	290.96	7.28
35	1704.22	0.3348	296.21	3.38
36	1854.75	0.2069	321.69	4.93
37	2031.85	0.2843	352.30	3.12
38	2141.81	0.0992	371.35	24.89
39	2197.07	0.1210	380.87	16.01
40	2316.51	0.1471	401.60	10.76
41	2470.55	0.0453	428.38	103.81

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2566.31	0.1067	444.95	18.83
43	2628.51	0.1456	455.58	10.61
44	2675.39	0.0615	463.91	55.11
45	2761.48	0.1603	478.70	8.62
46	3077.78	0.2622	533.61	3.74
47	3220.01	0.1515	558.47	9.34
48	3360.49	0.0919	582.74	21.17
49	3416.88	0.0511	592.49	69.95
50	3467.79	0.0560	601.33	59.14
51	3503.17	0.0868	607.44	23.85
52	3609.50	0.1568	625.96	6.34
53	3625.56	0.2308	628.67	3.89
54	3672.05	0.0665	636.69	40.92
55	3750.24	0.1928	650.26	5.31
56	3876.81	0.1285	672.24	10.41
57	3908.42	0.2100	677.88	4.62
58	3997.98	0.0732	693.24	32.42
59	4028.90	0.0966	698.66	22.09

Errors quoted at 0.000 sigma

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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: DET01
Sample Title: Attenuation NOPI-120-GAM4
Peak Analysis Performed on: 3-08-96 11:54:17 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	15-	24	19.09	3.23	8.16E+03	0.00	1.04E+04
	2	44-	52	48.08	8.25	9.94E+02	0.00	1.80E+04
	3	88-	109	100.05	17.27	2.54E+04	0.00	4.60E+04
	4	119-	130	122.79	21.21	2.21E+03	0.00	2.68E+04
	5	156-	167	158.70	27.44	4.28E+05	0.00	5.21E+04
	6	170-	196	181.25	31.35	1.34E+05	0.00	8.44E+04
	7	200-	210	205.39	35.53	5.23E+04	0.00	3.69E+04
	8	234-	258	247.24	42.79	1.20E+06	0.00	1.47E+05
	9	258-	267	262.07	45.36	8.67E+03	0.00	3.17E+04
M	10	271-	299	281.34	48.71	2.51E+05	0.00	2.51E+04
m	11	271-	299	288.99	50.03	6.95E+04	0.00	1.65E+04
	12	312-	323	316.59	54.82	2.20E+03	0.00	1.77E+04
	13	325-	354	336.71	58.31	1.62E+03	0.00	1.46E+04
m	14	325-	354	346.85	60.07	1.31E+04	0.00	1.46E+04
	15	439-	451	444.43	76.99	5.47E+02	0.00	2.55E+04
	16	487-	507	499.91	86.61	3.37E+05	0.00	5.60E+04
	17	597-	621	608.24	105.40	2.18E+05	0.00	6.32E+04
	18	625-	640	631.81	109.49	6.73E+02	0.00	3.94E+04
	19	648-	659	653.72	113.29	1.38E+03	0.00	3.12E+04
M	20	667-	697	676.49	117.24	4.53E+03	0.00	5.53E+04
m	21	667-	697	683.99	118.54	6.97E+03	0.00	5.93E+04
	22	700-	724	710.77	123.18	1.81E+06	0.00	5.65E+04
	23	754-	768	759.61	131.65	5.67E+02	0.00	2.18E+04
	24	836-	848	842.53	146.03	3.83E+02	0.00	1.76E+04
	25	940-	965	954.04	165.37	3.88E+03	0.00	3.14E+04
	26	993-	1007	998.14	173.02	6.91E+02	0.00	1.73E+04
	27	1007-	1028	1018.05	176.47	4.20E+04	0.00	2.41E+04
	28	1081-	1098	1087.42	188.50	5.74E+03	0.00	2.00E+04
	29	1173-	1188	1178.87	204.36	1.29E+03	0.00	1.83E+04
	30	1191-	1205	1200.85	208.18	8.38E+02	0.00	1.75E+04
	31	1332-	1345	1340.25	232.35	2.96E+02	0.00	1.47E+04
	32	1422-	1442	1431.53	248.18	1.13E+05	0.00	2.30E+04
	33	1454-	1464	1458.66	252.89	5.53E+02	0.00	1.06E+04
	34	1666-	1688	1678.18	290.96	2.65E+03	0.00	1.83E+04
	35	1700-	1720	1708.45	296.21	5.39E+02	0.00	1.64E+04
	36	1844-	1865	1855.39	321.69	1.87E+03	0.00	1.50E+04
	37	2027-	2037	2031.90	352.30	2.77E+02	0.00	7.40E+03
	38	2133-	2154	2141.75	371.35	3.90E+03	0.00	1.51E+04
	39	2184-	2209	2196.63	380.87	3.04E+03	0.00	1.70E+04
	40	2304-	2325	2316.14	401.60	1.50E+03	0.00	1.52E+04
	41	2454-	2488	2470.55	428.38	4.69E+04	0.00	2.22E+04
	42	2556-	2575	2566.12	444.95	4.10E+03	0.00	1.23E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	2614-	2638	2627.43	455.58	1.97E+03	0.00	1.52E+04
	44	2661-	2688	2675.43	463.91	1.58E+04	0.00	1.67E+04
	45	2748-	2770	2760.74	478.70	1.39E+03	0.00	1.36E+04
	46	3072-	3083	3077.30	533.61	3.37E+02	0.00	7.07E+03
	47	3211-	3235	3220.68	558.47	9.57E+02	0.00	1.26E+04
	48	3349-	3371	3360.59	582.74	4.08E+03	0.00	1.07E+04
	49	3405-	3431	3416.81	592.49	2.34E+04	0.00	1.25E+04
	50	3453-	3480	3467.81	601.33	1.77E+04	0.00	1.25E+04
	51	3491-	3515	3503.01	607.44	4.56E+03	0.00	1.11E+04
M	52	3601-	3637	3609.82	625.96	1.18E+03	0.00	9.00E+03
m	53	3601-	3637	3625.43	628.67	5.50E+02	0.00	1.37E+04
	54	3654-	3687	3671.70	636.69	1.10E+04	0.00	1.42E+04
	55	3743-	3758	3749.91	650.26	4.18E+02	0.00	6.70E+03
	56	3866-	3889	3876.67	672.24	2.00E+03	0.00	9.81E+03
	57	3901-	3921	3909.20	677.88	4.79E+02	0.00	8.39E+03
	58	3982-	4012	3997.79	693.24	7.18E+03	0.00	1.14E+04
	59	4023-	4035	4029.01	698.66	2.16E+03	0.00	1.68E+03

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

Errors quoted at 0.000 sigma

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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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Report Generated On                 :  3-08-96 11:52:09 AM

Sample Title                        : Attenuation NOPI-121-GAM4
Spectrum Description                : NOPI-121-GAM4 attenuation
Sample Identification               : NP121AT2
Sample Type                         :
Sample Geometry                     :

Peak Locate Threshold               :  3.00
Peak Locate Range (in channels)     :     1 -  4096
Peak Area Range (in channels)       :     1 -  4096
Identification Energy Tolerance     :    1.000 keV

Sample Size                         :   0.000E+00 Unit

Sample Taken On                     :
Acquisition Started                 :  3-07-96  8:50:42 AM

Live Time                           :     1800.0 seconds
Real Time                           :     1990.2 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: Attenuation NOPI-121-GAM4
Peak Locate Performed on: 3-08-96 11:52:04 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	101.64	0.1347	17.24	27.90
2	122.07	0.2444	21.00	7.77
3	158.66	0.0546	27.42	157.35
4	184.00	0.2341	31.03	18.24
5	191.60	0.1720	33.07	18.57
6	205.28	0.0731	35.52	93.24
7	224.35	0.3059	38.16	4.25
8	248.67	0.0416	42.76	304.22
9	261.88	0.1149	45.34	38.67
10	281.11	0.0503	48.68	183.43
11	288.87	0.0735	50.00	86.45
12	316.22	0.2477	54.78	7.53
13	336.43	0.2852	58.27	4.29
14	346.74	0.1002	60.04	44.83
15	442.61	0.3297	76.80	3.91
16	499.79	0.0372	86.57	299.65
17	597.43	0.3935	103.57	3.26
18	607.88	0.0398	105.35	245.96
19	653.27	0.2140	112.99	7.97
20	681.44	0.2501	117.70	4.92
21	710.45	0.0220	123.13	696.83
22	759.53	0.2986	131.60	3.58
23	842.68	0.3270	146.13	3.18
24	956.69	0.2004	165.50	7.24
25	997.18	0.2399	172.50	5.50
26	1017.62	0.0554	176.40	101.52
27	1086.51	0.1117	188.28	25.49
28	1178.25	0.1875	204.36	7.50
29	1200.74	0.2233	208.55	6.17
30	1339.60	0.2798	231.92	4.53
31	1430.96	0.0396	248.09	176.10
32	1678.19	0.1783	290.97	6.71
33	2141.24	0.1016	371.26	23.85
34	2195.99	0.1232	380.72	16.20
35	2316.30	0.1589	401.62	9.44
36	2469.63	0.0456	428.21	102.24
37	2565.25	0.1072	444.66	18.71
38	2627.83	0.1625	455.33	7.12
39	2674.46	0.0612	463.72	54.96
40	2701.41	0.2512	468.55	3.81
41	2760.63	0.1566	478.43	8.86

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	3218.47	0.1539	558.03	8.06
43	3359.37	0.0906	582.55	23.16
44	3415.65	0.0516	592.28	68.88
45	3466.62	0.0566	601.13	57.71
46	3501.88	0.0861	607.24	24.57
47	3541.22	0.2355	614.22	3.77
48	3609.14	0.1512	625.92	7.44
49	3625.95	0.2209	628.60	3.90
50	3670.52	0.0679	636.46	39.17
51	3750.21	0.2503	650.01	3.28
52	3875.62	0.1278	672.09	11.98
53	3904.93	0.1970	677.43	4.83
54	3996.67	0.0739	693.03	31.39
55	4028.54	0.0985	698.54	19.84

Errors quoted at 0.000 sigma

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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: DET01
Sample Title: Attenuation NOPI-121-GAM4
Peak Analysis Performed on: 3-08-96 11:52:08 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	88-	108	99.89	17.24	2.21E+04	0.00	4.30E+04
	2	114-	129	121.56	21.00	3.26E+03	0.00	3.37E+04
	3	156-	166	158.59	27.42	3.83E+05	0.00	4.69E+04
M	4	170-	197	179.41	31.03	9.34E+04	0.00	3.35E+04
m	5	170-	197	191.20	33.07	1.02E+04	0.00	3.46E+04
	6	197-	210	205.30	35.52	4.53E+04	0.00	4.96E+04
	7	215-	227	220.50	38.16	7.38E+03	0.00	6.53E+04
	8	234-	258	247.07	42.76	1.14E+06	0.00	1.48E+05
	9	258-	266	261.92	45.34	9.38E+03	0.00	2.76E+04
M	10	271-	299	281.17	48.68	2.41E+05	0.00	2.45E+04
m	11	271-	299	288.82	50.00	6.62E+04	0.00	1.82E+04
	12	311-	323	316.34	54.78	2.09E+03	0.00	1.87E+04
	13	328-	354	336.50	58.27	1.53E+03	0.00	1.56E+04
m	14	328-	354	346.67	60.04	1.31E+04	0.00	1.40E+04
	15	439-	448	443.33	76.80	6.30E+02	0.00	1.92E+04
	16	487-	512	499.68	86.57	3.28E+05	0.00	6.76E+04
M	17	593-	617	597.69	103.57	4.89E+02	0.00	2.60E+04
m	18	593-	617	607.92	105.35	2.10E+05	0.00	3.05E+04
	19	639-	658	652.02	112.99	1.72E+03	0.00	5.26E+04
	20	661-	695	679.13	117.70	1.16E+04	0.00	1.01E+05
	21	696-	724	710.46	123.13	1.76E+06	0.00	6.95E+04
	22	754-	765	759.30	131.60	5.36E+02	0.00	1.71E+04
	23	833-	850	843.07	146.13	5.97E+02	0.00	2.38E+04
	24	944-	964	954.78	165.50	2.82E+03	0.00	2.50E+04
	25	985-	1004	995.15	172.50	1.81E+03	0.00	2.22E+04
	26	1011-	1026	1017.65	176.40	4.09E+04	0.00	1.76E+04
	27	1073-	1092	1086.11	188.28	5.45E+03	0.00	2.21E+04
	28	1172-	1192	1178.85	204.36	1.21E+03	0.00	2.41E+04
	29	1197-	1213	1203.00	208.55	1.42E+03	0.00	1.89E+04
	30	1327-	1343	1337.79	231.92	3.26E+02	0.00	1.78E+04
	31	1423-	1446	1430.97	248.09	1.10E+05	0.00	2.49E+04
	32	1670-	1689	1678.26	290.97	2.17E+03	0.00	1.56E+04
	33	2132-	2152	2141.19	371.26	3.72E+03	0.00	1.40E+04
	34	2184-	2202	2195.75	380.72	2.46E+03	0.00	1.28E+04
	35	2307-	2325	2316.26	401.62	1.43E+03	0.00	1.28E+04
	36	2458-	2480	2469.57	428.21	4.50E+04	0.00	1.50E+04
	37	2547-	2578	2564.41	444.66	4.32E+03	0.00	1.93E+04
	38	2613-	2636	2625.95	455.33	1.75E+03	0.00	1.42E+04
	39	2664-	2684	2674.34	463.72	1.56E+04	0.00	1.24E+04
	40	2694-	2708	2702.17	468.55	2.62E+02	0.00	8.78E+03
	41	2747-	2771	2759.18	478.43	1.44E+03	0.00	1.45E+04
	42	3207-	3229	3218.13	558.03	1.45E+03	0.00	1.12E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	3348-	3374	3359.54	582.55	4.61E+03	0.00	1.21E+04
	44	3400-	3434	3415.64	592.28	2.28E+04	0.00	1.60E+04
	45	3449-	3484	3466.63	601.13	1.74E+04	0.00	1.56E+04
	46	3490-	3513	3501.87	607.24	4.71E+03	0.00	1.01E+04
	47	3535-	3550	3542.12	614.22	4.40E+02	0.00	6.61E+03
M	48	3598-	3634	3609.57	625.92	1.53E+03	0.00	1.01E+04
m	49	3598-	3634	3625.06	628.60	7.29E+02	0.00	1.33E+04
	50	3652-	3683	3670.34	636.46	1.03E+04	0.00	1.37E+04
	51	3737-	3759	3748.52	650.01	4.95E+02	0.00	9.51E+03
	52	3863-	3893	3875.83	672.09	1.76E+03	0.00	1.28E+04
	53	3897-	3920	3906.62	677.43	8.49E+02	0.00	9.27E+03
	54	3980-	4011	3996.56	693.03	7.22E+03	0.00	1.20E+04
	55	4021-	4035	4028.31	698.54	2.49E+03	0.00	2.07E+03

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

Errors quoted at 0.000 sigma

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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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Report Generated On              :  3-08-96 11:52:50 AM

Sample Title                     : Attenuation NOPI-122-GAM4
Spectrum Description             : NOPI-122-GAM4 attenuation
Sample Identification            : NP122AT2
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-07-96  9:32:12 AM

Live Time                        :     1800.0 seconds
Real Time                        :     1987.9 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: Attenuation NOPI-122-GAM4
Peak Locate Performed on: 3-08-96 11:52:44 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	101.80	0.1339	17.28	28.73
2	122.46	0.2417	20.99	9.28
3	158.85	0.0556	27.44	153.50
4	191.77	0.1667	31.35	21.41
5	205.45	0.0767	35.55	84.22
6	224.42	0.2672	38.24	6.76
7	248.88	0.0409	42.79	316.20
8	262.07	0.1179	45.38	34.84
9	281.25	0.0517	48.71	172.87
10	289.01	0.0736	50.04	86.39
11	316.93	0.2642	54.82	5.29
12	354.46	0.4204	59.86	3.03
13	442.79	0.3500	76.85	3.79
14	500.03	0.0376	86.62	307.98
15	608.28	0.0393	105.41	239.97
16	653.43	0.2214	113.22	7.87
17	674.99	0.2499	117.34	7.57
18	682.06	0.2492	118.49	5.72
19	710.74	0.0223	123.19	722.76
20	759.62	0.2883	131.84	3.79
21	957.32	0.2191	165.50	5.31
22	997.52	0.2389	173.03	6.02
23	1018.12	0.0550	176.49	102.84
24	1087.04	0.1102	188.44	25.51
25	1103.28	0.3609	191.28	3.16
26	1178.64	0.1910	204.34	9.50
27	1201.48	0.2262	208.41	6.50
28	1316.34	0.2695	228.10	3.79
29	1340.31	0.2993	232.20	4.12
30	1431.61	0.0393	248.20	171.63
31	1457.26	0.2575	252.55	4.36
32	1678.99	0.1848	291.04	6.31
33	1856.18	0.1930	321.87	4.45
34	2142.07	0.0992	371.38	24.50
35	2196.91	0.1225	381.00	15.07
36	2316.47	0.1631	401.67	8.13
37	2470.73	0.0456	428.40	103.59
38	2566.36	0.1065	444.82	18.27
39	2628.89	0.1578	455.84	8.81
40	2649.10	0.2783	459.42	3.50
41	2675.65	0.0617	463.92	53.93

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2761.40	0.1604	478.88	7.39
43	3220.18	0.1583	558.40	7.72
44	3360.82	0.0931	582.75	21.09
45	3417.15	0.0514	592.54	69.76
46	3468.13	0.0567	601.37	57.59
47	3503.58	0.0834	607.50	26.91
48	3610.81	0.1598	626.10	6.70
49	3672.16	0.0671	636.72	39.06
50	3827.78	0.2559	663.90	3.41
51	3852.09	0.2908	668.37	3.09
52	3876.84	0.1240	672.27	11.85
53	3908.14	0.1859	677.56	6.06
54	3998.27	0.0734	693.33	31.35
55	4028.12	0.0996	698.66	18.15

Errors quoted at 0.000 sigma

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

Detector Name: DET01
Sample Title: Attenuation NOPI-122-GAM4
Peak Analysis Performed on: 3-08-96 11:52:48 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	88-	109	100.13	17.28	2.03E+04	0.00	4.42E+04
	2	114-	130	121.50	20.99	2.95E+03	0.00	3.56E+04
	3	156-	167	158.71	27.44	3.57E+05	0.00	4.95E+04
	4	170-	197	181.26	31.35	1.18E+05	0.00	8.68E+04
	5	197-	211	205.46	35.55	4.14E+04	0.00	5.46E+04
	6	215-	228	220.97	38.24	7.91E+03	0.00	7.06E+04
	7	234-	258	247.24	42.79	1.11E+06	0.00	1.44E+05
	8	258-	266	262.15	45.38	9.11E+03	0.00	2.74E+04
M	9	271-	299	281.36	48.71	2.36E+05	0.00	2.41E+04
m	10	271-	299	289.01	50.04	6.49E+04	0.00	1.60E+04
	11	310-	323	316.61	54.82	1.96E+03	0.00	1.97E+04
	12	332-	357	345.63	59.86	1.39E+04	0.00	3.65E+04
	13	440-	450	443.59	76.85	5.32E+02	0.00	2.09E+04
	14	487-	512	499.97	86.62	3.25E+05	0.00	6.74E+04
	15	600-	619	608.27	105.41	2.08E+05	0.00	5.11E+04
	16	641-	661	653.32	113.22	2.07E+03	0.00	5.48E+04
M	17	661-	695	677.07	117.34	4.98E+03	0.00	7.79E+04
m	18	661-	695	683.71	118.49	6.21E+03	0.00	7.70E+04
	19	696-	724	710.83	123.19	1.74E+06	0.00	6.91E+04
	20	755-	767	760.70	131.84	7.50E+02	0.00	1.78E+04
	21	941-	967	954.77	165.50	2.83E+03	0.00	3.18E+04
	22	994-	1008	998.20	173.03	4.77E+02	0.00	1.71E+04
	23	1008-	1027	1018.13	176.49	4.03E+04	0.00	2.18E+04
M	24	1078-	1107	1087.06	188.44	5.62E+03	0.00	1.51E+04
m	25	1078-	1107	1103.42	191.28	2.80E+02	0.00	1.30E+04
	26	1174-	1185	1178.76	204.34	1.07E+03	0.00	1.35E+04
	27	1197-	1209	1202.19	208.41	8.02E+02	0.00	1.48E+04
	28	1307-	1323	1315.73	228.10	6.97E+02	0.00	1.80E+04
	29	1331-	1345	1339.35	232.20	4.66E+02	0.00	1.57E+04
	30	1424-	1450	1431.64	248.20	1.09E+05	0.00	2.80E+04
	31	1450-	1464	1456.71	252.55	4.77E+02	0.00	1.43E+04
	32	1671-	1689	1678.66	291.04	1.84E+03	0.00	1.50E+04
	33	1843-	1869	1856.44	321.87	1.52E+03	0.00	1.84E+04
	34	2131-	2150	2141.91	371.38	3.97E+03	0.00	1.32E+04
	35	2189-	2212	2197.38	381.00	2.80E+03	0.00	1.56E+04
	36	2310-	2325	2316.54	401.67	1.20E+03	0.00	1.11E+04
	37	2460-	2484	2470.70	428.40	4.53E+04	0.00	1.55E+04
	38	2544-	2575	2565.38	444.82	3.93E+03	0.00	1.94E+04
	39	2620-	2659	2628.87	455.84	1.10E+03	0.00	1.06E+04
m	40	2620-	2659	2649.54	459.42	2.91E+02	0.00	1.06E+04
	41	2659-	2689	2675.49	463.92	1.52E+04	0.00	1.82E+04
	42	2750-	2772	2761.75	478.88	1.33E+03	0.00	1.32E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	3209-	3237	3220.25	558.40	1.34E+03	0.00	1.39E+04
	44	3349-	3373	3360.69	582.75	4.05E+03	0.00	1.16E+04
	45	3402-	3431	3417.10	592.54	2.36E+04	0.00	1.32E+04
	46	3445-	3487	3468.04	601.37	1.70E+04	0.00	1.87E+04
	47	3487-	3521	3503.36	607.50	4.98E+03	0.00	1.46E+04
	48	3602-	3619	3610.65	626.10	7.81E+02	0.00	7.91E+03
	49	3654-	3690	3671.88	636.72	1.09E+04	0.00	1.50E+04
M	50	3821-	3890	3828.56	663.90	3.23E+02	0.00	7.96E+03
m	51	3821-	3890	3854.39	668.37	2.94E+02	0.00	1.29E+04
m	52	3821-	3890	3876.84	672.27	1.85E+03	0.00	1.28E+04
	53	3898-	3915	3907.34	677.56	3.92E+02	0.00	7.33E+03
	54	3985-	4011	3998.26	693.33	6.94E+03	0.00	1.01E+04
	55	4023-	4035	4029.00	698.66	2.00E+03	0.00	1.68E+03

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

Errors quoted at 0.000 sigma

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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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Report Generated On                 :  3-08-96 11:53:33 AM

Sample Title                        : Attenuation NOPI-123-GAM4
Spectrum Description                : NOPI-123-GAM4 attenuation
Sample Identification               : NP123AT2
Sample Type                         :
Sample Geometry                     :

Peak Locate Threshold               :  3.00
Peak Locate Range (in channels)     :     1 -  4096
Peak Area Range (in channels)       :     1 -  4096
Identification Energy Tolerance     :    1.000 keV

Sample Size                         :   0.000E+00 Unit

Sample Taken On                     :
Acquisition Started                 :  3-07-96 10:13:47 AM

Live Time                           :     1800.0 seconds
Real Time                           :     1988.3 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: Attenuation NOPI-123-GAM4
Peak Locate Performed on: 3-08-96 11:53:28 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 3.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	95.23	0.3788	16.44	3.17
2	101.88	0.1332	17.55	26.11
3	115.82	0.3916	20.01	3.17
4	122.36	0.2496	21.14	10.28
5	158.92	0.0546	27.45	156.52
6	191.94	0.1613	31.36	21.74
7	205.56	0.0762	35.56	86.25
8	248.99	0.0407	42.81	319.70
9	262.11	0.1181	45.39	35.60
10	281.43	0.0516	48.73	165.31
11	289.09	0.0738	50.06	86.41
12	316.97	0.2378	54.91	7.63
13	347.02	0.0993	60.11	46.87
14	500.16	0.0372	86.65	306.19
15	608.45	0.0389	105.44	233.06
16	632.11	0.3351	109.31	3.35
17	653.76	0.2257	112.95	8.72
18	675.32	0.2445	117.19	7.37
19	682.85	0.2289	118.39	5.54
20	711.01	0.0223	123.23	731.58
21	759.93	0.3074	131.88	4.81
22	842.80	0.2849	146.06	4.08
23	886.97	0.3654	153.85	3.41
24	957.62	0.2209	165.65	5.33
25	997.88	0.2055	172.97	8.17
26	1018.39	0.0553	176.53	102.45
27	1087.28	0.1089	188.46	25.94
28	1179.03	0.1801	204.48	9.52
29	1201.53	0.2089	208.27	7.26
30	1316.44	0.2442	228.23	5.00
31	1431.96	0.0395	248.26	177.03
32	1458.32	0.2729	252.96	4.85
33	1679.11	0.1788	291.05	6.49
34	1857.40	0.2017	321.93	3.32
35	2142.53	0.1003	371.44	24.13
36	2197.38	0.1206	381.02	16.17
37	2317.69	0.1551	401.87	9.60
38	2471.26	0.0453	428.49	104.75
39	2567.18	0.1063	445.11	18.98
40	2628.96	0.1630	455.88	7.40
41	2649.71	0.2785	459.52	3.63

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2676.15	0.0620	464.04	54.79
43	2762.35	0.1553	479.03	9.31
44	2992.93	0.2734	518.93	3.39
45	3220.12	0.1549	558.35	8.46
46	3361.47	0.0960	582.92	20.07
47	3417.81	0.0515	592.66	69.64
48	3468.86	0.0565	601.50	57.66
49	3504.18	0.0855	607.70	25.44
50	3610.99	0.1411	626.18	10.84
51	3626.46	0.2757	628.77	3.10
52	3673.01	0.0666	636.85	40.69
53	3878.06	0.1329	672.31	9.71
54	3907.72	0.2333	678.07	3.45
55	3999.05	0.0745	693.43	30.21
56	4028.89	0.0988	698.38	20.48

Errors quoted at 0.000 sigma

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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: DET01
Sample Title: Attenuation NOPI-123-GAM4
Peak Analysis Performed on: 3-08-96 11:53:32 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	1	88-	109	95.29	16.44	3.88E+03	0.00	2.17E+04
m	2	88-	109	101.69	17.55	1.63E+04	0.00	2.18E+04
M	3	113-	130	115.90	20.01	7.06E+02	0.00	1.43E+04
m	4	113-	130	122.38	21.14	2.23E+03	0.00	1.87E+04
	5	156-	167	158.80	27.45	3.63E+05	0.00	4.89E+04
	6	170-	197	181.33	31.36	1.20E+05	0.00	8.51E+04
	7	197-	210	205.56	35.56	4.20E+04	0.00	5.06E+04
	8	234-	258	247.35	42.81	1.12E+06	0.00	1.44E+05
	9	258-	266	262.23	45.39	9.10E+03	0.00	2.74E+04
M	10	271-	299	281.47	48.73	2.36E+05	0.00	2.43E+04
m	11	271-	299	289.12	50.06	6.51E+04	0.00	1.77E+04
	12	312-	327	317.11	54.91	1.57E+03	0.00	2.26E+04
	13	341-	354	347.07	60.11	1.10E+04	0.00	2.13E+04
	14	487-	512	500.11	86.65	3.25E+05	0.00	6.80E+04
	15	602-	621	608.47	105.44	2.10E+05	0.00	5.00E+04
	16	621-	636	630.80	109.31	4.91E+02	0.00	3.94E+04
	17	640-	659	651.77	112.95	1.95E+03	0.00	5.18E+04
M	18	661-	692	676.20	117.19	4.14E+03	0.00	5.52E+04
m	19	661-	692	683.15	118.39	5.80E+03	0.00	5.76E+04
	20	698-	725	711.03	123.23	1.75E+06	0.00	6.50E+04
	21	755-	774	760.91	131.88	5.12E+02	0.00	2.78E+04
	22	837-	848	842.69	146.06	3.90E+02	0.00	1.59E+04
	23	883-	891	887.62	153.85	3.01E+02	0.00	1.09E+04
	24	945-	964	955.66	165.65	2.64E+03	0.00	2.40E+04
	25	992-	1002	997.87	172.97	9.19E+02	0.00	1.25E+04
	26	1009-	1025	1018.37	176.53	4.09E+04	0.00	1.88E+04
	27	1076-	1096	1087.16	188.46	5.60E+03	0.00	2.27E+04
	28	1171-	1187	1179.54	204.48	1.56E+03	0.00	1.90E+04
	29	1198-	1206	1201.41	208.27	7.23E+02	0.00	1.04E+04
	30	1310-	1323	1316.50	228.23	8.86E+02	0.00	1.45E+04
	31	1424-	1442	1431.95	248.26	1.09E+05	0.00	2.06E+04
	32	1455-	1468	1459.08	252.96	2.79E+02	0.00	1.34E+04
	33	1668-	1689	1678.68	291.05	2.06E+03	0.00	1.74E+04
	34	1846-	1866	1856.77	321.93	1.22E+03	0.00	1.47E+04
	35	2131-	2153	2142.24	371.44	4.40E+03	0.00	1.47E+04
	36	2187-	2210	2197.50	381.02	2.80E+03	0.00	1.56E+04
	37	2311-	2326	2317.68	401.87	1.34E+03	0.00	1.09E+04
	38	2454-	2485	2471.19	428.49	4.62E+04	0.00	1.99E+04
	39	2557-	2577	2567.01	445.11	3.87E+03	0.00	1.30E+04
M	40	2620-	2659	2629.14	455.88	1.49E+03	0.00	1.19E+04
m	41	2620-	2659	2650.13	459.52	4.01E+02	0.00	1.47E+04
	42	2665-	2692	2676.16	464.04	1.54E+04	0.00	1.64E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	2753-	2774	2762.60	479.03	1.38E+03	0.00	1.26E+04
	44	2985-	2999	2992.69	518.93	2.39E+02	0.00	9.05E+03
	45	3210-	3230	3219.96	558.35	9.61E+02	0.00	1.04E+04
	46	3349-	3375	3361.66	582.92	3.89E+03	0.00	1.26E+04
	47	3405-	3433	3417.82	592.66	2.33E+04	0.00	1.26E+04
	48	3456-	3482	3468.80	601.50	1.74E+04	0.00	1.17E+04
	49	3494-	3520	3504.54	607.70	4.66E+03	0.00	1.12E+04
M	50	3601-	3635	3611.10	626.18	1.22E+03	0.00	8.27E+03
m	51	3601-	3635	3626.00	628.77	3.83E+02	0.00	9.92E+03
	52	3651-	3688	3672.60	636.85	1.06E+04	0.00	1.62E+04
	53	3865-	3889	3877.07	672.31	1.74E+03	0.00	1.04E+04
	54	3902-	3921	3910.27	678.07	4.34E+02	0.00	7.88E+03
	55	3981-	4015	3998.89	693.43	7.32E+03	0.00	1.28E+04
	56	4018-	4035	4027.39	698.38	3.07E+03	0.00	2.71E+03

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

Errors quoted at 0.000 sigma

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

Report Generated On              :  3-06-96  9:22:57 AM

Sample Title                     : Background 03/05/96
Spectrum Description             : Background 03/05/96
Sample Identification            : BG030596
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  2.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-05-96 10:35:19 AM

Live Time                        :    80000.0 seconds
Real Time                        :    80003.0 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: Background 03/05/96
Peak Locate Performed on: 3-06-96 9:20:18 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	366.25	0.3731	63.33	2.81
2	534.87	0.3232	92.71	3.00
3	635.56	0.3366	109.93	3.51
4	1072.67	0.2752	186.07	4.14
5	1139.16	0.2637	197.61	5.25
6	1380.12	0.3477	238.80	3.00
7	1705.88	0.3008	295.78	3.50
8	2033.07	0.2640	352.48	3.87
9	2817.19	0.3553	488.51	2.14
10	2951.74	0.2050	512.08	3.42
11	3184.46	0.3550	552.20	2.01
12	3194.90	0.3562	554.01	2.21
13	3521.38	0.2662	610.71	2.49
14	3605.84	0.2978	625.22	2.58
15	3946.73	0.3172	684.37	2.00
16	4030.47	0.3087	698.85	2.51

Errors quoted at 1.000 sigma

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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: DET01
Sample Title: Background 03/05/96
Peak Analysis Performed on: 3-06-96 9:20:53 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	360-	369	365.68	63.33	9.07E+01	19.65	1.31E+02
	2	528-	542	535.04	92.71	1.89E+02	31.72	2.81E+02
	3	625-	640	634.37	109.93	8.10E+01	30.07	2.74E+02
	4	1066-	1083	1073.41	186.07	9.54E+01	32.14	2.87E+02
	5	1132-	1154	1139.90	197.61	8.35E+01	37.06	3.30E+02
	6	1367-	1386	1377.42	238.80	3.47E+01	28.20	2.17E+02
	7	1701-	1710	1706.00	295.78	2.87E+01	15.90	9.93E+01
	8	2026-	2038	2032.90	352.48	4.33E+01	16.55	8.77E+01
	9	2813-	2822	2817.29	488.51	1.58E+01	8.56	2.52E+01
	10	2939-	2968	2953.19	512.08	2.98E+02	33.65	1.76E+02
M	11	3177-	3200	3184.52	552.20	1.20E+01	6.33	1.65E+01
m	12	3177-	3200	3194.96	554.01	1.03E+01	5.50	1.03E+01
	13	3511-	3531	3521.89	610.71	3.72E+01	16.86	6.78E+01
	14	3599-	3611	3605.58	625.22	2.14E+01	8.56	1.96E+01
	15	3941-	3954	3946.62	684.37	1.65E+01	9.52	2.65E+01
	16	4025-	4036	4030.14	698.85	1.58E+01	7.48	1.12E+01

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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*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************

Report Generated On              :  4-03-96 12:02:43 PM

Sample Title                     : DP1B standard
Spectrum Description             : DP1B standard
Sample Identification            : DP1B_3
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  2.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-09-96  3:01:55 PM

Live Time                        :    80000.0 seconds
Real Time                        :    80027.4 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: DP1B standard
Peak Locate Performed on: 4-03-96 12:00:35 PM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.35	0.4498	5.37	3.21
2	37.18	0.3277	6.44	7.64
3	63.41	0.2187	10.88	12.40
4	75.94	0.1982	13.06	13.88
5	94.29	0.1872	16.31	20.28
6	114.00	0.3712	19.33	7.26
7	148.84	0.1973	25.69	14.56
8	158.75	0.2273	27.44	10.96
9	269.39	0.0883	46.64	62.60
10	289.95	0.1954	50.13	13.23
11	307.98	0.1164	53.33	33.57
12	366.06	0.0795	63.40	72.03
13	391.41	0.1634	67.79	15.18
14	421.36	0.3656	72.79	3.20
15	432.66	0.0702	74.94	81.11
16	445.88	0.0618	77.23	109.58
17	458.66	0.1276	79.48	24.53
18	468.93	0.1270	81.24	26.71
19	484.59	0.1092	83.97	30.34
20	504.47	0.0951	87.33	36.44
21	519.37	0.1131	90.07	28.37
22	535.06	0.0782	92.72	46.78
23	547.74	0.1637	94.90	14.18
24	568.98	0.1795	98.35	13.32
25	643.00	0.3483	111.26	3.31
26	652.08	0.1792	113.02	12.09
27	753.39	0.3002	130.56	3.74
28	831.01	0.1287	144.12	18.71
29	891.03	0.1792	154.41	11.14
30	904.43	0.3714	156.58	2.29
31	943.83	0.1783	163.53	11.17
32	1074.77	0.0728	186.29	49.11
33	1186.59	0.2072	205.68	7.35
34	1279.80	0.3572	221.63	2.12
35	1344.64	0.4283	232.97	2.01
36	1363.56	0.1588	236.39	11.43
37	1378.96	0.2328	239.09	5.24
38	1398.12	0.0672	242.37	61.40
39	1480.70	0.1842	256.71	8.72
40	1495.60	0.1714	259.20	8.30
41	1556.66	0.1527	269.87	12.06

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1567.30	0.1723	271.75	10.18
43	1588.09	0.2189	275.09	6.15
44	1601.04	0.3717	277.46	2.36
45	1639.05	0.2967	284.14	3.81
46	1653.47	0.2512	286.51	4.83
47	1705.68	0.0529	295.72	88.33
48	1733.47	0.2210	300.60	5.09
49	1871.41	0.2876	324.81	2.68
50	1906.07	0.2446	330.45	4.18
51	1956.02	0.3328	338.90	2.73
52	2033.24	0.0470	352.52	104.57
53	2064.20	0.2811	357.88	3.94
54	2155.29	0.3797	373.75	2.26
55	2235.25	0.2761	387.52	2.56
56	2246.66	0.2427	389.70	4.38
57	2292.02	0.3713	397.86	2.43
58	2322.03	0.2575	402.65	3.59
59	2448.71	0.3190	424.81	2.41
60	2554.83	0.3110	442.92	3.04
61	2627.19	0.2811	455.11	2.87
62	2815.13	0.2346	487.85	4.22
63	2870.75	0.3177	497.74	2.48
64	3084.24	0.2458	534.66	3.37
65	3465.07	0.2641	600.65	3.07
66	3520.20	0.0509	610.41	66.69
67	3633.99	0.2922	630.02	2.90
68	3843.65	0.1445	666.56	8.34
69	3977.38	0.2802	689.54	2.35
70	4028.56	0.1535	698.57	8.22

Errors quoted at 1.000 sigma

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

Detector Name: DET01
Sample Title: DP1B standard
Peak Analysis Performed on: 4-03-96 12:01:18 PM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	28-	34	31.44	5.37	2.56E+02	125.40	5.53E+03
2	34-	40	37.60	6.44	1.18E+03	125.87	5.27E+03
3	60-	66	63.21	10.88	4.59E+03	132.04	4.62E+03
4	72-	79	75.82	13.06	1.49E+04	194.58	7.64E+03
5	92-	97	94.55	16.31	9.09E+03	205.09	1.29E+04
6	107-	117	111.95	19.33	4.57E+03	197.06	9.10E+03
7	144-	152	148.62	25.69	1.98E+03	130.53	4.62E+03
8	154-	162	158.73	27.44	1.97E+03	127.16	4.36E+03
9	264-	274	269.41	46.64	2.23E+04	204.19	5.18E+03
10	284-	295	289.53	50.13	2.40E+03	152.22	5.17E+03
11	302-	313	308.01	53.33	5.52E+03	165.56	5.47E+03
12	360-	371	366.06	63.40	2.09E+04	216.83	6.53E+03
13	389-	397	391.38	67.79	2.14E+03	137.25	4.94E+03
14	415-	424	420.19	72.79	3.27E+02	142.69	5.68E+03
15	426-	438	432.57	74.94	3.12E+04	256.59	8.14E+03
16	439-	451	445.82	77.23	5.60E+04	298.09	7.71E+03
17	452-	464	458.79	79.48	2.48E+03	200.08	8.83E+03
18	464-	474	468.94	81.24	3.69E+03	158.74	5.72E+03
19	478-	490	484.69	83.97	9.18E+03	185.74	5.96E+03
20	498-	510	504.03	87.33	1.78E+04	216.67	6.79E+03
21	513-	525	519.86	90.07	7.08E+03	185.64	6.44E+03
22	528-	541	535.15	92.72	2.62E+04	238.41	6.81E+03
23	543-	554	547.66	94.90	2.47E+03	157.30	5.53E+03
24	559-	575	567.59	98.35	2.25E+03	178.77	5.65E+03
25	637-	646	642.04	111.26	4.21E+02	108.91	3.25E+03
26	646-	658	652.15	113.02	8.44E+02	143.73	4.65E+03
27	746-	760	753.30	130.56	4.41E+02	147.06	4.44E+03
28	823-	838	831.50	144.12	3.11E+03	165.73	4.87E+03
29	883-	898	890.85	154.41	1.18E+03	162.99	5.06E+03
30	898-	908	903.35	156.58	2.18E+02	113.14	3.33E+03
31	935-	951	943.43	163.53	1.09E+03	159.03	4.60E+03
32	1066-	1083	1074.65	186.29	1.92E+04	215.04	4.92E+03
33	1180-	1195	1186.44	205.68	6.41E+02	132.85	3.38E+03
34	1273-	1288	1278.42	221.63	2.81E+02	116.19	2.62E+03
35	1341-	1348	1343.80	232.97	1.39E+02	61.91	1.21E+03
36	1357-	1372	1363.51	236.39	7.14E+02	126.56	3.03E+03
37	1372-	1388	1379.12	239.09	3.93E+02	127.18	2.99E+03
38	1388-	1407	1398.04	242.37	1.47E+04	178.35	2.86E+03
39	1476-	1485	1480.67	256.71	4.28E+02	76.42	1.54E+03
40	1486-	1505	1495.05	259.20	9.47E+02	134.12	2.83E+03
41	1550-	1562	1556.59	269.87	7.37E+02	100.16	2.18E+03
42	1562-	1573	1567.44	271.75	3.39E+02	93.75	2.10E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1578-	1595	1586.68	275.09	5.09E+02	119.46	2.50E+03
44	1595-	1605	1600.35	277.46	1.10E+02	73.13	1.39E+03
45	1634-	1643	1638.89	284.14	1.15E+02	70.29	1.37E+03
46	1643-	1659	1652.53	286.51	2.85E+02	114.18	2.43E+03
47	1695-	1715	1705.61	295.72	2.83E+04	215.63	2.92E+03
48	1729-	1741	1733.75	300.60	3.09E+02	85.79	1.65E+03
49	1866-	1881	1873.35	324.81	3.37E+02	96.42	1.79E+03
50	1901-	1912	1905.87	330.45	1.26E+02	77.81	1.48E+03
51	1945-	1966	1954.60	338.90	2.35E+02	139.56	2.95E+03
52	2022-	2044	2033.13	352.52	4.23E+04	249.99	3.00E+03
53	2060-	2069	2064.03	357.88	1.11E+02	61.62	1.04E+03
54	2151-	2160	2155.58	373.75	9.91E+01	61.51	1.04E+03
55	2229-	2241	2234.97	387.52	1.97E+02	81.73	1.51E+03
56	2241-	2255	2247.51	389.70	2.38E+02	92.28	1.74E+03
57	2288-	2301	2294.59	397.86	1.77E+02	83.66	1.51E+03
58	2313-	2329	2322.20	402.65	2.67E+02	105.83	2.08E+03
59	2444-	2454	2449.98	424.81	1.66E+02	68.85	1.22E+03
60	2548-	2560	2554.40	442.92	8.29E+01	71.08	1.16E+03
61	2615-	2636	2624.67	455.11	3.51E+02	109.78	1.79E+03
62	2802-	2827	2813.47	487.85	4.48E+02	118.88	1.82E+03
63	2860-	2881	2870.49	497.74	1.68E+02	98.21	1.46E+03
64	3075-	3091	3083.39	534.66	1.54E+02	78.48	1.14E+03
65	3451-	3474	3463.87	600.65	2.73E+02	106.02	1.57E+03
66	3506-	3533	3520.15	610.41	2.11E+04	190.09	1.88E+03
67	3628-	3640	3633.25	630.02	8.75E+01	55.67	7.01E+02
68	3834-	3854	3843.90	666.56	6.55E+02	86.17	1.08E+03
69	3972-	3986	3976.45	689.54	9.81E+01	60.64	7.41E+02
70	4022-	4035	4028.52	698.57	3.54E+02	39.87	2.55E+02

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
****

Detector Name: DET01
Sample Title: DP1B standard
Peak Analysis Performed on: 4-03-96 12:00:35 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.37	2.56E+02	125.40			2.56E+02	1.25E+02
2	6.44	1.18E+03	125.87			1.18E+03	1.26E+02
3	10.88	4.59E+03	132.04			4.59E+03	1.32E+02
4	13.06	1.49E+04	194.58			1.49E+04	1.95E+02
5	16.31	9.09E+03	205.09			9.09E+03	2.05E+02
6	19.33	4.57E+03	197.06			4.57E+03	1.97E+02
7	25.69	1.98E+03	130.53			1.98E+03	1.31E+02
8	27.44	1.97E+03	127.16			1.97E+03	1.27E+02
9	46.64	2.23E+04	204.19			2.23E+04	2.04E+02
10	50.13	2.40E+03	152.22			2.40E+03	1.52E+02
11	53.33	5.52E+03	165.56			5.52E+03	1.66E+02
12	63.40	2.09E+04	216.83			2.09E+04	2.17E+02
13	67.79	2.14E+03	137.25			2.14E+03	1.37E+02
14	72.79	3.27E+02	142.69			3.27E+02	1.43E+02
15	74.94	3.12E+04	256.59			3.12E+04	2.57E+02
16	77.23	5.60E+04	298.09			5.60E+04	2.98E+02
17	79.48	2.48E+03	200.08			2.48E+03	2.00E+02
18	81.24	3.69E+03	158.74			3.69E+03	1.59E+02
19	83.97	9.18E+03	185.74			9.18E+03	1.86E+02
20	87.33	1.78E+04	216.67			1.78E+04	2.17E+02
21	90.07	7.08E+03	185.64			7.08E+03	1.86E+02
22	92.72	2.62E+04	238.41	1.89E+02	3.17E+01	2.60E+04	2.41E+02
23	94.90	2.47E+03	157.30			2.47E+03	1.57E+02
24	98.35	2.25E+03	178.77			2.25E+03	1.79E+02
25	111.26	4.21E+02	108.91			4.21E+02	1.09E+02
26	113.02	8.44E+02	143.73			8.44E+02	1.44E+02
27	130.56	4.41E+02	147.06			4.41E+02	1.47E+02
28	144.12	3.11E+03	165.73			3.11E+03	1.66E+02
29	154.41	1.18E+03	162.99			1.18E+03	1.63E+02
30	156.58	2.18E+02	113.14			2.18E+02	1.13E+02
31	163.53	1.09E+03	159.03			1.09E+03	1.59E+02
32	186.29	1.92E+04	215.04	9.54E+01	3.21E+01	1.91E+04	2.17E+02
33	205.68	6.41E+02	132.85			6.41E+02	1.33E+02
34	221.63	2.81E+02	116.19			2.81E+02	1.16E+02
35	232.97	1.39E+02	61.91			1.39E+02	6.19E+01
36	236.39	7.14E+02	126.56			7.14E+02	1.27E+02
37	239.09	3.93E+02	127.18			3.93E+02	1.27E+02
38	242.37	1.47E+04	178.35			1.47E+04	1.78E+02
39	256.71	4.28E+02	76.42			4.28E+02	7.64E+01
40	259.20	9.47E+02	134.12			9.47E+02	1.34E+02
41	269.87	7.37E+02	100.16			7.37E+02	1.00E+02
42	271.75	3.39E+02	93.75			3.39E+02	9.37E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	275.09	5.09E+02	119.46			5.09E+02	1.19E+02
44	277.46	1.10E+02	73.13			1.10E+02	7.31E+01
45	284.14	1.15E+02	70.29			1.15E+02	7.03E+01
46	286.51	2.85E+02	114.18			2.85E+02	1.14E+02
47	295.72	2.83E+04	215.63	2.87E+01	1.59E+01	2.82E+04	2.16E+02
48	300.60	3.09E+02	85.79			3.09E+02	8.58E+01
49	324.81	3.37E+02	96.42			3.37E+02	9.64E+01
50	330.45	1.26E+02	77.81			1.26E+02	7.78E+01
51	338.90	2.35E+02	139.56			2.35E+02	1.40E+02
52	352.52	4.23E+04	249.99	4.33E+01	1.65E+01	4.23E+04	2.51E+02
53	357.88	1.11E+02	61.62			1.11E+02	6.16E+01
54	373.75	9.91E+01	61.51			9.91E+01	6.15E+01
55	387.52	1.97E+02	81.73			1.97E+02	8.17E+01
56	389.70	2.38E+02	92.28			2.38E+02	9.23E+01
57	397.86	1.77E+02	83.66			1.77E+02	8.37E+01
58	402.65	2.67E+02	105.83			2.67E+02	1.06E+02
59	424.81	1.66E+02	68.85			1.66E+02	6.88E+01
60	442.92	8.29E+01	71.08			8.29E+01	7.11E+01
61	455.11	3.51E+02	109.78			3.51E+02	1.10E+02
62	487.85	4.48E+02	118.88			4.48E+02	1.19E+02
63	497.74	1.68E+02	98.21			1.68E+02	9.82E+01
64	534.66	1.54E+02	78.48			1.54E+02	7.85E+01
65	600.65	2.73E+02	106.02			2.73E+02	1.06E+02
66	610.41	2.11E+04	190.09			2.11E+04	1.90E+02
67	630.02	8.75E+01	55.67			8.75E+01	5.57E+01
68	666.56	6.55E+02	86.17			6.55E+02	8.62E+01
69	689.54	9.81E+01	60.64			9.81E+01	6.06E+01
70	698.57	3.54E+02	39.87			3.54E+02	3.99E+01

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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*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************

Report Generated On              :  4-03-96 12:10:41 PM

Sample Title                     : DP1B standard
Spectrum Description             : DP1B standard
Sample Identification            : DP1B_4
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  2.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-15-96 12:02:21 PM

Live Time                        :    80000.0 seconds
Real Time                        :    80027.6 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: DP1B standard
Peak Locate Performed on: 4-03-96 12:09:05 PM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.63	0.5686	5.36	2.19
2	37.23	0.3341	6.46	6.94
3	63.46	0.2137	10.91	11.85
4	76.00	0.2054	13.07	14.42
5	98.00	0.6260	16.41	2.55
6	114.11	0.4181	19.36	5.10
7	148.98	0.2010	25.75	15.64
8	158.92	0.2173	27.51	12.99
9	186.43	0.5025	32.03	2.48
10	211.90	0.3958	36.73	3.10
11	269.70	0.0869	46.68	65.51
12	290.26	0.2087	50.12	11.49
13	308.18	0.1166	53.38	34.41
14	366.26	0.0815	63.44	67.25
15	391.70	0.1631	67.81	16.59
16	409.09	0.4399	71.01	2.82
17	432.97	0.0713	74.99	84.65
18	446.06	0.0621	77.28	110.84
19	458.89	0.1311	79.52	24.29
20	469.01	0.1288	81.31	25.72
21	484.96	0.1125	84.03	31.35
22	504.85	0.0948	87.41	36.30
23	519.66	0.1136	90.11	28.71
24	535.39	0.0798	92.79	47.29
25	548.13	0.1610	94.98	14.78
26	569.19	0.1860	98.39	11.76
27	578.94	0.4095	100.17	3.18
28	590.97	0.4360	102.83	2.86
29	610.77	0.3690	105.82	2.96
30	652.42	0.1729	113.10	12.04
31	698.87	0.3846	121.14	2.50
32	759.28	0.5733	130.87	2.19
33	831.60	0.1321	144.16	18.73
34	891.61	0.1862	154.53	9.62
35	944.30	0.1948	163.81	7.15
36	1075.43	0.0727	186.39	46.78
37	1148.61	0.4127	199.51	2.05
38	1166.71	0.3242	202.37	2.80
39	1187.03	0.2158	205.63	6.77
40	1363.98	0.1638	236.50	10.91
41	1379.36	0.2129	239.20	5.30

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1398.95	0.0667	242.52	62.17
43	1481.31	0.1878	256.84	8.34
44	1496.54	0.1725	259.36	9.00
45	1557.46	0.1505	269.92	11.54
46	1568.08	0.1739	271.96	9.39
47	1588.87	0.2167	275.19	6.11
48	1626.35	0.3652	281.66	2.70
49	1653.72	0.2771	286.62	3.42
50	1706.55	0.0530	295.87	86.25
51	1733.74	0.2037	300.71	6.34
52	1843.78	0.3819	319.86	2.30
53	1872.91	0.2506	324.74	3.37
54	1955.66	0.2886	338.88	2.71
55	2034.32	0.0472	352.70	103.11
56	2067.45	0.3925	358.43	2.10
57	2131.89	0.3243	369.42	2.83
58	2202.83	0.3061	381.99	3.32
59	2235.97	0.2436	387.76	4.06
60	2247.21	0.2963	389.60	2.97
61	2322.92	0.2139	402.90	5.16
62	2521.01	0.3644	437.25	2.02
63	2628.68	0.3132	456.26	2.21
64	2778.73	0.2526	481.91	3.01
65	2815.53	0.2373	488.21	4.23
66	3084.95	0.2663	534.68	3.08
67	3226.67	0.2507	559.67	4.03
68	3371.45	0.3197	584.55	2.28
69	3522.00	0.0509	610.72	67.36
70	3771.32	0.3383	654.57	2.36
71	3846.58	0.1528	666.84	7.09
72	4028.05	0.1607	698.34	7.10

Errors quoted at 1.000 sigma

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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: DET01
Sample Title: DP1B standard
Peak Analysis Performed on: 4-03-96 12:09:36 PM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	28-	34	31.42	5.36	2.11E+02	125.16	5.52E+03
2	34-	40	37.73	6.46	1.14E+03	127.29	5.43E+03
3	60-	66	63.41	10.91	4.51E+03	134.03	4.86E+03
4	72-	79	75.84	13.07	1.48E+04	193.15	7.47E+03
5	92-	101	95.12	16.41	1.15E+04	266.59	1.61E+04
6	107-	117	112.10	19.36	4.77E+03	196.90	9.04E+03
7	144-	153	148.94	25.75	2.14E+03	144.26	5.32E+03
8	154-	163	159.14	27.51	1.77E+03	139.60	5.05E+03
9	182-	190	185.17	32.03	1.85E+02	121.17	4.41E+03
10	207-	216	212.29	36.73	3.98E+02	129.48	4.65E+03
11	264-	274	269.64	46.68	2.27E+04	203.39	4.98E+03
12	285-	295	289.49	50.12	2.33E+03	142.38	4.72E+03
13	302-	313	308.26	53.38	5.54E+03	165.43	5.45E+03
14	360-	371	366.32	63.44	2.13E+04	213.27	6.03E+03
15	386-	397	391.48	67.81	2.76E+03	167.13	6.26E+03
16	407-	414	409.96	71.01	1.65E+02	115.46	4.35E+03
17	427-	438	432.86	74.99	3.14E+04	248.08	7.53E+03
18	440-	451	446.10	77.28	5.61E+04	290.95	7.14E+03
19	455-	464	459.00	79.52	4.18E+03	152.99	5.41E+03
20	464-	475	469.30	81.31	3.72E+03	169.95	6.28E+03
21	478-	491	485.00	84.03	9.50E+03	194.37	6.28E+03
22	500-	511	504.50	87.41	1.76E+04	209.83	6.38E+03
23	513-	525	520.07	90.11	6.85E+03	186.40	6.55E+03
24	529-	541	535.51	92.79	2.65E+04	228.46	6.05E+03
25	543-	554	548.14	94.98	2.32E+03	159.23	5.74E+03
26	562-	575	567.82	98.39	2.39E+03	155.86	4.82E+03
27	575-	582	578.06	100.17	1.36E+02	91.69	2.72E+03
28	588-	597	593.41	102.83	1.36E+02	107.24	3.24E+03
29	604-	617	610.66	105.82	4.54E+02	141.11	4.31E+03
30	646-	659	652.66	113.10	1.07E+03	152.71	4.94E+03
31	695-	702	698.97	121.14	1.84E+02	85.87	2.38E+03
32	751-	762	755.10	130.87	2.58E+02	121.51	3.59E+03
33	824-	839	831.75	144.16	2.80E+03	168.16	5.08E+03
34	883-	899	891.50	154.53	8.91E+02	175.34	5.67E+03
35	936-	952	945.01	163.81	1.25E+03	157.01	4.46E+03
36	1067-	1083	1075.24	186.39	1.94E+04	207.12	4.47E+03
37	1145-	1157	1150.90	199.51	2.86E+02	114.96	3.03E+03
38	1158-	1175	1167.34	202.37	4.58E+02	152.22	4.13E+03
39	1178-	1195	1186.18	205.63	6.81E+02	148.17	3.86E+03
40	1354-	1373	1364.17	236.50	1.01E+03	147.15	3.44E+03
41	1373-	1385	1379.76	239.20	4.91E+02	97.91	2.14E+03
42	1389-	1408	1398.86	242.52	1.43E+04	182.96	3.20E+03

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1476-	1486	1481.46	256.84	4.66E+02	82.65	1.69E+03
	44	1487-	1506	1495.97	259.36	8.53E+02	136.66	2.96E+03
	45	1548-	1562	1556.90	269.92	9.90E+02	108.97	2.29E+03
	46	1562-	1574	1568.65	271.96	3.17E+02	103.43	2.43E+03
	47	1579-	1596	1587.28	275.19	3.90E+02	122.85	2.66E+03
	48	1616-	1631	1624.54	281.66	1.58E+02	105.29	2.18E+03
	49	1645-	1663	1653.15	286.62	3.94E+02	125.54	2.66E+03
	50	1696-	1716	1706.50	295.87	2.80E+04	213.59	2.82E+03
	51	1727-	1743	1734.41	300.71	4.46E+02	104.80	2.00E+03
	52	1838-	1851	1844.82	319.86	1.62E+02	84.31	1.54E+03
	53	1866-	1878	1872.95	324.74	2.16E+02	84.14	1.61E+03
	54	1945-	1962	1954.48	338.88	1.40E+02	117.35	2.47E+03
	55	2023-	2045	2034.20	352.70	4.20E+04	251.31	3.14E+03
	56	2063-	2072	2067.25	358.43	1.15E+02	61.70	1.05E+03
	57	2122-	2136	2130.62	369.42	1.59E+02	86.72	1.55E+03
	58	2198-	2207	2203.06	381.99	9.47E+01	60.83	1.03E+03
M	59	2229-	2254	2236.34	387.76	2.18E+02	57.42	1.89E+03
m	60	2229-	2254	2246.95	389.60	1.66E+02	49.71	2.01E+03
	61	2316-	2331	2323.66	402.90	3.18E+02	98.61	1.88E+03
	62	2517-	2526	2521.72	437.25	1.36E+02	56.29	8.63E+02
	63	2618-	2640	2631.32	456.26	2.65E+02	117.57	2.01E+03
	64	2772-	2787	2779.20	481.91	1.33E+02	82.57	1.33E+03
	65	2803-	2827	2815.56	488.21	4.78E+02	112.13	1.67E+03
	66	3074-	3094	3083.49	534.68	1.44E+02	93.92	1.38E+03
	67	3221-	3234	3227.57	559.67	1.24E+02	61.88	8.21E+02
	68	3366-	3378	3371.02	584.55	8.23E+01	60.76	8.43E+02
	69	3508-	3535	3521.94	610.72	2.09E+04	191.09	1.95E+03
	70	3766-	3785	3774.80	654.57	1.25E+02	78.14	9.93E+02
	71	3832-	3860	3845.53	666.84	7.04E+02	112.12	1.44E+03
	72	4017-	4035	4027.14	698.34	4.20E+02	54.73	4.33E+02

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
****

Detector Name: DET01
Sample Title: DP1B standard
Peak Analysis Performed on: 4-03-96 12:09:05 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	5.36	2.11E+02	125.16			2.11E+02	1.25E+02	
2	6.46	1.14E+03	127.29			1.14E+03	1.27E+02	
3	10.91	4.51E+03	134.03			4.51E+03	1.34E+02	
4	13.07	1.48E+04	193.15			1.48E+04	1.93E+02	
5	16.41	1.15E+04	266.59			1.15E+04	2.67E+02	
6	19.36	4.77E+03	196.90			4.77E+03	1.97E+02	
7	25.75	2.14E+03	144.26			2.14E+03	1.44E+02	
8	27.51	1.77E+03	139.60			1.77E+03	1.40E+02	
9	32.03	1.85E+02	121.17			1.85E+02	1.21E+02	
10	36.73	3.98E+02	129.48			3.98E+02	1.29E+02	
11	46.68	2.27E+04	203.39			2.27E+04	2.03E+02	
12	50.12	2.33E+03	142.38			2.33E+03	1.42E+02	
13	53.38	5.54E+03	165.43			5.54E+03	1.65E+02	
14	63.44	2.13E+04	213.27			2.13E+04	2.13E+02	
15	67.81	2.76E+03	167.13			2.76E+03	1.67E+02	2.57E+03 ± 4.4%
16	71.01	1.65E+02	115.46			1.65E+02	1.15E+02	
17	74.99	3.14E+04	248.08			3.14E+04	2.48E+02	
18	77.28	5.61E+04	290.95			5.61E+04	2.91E+02	
19	79.52	4.18E+03	152.99			4.18E+03	1.53E+02	
20	81.31	3.72E+03	169.95			3.72E+03	1.70E+02	
21	84.03	9.50E+03	194.37			9.50E+03	1.94E+02	
22	87.41	1.76E+04	209.83			1.76E+04	2.10E+02	
23	90.11	6.85E+03	186.40			6.85E+03	1.86E+02	
24	92.79	2.65E+04	228.46	1.89E+02	3.17E+01	2.63E+04	2.31E+02	
25	94.98	2.32E+03	159.23			2.32E+03	1.59E+02	
26	98.39	2.39E+03	155.86			2.39E+03	1.56E+02	
27	100.17	1.36E+02	91.69			1.36E+02	9.17E+01	
28	102.83	1.36E+02	107.24			1.36E+02	1.07E+02	
29	105.82	4.54E+02	141.11			4.54E+02	1.41E+02	
30	113.10	1.07E+03	152.71			1.07E+03	1.53E+02	
31	121.14	1.84E+02	85.87			1.84E+02	8.59E+01	
32	130.87	2.58E+02	121.51			2.58E+02	1.22E+02	
33	144.16	2.80E+03	168.16			2.80E+03	1.68E+02	
34	154.53	8.91E+02	175.34			8.91E+02	1.75E+02	
35	163.81	1.25E+03	157.01			1.25E+03	1.57E+02	
36	186.39	1.94E+04	207.12	9.54E+01	3.21E+01	1.93E+04	2.10E+02	
37	199.51	2.86E+02	114.96			2.86E+02	1.15E+02	
38	202.37	4.58E+02	152.22			4.58E+02	1.52E+02	
39	205.63	6.81E+02	148.17			6.81E+02	1.48E+02	
40	236.50	1.01E+03	147.15			1.01E+03	1.47E+02	
41	239.20	4.91E+02	97.91			4.91E+02	9.79E+01	
42	242.52	1.43E+04	182.96			1.43E+04	1.83E+02	

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	256.84	4.66E+02	82.65			4.66E+02	8.26E+01
44	259.36	8.53E+02	136.66			8.53E+02	1.37E+02
45	269.92	9.90E+02	108.97			9.90E+02	1.09E+02
46	271.96	3.17E+02	103.43			3.17E+02	1.03E+02
47	275.19	3.90E+02	122.85			3.90E+02	1.23E+02
48	281.66	1.58E+02	105.29			1.58E+02	1.05E+02
49	286.62	3.94E+02	125.54			3.94E+02	1.26E+02
50	295.87	2.80E+04	213.59	2.87E+01	1.59E+01	2.79E+04	2.14E+02
51	300.71	4.46E+02	104.80			4.46E+02	1.05E+02
52	319.86	1.62E+02	84.31			1.62E+02	8.43E+01
53	324.74	2.16E+02	84.14			2.16E+02	8.41E+01
54	338.88	1.40E+02	117.35			1.40E+02	1.17E+02
55	352.70	4.20E+04	251.31	4.33E+01	1.65E+01	4.20E+04	2.52E+02
56	358.43	1.15E+02	61.70			1.15E+02	6.17E+01
57	369.42	1.59E+02	86.72			1.59E+02	8.67E+01
58	381.99	9.47E+01	60.83			9.47E+01	6.08E+01
M 59	387.76	2.18E+02	57.42			2.18E+02	5.74E+01
m 60	389.60	1.66E+02	49.71			1.66E+02	4.97E+01
61	402.90	3.18E+02	98.61			3.18E+02	9.86E+01
62	437.25	1.36E+02	56.29			1.36E+02	5.63E+01
63	456.26	2.65E+02	117.57			2.65E+02	1.18E+02
64	481.91	1.33E+02	82.57			1.33E+02	8.26E+01
65	488.21	4.78E+02	112.13			4.78E+02	1.12E+02
66	534.68	1.44E+02	93.92			1.44E+02	9.39E+01
67	559.67	1.24E+02	61.88			1.24E+02	6.19E+01
68	584.55	8.23E+01	60.76			8.23E+01	6.08E+01
69	610.72	2.09E+04	191.09			2.09E+04	1.91E+02
70	654.57	1.25E+02	78.14			1.25E+02	7.81E+01
71	666.84	7.04E+02	112.12			7.04E+02	1.12E+02
72	698.34	4.20E+02	54.73			4.20E+02	5.47E+01

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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*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************

Report Generated On              :  4-03-96 12:15:58 PM

Sample Title                     : DP1B standard
Spectrum Description             : DP1B standard
Sample Identification            : DP1B_5
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  2.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-27-96  8:45:05 AM

Live Time                        :    80000.0 seconds
Real Time                        :    80027.6 seconds


            Energy Calibration Used Done On       :  1-16-96
            Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: DP1B standard
Peak Locate Performed on: 4-03-96 12:14:10 PM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.75	0.4692	5.37	3.41
2	37.38	0.3589	6.45	4.78
3	46.92	0.6410	8.10	2.25
4	63.47	0.2141	10.88	11.60
5	76.05	0.2027	13.06	14.11
6	94.38	0.1846	16.32	18.15
7	110.42	0.1961	19.13	15.05
8	114.52	0.3787	20.02	3.60
9	148.95	0.1969	25.74	15.83
10	158.88	0.2154	27.48	11.53
11	211.42	0.5167	36.46	2.18
12	269.57	0.0893	46.66	62.24
13	290.19	0.1969	50.12	13.58
14	308.13	0.1144	53.36	35.80
15	366.17	0.0809	63.42	69.23
16	391.61	0.1654	67.79	16.18
17	421.51	0.3955	72.80	3.36
18	432.87	0.0713	74.97	83.75
19	446.01	0.0620	77.26	111.16
20	458.80	0.1312	79.53	23.68
21	469.01	0.1275	81.26	26.31
22	484.79	0.1105	84.02	32.70
23	504.60	0.0950	87.38	35.87
24	519.53	0.1129	90.10	27.86
25	535.27	0.0791	92.76	45.63
26	547.96	0.1629	94.92	13.70
27	569.00	0.1817	98.40	12.93
28	652.29	0.1780	113.12	11.92
29	707.28	0.2863	122.60	4.78
30	753.39	0.3640	130.94	3.29
31	831.49	0.1346	144.18	17.22
32	891.32	0.1787	154.51	11.03
33	944.10	0.1919	163.62	10.03
34	1075.15	0.0731	186.35	48.11
35	1186.69	0.1983	205.75	7.49
36	1217.69	0.3764	210.91	2.15
37	1364.11	0.1544	236.47	12.11
38	1379.14	0.2197	239.26	5.56
39	1398.70	0.0657	242.47	62.89
40	1480.90	0.2128	256.50	6.51
41	1496.30	0.1770	259.44	9.14

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1557.37	0.1491	269.84	11.94
43	1567.83	0.1676	271.85	10.84
44	1588.43	0.2211	275.50	4.98
45	1654.02	0.2708	286.92	3.80
46	1674.64	0.3570	290.17	2.52
47	1706.22	0.0528	295.81	90.39
48	1734.11	0.2093	300.58	5.50
49	1759.31	0.4161	305.47	2.24
50	1793.47	0.3401	310.86	2.16
51	1872.17	0.2683	324.71	4.18
52	1907.49	0.2990	330.86	2.88
53	1956.00	0.2868	338.86	2.65
54	2033.89	0.0465	352.63	106.90
55	2235.93	0.2950	387.74	2.95
56	2247.12	0.2149	389.62	5.52
57	2323.21	0.2024	402.58	5.92
58	2628.57	0.2486	456.09	3.62
59	2717.32	0.3141	471.02	2.28
60	2777.15	0.2390	481.55	4.16
61	2815.55	0.2656	488.08	3.29
62	3083.20	0.2369	534.99	3.70
63	3354.00	0.2980	581.61	2.33
64	3372.12	0.3279	584.87	2.11
65	3419.81	0.2865	592.70	2.93
66	3521.48	0.0506	610.60	68.88
67	3679.29	0.2866	637.96	2.62
68	3845.31	0.1429	666.80	7.92
69	3981.99	0.2838	690.27	2.24
70	4028.35	0.1505	698.19	7.90

Errors quoted at 1.000 sigma

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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: DET01
Sample Title: DP1B standard
Peak Analysis Performed on: 4-03-96 12:14:36 PM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	29-	34	31.44	5.37	4.58E+02	112.26	4.71E+03
2	34-	40	37.67	6.45	8.53E+02	127.55	5.54E+03
3	45-	49	47.18	8.10	2.60E+02	82.55	2.85E+03
4	60-	66	63.22	10.88	4.61E+03	134.05	4.79E+03
5	72-	79	75.82	13.06	1.45E+04	194.73	7.78E+03
6	92-	97	94.60	16.32	8.84E+03	205.42	1.31E+04
7	107-	114	110.80	19.13	2.48E+03	164.00	8.05E+03
8	114-	118	115.95	20.02	1.07E+03	105.33	4.18E+03
9	144-	153	148.93	25.74	2.07E+03	144.08	5.32E+03
10	154-	163	158.94	27.48	1.86E+03	138.28	4.92E+03
11	206-	215	210.72	36.46	7.01E+02	128.42	4.48E+03
12	264-	274	269.53	46.66	2.28E+04	204.66	5.09E+03
13	285-	295	289.49	50.12	1.94E+03	146.38	5.11E+03
14	302-	313	308.15	53.36	5.43E+03	164.10	5.37E+03
15	360-	371	366.20	63.42	2.16E+04	213.60	6.00E+03
16	385-	397	391.35	67.79	2.57E+03	177.98	6.83E+03
17	415-	424	420.24	72.80	2.77E+02	142.73	5.69E+03
18	427-	438	432.75	74.97	3.11E+04	249.08	7.72E+03
19	440-	451	445.97	77.26	5.65E+04	291.88	7.18E+03
20	452-	464	459.05	79.53	2.22E+03	200.62	8.92E+03
21	464-	475	469.06	81.26	3.65E+03	171.64	6.42E+03
22	478-	490	484.95	84.02	9.25E+03	187.71	6.11E+03
23	500-	510	504.31	87.38	1.73E+04	203.56	6.25E+03
24	513-	525	520.02	90.10	6.85E+03	187.85	6.69E+03
25	528-	541	535.36	92.76	2.56E+04	238.07	6.93E+03
26	543-	554	547.83	94.92	2.24E+03	159.49	5.76E+03
27	562-	575	567.89	98.40	2.07E+03	155.87	4.90E+03
28	646-	659	652.76	113.12	8.57E+02	154.32	5.10E+03
29	704-	714	707.39	122.60	2.09E+02	113.36	3.34E+03
30	749-	760	755.48	130.94	2.17E+02	122.02	3.66E+03
31	824-	838	831.84	144.18	3.05E+03	156.58	4.52E+03
32	883-	899	891.41	154.51	1.02E+03	173.59	5.53E+03
33	936-	951	943.91	163.62	9.78E+02	150.27	4.31E+03
34	1066-	1083	1074.97	186.35	2.00E+04	211.69	4.52E+03
35	1178-	1195	1186.83	205.75	8.37E+02	149.27	3.89E+03
36	1208-	1226	1216.62	210.91	2.04E+02	145.83	3.65E+03
37	1354-	1373	1363.99	236.47	1.06E+03	148.43	3.49E+03
38	1373-	1388	1380.10	239.26	4.65E+02	117.64	2.67E+03
39	1389-	1407	1398.61	242.47	1.45E+04	180.29	3.12E+03
40	1471-	1487	1479.48	256.50	6.09E+02	117.33	2.50E+03
41	1487-	1505	1496.45	259.44	1.01E+03	128.43	2.70E+03
42	1547-	1563	1556.38	269.84	1.03E+03	120.48	2.57E+03

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1563-	1573	1568.02	271.85	4.82E+02	85.18	1.80E+03
	44	1578-	1598	1589.07	275.50	5.84E+02	138.45	2.98E+03
	45	1644-	1663	1654.89	286.92	1.86E+02	135.68	3.03E+03
	46	1668-	1678	1673.61	290.17	1.03E+02	77.50	1.57E+03
	47	1696-	1716	1706.14	295.81	2.84E+04	214.24	2.80E+03
	48	1723-	1741	1733.65	300.58	3.60E+02	118.04	2.36E+03
	49	1755-	1769	1761.84	305.47	1.28E+02	94.70	1.86E+03
	50	1786-	1799	1792.93	310.86	1.94E+02	83.89	1.52E+03
	51	1866-	1877	1872.79	324.71	2.05E+02	77.43	1.45E+03
	52	1902-	1918	1908.26	330.86	2.26E+02	107.68	2.15E+03
	53	1945-	1963	1954.40	338.86	5.40E+02	117.73	2.31E+03
	54	2023-	2044	2033.79	352.63	4.32E+04	247.25	2.76E+03
M	55	2227-	2258	2236.21	387.74	1.39E+02	51.44	1.96E+03
m	56	2227-	2258	2247.08	389.62	2.76E+02	90.61	1.92E+03
	57	2314-	2329	2321.77	402.58	4.30E+02	96.50	1.77E+03
	58	2620-	2640	2630.36	456.09	3.41E+02	105.72	1.73E+03
	59	2710-	2723	2716.44	471.02	1.84E+02	70.08	1.05E+03
	60	2764-	2789	2777.16	481.55	2.49E+02	122.93	1.98E+03
	61	2810-	2823	2814.82	488.08	1.43E+02	72.52	1.13E+03
	62	3075-	3094	3085.29	534.99	2.10E+02	89.71	1.31E+03
	63	3349-	3362	3354.09	581.61	1.10E+02	65.75	9.29E+02
	64	3362-	3381	3372.92	584.87	1.07E+02	89.18	1.31E+03
	65	3410-	3425	3418.02	592.70	1.36E+02	73.78	1.06E+03
	66	3507-	3535	3521.25	610.60	2.12E+04	192.12	1.90E+03
	67	3673-	3688	3679.02	637.96	7.60E+01	65.99	8.46E+02
	68	3835-	3855	3845.31	666.80	5.54E+02	86.10	1.10E+03
	69	3971-	3991	3980.65	690.27	1.09E+02	83.39	1.09E+03
	70	4017-	4035	4026.30	698.19	5.91E+02	49.97	3.39E+02

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
****

Detector Name: DET01
Sample Title: DP1B standard
Peak Analysis Performed on: 4-03-96 12:14:10 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.37	4.58E+02	112.26			4.58E+02	1.12E+02
2	6.45	8.53E+02	127.55			8.53E+02	1.28E+02
3	8.10	2.60E+02	82.55			2.60E+02	8.25E+01
4	10.88	4.61E+03	134.05			4.61E+03	1.34E+02
5	13.06	1.45E+04	194.73			1.45E+04	1.95E+02
6	16.32	8.84E+03	205.42			8.84E+03	2.05E+02
7	19.13	2.48E+03	164.00			2.48E+03	1.64E+02
8	20.02	1.07E+03	105.33			1.07E+03	1.05E+02
9	25.74	2.07E+03	144.08			2.07E+03	1.44E+02
10	27.48	1.86E+03	138.28			1.86E+03	1.38E+02
11	36.46	7.01E+02	128.42			7.01E+02	1.28E+02
12	46.66	2.28E+04	204.66			2.28E+04	2.05E+02
13	50.12	1.94E+03	146.38			1.94E+03	1.46E+02
14	53.36	5.43E+03	164.10			5.43E+03	1.64E+02
15	63.42	2.16E+04	213.60			2.16E+04	2.14E+02
16	67.79	2.57E+03	177.98			2.57E+03	1.78E+02
17	72.80	2.77E+02	142.73			2.77E+02	1.43E+02
18	74.97	3.11E+04	249.08			3.11E+04	2.49E+02
19	77.26	5.65E+04	291.88			5.65E+04	2.92E+02
20	79.53	2.22E+03	200.62			2.22E+03	2.01E+02
21	81.26	3.65E+03	171.64			3.65E+03	1.72E+02
22	84.02	9.25E+03	187.71			9.25E+03	1.88E+02
23	87.38	1.73E+04	203.56			1.73E+04	2.04E+02
24	90.10	6.85E+03	187.85			6.85E+03	1.88E+02
25	92.76	2.56E+04	238.07	1.89E+02	3.17E+01	2.54E+04	2.40E+02
26	94.92	2.24E+03	159.49			2.24E+03	1.59E+02
27	98.40	2.07E+03	155.87			2.07E+03	1.56E+02
28	113.12	8.57E+02	154.32			8.57E+02	1.54E+02
29	122.60	2.09E+02	113.36			2.09E+02	1.13E+02
30	130.94	2.17E+02	122.02			2.17E+02	1.22E+02
31	144.18	3.05E+03	156.58			3.05E+03	1.57E+02
32	154.51	1.02E+03	173.59			1.02E+03	1.74E+02
33	163.62	9.78E+02	150.27			9.78E+02	1.50E+02
34	186.35	2.00E+04	211.69	9.54E+01	3.21E+01	1.99E+04	2.14E+02
35	205.75	8.37E+02	149.27			8.37E+02	1.49E+02
36	210.91	2.04E+02	145.83			2.04E+02	1.46E+02
37	236.47	1.06E+03	148.43			1.06E+03	1.48E+02
38	239.26	4.65E+02	117.64			4.65E+02	1.18E+02
39	242.47	1.45E+04	180.29			1.45E+04	1.80E+02
40	256.50	6.09E+02	117.33			6.09E+02	1.17E+02
41	259.44	1.01E+03	128.43			1.01E+03	1.28E+02
42	269.84	1.03E+03	120.48			1.03E+03	1.20E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	271.85	4.82E+02	85.18			4.82E+02	8.52E+01
44	275.50	5.84E+02	138.45			5.84E+02	1.38E+02
45	286.92	1.86E+02	135.68			1.86E+02	1.36E+02
46	290.17	1.03E+02	77.50			1.03E+02	7.75E+01
47	295.81	2.84E+04	214.24	2.87E+01	1.59E+01	2.84E+04	2.15E+02
48	300.58	3.60E+02	118.04			3.60E+02	1.18E+02
49	305.47	1.28E+02	94.70			1.28E+02	9.47E+01
50	310.86	1.94E+02	83.89			1.94E+02	8.39E+01
51	324.71	2.05E+02	77.43			2.05E+02	7.74E+01
52	330.86	2.26E+02	107.68			2.26E+02	1.08E+02
53	338.86	5.40E+02	117.73			5.40E+02	1.18E+02
54	352.63	4.32E+04	247.25	4.33E+01	1.65E+01	4.32E+04	2.48E+02
M 55	387.74	1.39E+02	51.44			1.39E+02	5.14E+01
m 56	389.62	2.76E+02	90.61			2.76E+02	9.06E+01
57	402.58	4.30E+02	96.50			4.30E+02	9.65E+01
58	456.09	3.41E+02	105.72			3.41E+02	1.06E+02
59	471.02	1.84E+02	70.08			1.84E+02	7.01E+01
60	481.55	2.49E+02	122.93			2.49E+02	1.23E+02
61	488.08	1.43E+02	72.52			1.43E+02	7.25E+01
62	534.99	2.10E+02	89.71			2.10E+02	8.97E+01
63	581.61	1.10E+02	65.75			1.10E+02	6.57E+01
64	584.87	1.07E+02	89.18			1.07E+02	8.92E+01
65	592.70	1.36E+02	73.78			1.36E+02	7.38E+01
66	610.60	2.12E+04	192.12			2.12E+04	1.92E+02
67	637.96	7.60E+01	65.99			7.60E+01	6.60E+01
68	666.80	5.54E+02	86.10			5.54E+02	8.61E+01
69	690.27	1.09E+02	83.39			1.09E+02	8.34E+01
70	698.19	5.91E+02	49.97			5.91E+02	5.00E+01

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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*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************

Report Generated On              :  3-11-96  9:53:28 AM

Sample Title                     : DM1B standard
Spectrum Description             : DM1B standard
Sample Identification            : DM1B_3
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  2.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-07-96 10:56:28 AM

Live Time                        :    80000.0 seconds
Real Time                        :    80019.3 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: DM1B standard
Peak Locate Performed on: 3-11-96 9:52:27 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	37.18	0.3646	6.38	6.17
2	75.62	0.2359	12.89	11.07
3	94.40	0.1793	15.86	18.57
4	103.60	0.2351	17.97	10.85
5	114.39	0.4427	19.08	3.10
6	174.95	0.6540	29.53	2.23
7	186.99	0.6355	32.24	2.44
8	193.73	0.3559	33.47	4.16
9	201.09	0.2378	34.72	7.33
10	208.94	0.6744	36.01	2.06
11	216.51	0.3644	37.44	3.45
12	230.92	0.1490	39.93	22.95
13	251.96	0.5702	42.76	2.93
14	261.76	0.5906	45.31	2.19
15	269.48	0.2455	46.63	7.75
16	277.92	0.4710	48.08	2.90
17	308.15	0.3869	52.94	3.63
18	334.32	0.1872	57.89	13.16
19	367.66	0.2147	63.71	6.61
20	389.51	0.4911	67.59	2.02
21	432.84	0.0691	74.97	87.64
22	445.98	0.0619	77.30	111.59
23	477.74	0.5516	82.87	2.42
24	487.98	0.1318	84.53	25.19
25	504.55	0.0927	87.37	38.76
26	519.80	0.0924	90.14	44.79
27	539.73	0.0930	93.50	44.55
28	563.54	0.4989	97.68	2.18
29	575.00	0.1370	99.66	22.93
30	610.60	0.1646	105.60	13.55
31	628.07	0.2129	109.16	7.59
32	650.00	0.3977	112.70	2.24
33	666.00	0.1610	115.38	15.80
34	693.09	0.4429	120.01	2.54
35	700.06	0.4722	121.41	2.05
36	746.03	0.1028	129.29	34.41
37	784.08	0.4491	135.93	2.36
38	814.17	0.4366	141.11	2.07
39	830.33	0.4307	143.91	2.54
40	842.95	0.2830	146.11	4.58
41	864.56	0.4319	149.83	2.59

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	877.83	0.2987	152.18	4.24
43	889.78	0.1418	154.24	16.20
44	903.33	0.3786	156.62	2.86
45	962.18	0.2656	166.80	5.27
46	1039.62	0.3952	180.18	2.51
47	1047.19	0.4107	181.66	2.66
48	1057.69	0.4124	183.40	2.24
49	1074.99	0.1950	186.46	6.14
50	1152.37	0.2276	199.84	5.69
51	1179.17	0.3174	204.45	3.21
52	1188.55	0.3618	206.02	2.64
53	1209.19	0.0897	209.61	35.81
54	1247.99	0.2304	216.13	5.08
55	1378.98	0.0467	239.06	128.13
56	1392.75	0.0913	241.46	33.90
57	1459.84	0.2762	253.30	4.15
58	1561.65	0.0980	270.73	28.19
59	1590.16	0.4662	275.62	2.14
60	1602.77	0.1171	277.87	19.35
61	1665.34	0.2420	288.72	4.53
62	1674.98	0.4593	290.41	2.04
63	1720.66	0.4556	298.34	2.07
64	1734.32	0.1055	300.69	21.71
65	1789.26	0.3634	310.64	2.17
66	1859.16	0.2328	322.36	4.63
67	1895.44	0.1076	328.59	20.58
68	1920.13	0.2426	333.08	3.54
69	1954.97	0.0716	338.96	45.86
70	1970.43	0.2598	341.61	3.66
71	2033.56	0.1104	352.58	19.63
72	2048.63	0.3535	355.12	2.21
73	2122.83	0.3531	368.06	2.31
74	2168.06	0.3126	376.05	3.41
75	2179.94	0.2318	378.02	4.20
76	2283.92	0.4110	395.96	2.22
77	2300.61	0.3995	398.86	2.02
78	2324.96	0.3786	403.06	2.08
79	2366.09	0.1371	410.43	12.17
80	2508.26	0.3124	434.88	2.99
81	2617.70	0.2818	453.96	2.69
82	2675.33	0.1063	463.90	18.05
83	2746.07	0.3492	476.17	2.20
84	2765.99	0.3182	479.59	2.82
85	2832.11	0.3837	491.00	2.24
86	2846.70	0.2958	493.61	2.71
87	2922.25	0.3916	506.24	2.12
88	2951.18	0.0950	511.54	22.24
89	3024.70	0.2923	524.52	2.30
90	3042.62	0.3650	527.76	2.11
91	3249.71	0.1906	563.53	4.41

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
92	3369.89	0.0638	584.34	44.46
93	3414.43	0.3051	592.13	2.70
94	3441.30	0.3651	596.80	2.34
95	3520.94	0.1245	610.71	11.88
96	3562.30	0.2797	617.64	2.62
97	3665.81	0.3982	635.54	2.04
98	3682.92	0.3039	638.62	2.59
99	3825.07	0.3525	660.19	2.28
100	3857.88	0.2691	668.99	3.09
101	4006.50	0.3218	696.12	2.28
102	4028.16	0.1699	698.11	5.95

Errors quoted at 1.000 sigma

****
***** P E A K A N A L Y S I S R E P O R T *****
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Detector Name: DET01
Sample Title: DM1B standard
Peak Analysis Performed on: 3-11-96 9:52:49 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	34-	42	37.29	6.38	4.02E+02	100.61	4.44E+03
	2	67-	82	74.80	12.89	3.95E+03	186.68	1.03E+04
	3	82-	101	91.96	15.86	1.14E+04	248.27	1.43E+04
M	4	101-	121	104.11	17.97	1.56E+03	76.73	3.54E+03
m	5	101-	121	110.48	19.08	3.47E+03	121.31	4.41E+03
	6	166-	177	170.77	29.53	4.04E+01	97.09	3.74E+03
M	7	181-	221	186.38	32.24	1.86E+02	49.71	3.69E+03
m	8	181-	221	193.50	33.47	6.81E+02	62.72	4.00E+03
m	9	181-	221	200.66	34.72	1.48E+03	90.06	4.01E+03
m	10	181-	221	208.13	36.01	1.67E+02	48.95	4.01E+03
m	11	181-	221	216.37	37.44	6.45E+02	61.04	3.70E+03
	12	223-	240	230.75	39.93	3.29E+03	145.73	5.50E+03
	13	242-	254	247.03	42.76	5.15E+01	98.37	3.65E+03
M	14	259-	281	261.77	45.31	1.80E-07	3.63	1.92E+03
m	15	259-	281	269.37	46.63	8.04E+02	6.54	2.42E+03
m	16	259-	281	277.74	48.08	8.42E+01	3.79	2.37E+03
	17	297-	311	305.75	52.94	2.65E+02	106.80	3.87E+03
	18	326-	340	334.26	57.89	1.08E+03	118.95	4.54E+03
	19	362-	373	367.82	63.71	1.34E+03	112.20	4.48E+03
	20	387-	396	390.24	67.59	1.45E+02	92.28	3.70E+03
	21	426-	438	432.78	74.97	3.24E+04	232.30	8.22E+03
	22	438-	454	446.19	77.30	3.36E+04	354.37	2.74E+04
M	23	454-	496	478.35	82.87	8.04E-05	4.08	5.12E+03
m	24	454-	496	487.89	84.53	3.73E+03	11.25	5.21E+03
	25	496-	512	504.26	87.37	1.83E+04	196.07	6.45E+03
	26	512-	527	520.22	90.14	9.60E+03	178.20	7.27E+03
	27	529-	552	539.63	93.50	1.19E+04	195.60	6.60E+03
M	28	556-	587	563.72	97.68	7.77E+01	39.17	2.71E+03
m	29	556-	587	575.11	99.66	2.53E+03	108.00	2.72E+03
	30	602-	619	609.41	105.60	3.81E+03	135.88	4.47E+03
	31	622-	641	629.93	109.16	1.45E+03	135.59	4.82E+03
	32	646-	656	650.33	112.70	1.25E+02	79.04	2.56E+03
	33	656-	673	665.78	115.38	1.41E+03	121.30	4.09E+03
M	34	690-	703	692.50	120.01	2.60E+01	9.88	6.09E+02
m	35	690-	703	700.53	121.41	3.50E+01	10.35	6.15E+02
	36	738-	752	745.99	129.29	4.68E+03	118.42	3.25E+03
	37	782-	788	784.25	135.93	2.67E+01	51.18	1.37E+03
	38	810-	819	814.15	141.11	4.16E+01	67.44	1.99E+03
	39	828-	847	830.31	143.91	6.51E+01	36.66	1.44E+03
m	40	828-	847	842.99	146.11	1.91E+02	60.41	1.96E+03
M	41	861-	910	864.42	149.83	1.45E+01	19.33	1.88E+03
m	42	861-	910	877.97	152.18	1.95E+02	20.50	2.18E+03

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
m	43	861-	910	889.87	154.24	1.52E+03	38.98	2.08E+03
m	44	861-	910	903.59	156.62	8.17E+01	19.00	2.14E+03
	45	958-	968	962.26	166.80	1.87E+02	66.72	1.79E+03
M	46	1036-	1061	1039.40	180.18	4.95E+01	3.72	6.26E+02
m	47	1036-	1061	1047.93	181.66	1.43E+01	2.32	6.38E+02
m	48	1036-	1061	1058.01	183.40	2.23E+01	2.56	6.52E+02
	49	1070-	1087	1075.63	186.46	8.44E+02	99.99	2.79E+03
	50	1145-	1160	1152.80	199.84	4.57E+02	84.89	2.25E+03
M	51	1175-	1192	1179.36	204.45	1.14E+02	49.42	1.31E+03
m	52	1175-	1192	1188.41	206.02	6.33E+01	36.18	1.44E+03
	53	1203-	1217	1209.13	209.61	4.80E+03	104.42	2.09E+03
	54	1233-	1256	1246.73	216.13	5.59E+02	111.76	2.98E+03
M	55	1369-	1407	1378.96	239.06	5.67E+04	349.95	2.13E+03
m	56	1369-	1407	1392.77	241.46	5.48E+03	84.16	1.55E+03
	57	1455-	1469	1461.01	253.30	2.49E+02	65.59	1.40E+03
	58	1550-	1569	1561.55	270.73	3.01E+03	98.99	1.93E+03
M	59	1587-	1611	1589.76	275.62	3.78E-07	2.67	1.05E+03
m	60	1587-	1611	1602.72	277.87	1.75E+03	7.09	1.66E+03
M	61	1657-	1679	1665.26	288.72	2.08E+02	44.01	1.38E+03
m	62	1657-	1679	1675.02	290.41	1.46E+01	24.58	1.14E+03
M	63	1699-	1741	1720.77	298.34	1.83E-06	14595.6	1.58E+03
m	64	1699-	1741	1734.26	300.69	2.33E+03	7.54	1.52E+03
	65	1784-	1799	1791.65	310.64	1.03E+02	63.79	1.32E+03
	66	1852-	1868	1859.25	322.36	1.79E+02	69.19	1.47E+03
	67	1884-	1906	1895.16	328.59	2.15E+03	99.66	2.01E+03
	68	1911-	1930	1921.07	333.08	3.35E+02	80.61	1.76E+03
M	69	1945-	1977	1954.97	338.96	8.32E+03	149.30	1.64E+03
m	70	1945-	1977	1970.25	341.61	2.11E+02	32.98	1.38E+03
M	71	2019-	2053	2033.51	352.58	1.82E+03	86.86	1.51E+03
m	72	2019-	2053	2048.12	355.12	7.62E+01	30.28	1.30E+03
	73	2118-	2127	2122.77	368.06	4.22E+01	41.48	7.43E+02
M	74	2158-	2194	2168.80	376.05	1.17E+02	36.73	1.64E+03
m	75	2158-	2194	2180.16	378.02	3.46E+02	58.37	1.72E+03
M	76	2273-	2305	2283.61	395.96	5.29E+01	33.19	6.70E+02
m	77	2273-	2305	2300.32	398.86	3.23E+01	25.62	6.74E+02
	78	2318-	2331	2324.58	403.06	2.57E+01	53.26	1.02E+03
	79	2358-	2383	2367.09	410.43	9.71E+02	92.01	1.75E+03
	80	2504-	2513	2508.06	434.88	4.08E+01	36.86	5.82E+02
	81	2610-	2626	2618.05	453.96	6.46E+01	58.32	1.07E+03
	82	2662-	2687	2675.37	463.90	1.68E+03	90.75	1.54E+03
M	83	2740-	2770	2746.10	476.17	5.11E+01	26.09	5.44E+02
m	84	2740-	2770	2765.82	479.59	6.55E+01	29.87	5.19E+02
M	85	2828-	2852	2831.66	491.00	3.44E+01	7.19	3.06E+02
m	86	2828-	2852	2846.67	493.61	5.18E+01	8.51	2.91E+02
	87	2910-	2928	2919.49	506.24	4.67E+01	58.91	1.01E+03
	88	2932-	2963	2950.05	511.54	3.01E+03	107.54	1.71E+03
M	89	3016-	3057	3024.91	524.52	1.84E+02	49.18	1.12E+03
m	90	3016-	3057	3043.61	527.76	5.59E+01	29.01	1.92E+03
	91	3241-	3262	3249.86	563.53	3.91E+02	68.27	1.13E+03
	92	3355-	3382	3369.86	584.34	8.87E+03	126.19	1.56E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M 93	3408-	3451	3414.75	592.13	3.81E+01	24.14	5.28E+02
m 94	3408-	3451	3441.69	596.80	5.06E+01	28.08	5.04E+02
95	3511-	3536	3521.90	610.71	1.06E+03	79.14	1.22E+03
96	3555-	3568	3561.86	617.64	1.16E+02	41.32	5.77E+02
M 97	3660-	3693	3665.07	635.54	2.37E+01	18.72	2.82E+02
m 98	3660-	3693	3682.81	638.62	2.48E+01	19.10	2.84E+02
99	3793-	3831	3807.22	660.19	1.22E+02	104.35	1.83E+03
100	3852-	3864	3857.94	668.99	5.25E+01	39.52	5.73E+02
M101	4001-	4035	4014.37	696.12	2.07E+02	29.61	6.75E+02
m102	4001-	4035	4025.82	698.11	4.67E+02	36.56	6.88E+02

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
****

Detector Name: DET01
Sample Title: DM1B standard
Peak Analysis Performed on: 3-11-96 9:52:27 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	6.38	4.02E+02	100.61			4.02E+02	1.01E+02
2	12.89	3.95E+03	186.68			3.95E+03	1.87E+02
3	15.86	1.14E+04	248.27			1.14E+04	2.48E+02
M 4	17.97	1.56E+03	76.73			1.56E+03	7.67E+01
m 5	19.08	3.47E+03	121.31			3.47E+03	1.21E+02
6	29.53	4.04E+01	97.09			4.04E+01	9.71E+01
M 7	32.24	1.86E+02	49.71			1.86E+02	4.97E+01
m 8	33.47	6.81E+02	62.72			6.81E+02	6.27E+01
m 9	34.72	1.48E+03	90.06			1.48E+03	9.01E+01
m 10	36.01	1.67E+02	48.95			1.67E+02	4.89E+01
m 11	37.44	6.45E+02	61.04			6.45E+02	6.10E+01
12	39.93	3.29E+03	145.73			3.29E+03	1.46E+02
13	42.76	5.15E+01	98.37			5.15E+01	9.84E+01
M 14	45.31	1.80E-07	3.63			1.80E-07	3.63E+00
m 15	46.63	8.04E+02	6.54			8.04E+02	6.54E+00
16	48.08	8.42E+01	3.79			8.42E+01	3.79E+00
17	52.94	2.65E+02	106.80			2.65E+02	1.07E+02
18	57.89	1.08E+03	118.95			1.08E+03	1.19E+02
19	63.71	1.34E+03	112.20			1.34E+03	1.12E+02
20	67.59	1.45E+02	92.28			1.45E+02	9.23E+01
21	74.97	3.24E+04	232.30			3.24E+04	2.32E+02
22	77.30	3.36E+04	354.37			3.36E+04	3.54E+02
M 23	82.87	8.04E-05	4.08			8.04E-05	4.08E+00
m 24	84.53	3.73E+03	11.25			3.73E+03	1.13E+01
25	87.37	1.83E+04	196.07			1.83E+04	1.96E+02
26	90.14	9.60E+03	178.20			9.60E+03	1.78E+02
27	93.50	1.19E+04	195.60	1.89E+02	3.17E+01	1.17E+04	1.98E+02
M 28	97.68	7.77E+01	39.17			7.77E+01	3.92E+01
m 29	99.66	2.53E+03	108.00			2.53E+03	1.08E+02
30	105.60	3.81E+03	135.88			3.81E+03	1.36E+02
31	109.16	1.45E+03	135.59	8.10E+01	3.01E+01	1.37E+03	1.39E+02
32	112.70	1.25E+02	79.04			1.25E+02	7.90E+01
33	115.38	1.41E+03	121.30			1.41E+03	1.21E+02
M 34	120.01	2.60E+01	9.88			2.60E+01	9.88E+00
m 35	121.41	3.50E+01	10.35			3.50E+01	1.04E+01
36	129.29	4.68E+03	118.42			4.68E+03	1.18E+02
37	135.93	2.67E+01	51.18			2.67E+01	5.12E+01
38	141.11	4.16E+01	67.44			4.16E+01	6.74E+01
M 39	143.91	6.51E+01	36.66			6.51E+01	3.67E+01
m 40	146.11	1.91E+02	60.41			1.91E+02	6.04E+01
M 41	149.83	1.45E+01	19.33			1.45E+01	1.93E+01
42	152.18	1.95E+02	20.50			1.95E+02	2.05E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m 43	154.24	1.52E+03	38.98			1.52E+03	3.90E+01
m 44	156.62	8.17E+01	19.00			8.17E+01	1.90E+01
45	166.80	1.87E+02	66.72			1.87E+02	6.67E+01
M 46	180.18	4.95E+01	3.72			4.95E+01	3.72E+00
m 47	181.66	1.43E+01	2.32			1.43E+01	2.32E+00
m 48	183.40	2.23E+01	2.56			2.23E+01	2.56E+00
49	186.46	8.44E+02	99.99	9.54E+01	3.21E+01	7.49E+02	1.05E+02
50	199.84	4.57E+02	84.89			4.57E+02	8.49E+01
M 51	204.45	1.14E+02	49.42			1.14E+02	4.94E+01
m 52	206.02	6.33E+01	36.18			6.33E+01	3.62E+01
53	209.61	4.80E+03	104.42			4.80E+03	1.04E+02
54	216.13	5.59E+02	111.76			5.59E+02	1.12E+02
M 55	239.06	5.67E+04	349.95			5.67E+04	3.50E+02
m 56	241.46	5.48E+03	84.16			5.48E+03	8.42E+01
57	253.30	2.49E+02	65.59			2.49E+02	6.56E+01
58	270.73	3.01E+03	98.99			3.01E+03	9.90E+01
M 59	275.62	3.78E-07	2.67			3.78E-07	2.67E+00
m 60	277.87	1.75E+03	7.09			1.75E+03	7.09E+00
M 61	288.72	2.08E+02	44.01			2.08E+02	4.40E+01
m 62	290.41	1.46E+01	24.58			1.46E+01	2.46E+01
M 63	298.34	1.83E-06	14595.6			1.83E-06	1.46E+04
m 64	300.69	2.33E+03	7.54			2.33E+03	7.54E+00
65	310.64	1.03E+02	63.79			1.03E+02	6.38E+01
66	322.36	1.79E+02	69.19			1.79E+02	6.92E+01
67	328.59	2.15E+03	99.66			2.15E+03	9.97E+01
68	333.08	3.35E+02	80.61			3.35E+02	8.06E+01
M 69	338.96	8.32E+03	149.30			8.32E+03	1.49E+02
m 70	341.61	2.11E+02	32.98			2.11E+02	3.30E+01
M 71	352.58	1.82E+03	86.86	4.33E+01	1.65E+01	1.78E+03	8.84E+01
m 72	355.12	7.62E+01	30.28			7.62E+01	3.03E+01
73	368.06	4.22E+01	41.48			4.22E+01	4.15E+01
M 74	376.05	1.17E+02	36.73			1.17E+02	3.67E+01
m 75	378.02	3.46E+02	58.37			3.46E+02	5.84E+01
M 76	395.96	5.29E+01	33.19			5.29E+01	3.32E+01
m 77	398.86	3.23E+01	25.62			3.23E+01	2.56E+01
78	403.06	2.57E+01	53.26			2.57E+01	5.33E+01
79	410.43	9.71E+02	92.01			9.71E+02	9.20E+01
80	434.88	4.08E+01	36.86			4.08E+01	3.69E+01
81	453.96	6.46E+01	58.32			6.46E+01	5.83E+01
82	463.90	1.68E+03	90.75			1.68E+03	9.08E+01
M 83	476.17	5.11E+01	26.09			5.11E+01	2.61E+01
m 84	479.59	6.55E+01	29.87			6.55E+01	2.99E+01
M 85	491.00	3.44E+01	7.19			3.44E+01	7.19E+00
m 86	493.61	5.18E+01	8.51			5.18E+01	8.51E+00
87	506.24	4.67E+01	58.91			4.67E+01	5.89E+01
88	511.54	3.01E+03	107.54	2.98E+02	3.37E+01	2.71E+03	1.13E+02
M 89	524.52	1.84E+02	49.18			1.84E+02	4.92E+01
m 90	527.76	5.59E+01	29.01			5.59E+01	2.90E+01
91	563.53	3.91E+02	68.27			3.91E+02	6.83E+01
92	584.34	8.87E+03	126.19			8.87E+03	1.26E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M 93	592.13	3.81E+01	24.14			3.81E+01	2.41E+01
m 94	596.80	5.06E+01	28.08			5.06E+01	2.81E+01
95	610.71	1.06E+03	79.14			1.06E+03	7.91E+01
96	617.64	1.16E+02	41.32			1.16E+02	4.13E+01
M 97	635.54	2.37E+01	18.72			2.37E+01	1.87E+01
m 98	638.62	2.48E+01	19.10			2.48E+01	1.91E+01
99	660.19	1.22E+02	104.35			1.22E+02	1.04E+02
100	668.99	5.25E+01	39.52			5.25E+01	3.95E+01
M101	696.12	2.07E+02	29.61			2.07E+02	2.96E+01
m102	698.11	4.67E+02	36.56			4.67E+02	3.66E+01

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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***********************************************************************
*****          A R E A   C O R R E C T I O N   R E P O R T          *****
*****      R E F E R E N C E   P E A K / B K G . S U B T R A C T    *****
***********************************************************************
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Detector Name: DET01
Sample Title: DM1B standard
Peak Analysis Performed on: 3-11-96 9:52:27 AM

Ref. Peak Energy: 0.00; Reference Date:
Peak Ratio: 0.00; Uncertainty: 0.00
Background File : E:\GENIEPC\CAMFILES\BG030596.CNF

Corrected area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	6.38	4.02E+02	100.61			4.02E+02	1.01E+02
2	12.89	3.95E+03	186.68			3.95E+03	1.87E+02
3	15.86	1.14E+04	248.27			1.14E+04	2.48E+02
M 4	17.97	1.56E+03	76.73			1.56E+03	7.67E+01
m 5	19.08	3.47E+03	121.31			3.47E+03	1.21E+02
6	29.53	4.04E+01	97.09			4.04E+01	9.71E+01
M 7	32.24	1.86E+02	49.71			1.86E+02	4.97E+01
m 8	33.47	6.81E+02	62.72			6.81E+02	6.27E+01
m 9	34.72	1.48E+03	90.06			1.48E+03	9.01E+01
10	36.01	1.67E+02	48.95			1.67E+02	4.89E+01
m 11	37.44	6.45E+02	61.04			6.45E+02	6.10E+01
12	39.93	3.29E+03	145.73			3.29E+03	1.46E+02
13	42.76	5.15E+01	98.37			5.15E+01	9.84E+01
M 14	45.31	1.80E-07	3.63			1.80E-07	3.63E+00
m 15	46.63	8.04E+02	6.54			8.04E+02	6.54E+00
m 16	48.08	8.42E+01	3.79			8.42E+01	3.79E+00
17	52.94	2.65E+02	106.80			2.65E+02	1.07E+02
18	57.89	1.08E+03	118.95			1.08E+03	1.19E+02
19	63.71	1.34E+03	112.20			1.34E+03	1.12E+02
20	67.59	1.45E+02	92.28			1.45E+02	9.23E+01
21	74.97	3.24E+04	232.30			3.24E+04	2.32E+02
22	77.30	3.36E+04	354.37			3.36E+04	3.54E+02
M 23	82.87	8.04E-05	4.08			8.04E-05	4.08E+00
m 24	84.53	3.73E+03	11.25			3.73E+03	1.13E+01
25	87.37	1.83E+04	196.07			1.83E+04	1.96E+02
26	90.14	9.60E+03	178.20			9.60E+03	1.78E+02
27	93.50	1.19E+04	195.60	1.89E+02	3.17E+01	1.17E+04	1.98E+02
M 28	97.68	7.77E+01	39.17			7.77E+01	3.92E+01
m 29	99.66	2.53E+03	108.00			2.53E+03	1.08E+02
30	105.60	3.81E+03	135.88			3.81E+03	1.36E+02
31	109.16	1.45E+03	135.59	8.10E+01	3.01E+01	1.37E+03	1.39E+02
32	112.70	1.25E+02	79.04			1.25E+02	7.90E+01
33	115.38	1.41E+03	121.30			1.41E+03	1.21E+02
M 34	120.01	2.60E+01	9.88			2.60E+01	9.88E+00
m 35	121.41	3.50E+01	10.35			3.50E+01	1.04E+01
36	129.29	4.68E+03	118.42			4.68E+03	1.18E+02
37	135.93	2.67E+01	51.18			2.67E+01	5.12E+01
38	141.11	4.16E+01	67.44			4.16E+01	6.74E+01
M 39	143.91	6.51E+01	36.66			6.51E+01	3.67E+01
m 40	146.11	1.91E+02	60.41			1.91E+02	6.04E+01

M 41	149.83	1.45E+01	19.33		1.45E+01	1.93E+01
⌐ 42	152.18	1.95E+02	20.50		1.95E+02	2.05E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m 43	154.24	1.52E+03	38.98			1.52E+03	3.90E+01
m 44	156.62	8.17E+01	19.00			8.17E+01	1.90E+01
45	166.80	1.87E+02	66.72			1.87E+02	6.67E+01
M 46	180.18	4.95E+01	3.72			4.95E+01	3.72E+00
m 47	181.66	1.43E+01	2.32			1.43E+01	2.32E+00
m 48	183.40	2.23E+01	2.56			2.23E+01	2.56E+00
49	186.46	8.44E+02	99.99	9.54E+01	3.21E+01	7.49E+02	1.05E+02
50	199.84	4.57E+02	84.89			4.57E+02	8.49E+01
M 51	204.45	1.14E+02	49.42			1.14E+02	4.94E+01
m 52	206.02	6.33E+01	36.18			6.33E+01	3.62E+01
53	209.61	4.80E+03	104.42			4.80E+03	1.04E+02
54	216.13	5.59E+02	111.76			5.59E+02	1.12E+02
M 55	239.06	5.67E+04	349.95			5.67E+04	3.50E+02
m 56	241.46	5.48E+03	84.16			5.48E+03	8.42E+01
57	253.30	2.49E+02	65.59			2.49E+02	6.56E+01
58	270.73	3.01E+03	98.99			3.01E+03	9.90E+01
M 59	275.62	3.78E-07	2.67			3.78E-07	2.67E+00
m 60	277.87	1.75E+03	7.09			1.75E+03	7.09E+00
M 61	288.72	2.08E+02	44.01			2.08E+02	4.40E+01
m 62	290.41	1.46E+01	24.58			1.46E+01	2.46E+01
M 63	298.34	1.83E-06	14595.6			1.83E-06	1.46E+04
m 64	300.69	2.33E+03	7.54			2.33E+03	7.54E+00
65	310.64	1.03E+02	63.79			1.03E+02	6.38E+01
66	322.36	1.79E+02	69.19			1.79E+02	6.92E+01
67	328.59	2.15E+03	99.66			2.15E+03	9.97E+01
68	333.08	3.35E+02	80.61			3.35E+02	8.06E+01
M 69	338.96	8.32E+03	149.30			8.32E+03	1.49E+02
m 70	341.61	2.11E+02	32.98			2.11E+02	3.30E+01
M 71	352.58	1.82E+03	86.86	4.33E+01	1.65E+01	1.78E+03	8.84E+01
m 72	355.12	7.62E+01	30.28			7.62E+01	3.03E+01
73	368.06	4.22E+01	41.48			4.22E+01	4.15E+01
M 74	376.05	1.17E+02	36.73			1.17E+02	3.67E+01
m 75	378.02	3.46E+02	58.37			3.46E+02	5.84E+01
M 76	395.96	5.29E+01	33.19			5.29E+01	3.32E+01
m 77	398.86	3.23E+01	25.62			3.23E+01	2.56E+01
78	403.06	2.57E+01	53.26			2.57E+01	5.33E+01
79	410.43	9.71E+02	92.01			9.71E+02	9.20E+01
80	434.88	4.08E+01	36.86			4.08E+01	3.69E+01
81	453.96	6.46E+01	58.32			6.46E+01	5.83E+01
82	463.90	1.68E+03	90.75			1.68E+03	9.08E+01
M 83	476.17	5.11E+01	26.09			5.11E+01	2.61E+01
m 84	479.59	6.55E+01	29.87			6.55E+01	2.99E+01
M 85	491.00	3.44E+01	7.19			3.44E+01	7.19E+00
m 86	493.61	5.18E+01	8.51			5.18E+01	8.51E+00
87	506.24	4.67E+01	58.91			4.67E+01	5.89E+01
88	511.54	3.01E+03	107.54	2.98E+02	3.37E+01	2.71E+03	1.13E+02
M 89	524.52	1.84E+02	49.18			1.84E+02	4.92E+01
m 90	527.76	5.59E+01	29.01			5.59E+01	2.90E+01
91	563.53	3.91E+02	68.27			3.91E+02	6.83E+01
92	584.34	8.87E+03	126.19			8.87E+03	1.26E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M 93	592.13	3.81E+01	24.14			3.81E+01	2.41E+01
m 94	596.80	5.06E+01	28.08			5.06E+01	2.81E+01
95	610.71	1.06E+03	79.14			1.06E+03	7.91E+01
96	617.64	1.16E+02	41.32			1.16E+02	4.13E+01
M 97	635.54	2.37E+01	18.72			2.37E+01	1.87E+01
m 98	638.62	2.48E+01	19.10			2.48E+01	1.91E+01
99	660.19	1.22E+02	104.35			1.22E+02	1.04E+02
100	668.99	5.25E+01	39.52			5.25E+01	3.95E+01
M101	696.12	2.07E+02	29.61			2.07E+02	2.96E+01
m102	698.11	4.67E+02	36.56			4.67E+02	3.66E+01

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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*************************************************************************
*****        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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Report Generated On	:	4-03-96 3:04:44 PM
Sample Title	:	BL5D standard
Spectrum Description	:	BL5D standard
Sample Identification	:	BL5D_3
Sample Type	:	
Sample Geometry	:	
Peak Locate Threshold	:	2.00
Peak Locate Range (in channels)	:	1 - 4096
Peak Area Range (in channels)	:	1 - 4096
Identification Energy Tolerance	:	1.000 keV
Sample Size	:	0.000E+00 Unit
Sample Taken On	:	
Acquisition Started	:	3-08-96 11:32:41 AM
Live Time	:	80000.0 seconds
Real Time	:	80374.7 seconds

Energy Calibration Used Done On	:	1-16-96
Efficiency Calibration Used Done On	:	????????

DP13-3

****
***** P E A K L O C A T E R E P O R T *****
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Detector Name: DET01
Sample Title: BL5D standard
Peak Locate Performed on: 4-03-96 3:03:26 PM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.40	0.2259	5.34	11.75
2	37.22	0.1758	6.42	25.35
3	53.29	0.3710	9.23	5.13
4	63.40	0.1008	10.87	59.32
5	75.92	0.0976	13.05	58.58
6	94.33	0.0928	16.32	77.85
7	117.26	0.2608	19.44	10.93
8	121.64	0.3434	20.99	5.42
9	139.82	0.4505	24.17	2.88
10	148.82	0.1056	25.73	52.17
11	158.81	0.1137	27.47	44.86
12	173.85	0.4662	30.04	2.08
13	212.43	0.2037	36.78	11.69
14	269.42	0.0453	46.64	239.03
15	290.05	0.0994	50.10	51.73
16	308.04	0.0587	53.33	135.42
17	338.85	0.2854	58.63	5.66
18	366.08	0.0409	63.41	271.94
19	375.74	0.3008	65.02	5.65
20	391.36	0.0841	67.77	61.68
21	409.70	0.2634	70.87	5.89
22	432.72	0.0358	74.94	316.09
23	445.92	0.0316	77.24	425.40
24	458.62	0.0651	79.49	92.60
25	468.89	0.0646	81.24	103.49
26	484.64	0.0566	83.98	115.28
27	504.54	0.0485	87.37	142.14
28	519.40	0.0578	90.07	109.02
29	535.11	0.0400	92.73	180.13
30	547.73	0.0813	95.02	55.52
31	568.98	0.0851	98.41	59.21
32	593.82	0.2684	102.97	2.14
33	610.73	0.2305	105.75	7.40
34	630.96	0.1695	109.19	13.95
35	643.50	0.1629	111.25	14.32
36	652.14	0.0897	113.04	49.69
37	667.89	0.3978	115.13	3.27
38	698.77	0.2185	120.99	9.06
39	706.96	0.1719	122.57	14.03
40	739.88	0.2057	128.18	9.47
41	758.91	0.4355	130.86	2.86

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	812.27	0.2771	140.91	2.85
43	831.17	0.0672	144.10	71.00
44	891.14	0.0888	154.44	43.33
45	916.77	0.2258	159.14	8.20
46	943.95	0.0969	163.60	36.03
47	1036.77	0.3806	179.99	2.32
48	1074.84	0.0373	186.30	184.39
49	1126.17	0.3693	195.34	3.31
50	1133.79	0.2436	196.54	5.65
51	1149.04	0.3588	199.04	2.38
52	1167.77	0.2173	202.36	7.17
53	1186.35	0.1009	205.67	29.96
54	1217.11	0.2044	211.09	7.63
55	1250.12	0.4097	216.60	2.03
56	1363.60	0.0791	236.37	45.84
57	1398.16	0.0338	242.39	244.23
58	1427.28	0.4074	247.23	2.61
59	1444.45	0.3475	250.77	2.11
60	1461.27	0.2923	253.40	3.34
61	1471.65	0.5287	255.38	2.32
62	1480.61	0.0998	256.68	27.84
63	1495.55	0.0841	259.27	36.84
64	1534.15	0.3371	266.05	2.78
65	1556.82	0.0759	269.86	50.33
66	1567.24	0.0842	271.74	41.92
67	1587.81	0.1116	275.14	22.64
68	1623.50	0.2247	281.61	6.25
69	1638.94	0.1908	284.14	7.28
70	1652.77	0.1295	286.55	14.90
71	1705.71	0.0266	295.73	354.03
72	1733.31	0.1142	300.49	19.42
73	1748.71	0.1672	303.19	11.02
74	1758.70	0.2283	304.95	5.39
75	1816.94	0.2014	315.13	6.09
76	1871.36	0.1295	324.39	15.02
77	1906.17	0.1272	330.41	13.98
78	1926.25	0.3860	333.92	2.44
79	1932.73	0.2998	335.02	3.26
80	1955.01	0.1612	338.77	10.67
81	1980.60	0.2946	343.30	2.32
82	2033.40	0.0237	352.54	411.28
83	2071.38	0.3393	359.42	2.29
84	2094.27	0.4015	362.83	2.25
85	2147.54	0.2980	372.35	2.77
86	2234.62	0.1398	387.35	12.06
87	2247.31	0.1201	389.70	17.30
88	2304.18	0.3791	399.53	2.35
89	2321.96	0.1152	402.58	16.78
90	2340.31	0.1459	405.94	9.04
91	2469.35	0.2123	428.56	5.74

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
92	2499.39	0.3128	433.37	2.95
93	2571.46	0.2338	445.84	4.05
94	2628.10	0.1439	455.48	11.20
95	2669.08	0.1742	462.65	7.37
96	2714.21	0.1883	470.76	6.51
97	2742.17	0.2626	475.40	2.55
98	2776.26	0.1160	481.40	15.18
99	2814.00	0.1174	487.92	16.05
100	2946.27	0.2231	510.93	3.10
101	3083.66	0.1396	534.66	9.87
102	3140.02	0.2264	544.19	3.54
103	3351.77	0.1311	581.15	11.97
104	3491.60	0.2749	604.94	2.30
105	3520.46	0.0257	610.45	269.18
106	3553.31	0.2978	615.98	2.44
107	3587.09	0.3974	622.91	2.03
108	3695.54	0.2440	640.63	3.76
109	3844.78	0.0787	666.69	27.95
110	3947.59	0.2330	684.30	3.42
111	3964.25	0.2418	687.46	3.51
112	3978.58	0.2305	689.93	3.45
113	4004.96	0.2880	694.70	2.75
114	4028.93	0.0834	698.44	28.20

Errors quoted at 1.000 sigma

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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: DET01
Sample Title: BL5D standard
Peak Analysis Performed on: 4-03-96 3:03:54 PM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	28-	34	31.30	5.34	4.33E+03	462.38	7.42E+04
2	34-	40	37.53	6.42	1.65E+04	473.27	7.46E+04
3	50-	56	53.69	9.23	3.53E+03	412.24	5.97E+04
4	60-	66	63.19	10.87	9.08E+04	539.03	7.16E+04
5	72-	79	75.77	13.05	2.75E+05	810.02	1.27E+05
6	92-	97	94.59	16.32	1.48E+05	826.10	2.09E+05
7	107-	121	112.61	19.44	8.17E+04	914.03	1.58E+05
8	121-	125	121.54	20.99	5.82E+02	311.39	4.17E+04
9	135-	143	139.85	24.17	1.50E+03	469.64	6.69E+04
10	144-	152	148.84	25.73	2.83E+04	495.77	6.68E+04
11	154-	162	158.87	27.47	2.37E+04	483.34	6.45E+04
12	169-	178	173.68	30.04	1.14E+03	493.53	6.88E+04
13	208-	216	212.57	36.78	4.52E+03	446.90	5.97E+04
14	264-	274	269.44	46.64	3.30E+05	776.47	7.28E+04
15	284-	295	289.39	50.10	3.18E+04	581.68	7.61E+04
16	302-	313	308.01	53.33	8.16E+04	624.21	7.69E+04
17	333-	341	338.54	58.63	9.05E+02	450.97	6.17E+04
18	360-	371	366.10	63.41	3.04E+05	819.94	9.20E+04
19	373-	381	375.43	65.02	1.13E+03	474.23	6.81E+04
20	385-	396	391.24	67.77	3.77E+04	633.95	9.09E+04
21	403-	415	409.13	70.87	2.03E+03	664.16	1.03E+05
22	426-	438	432.62	74.94	4.67E+05	987.48	1.19E+05
23	440-	451	445.84	77.24	8.31E+05	1114.21	1.03E+05
24	452-	464	458.85	79.49	3.86E+04	757.83	1.26E+05
25	464-	474	468.95	81.24	5.56E+04	608.09	8.36E+04
26	478-	490	484.75	83.98	1.37E+05	712.86	8.74E+04
27	500-	510	504.24	87.37	2.57E+05	786.56	9.35E+04
28	513-	525	519.86	90.07	1.03E+05	715.55	9.63E+04
29	528-	541	535.18	92.73	3.75E+05	905.49	9.90E+04
30	541-	554	548.37	95.02	6.08E+03	781.50	1.31E+05
31	558-	575	567.92	98.41	3.94E+04	728.46	8.93E+04
32	587-	600	594.20	102.97	4.69E+03	533.99	6.21E+04
33	600-	617	610.26	105.75	3.11E+03	677.05	8.27E+04
34	624-	637	630.09	109.19	1.99E+03	565.97	7.02E+04
35	637-	647	641.96	111.25	6.62E+03	459.86	5.42E+04
36	647-	658	652.29	113.04	1.46E+04	509.03	6.09E+04
37	658-	672	664.35	115.13	2.09E+03	573.56	6.86E+04
38	691-	702	698.11	120.99	1.33E+03	458.78	5.20E+04
39	702-	713	707.23	122.57	2.55E+03	460.41	5.21E+04
40	732-	747	739.58	128.18	2.40E+03	585.44	6.79E+04
41	747-	766	755.02	130.86	6.06E+03	716.80	8.44E+04
42	806-	819	813.00	140.91	2.84E+03	528.62	6.12E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	823-	838	831.38	144.10	4.33E+04	629.43	7.06E+04
	44	883-	898	890.98	154.44	1.60E+04	619.92	7.35E+04
	45	913-	924	918.12	159.14	1.56E+03	456.46	5.15E+04
	46	936-	951	943.84	163.60	1.16E+04	580.54	6.49E+04
	47	1033-	1044	1038.34	179.99	9.47E+02	431.23	4.60E+04
	48	1066-	1083	1074.71	186.30	2.81E+05	812.20	6.88E+04
M	49	1120-	1142	1126.81	195.34	9.67E+02	223.36	5.13E+04
m	50	1120-	1142	1133.73	196.54	2.00E+03	305.08	5.47E+04
	51	1142-	1155	1148.15	199.04	1.56E+03	476.14	4.98E+04
	52	1159-	1176	1167.33	202.36	3.49E+03	581.38	6.07E+04
	53	1179-	1194	1186.42	205.67	1.12E+04	506.02	4.89E+04
	54	1211-	1225	1217.65	211.09	1.77E+03	445.03	4.12E+04
	55	1246-	1254	1249.39	216.60	5.28E+02	276.52	2.32E+04
	56	1354-	1372	1363.43	236.37	1.64E+04	529.24	4.58E+04
	57	1388-	1407	1398.15	242.39	2.19E+05	697.57	4.47E+04
	58	1422-	1431	1426.06	247.23	3.80E+02	272.44	2.09E+04
	59	1441-	1453	1446.44	250.77	1.04E+03	340.40	2.69E+04
	60	1455-	1467	1461.63	253.40	9.47E+02	341.34	2.71E+04
M	61	1467-	1488	1473.01	255.38	4.82E+02	141.71	2.85E+04
m	62	1467-	1488	1480.51	256.68	6.86E+03	292.26	3.32E+04
	63	1488-	1505	1495.45	259.27	1.36E+04	464.39	3.65E+04
	64	1530-	1538	1534.56	266.05	5.06E+02	237.59	1.71E+04
	65	1547-	1562	1556.52	269.86	1.22E+04	434.77	3.54E+04
	66	1562-	1576	1567.34	271.74	7.03E+03	415.93	3.47E+04
	67	1578-	1597	1586.99	275.14	8.85E+03	492.77	3.89E+04
	68	1618-	1630	1624.27	281.61	1.17E+03	334.60	2.60E+04
	69	1630-	1645	1638.89	284.14	2.00E+03	406.66	3.26E+04
	70	1645-	1658	1652.78	286.55	3.47E+03	369.04	2.94E+04
	71	1695-	1715	1705.70	295.73	4.28E+05	828.93	4.14E+04
	72	1727-	1741	1733.11	300.49	4.33E+03	364.37	2.69E+04
M	73	1741-	1768	1748.70	303.19	2.30E+03	217.23	2.80E+04
m	74	1741-	1768	1758.86	304.95	1.74E+03	186.07	2.94E+04
	75	1809-	1827	1817.53	315.13	1.87E+03	434.74	3.25E+04
	76	1860-	1881	1870.93	324.39	3.70E+03	498.21	3.75E+04
	77	1895-	1914	1905.64	330.41	4.11E+03	458.63	3.43E+04
M	78	1915-	1938	1925.92	333.92	9.95E+02	232.38	3.03E+04
m	79	1915-	1938	1932.27	335.02	1.01E+03	237.37	2.93E+04
	80	1944-	1962	1953.84	338.77	2.33E+03	460.10	3.63E+04
	81	1969-	1991	1979.98	343.30	8.57E+02	572.10	4.83E+04
	82	2022-	2044	2033.24	352.54	6.44E+05	968.69	4.36E+04
	83	2068-	2077	2072.93	359.42	3.06E+02	236.42	1.58E+04
	84	2083-	2105	2092.60	362.83	6.79E+02	496.91	3.64E+04
	85	2142-	2152	2147.51	372.35	3.32E+02	260.25	1.79E+04
	86	2223-	2240	2234.00	387.35	2.70E+03	417.36	3.11E+04
	87	2240-	2254	2247.55	389.70	2.90E+03	361.95	2.69E+04
	88	2300-	2309	2304.19	399.53	4.87E+02	242.76	1.66E+04
	89	2310-	2330	2321.80	402.58	4.05E+03	481.01	3.63E+04
	90	2330-	2351	2341.17	405.94	3.93E+03	502.90	3.83E+04
	91	2463-	2481	2471.59	428.56	1.75E+03	428.21	3.15E+04
	92	2495-	2505	2499.34	433.37	3.66E+02	244.39	1.57E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
93	2559-	2583	2571.24	445.84	1.09E+03	486.30	3.24E+04
94	2616-	2638	2626.82	455.48	2.84E+03	446.07	2.90E+04
95	2656-	2681	2668.17	462.65	2.38E+03	489.05	3.15E+04
96	2705-	2726	2714.93	470.76	1.67E+03	413.69	2.60E+04
97	2731-	2749	2741.66	475.40	5.40E+02	363.45	2.28E+04
98	2766-	2788	2776.25	481.40	4.00E+03	426.55	2.63E+04
99	2801-	2826	2813.89	487.92	4.20E+03	467.29	2.85E+04
100	2933-	2958	2946.55	510.93	1.91E+03	447.36	2.64E+04
101	3070-	3096	3083.36	534.66	2.55E+03	451.31	2.59E+04
102	3126-	3153	3138.33	544.19	1.77E+03	457.16	2.59E+04
103	3340-	3363	3351.46	581.15	2.16E+03	405.50	2.31E+04
104	3477-	3501	3488.60	604.94	5.64E+02	444.76	2.72E+04
105	3506-	3534	3520.37	610.45	3.15E+05	744.32	2.90E+04
106	3547-	3560	3552.25	615.98	2.76E+02	234.41	1.21E+04
107	3582-	3600	3592.22	622.91	6.50E+02	298.54	1.54E+04
108	3684-	3703	3694.43	640.63	4.11E+02	312.52	1.62E+04
109	3830-	3859	3844.67	666.69	8.17E+03	453.18	2.32E+04
110	3933-	3955	3946.21	684.30	4.99E+02	347.42	1.78E+04
M111	3955-	3993	3964.41	687.46	5.89E+02	131.00	1.61E+04
m112	3955-	3993	3978.67	689.93	7.25E+02	146.65	2.38E+04
113	3999-	4019	4006.20	694.70	5.55E+02	315.26	1.58E+04
114	4019-	4035	4027.76	698.44	5.72E+03	180.91	4.95E+03

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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***** B A C K G R O U N D S U B T R A C T R E P O R T *****
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Detector Name: DET01
Sample Title: BL5D standard
Peak Analysis Performed on: 4-03-96 3:03:26 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.34	4.33E+03	462.38			4.33E+03	4.62E+02
2	6.42	1.65E+04	473.27			1.65E+04	4.73E+02
3	9.23	3.53E+03	412.24			3.53E+03	4.12E+02
4	10.87	9.08E+04	539.03			9.08E+04	5.39E+02
5	13.05	2.75E+05	810.02			2.75E+05	8.10E+02
6	16.32	1.48E+05	826.10			1.48E+05	8.26E+02
7	19.44	8.17E+04	914.03			8.17E+04	9.14E+02
8	20.99	5.82E+02	311.39			5.82E+02	3.11E+02
9	24.17	1.50E+03	469.64			1.50E+03	4.70E+02
10	25.73	2.83E+04	495.77			2.83E+04	4.96E+02
11	27.47	2.37E+04	483.34			2.37E+04	4.83E+02
12	30.04	1.14E+03	493.53			1.14E+03	4.94E+02
13	36.78	4.52E+03	446.90			4.52E+03	4.47E+02
14	46.64	3.30E+05	776.47			3.30E+05	7.76E+02
15	50.10	3.18E+04	581.68			3.18E+04	5.82E+02
16	53.33	8.16E+04	624.21			8.16E+04	6.24E+02
17	58.63	9.05E+02	450.97			9.05E+02	4.51E+02
18	63.41	3.04E+05	819.94			3.04E+05	8.20E+02
19	65.02	1.13E+03	474.23			1.13E+03	4.74E+02
20	67.77	3.77E+04	633.95			3.77E+04	6.34E+02
21	70.87	2.03E+03	664.16			2.03E+03	6.64E+02
22	74.94	4.67E+05	987.48			4.67E+05	9.87E+02
23	77.24	8.31E+05	1114.21			8.31E+05	1.11E+03
24	79.49	3.86E+04	757.83			3.86E+04	7.58E+02
25	81.24	5.56E+04	608.09			5.56E+04	6.08E+02
26	83.98	1.37E+05	712.86			1.37E+05	7.13E+02
27	87.37	2.57E+05	786.56			2.57E+05	7.87E+02
28	90.07	1.03E+05	715.55			1.03E+05	7.16E+02
29	92.73	3.75E+05	905.49	1.89E+02	3.17E+01	3.75E+05	9.06E+02
30	95.02	6.08E+03	781.50			6.08E+03	7.81E+02
31	98.41	3.94E+04	728.46			3.94E+04	7.28E+02
32	102.97	4.69E+03	533.99			4.69E+03	5.34E+02
33	105.75	3.11E+03	677.05			3.11E+03	6.77E+02
34	109.19	1.99E+03	565.97	8.10E+01	3.01E+01	1.91E+03	5.67E+02
35	111.25	6.62E+03	459.86			6.62E+03	4.60E+02
36	113.04	1.46E+04	509.03			1.46E+04	5.09E+02
37	115.13	2.09E+03	573.56			2.09E+03	5.74E+02
38	120.99	1.33E+03	458.78			1.33E+03	4.59E+02
39	122.57	2.55E+03	460.41			2.55E+03	4.60E+02
40	128.18	2.40E+03	585.44			2.40E+03	5.85E+02
41	130.86	6.06E+03	716.80			6.06E+03	7.17E+02
42	140.91	2.84E+03	528.62			2.84E+03	5.29E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	144.10	4.33E+04	629.43			4.33E+04	6.29E+02
44	154.44	1.60E+04	619.92			1.60E+04	6.20E+02
45	159.14	1.56E+03	456.46			1.56E+03	4.56E+02
46	163.60	1.16E+04	580.54			1.16E+04	5.81E+02
47	179.99	9.47E+02	431.23			9.47E+02	4.31E+02
48	186.30	2.81E+05	812.20	9.54E+01	3.21E+01	2.81E+05	8.13E+02
M 49	195.34	9.67E+02	223.36			9.67E+02	2.23E+02
m 50	196.54	2.00E+03	305.08	8.78E+01	2.66E+01	1.91E+03	3.06E+02
51	199.04	1.56E+03	476.14			1.56E+03	4.76E+02
52	202.36	3.49E+03	581.38			3.49E+03	5.81E+02
53	205.67	1.12E+04	506.02			1.12E+04	5.06E+02
54	211.09	1.77E+03	445.03			1.77E+03	4.45E+02
55	216.60	5.28E+02	276.52			5.28E+02	2.77E+02
56	236.37	1.64E+04	529.24			1.64E+04	5.29E+02
57	242.39	2.19E+05	697.57			2.19E+05	6.98E+02
58	247.23	3.80E+02	272.44			3.80E+02	2.72E+02
59	250.77	1.04E+03	340.40			1.04E+03	3.40E+02
60	253.40	9.47E+02	341.34			9.47E+02	3.41E+02
M 61	255.38	4.82E+02	141.71			4.82E+02	1.42E+02
m 62	256.68	6.86E+03	292.26			6.86E+03	2.92E+02
63	259.27	1.36E+04	464.39			1.36E+04	4.64E+02
64	266.05	5.06E+02	237.59			5.06E+02	2.38E+02
65	269.86	1.22E+04	434.77			1.22E+04	4.35E+02
66	271.74	7.03E+03	415.93			7.03E+03	4.16E+02
67	275.14	8.85E+03	492.77			8.85E+03	4.93E+02
68	281.61	1.17E+03	334.60			1.17E+03	3.35E+02
69	284.14	2.00E+03	406.66			2.00E+03	4.07E+02
70	286.55	3.47E+03	369.04			3.47E+03	3.69E+02
71	295.73	4.28E+05	828.93	2.87E+01	1.59E+01	4.28E+05	8.29E+02
72	300.49	4.33E+03	364.37			4.33E+03	3.64E+02
M 73	303.19	2.30E+03	217.23			2.30E+03	2.17E+02
m 74	304.95	1.74E+03	186.07			1.74E+03	1.86E+02
75	315.13	1.87E+03	434.74			1.87E+03	4.35E+02
76	324.39	3.70E+03	498.21			3.70E+03	4.98E+02
77	330.41	4.11E+03	458.63			4.11E+03	4.59E+02
M 78	333.92	9.95E+02	232.38			9.95E+02	2.32E+02
m 79	335.02	1.01E+03	237.37			1.01E+03	2.37E+02
80	338.77	2.33E+03	460.10			2.33E+03	4.60E+02
81	343.30	8.57E+02	572.10			8.57E+02	5.72E+02
82	352.54	6.44E+05	968.69	4.33E+01	1.65E+01	6.44E+05	9.69E+02
83	359.42	3.06E+02	236.42			3.06E+02	2.36E+02
84	362.83	6.79E+02	496.91			6.79E+02	4.97E+02
85	372.35	3.32E+02	260.25			3.32E+02	2.60E+02
86	387.35	2.70E+03	417.36			2.70E+03	4.17E+02
87	389.70	2.90E+03	361.95			2.90E+03	3.62E+02
88	399.53	4.87E+02	242.76			4.87E+02	2.43E+02
89	402.58	4.05E+03	481.01			4.05E+03	4.81E+02
90	405.94	3.93E+03	502.90			3.93E+03	5.03E+02
91	428.56	1.75E+03	428.21			1.75E+03	4.28E+02
92	433.37	3.66E+02	244.39			3.66E+02	2.44E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
93	445.84	1.09E+03	486.30			1.09E+03	4.86E+02
94	455.48	2.84E+03	446.07			2.84E+03	4.46E+02
95	462.65	2.38E+03	489.05			2.38E+03	4.89E+02
96	470.76	1.67E+03	413.69			1.67E+03	4.14E+02
97	475.40	5.40E+02	363.45			5.40E+02	3.63E+02
98	481.40	4.00E+03	426.55			4.00E+03	4.27E+02
99	487.92	4.20E+03	467.29			4.20E+03	4.67E+02
100	510.93	1.91E+03	447.36			1.91E+03	4.47E+02
101	534.66	2.55E+03	451.31			2.55E+03	4.51E+02
102	544.19	1.77E+03	457.16			1.77E+03	4.57E+02
103	581.15	2.16E+03	405.50			2.16E+03	4.06E+02
104	604.94	5.64E+02	444.76			5.64E+02	4.45E+02
105	610.45	3.15E+05	744.32			3.15E+05	7.44E+02
106	615.98	2.76E+02	234.41			2.76E+02	2.34E+02
107	622.91	6.50E+02	298.54			6.50E+02	2.99E+02
108	640.63	4.11E+02	312.52			4.11E+02	3.13E+02
109	666.69	8.17E+03	453.18			8.17E+03	4.53E+02
110	684.30	4.99E+02	347.42			4.99E+02	3.47E+02
M111	687.46	5.89E+02	131.00			5.89E+02	1.31E+02
m112	689.93	7.25E+02	146.65			7.25E+02	1.47E+02
113	694.70	5.55E+02	315.26			5.55E+02	3.15E+02
114	698.44	5.72E+03	180.91			5.72E+03	1.81E+02

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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*****        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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Report Generated On	:	4-03-96 11:30:13 AM
Sample Title	:	NOPI-113-GAM4
Spectrum Description	:	NOPI-113-GAM4
Sample Identification	:	NP113_2
Sample Type	:	
Sample Geometry	:	
Peak Locate Threshold	:	2.00
Peak Locate Range (in channels)	:	1 - 4096
Peak Area Range (in channels)	:	1 - 4096
Identification Energy Tolerance	:	1.000 keV
Sample Size	:	0.000E+00 Unit
Sample Taken On	:	
Acquisition Started	:	3-11-96 3:15:49 PM
Live Time	:	80000.0 seconds
Real Time	:	80100.5 seconds

Energy Calibration Used Done On	:	1-16-96
Efficiency Calibration Used Done On	:	????????

DP1B-3

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***** P E A K L O C A T E R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-113-GAM4
Peak Locate Performed on: 4-03-96 11:29:13 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.56	0.2756	5.35	7.40
2	37.19	0.2171	6.42	17.27
3	53.40	0.4296	9.26	4.16
4	63.36	0.1217	10.88	43.01
5	75.94	0.1194	13.06	39.51
6	94.32	0.1156	16.32	50.58
7	117.41	0.4790	19.42	2.57
8	121.94	0.4031	21.05	4.27
9	148.86	0.1322	25.73	31.71
10	158.84	0.1419	27.48	27.81
11	212.34	0.2542	36.78	7.75
12	250.89	0.6515	43.75	2.09
13	269.40	0.0631	46.64	124.15
14	289.98	0.1346	50.08	28.36
15	308.04	0.0819	53.33	69.48
16	366.06	0.0565	63.40	142.50
17	375.52	0.4312	65.10	2.26
18	391.32	0.1168	67.75	32.70
19	421.13	0.2752	72.91	6.13
20	432.67	0.0508	74.94	155.49
21	445.89	0.0446	77.24	212.61
22	458.59	0.0936	79.50	44.88
23	468.85	0.0891	81.24	53.94
24	484.61	0.0777	83.97	60.49
25	504.49	0.0694	87.37	67.26
26	519.38	0.0809	90.08	55.82
27	535.04	0.0552	92.73	93.54
28	547.87	0.1210	95.04	26.39
29	569.04	0.1292	98.32	26.13
30	578.70	0.3746	100.56	2.84
31	611.18	0.2794	105.73	4.69
32	630.79	0.2257	109.16	7.60
33	652.13	0.1239	113.03	23.84
34	667.48	0.4231	115.09	2.90
35	698.54	0.2728	120.97	5.39
36	706.91	0.2177	122.60	8.08
37	739.95	0.3047	128.06	3.12
38	753.50	0.2415	130.65	6.50
39	812.93	0.4232	140.81	2.33
40	831.09	0.0938	144.07	36.48
41	891.10	0.1229	154.46	22.70

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	916.67	0.2971	159.16	3.99
43	943.74	0.1338	163.56	19.17
44	1074.74	0.0520	186.28	94.08
45	1091.90	0.4068	189.59	2.41
46	1147.33	0.3719	199.27	2.78
47	1166.98	0.2896	202.01	2.92
48	1186.26	0.1371	205.70	15.57
49	1216.01	0.3654	210.79	2.75
50	1338.74	0.3676	232.14	2.83
51	1363.48	0.1105	236.32	23.71
52	1378.87	0.2175	238.98	5.84
53	1398.09	0.0481	242.37	120.86
54	1480.38	0.1422	256.58	13.37
55	1495.59	0.1278	259.25	15.95
56	1556.61	0.1031	269.82	26.78
57	1567.08	0.1195	271.75	21.20
58	1587.73	0.1561	275.09	11.29
59	1638.54	0.2415	283.93	5.16
60	1652.59	0.1683	286.52	9.60
61	1662.39	0.3802	288.21	2.57
62	1705.59	0.0377	295.71	173.87
63	1733.39	0.1602	300.47	9.64
64	1748.15	0.2474	303.10	4.72
65	1758.07	0.2783	304.83	3.33
66	1816.36	0.3089	315.22	2.05
67	1870.83	0.1765	324.45	7.41
68	1905.96	0.1722	330.45	9.16
69	1933.15	0.3945	334.72	2.26
70	1953.98	0.2024	338.93	5.89
71	1980.77	0.2928	343.36	2.21
72	2033.18	0.0337	352.50	205.18
73	2234.54	0.2069	387.40	5.60
74	2247.33	0.1654	389.69	8.85
75	2321.90	0.1587	402.47	8.99
76	2339.04	0.2320	405.67	4.46
77	2521.45	0.3949	438.23	2.19
78	2570.03	0.2752	445.79	3.23
79	2628.18	0.2330	455.90	3.01
80	2662.44	0.3486	462.37	2.44
81	2713.98	0.2853	470.56	2.77
82	2775.43	0.1817	481.45	6.20
83	2814.11	0.1601	488.06	7.43
84	3083.07	0.2052	534.35	5.75
85	3351.75	0.1733	580.72	6.39
86	3520.12	0.0364	610.39	134.88
87	3555.15	0.3467	616.24	2.25
88	3657.16	0.2702	633.65	2.98
89	3844.42	0.1179	666.51	11.99
90	3978.64	0.2502	690.11	2.61
91	4016.27	0.3752	697.26	2.20

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
92	4028.76	0.1119	698.54	15.28

Errors quoted at 1.000 sigma

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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: DET01
Sample Title: NOPI-113-GAM4
Peak Analysis Performed on: 4-03-96 11:29:30 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	28-	34	31.32	5.35	1.79E+03	263.32	2.39E+04
2	34-	40	37.53	6.42	6.44E+03	269.66	2.37E+04
3	50-	56	53.88	9.26	1.46E+03	224.96	1.76E+04
4	60-	66	63.25	10.88	3.72E+04	314.88	2.22E+04
5	72-	79	75.79	13.06	1.12E+05	480.71	3.98E+04
6	92-	97	94.57	16.32	5.75E+04	493.35	7.25E+04
7	107-	121	112.44	19.42	3.10E+04	501.31	4.62E+04
8	121-	125	121.89	21.05	2.88E+02	159.40	1.08E+04
9	144-	152	148.83	25.73	9.82E+03	255.65	1.71E+04
10	154-	163	158.94	27.48	8.20E+03	266.44	1.79E+04
11	207-	216	212.58	36.78	1.49E+03	241.13	1.61E+04
12	248-	255	252.77	43.75	2.74E+02	204.21	1.37E+04
13	264-	274	269.41	46.64	8.54E+04	388.41	1.75E+04
14	284-	295	289.28	50.08	8.96E+03	285.32	1.80E+04
15	302-	313	308.02	53.33	2.12E+04	306.59	1.82E+04
16	360-	371	366.07	63.40	8.25E+04	407.96	2.10E+04
17	373-	381	375.88	65.10	3.18E+02	226.93	1.56E+04
18	385-	396	391.13	67.75	9.49E+03	307.33	2.12E+04
19	415-	424	420.90	72.91	7.12E+02	262.98	1.94E+04
20	426-	438	432.59	74.94	1.13E+05	483.20	2.83E+04
21	439-	451	445.84	77.24	2.04E+05	568.33	2.78E+04
22	452-	464	458.90	79.50	8.89E+03	378.69	3.16E+04
23	464-	474	468.92	81.24	1.36E+04	307.61	2.16E+04
24	478-	490	484.70	83.97	3.68E+04	356.09	2.12E+04
25	500-	510	504.29	87.37	6.47E+04	394.57	2.35E+04
26	513-	525	519.89	90.08	2.59E+04	361.13	2.46E+04
27	528-	541	535.15	92.73	1.01E+05	463.99	2.55E+04
28	541-	554	548.51	95.04	1.15E+03	394.08	3.33E+04
29	559-	575	567.39	98.32	8.44E+03	343.23	2.08E+04
30	575-	585	580.34	100.56	1.09E+03	218.11	1.23E+04
31	604-	617	610.15	105.73	1.68E+03	269.67	1.57E+04
32	624-	634	629.91	109.16	1.62E+03	224.81	1.30E+04
33	647-	658	652.24	113.03	4.31E+03	253.65	1.50E+04
34	658-	672	664.10	115.09	7.70E+02	283.90	1.67E+04
35	691-	702	698.03	120.97	5.61E+02	228.08	1.28E+04
36	702-	713	707.39	122.60	8.78E+02	230.56	1.30E+04
37	732-	747	738.87	128.06	7.18E+02	291.90	1.68E+04
38	747-	760	753.81	130.65	1.21E+03	262.83	1.50E+04
39	805-	820	812.39	140.81	8.67E+02	294.86	1.72E+04
40	823-	838	831.19	144.07	1.18E+04	313.82	1.73E+04
41	883-	898	891.09	154.46	4.43E+03	308.49	1.81E+04
42	912-	924	918.23	159.16	5.69E+02	244.30	1.39E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	935-	951	943.61	163.56	3.27E+03	305.61	1.71E+04
	44	1066-	1083	1074.62	186.28	7.34E+04	409.16	1.71E+04
	45	1088-	1100	1093.68	189.59	4.09E+02	224.43	1.17E+04
	46	1142-	1155	1149.49	199.27	6.08E+02	239.47	1.26E+04
	47	1158-	1175	1165.29	202.01	1.28E+03	294.32	1.55E+04
	48	1180-	1194	1186.58	205.70	2.97E+03	240.69	1.15E+04
	49	1210-	1224	1215.93	210.79	3.63E+02	227.08	1.07E+04
	50	1333-	1347	1339.05	232.14	4.38E+02	214.55	9.55E+03
	51	1354-	1372	1363.11	236.32	4.30E+03	270.59	1.20E+04
	52	1372-	1386	1378.48	238.98	8.00E+02	213.42	9.38E+03
	53	1388-	1407	1398.01	242.37	5.23E+04	352.66	1.20E+04
	54	1470-	1486	1479.97	256.58	2.02E+03	232.92	9.94E+03
	55	1486-	1505	1495.32	259.25	2.31E+03	271.10	1.19E+04
	56	1546-	1562	1556.26	269.82	3.37E+03	234.71	9.86E+03
	57	1562-	1576	1567.41	271.75	2.17E+03	212.10	8.96E+03
	58	1577-	1597	1586.65	275.09	1.60E+03	270.25	1.14E+04
	59	1631-	1644	1637.67	283.93	5.64E+02	186.09	7.54E+03
M	60	1644-	1668	1652.61	286.52	1.15E+03	138.56	8.38E+03
m	61	1644-	1668	1662.31	288.21	2.75E+02	78.99	7.78E+03
	62	1695-	1715	1705.57	295.71	1.04E+05	415.26	1.09E+04
	63	1723-	1740	1733.01	300.47	1.27E+03	219.80	8.55E+03
M	64	1740-	1768	1748.21	303.10	5.33E+02	107.21	8.05E+03
m	65	1740-	1768	1758.14	304.83	4.94E+02	102.38	8.51E+03
	66	1811-	1826	1818.10	315.22	5.24E+02	193.80	7.38E+03
	67	1863-	1881	1871.27	324.45	8.74E+02	229.03	8.95E+03
	68	1899-	1913	1905.90	330.45	1.12E+03	185.56	6.99E+03
	69	1918-	1940	1930.49	334.72	3.79E+02	282.00	1.17E+04
	70	1948-	1961	1954.79	338.93	8.15E+02	181.55	7.12E+03
	71	1976-	1986	1980.32	343.36	2.07E+02	154.58	6.26E+03
	72	2022-	2043	2033.05	352.50	1.56E+05	479.20	1.14E+04
	73	2228-	2240	2234.29	387.40	6.01E+02	163.98	6.15E+03
	74	2240-	2253	2247.46	389.69	8.83E+02	174.98	6.60E+03
	75	2310-	2330	2321.17	402.47	1.01E+03	251.22	9.92E+03
	76	2330-	2350	2339.62	405.67	1.21E+03	250.28	9.81E+03
	77	2517-	2533	2527.33	438.23	2.99E+02	184.04	6.39E+03
	78	2566-	2577	2570.96	445.79	3.75E+02	134.17	4.38E+03
	79	2620-	2638	2629.26	455.90	4.92E+02	199.70	6.84E+03
	80	2658-	2674	2666.54	462.37	3.77E+02	179.24	6.04E+03
	81	2707-	2718	2713.75	470.56	3.44E+02	127.90	3.99E+03
	82	2768-	2787	2776.54	481.45	6.38E+02	205.06	6.89E+03
	83	2804-	2826	2814.68	488.06	8.02E+02	225.94	7.43E+03
	84	3070-	3093	3081.60	534.35	6.44E+02	219.21	6.76E+03
	85	3338-	3361	3348.96	580.72	9.10E+02	214.13	6.39E+03
	86	3506-	3533	3520.04	610.39	7.54E+04	373.38	8.00E+03
	87	3548-	3562	3553.79	616.24	1.60E+02	132.30	3.63E+03
	88	3647-	3663	3654.15	633.65	1.94E+02	146.32	4.02E+03
	89	3830-	3858	3843.66	666.51	2.07E+03	239.89	6.71E+03
	90	3971-	3986	3979.70	690.11	3.27E+02	132.89	3.47E+03
M	91	4011-	4035	4020.95	697.26	7.04E+02	60.43	2.40E+03
	92	4011-	4035	4028.34	698.54	1.45E+03	67.38	1.80E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-113-GAM4
Peak Analysis Performed on: 4-03-96 11:29:13 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.35	1.79E+03	263.32			1.79E+03	2.63E+02
2	6.42	6.44E+03	269.66			6.44E+03	2.70E+02
3	9.26	1.46E+03	224.96			1.46E+03	2.25E+02
4	10.88	3.72E+04	314.88			3.72E+04	3.15E+02
5	13.06	1.12E+05	480.71			1.12E+05	4.81E+02
6	16.32	5.75E+04	493.35			5.75E+04	4.93E+02
7	19.42	3.10E+04	501.31			3.10E+04	5.01E+02
8	21.05	2.88E+02	159.40			2.88E+02	1.59E+02
9	25.73	9.82E+03	255.65			9.82E+03	2.56E+02
10	27.48	8.20E+03	266.44			8.20E+03	2.66E+02
11	36.78	1.49E+03	241.13			1.49E+03	2.41E+02
12	43.75	2.74E+02	204.21			2.74E+02	2.04E+02
13	46.64	8.54E+04	388.41			8.54E+04	3.88E+02
14	50.08	8.96E+03	285.32			8.96E+03	2.85E+02
15	53.33	2.12E+04	306.59			2.12E+04	3.07E+02
16	63.40	8.25E+04	407.96			8.25E+04	4.08E+02
17	65.10	3.18E+02	226.93			3.18E+02	2.27E+02
18	67.75	9.49E+03	307.33			9.49E+03	3.07E+02
19	72.91	7.12E+02	262.98			7.12E+02	2.63E+02
20	74.94	1.13E+05	483.20			1.13E+05	4.83E+02
21	77.24	2.04E+05	568.33			2.04E+05	5.68E+02
22	79.50	8.89E+03	378.69			8.89E+03	3.79E+02
23	81.24	1.36E+04	307.61			1.36E+04	3.08E+02
24	83.97	3.68E+04	356.09			3.68E+04	3.56E+02
25	87.37	6.47E+04	394.57			6.47E+04	3.95E+02
26	90.08	2.59E+04	361.13			2.59E+04	3.61E+02
27	92.73	1.01E+05	463.99	1.89E+02	3.17E+01	1.01E+05	4.65E+02
28	95.04	1.15E+03	394.08			1.15E+03	3.94E+02
29	98.32	8.44E+03	343.23			8.44E+03	3.43E+02
30	100.56	1.09E+03	218.11			1.09E+03	2.18E+02
31	105.73	1.68E+03	269.67			1.68E+03	2.70E+02
32	109.16	1.62E+03	224.81	8.10E+01	3.01E+01	1.54E+03	2.27E+02
33	113.03	4.31E+03	253.65			4.31E+03	2.54E+02
34	115.09	7.70E+02	283.90			7.70E+02	2.84E+02
35	120.97	5.61E+02	228.08			5.61E+02	2.28E+02
36	122.60	8.78E+02	230.56			8.78E+02	2.31E+02
37	128.06	7.18E+02	291.90			7.18E+02	2.92E+02
38	130.65	1.21E+03	262.83			1.21E+03	2.63E+02
39	140.81	8.67E+02	294.86			8.67E+02	2.95E+02
40	144.07	1.18E+04	313.82			1.18E+04	3.14E+02
41	154.46	4.43E+03	308.49			4.43E+03	3.08E+02
42	159.16	5.69E+02	244.30			5.69E+02	2.44E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	163.56	3.27E+03	305.61			3.27E+03	3.06E+02
44	186.28	7.34E+04	409.16	9.54E+01	3.21E+01	7.33E+04	4.10E+02
45	189.59	4.09E+02	224.43			4.09E+02	2.24E+02
46	199.27	6.08E+02	239.47			6.08E+02	2.39E+02
47	202.01	1.28E+03	294.32			1.28E+03	2.94E+02
48	205.70	2.97E+03	240.69			2.97E+03	2.41E+02
49	210.79	3.63E+02	227.08			3.63E+02	2.27E+02
50	232.14	4.38E+02	214.55			4.38E+02	2.15E+02
51	236.32	4.30E+03	270.59			4.30E+03	2.71E+02
52	238.98	8.00E+02	213.42			8.00E+02	2.13E+02
53	242.37	5.23E+04	352.66			5.23E+04	3.53E+02
54	256.58	2.02E+03	232.92			2.02E+03	2.33E+02
55	259.25	2.31E+03	271.10			2.31E+03	2.71E+02
56	269.82	3.37E+03	234.71			3.37E+03	2.35E+02
57	271.75	2.17E+03	212.10			2.17E+03	2.12E+02
58	275.09	1.60E+03	270.25			1.60E+03	2.70E+02
59	283.93	5.64E+02	186.09			5.64E+02	1.86E+02
M 60	286.52	1.15E+03	138.56			1.15E+03	1.39E+02
m 61	288.21	2.75E+02	78.99			2.75E+02	7.90E+01
62	295.71	1.04E+05	415.26	2.87E+01	1.59E+01	1.04E+05	4.16E+02
63	300.47	1.27E+03	219.80			1.27E+03	2.20E+02
M 64	303.10	5.33E+02	107.21			5.33E+02	1.07E+02
m 65	304.83	4.94E+02	102.38			4.94E+02	1.02E+02
66	315.22	5.24E+02	193.80			5.24E+02	1.94E+02
67	324.45	8.74E+02	229.03			8.74E+02	2.29E+02
68	330.45	1.12E+03	185.56			1.12E+03	1.86E+02
69	334.72	3.79E+02	282.00			3.79E+02	2.82E+02
70	338.93	8.15E+02	181.55			8.15E+02	1.82E+02
71	343.36	2.07E+02	154.58			2.07E+02	1.55E+02
72	352.50	1.56E+05	479.20	4.33E+01	1.65E+01	1.56E+05	4.79E+02
73	387.40	6.01E+02	163.98			6.01E+02	1.64E+02
74	389.69	8.83E+02	174.98			8.83E+02	1.75E+02
75	402.47	1.01E+03	251.22			1.01E+03	2.51E+02
76	405.67	1.21E+03	250.28			1.21E+03	2.50E+02
77	438.23	2.99E+02	184.04			2.99E+02	1.84E+02
78	445.79	3.75E+02	134.17			3.75E+02	1.34E+02
79	455.90	4.92E+02	199.70			4.92E+02	2.00E+02
80	462.37	3.77E+02	179.24			3.77E+02	1.79E+02
81	470.56	3.44E+02	127.90			3.44E+02	1.28E+02
82	481.45	6.38E+02	205.06			6.38E+02	2.05E+02
83	488.06	8.02E+02	225.94			8.02E+02	2.26E+02
84	534.35	6.44E+02	219.21			6.44E+02	2.19E+02
85	580.72	9.10E+02	214.13			9.10E+02	2.14E+02
86	610.39	7.54E+04	373.38			7.54E+04	3.73E+02
87	616.24	1.60E+02	132.30			1.60E+02	1.32E+02
88	633.65	1.94E+02	146.32			1.94E+02	1.46E+02
89	666.51	2.07E+03	239.89			2.07E+03	2.40E+02
90	690.11	3.27E+02	132.89			3.27E+02	1.33E+02
M 91	697.26	7.04E+02	60.43			7.04E+02	6.04E+01
92	698.54	1.45E+03	67.38			1.45E+03	6.74E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.

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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*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************

Report Generated On              :  4-03-96  3:43:58 PM

Sample Title                     : NOPI-114-GAM4
Spectrum Description             : NOPI-114-GAM4
Sample Identification            : NP114_2
Sample Type                      :
Sample Geometry                  :

Peak Locate Threshold            :  2.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.000 keV

Sample Size                      :   0.000E+00 Unit

Sample Taken On                  :
Acquisition Started              :  3-12-96  1:40:49 PM

Live Time                        :    80000.0 seconds
Real Time                        :    80126.5 seconds


            Energy Calibration Used Done On       :  1-16-96
            Efficiency Calibration Used Done On   : ????????
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DP1B_3

****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-114-GAM4
Peak Locate Performed on: 4-03-96 3:42:48 PM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.42	0.2679	5.35	8.04
2	37.20	0.2096	6.43	18.26
3	53.16	0.4534	9.25	4.07
4	63.41	0.1238	10.89	38.53
5	75.97	0.1191	13.06	38.03
6	94.34	0.1138	16.32	51.38
7	110.38	0.1187	19.17	44.23
8	117.45	0.4503	19.95	2.71
9	148.88	0.1273	25.73	35.27
10	158.87	0.1349	27.48	31.71
11	185.76	0.4876	32.14	2.12
12	212.22	0.2438	36.71	7.23
13	233.00	0.4122	40.36	2.66
14	269.46	0.0597	46.65	135.71
15	290.05	0.1272	50.09	31.75
16	308.05	0.0769	53.34	78.84
17	338.67	0.4012	58.53	2.73
18	366.11	0.0531	63.41	161.19
19	375.74	0.3648	64.99	4.07
20	391.46	0.1084	67.75	36.03
21	400.92	0.5194	69.51	2.46
22	421.24	0.2514	72.91	7.16
23	432.73	0.0478	74.95	177.89
24	445.95	0.0420	77.24	241.99
25	458.66	0.0868	79.51	52.53
26	468.93	0.0837	81.25	61.99
27	484.66	0.0733	83.99	68.62
28	504.52	0.0648	87.37	77.26
29	519.41	0.0760	90.09	62.66
30	535.12	0.0517	92.74	107.76
31	547.83	0.1121	94.94	30.45
32	569.00	0.1222	98.36	29.49
33	578.71	0.3122	100.45	5.01
34	592.32	0.3070	102.73	2.85
35	610.91	0.2887	105.71	5.07
36	630.97	0.2182	109.18	9.19
37	643.48	0.2491	111.26	5.69
38	652.20	0.1137	113.03	29.87
39	661.93	0.3742	114.86	3.07
40	698.76	0.2875	121.08	4.57
41	707.10	0.2201	122.70	8.59

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	740.07	0.2727	128.14	5.81
43	753.30	0.2381	130.83	6.36
44	812.43	0.3024	140.86	3.60
45	831.24	0.0876	144.11	42.68
46	891.26	0.1142	154.47	25.67
47	916.70	0.2770	159.08	4.40
48	943.88	0.1270	163.54	20.83
49	1074.81	0.0485	186.29	108.07
50	1147.72	0.3569	198.89	2.65
51	1167.68	0.2730	202.48	4.21
52	1186.23	0.1340	205.70	16.84
53	1217.26	0.2774	211.26	4.99
54	1363.60	0.1034	236.40	26.54
55	1378.46	0.2062	239.12	6.53
56	1398.20	0.0451	242.40	135.94
57	1480.76	0.1298	256.63	17.90
58	1495.74	0.1120	259.29	22.12
59	1556.87	0.0985	269.88	29.22
60	1567.22	0.1111	271.77	24.37
61	1587.87	0.1565	275.26	11.04
62	1624.24	0.2998	281.62	2.32
63	1653.32	0.1666	286.55	9.92
64	1705.72	0.0356	295.74	197.82
65	1733.14	0.1557	300.57	10.99
66	1748.11	0.2240	303.08	5.73
67	1759.72	0.2615	305.45	4.07
68	1816.86	0.2663	315.24	4.18
69	1871.35	0.1627	324.37	10.19
70	1906.39	0.1673	330.49	8.89
71	1928.83	0.3345	334.35	2.24
72	1955.24	0.1995	338.93	6.38
73	1978.44	0.3213	343.07	2.47
74	2016.04	0.3251	349.62	3.25
75	2033.36	0.0316	352.54	231.50
76	2175.17	0.3343	377.10	2.46
77	2192.51	0.3272	379.81	3.13
78	2234.88	0.2031	387.45	6.13
79	2247.53	0.1584	389.74	9.58
80	2321.80	0.1423	402.52	10.79
81	2339.89	0.2094	405.95	3.38
82	2405.26	0.3091	417.05	2.66
83	2571.93	0.2799	446.04	3.13
84	2627.29	0.1785	455.71	6.29
85	2668.36	0.3072	462.64	2.16
86	2714.21	0.2470	470.69	3.80
87	2776.50	0.1545	481.49	8.74
88	2814.14	0.1664	488.03	7.69
89	3083.23	0.2001	534.85	4.55
90	3352.13	0.1799	581.25	4.95
91	3520.42	0.0344	610.44	149.37

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
92	3844.36	0.1050	666.66	15.53
93	3946.49	0.2922	684.27	2.56
94	4028.96	0.1100	698.67	16.21

Errors quoted at 1.000 sigma

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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: DET01
Sample Title: NOPI-114-GAM4
Peak Analysis Performed on: 4-03-96 3:43:14 PM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	28-	34	31.32	5.35	1.97E+03	283.61	2.78E+04
2	34-	40	37.56	6.43	7.00E+03	289.63	2.76E+04
3	50-	56	53.84	9.25	1.51E+03	246.76	2.13E+04
4	60-	66	63.26	10.89	3.70E+04	329.48	2.57E+04
5	72-	79	75.81	13.06	1.15E+05	499.04	4.46E+04
6	92-	97	94.57	16.32	6.25E+04	525.04	8.34E+04
7	107-	114	111.00	19.17	1.79E+04	390.71	4.46E+04
8	114-	121	115.53	19.95	4.55E+03	343.50	3.48E+04
9	144-	152	148.82	25.73	1.23E+04	291.41	2.23E+04
10	154-	163	158.94	27.48	9.60E+03	306.52	2.40E+04
11	181-	190	185.83	32.14	7.49E+02	281.71	2.23E+04
12	207-	216	212.15	36.71	1.37E+03	278.12	2.16E+04
13	228-	237	233.23	40.36	5.23E+02	280.62	2.22E+04
14	264-	274	269.47	46.65	1.12E+05	447.06	2.33E+04
15	284-	295	289.31	50.09	1.19E+04	329.10	2.39E+04
16	302-	313	308.07	53.34	2.73E+04	353.28	2.44E+04
17	333-	344	337.96	58.53	4.07E+02	326.10	2.63E+04
18	360-	371	366.13	63.41	1.07E+05	471.16	2.86E+04
19	373-	381	375.25	64.99	4.99E+02	261.94	2.07E+04
20	385-	397	391.16	67.75	1.26E+04	379.52	3.08E+04
21	397-	406	401.29	69.51	5.51E+02	290.22	2.37E+04
22	415-	424	420.87	72.91	1.08E+03	305.68	2.62E+04
23	426-	438	432.63	74.95	1.48E+05	556.81	3.81E+04
24	440-	451	445.87	77.24	2.69E+05	633.71	3.32E+04
25	452-	464	458.94	79.51	1.22E+04	434.01	4.13E+04
26	464-	474	468.99	81.25	1.84E+04	350.68	2.78E+04
27	478-	490	484.78	83.99	4.83E+04	406.37	2.75E+04
28	500-	510	504.28	87.37	8.32E+04	449.79	3.08E+04
29	513-	525	519.94	90.09	3.32E+04	412.26	3.21E+04
30	528-	541	535.21	92.74	1.33E+05	528.83	3.27E+04
31	543-	554	547.90	94.94	1.28E+04	343.45	2.62E+04
32	559-	575	567.67	98.36	1.13E+04	392.09	2.71E+04
33	575-	585	579.69	100.45	4.88E+02	252.61	1.68E+04
34	588-	598	592.86	102.73	8.52E+02	248.09	1.61E+04
35	604-	617	610.02	105.71	1.83E+03	308.49	2.06E+04
36	624-	635	630.00	109.18	1.56E+03	277.98	1.88E+04
37	636-	647	642.04	111.26	1.42E+03	283.16	1.96E+04
38	647-	659	652.24	113.03	5.13E+03	311.57	2.15E+04
39	659-	668	662.77	114.86	4.82E+02	228.87	1.47E+04
40	693-	702	698.66	121.08	4.03E+02	224.21	1.42E+04
41	702-	714	708.00	122.70	9.29E+02	280.39	1.82E+04
42	732-	747	739.33	128.14	1.61E+03	327.95	2.11E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	747-	760	754.86	130.83	1.57E+03	298.16	1.94E+04
44	805-	819	812.70	140.86	9.44E+02	317.69	2.10E+04
45	823-	838	831.44	144.11	1.54E+04	356.87	2.24E+04
46	883-	898	891.18	154.47	5.63E+03	351.94	2.36E+04
47	912-	924	917.75	159.08	6.18E+02	277.58	1.79E+04
48	936-	951	943.45	163.54	3.95E+03	328.78	2.08E+04
49	1066-	1083	1074.68	186.29	9.71E+04	465.24	2.17E+04
50	1142-	1154	1147.31	198.89	5.99E+02	253.76	1.49E+04
51	1162-	1176	1167.99	202.48	8.20E+02	282.82	1.66E+04
52	1180-	1194	1186.56	205.70	3.50E+03	275.52	1.52E+04
53	1213-	1225	1218.64	211.26	4.64E+02	223.58	1.16E+04
54	1354-	1372	1363.60	236.40	5.14E+03	307.87	1.56E+04
55	1372-	1387	1379.26	239.12	1.18E+03	250.64	1.23E+04
56	1388-	1407	1398.19	242.40	6.90E+04	395.61	1.46E+04
57	1471-	1485	1480.22	256.63	2.50E+03	232.74	1.09E+04
58	1486-	1505	1495.58	259.29	3.60E+03	301.08	1.45E+04
59	1547-	1562	1556.64	269.88	4.23E+03	251.41	1.18E+04
60	1562-	1576	1567.51	271.77	2.42E+03	241.85	1.18E+04
61	1578-	1597	1587.66	275.26	2.24E+03	286.66	1.33E+04
62	1617-	1630	1624.33	281.62	2.50E+02	207.34	9.46E+03
63	1644-	1660	1652.78	286.55	1.13E+03	252.30	1.19E+04
64	1695-	1715	1705.72	295.74	1.36E+05	471.54	1.38E+04
65	1728-	1743	1733.58	300.57	1.33E+03	223.29	9.63E+03
66	1743-	1754	1748.06	303.08	5.78E+02	171.01	7.11E+03
67	1754-	1769	1761.76	305.45	7.39E+02	218.07	9.35E+03
68	1812-	1827	1818.18	315.24	5.56E+02	215.85	9.17E+03
69	1862-	1877	1870.85	324.37	1.02E+03	217.81	9.28E+03
70	1895-	1914	1906.11	330.49	1.49E+03	263.66	1.13E+04
71	1923-	1934	1928.41	334.35	2.25E+02	176.01	7.64E+03
72	1947-	1963	1954.79	338.93	8.25E+02	243.12	1.11E+04
73	1972-	1986	1978.65	343.07	4.81E+02	223.30	1.04E+04
74	2012-	2021	2016.45	349.62	2.86E+02	161.15	7.28E+03
75	2022-	2044	2033.24	352.54	2.04E+05	551.40	1.48E+04
76	2169-	2180	2174.85	377.10	1.97E+02	161.26	6.42E+03
77	2181-	2203	2190.48	379.81	4.11E+02	289.29	1.23E+04
78	2226-	2240	2234.55	387.45	5.87E+02	206.43	8.82E+03
79	2240-	2258	2247.76	389.74	9.88E+02	256.95	1.13E+04
80	2313-	2328	2321.45	402.52	1.41E+03	218.90	9.28E+03
81	2332-	2351	2341.23	405.95	1.28E+03	268.26	1.18E+04
82	2401-	2411	2405.26	417.05	2.14E+02	155.47	6.35E+03
83	2567-	2579	2572.40	446.04	3.98E+02	158.18	5.76E+03
84	2618-	2639	2628.14	455.71	9.25E+02	249.62	9.43E+03
85	2656-	2680	2668.08	462.64	1.12E+03	273.49	1.02E+04
86	2707-	2721	2714.51	470.69	3.28E+02	174.02	6.29E+03
87	2769-	2788	2776.79	481.49	1.23E+03	220.96	7.90E+03
88	2803-	2826	2814.49	488.03	1.37E+03	253.71	8.99E+03
89	3077-	3096	3084.46	534.85	5.27E+02	205.27	6.91E+03
90	3341-	3359	3352.01	581.25	5.06E+02	196.52	6.62E+03
91	3506-	3534	3520.34	610.44	1.01E+05	425.91	9.81E+03
92	3832-	3858	3844.47	666.66	2.13E+03	249.22	7.73E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
93	3939-	3952	3946.06	684.27	2.06E+02	129.22	3.65E+03
94	4023-	4035	4029.08	698.67	1.46E+03	85.04	1.20E+03

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-114-GAM4
Peak Analysis Performed on: 4-03-96 3:42:48 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.35	1.97E+03	283.61			1.97E+03	2.84E+02
2	6.43	7.00E+03	289.63			7.00E+03	2.90E+02
3	9.25	1.51E+03	246.76			1.51E+03	2.47E+02
4	10.89	3.70E+04	329.48			3.70E+04	3.29E+02
5	13.06	1.15E+05	499.04			1.15E+05	4.99E+02
6	16.32	6.25E+04	525.04			6.25E+04	5.25E+02
7	19.17	1.79E+04	390.71			1.79E+04	3.91E+02
8	19.95	4.55E+03	343.50			4.55E+03	3.43E+02
9	25.73	1.23E+04	291.41			1.23E+04	2.91E+02
10	27.48	9.60E+03	306.52			9.60E+03	3.07E+02
11	32.14	7.49E+02	281.71			7.49E+02	2.82E+02
12	36.71	1.37E+03	278.12			1.37E+03	2.78E+02
13	40.36	5.23E+02	280.62			5.23E+02	2.81E+02
14	46.65	1.12E+05	447.06			1.12E+05	4.47E+02
15	50.09	1.19E+04	329.10			1.19E+04	3.29E+02
16	53.34	2.73E+04	353.28			2.73E+04	3.53E+02
17	58.53	4.07E+02	326.10			4.07E+02	3.26E+02
18	63.41	1.07E+05	471.16			1.07E+05	4.71E+02
19	64.99	4.99E+02	261.94			4.99E+02	2.62E+02
20	67.75	1.26E+04	379.52			1.26E+04	3.80E+02
21	69.51	5.51E+02	290.22			5.51E+02	2.90E+02
22	72.91	1.08E+03	305.68			1.08E+03	3.06E+02
23	74.95	1.48E+05	556.81			1.48E+05	5.57E+02
24	77.24	2.69E+05	633.71			2.69E+05	6.34E+02
25	79.51	1.22E+04	434.01			1.22E+04	4.34E+02
26	81.25	1.84E+04	350.68			1.84E+04	3.51E+02
27	83.99	4.83E+04	406.37			4.83E+04	4.06E+02
28	87.37	8.32E+04	449.79			8.32E+04	4.50E+02
29	90.09	3.32E+04	412.26			3.32E+04	4.12E+02
30	92.74	1.33E+05	528.83	1.89E+02	3.17E+01	1.32E+05	5.30E+02
31	94.94	1.28E+04	343.45			1.28E+04	3.43E+02
32	98.36	1.13E+04	392.09			1.13E+04	3.92E+02
33	100.45	4.88E+02	252.61			4.88E+02	2.53E+02
34	102.73	8.52E+02	248.09			8.52E+02	2.48E+02
35	105.71	1.83E+03	308.49			1.83E+03	3.08E+02
36	109.18	1.56E+03	277.98	8.10E+01	3.01E+01	1.48E+03	2.80E+02
37	111.26	1.42E+03	283.16			1.42E+03	2.83E+02
38	113.03	5.13E+03	311.57			5.13E+03	3.12E+02
39	114.86	4.82E+02	228.87			4.82E+02	2.29E+02
40	121.08	4.03E+02	224.21			4.03E+02	2.24E+02
41	122.70	9.29E+02	280.39			9.29E+02	2.80E+02
42	128.14	1.61E+03	327.95			1.61E+03	3.28E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	130.83	1.57E+03	298.16			1.57E+03	2.98E+02
44	140.86	9.44E+02	317.69			9.44E+02	3.18E+02
45	144.11	1.54E+04	356.87			1.54E+04	3.57E+02
46	154.47	5.63E+03	351.94			5.63E+03	3.52E+02
47	159.08	6.18E+02	277.58			6.18E+02	2.78E+02
48	163.54	3.95E+03	328.78			3.95E+03	3.29E+02
49	186.29	9.71E+04	465.24	9.54E+01	3.21E+01	9.70E+04	4.66E+02
50	198.89	5.99E+02	253.76			5.99E+02	2.54E+02
51	202.48	8.20E+02	282.82			8.20E+02	2.83E+02
52	205.70	3.50E+03	275.52			3.50E+03	2.76E+02
53	211.26	4.64E+02	223.58			4.64E+02	2.24E+02
54	236.40	5.14E+03	307.87			5.14E+03	3.08E+02
55	239.12	1.18E+03	250.64			1.18E+03	2.51E+02
56	242.40	6.90E+04	395.61			6.90E+04	3.96E+02
57	256.63	2.50E+03	232.74			2.50E+03	2.33E+02
58	259.29	3.60E+03	301.08			3.60E+03	3.01E+02
59	269.88	4.23E+03	251.41			4.23E+03	2.51E+02
60	271.77	2.42E+03	241.85			2.42E+03	2.42E+02
61	275.26	2.24E+03	286.66			2.24E+03	2.87E+02
62	281.62	2.50E+02	207.34			2.50E+02	2.07E+02
63	286.55	1.13E+03	252.30			1.13E+03	2.52E+02
64	295.74	1.36E+05	471.54	2.87E+01	1.59E+01	1.36E+05	4.72E+02
65	300.57	1.33E+03	223.29			1.33E+03	2.23E+02
66	303.08	5.78E+02	171.01			5.78E+02	1.71E+02
67	305.45	7.39E+02	218.07			7.39E+02	2.18E+02
68	315.24	5.56E+02	215.85			5.56E+02	2.16E+02
69	324.37	1.02E+03	217.81			1.02E+03	2.18E+02
70	330.49	1.49E+03	263.66			1.49E+03	2.64E+02
71	334.35	2.25E+02	176.01			2.25E+02	1.76E+02
72	338.93	8.25E+02	243.12			8.25E+02	2.43E+02
73	343.07	4.81E+02	223.30			4.81E+02	2.23E+02
74	349.62	2.86E+02	161.15			2.86E+02	1.61E+02
75	352.54	2.04E+05	551.40	4.33E+01	1.65E+01	2.04E+05	5.52E+02
76	377.10	1.97E+02	161.26			1.97E+02	1.61E+02
77	379.81	4.11E+02	289.29			4.11E+02	2.89E+02
78	387.45	5.87E+02	206.43			5.87E+02	2.06E+02
79	389.74	9.88E+02	256.95			9.88E+02	2.57E+02
80	402.52	1.41E+03	218.90			1.41E+03	2.19E+02
81	405.95	1.28E+03	268.26			1.28E+03	2.68E+02
82	417.05	2.14E+02	155.47			2.14E+02	1.55E+02
83	446.04	3.98E+02	158.18			3.98E+02	1.58E+02
84	455.71	9.25E+02	249.62			9.25E+02	2.50E+02
85	462.64	1.12E+03	273.49			1.12E+03	2.73E+02
86	470.69	3.28E+02	174.02			3.28E+02	1.74E+02
87	481.49	1.23E+03	220.96			1.23E+03	2.21E+02
88	488.03	1.37E+03	253.71			1.37E+03	2.54E+02
89	534.85	5.27E+02	205.27			5.27E+02	2.05E+02
90	581.25	5.06E+02	196.52			5.06E+02	1.97E+02
91	610.44	1.01E+05	425.91			1.01E+05	4.26E+02
92	666.66	2.13E+03	249.22			2.13E+03	2.49E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
93	684.27	2.06E+02	129.22			2.06E+02	1.29E+02
94	698.67	1.46E+03	85.04			1.46E+03	8.50E+01

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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*************************************************************************
*****        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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Report Generated On	:	4-03-96 4:15:49 PM
Sample Title	:	NOPI-115-GAM4
Spectrum Description	:	NOPI-115-GAM4
Sample Identification	:	NP115_2
Sample Type	:	
Sample Geometry	:	
Peak Locate Threshold	:	2.00
Peak Locate Range (in channels)	:	1 - 4096
Peak Area Range (in channels)	:	1 - 4096
Identification Energy Tolerance	:	1.000 keV
Sample Size	:	0.000E+00 Unit
Sample Taken On	:	
Acquisition Started	:	3-13-96 11:57:17 AM
Live Time	:	80000.0 seconds
Real Time	:	80083.9 seconds

Energy Calibration Used Done On	:	1-16-96
Efficiency Calibration Used Done On	:	????????

DP1B-4

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***** P E A K L O C A T E R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-115-GAM4
Peak Locate Performed on: 4-03-96 4:14:48 PM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.65	0.2884	5.38	7.84
2	37.24	0.2275	6.44	14.74
3	53.34	0.4251	9.27	3.66
4	63.42	0.1295	10.90	34.74
5	76.07	0.1284	13.06	30.83
6	94.38	0.1247	16.33	39.94
7	110.43	0.1329	19.17	32.49
8	117.61	0.4673	19.96	2.81
9	138.83	0.5932	24.01	2.36
10	148.91	0.1406	25.74	28.28
11	158.90	0.1500	27.48	24.50
12	212.33	0.2439	36.76	9.09
13	269.59	0.0642	46.66	119.82
14	290.16	0.1445	50.15	24.32
15	308.16	0.0863	53.36	62.26
16	338.45	0.3856	58.51	3.70
17	366.19	0.0614	63.43	120.15
18	375.76	0.5099	65.15	2.20
19	391.63	0.1228	67.78	28.47
20	432.89	0.0536	74.97	147.77
21	446.02	0.0466	77.26	196.18
22	458.78	0.0973	79.54	42.37
23	469.01	0.0942	81.28	48.38
24	484.78	0.0833	84.00	56.02
25	504.67	0.0720	87.40	63.83
26	519.56	0.0852	90.11	47.91
27	535.26	0.0597	92.76	83.02
28	548.21	0.1289	94.97	23.46
29	569.11	0.1451	98.36	20.71
30	579.83	0.3780	100.48	3.02
31	612.07	0.3417	105.73	2.13
32	630.94	0.2639	109.20	6.12
33	643.62	0.2790	111.32	5.43
34	652.31	0.1321	113.05	21.54
35	677.26	0.5164	117.68	2.12
36	698.81	0.3895	120.91	2.86
37	707.36	0.2378	122.61	5.81
38	740.02	0.3710	128.09	3.38
39	753.51	0.2535	130.81	6.12
40	812.58	0.4111	141.36	2.34
41	831.50	0.1012	144.15	29.33

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	891.38	0.1276	154.48	21.33
43	917.72	0.3336	159.11	2.96
44	925.48	0.4728	160.41	2.09
45	944.28	0.1410	163.66	17.07
46	1075.25	0.0545	186.36	86.67
47	1135.14	0.3602	197.05	2.38
48	1166.38	0.2985	202.30	2.67
49	1186.22	0.1560	205.67	11.93
50	1217.09	0.3292	210.99	2.71
51	1363.86	0.1188	236.42	20.70
52	1379.32	0.2155	239.03	6.11
53	1398.59	0.0498	242.46	107.48
54	1481.39	0.1477	256.82	13.40
55	1495.87	0.1281	259.27	16.05
56	1533.70	0.3709	266.08	2.34
57	1557.10	0.1157	269.93	21.17
58	1567.85	0.1297	271.81	16.49
59	1588.23	0.1726	275.12	7.97
60	1625.22	0.3158	281.44	2.03
61	1653.53	0.1958	286.66	6.92
62	1706.17	0.0400	295.80	158.01
63	1734.31	0.1703	300.74	9.04
64	1749.19	0.2664	303.21	4.20
65	1759.49	0.3866	305.35	2.15
66	1817.52	0.2624	315.08	3.79
67	1872.00	0.1909	324.55	7.42
68	1906.88	0.1915	330.60	7.44
69	1929.44	0.3573	334.49	2.00
70	1954.57	0.2210	338.88	4.77
71	1977.42	0.3513	342.69	2.29
72	2033.80	0.0354	352.62	183.68
73	2096.00	0.3961	363.09	2.32
74	2215.97	0.3298	384.16	2.38
75	2235.54	0.2206	387.48	5.30
76	2248.17	0.1761	389.82	7.20
77	2292.06	0.3607	397.59	2.04
78	2322.27	0.1776	402.53	7.90
79	2341.04	0.2455	405.92	3.45
80	2395.90	0.3354	415.31	2.83
81	2628.20	0.2261	455.94	4.20
82	2669.40	0.2490	463.06	4.08
83	2700.72	0.3392	468.09	2.29
84	2715.01	0.2808	470.96	3.08
85	2776.82	0.1697	481.64	7.30
86	2815.46	0.1600	488.20	7.40
87	2942.87	0.3537	510.84	2.05
88	3084.28	0.2044	534.75	4.03
89	3352.58	0.2150	581.27	4.32
90	3371.74	0.2810	584.54	3.17
91	3521.23	0.0385	610.58	117.77

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
92	3845.76	0.1174	666.77	12.82
93	4028.69	0.1194	698.41	13.16

Errors quoted at 1.000 sigma

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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: DET01
Sample Title: NOPI-115-GAM4
Peak Analysis Performed on: 4-03-96 4:15:00 PM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	28-	34	31.52	5.38	2.07E+03	232.67	1.85E+04
2	34-	40	37.65	6.44	3.95E+03	239.64	1.91E+04
3	50-	56	53.94	9.27	1.47E+03	203.24	1.43E+04
4	60-	66	63.32	10.90	2.88E+04	278.29	1.75E+04
5	72-	79	75.81	13.06	8.28E+04	419.20	3.10E+04
6	92-	97	94.63	16.33	3.99E+04	429.27	5.63E+04
7	107-	114	111.04	19.17	1.08E+04	315.91	2.95E+04
8	114-	121	115.58	19.96	2.45E+03	277.22	2.28E+04
9	134-	142	138.91	24.01	4.94E+02	218.49	1.44E+04
10	144-	152	148.89	25.74	7.84E+03	233.09	1.43E+04
11	154-	163	158.96	27.48	6.05E+03	246.27	1.56E+04
12	207-	216	212.47	36.76	1.43E+03	221.92	1.36E+04
13	264-	274	269.56	46.66	8.02E+04	370.13	1.51E+04
14	285-	295	289.67	50.15	7.67E+03	244.99	1.38E+04
15	302-	313	308.16	53.36	1.85E+04	284.94	1.57E+04
16	333-	343	337.85	58.51	3.66E+02	242.04	1.54E+04
17	360-	371	366.24	63.43	6.38E+04	371.48	1.85E+04
18	373-	381	376.12	65.15	3.75E+02	209.84	1.33E+04
19	385-	397	391.30	67.78	7.92E+03	303.48	1.97E+04
20	427-	438	432.77	74.97	9.88E+04	434.73	2.25E+04
21	440-	451	446.01	77.26	1.78E+05	514.05	2.16E+04
22	452-	464	459.10	79.54	7.52E+03	353.73	2.75E+04
23	464-	475	469.15	81.28	1.19E+04	299.35	1.94E+04
24	478-	490	484.86	84.00	3.02E+04	324.39	1.76E+04
25	500-	510	504.45	87.40	5.57E+04	364.77	2.01E+04
26	513-	525	520.08	90.11	2.15E+04	334.80	2.13E+04
27	528-	541	535.37	92.76	7.78E+04	416.42	2.13E+04
28	543-	554	548.08	94.97	8.23E+03	275.14	1.68E+04
29	560-	575	567.67	98.36	6.63E+03	299.47	1.66E+04
30	575-	584	579.85	100.48	2.45E+02	189.78	1.02E+04
31	603-	618	610.13	105.73	1.02E+03	279.82	1.54E+04
32	624-	634	630.17	109.20	1.03E+03	205.67	1.10E+04
33	636-	647	642.39	111.32	5.55E+02	227.66	1.28E+04
34	647-	659	652.37	113.05	3.06E+03	249.16	1.38E+04
35	675-	684	679.04	117.68	2.46E+02	179.13	9.04E+03
36	691-	701	697.69	120.91	4.20E+02	194.77	9.96E+03
37	701-	714	707.49	122.61	3.70E+02	243.78	1.31E+04
38	732-	747	739.08	128.09	6.31E+02	268.86	1.43E+04
39	747-	760	754.73	130.81	8.31E+02	241.64	1.28E+04
40	810-	820	815.58	141.36	4.74E+02	197.55	1.02E+04
41	824-	838	831.67	144.15	9.47E+03	271.77	1.35E+04
42	883-	899	891.21	154.48	4.10E+03	298.01	1.61E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	43	912-	929	917.92	159.11	6.85E+02	157.30	1.21E+04
m	44	912-	929	925.41	160.41	4.30E+02	126.85	1.11E+04
	45	938-	952	944.16	163.66	2.29E+03	252.81	1.29E+04
	46	1066-	1083	1075.07	186.36	6.19E+04	377.69	1.47E+04
	47	1130-	1143	1136.72	197.05	7.51E+02	223.02	1.09E+04
	48	1161-	1174	1166.95	202.30	8.34E+02	213.35	9.89E+03
	49	1177-	1194	1186.43	205.67	2.30E+03	259.56	1.18E+04
	50	1212-	1222	1217.05	210.99	2.39E+02	157.66	6.53E+03
	51	1354-	1373	1363.68	236.42	3.42E+03	259.02	1.06E+04
	52	1373-	1385	1378.77	239.03	5.44E+02	172.28	6.81E+03
	53	1389-	1407	1398.53	242.46	4.58E+04	315.92	9.39E+03
	54	1476-	1488	1481.32	256.82	1.21E+03	169.55	6.42E+03
	55	1488-	1505	1495.47	259.27	3.01E+03	216.17	7.89E+03
	56	1530-	1539	1534.74	266.08	2.30E+02	119.96	4.02E+03
	57	1547-	1563	1556.94	269.93	1.90E+03	222.70	9.08E+03
	58	1563-	1577	1567.77	271.81	1.65E+03	193.28	7.43E+03
	59	1578-	1597	1586.82	275.12	2.17E+03	229.48	8.39E+03
	60	1615-	1630	1623.31	281.44	6.29E+02	186.41	6.81E+03
	61	1645-	1660	1653.41	286.66	9.76E+02	190.66	7.06E+03
	62	1696-	1716	1706.10	295.80	8.91E+04	382.85	9.19E+03
	63	1732-	1742	1734.59	300.74	6.60E+02	132.36	4.43E+03
	64	1742-	1755	1748.81	303.21	1.80E+02	160.00	5.62E+03
	65	1755-	1769	1761.18	305.35	2.57E+02	168.61	5.91E+03
	66	1813-	1825	1817.28	315.08	2.71E+02	147.28	4.99E+03
	67	1867-	1882	1871.88	324.55	3.85E+02	180.83	6.41E+03
	68	1900-	1913	1906.78	330.60	6.43E+02	159.89	5.52E+03
	69	1918-	1940	1929.17	334.49	4.25E+02	253.07	9.41E+03
	70	1948-	1960	1954.51	338.88	3.63E+02	155.09	5.55E+03
	71	1966-	1983	1976.46	342.69	3.56E+02	211.20	8.03E+03
	72	2022-	2044	2033.72	352.62	1.34E+05	445.97	9.64E+03
	73	2085-	2100	2094.09	363.09	2.49E+02	167.81	5.57E+03
	74	2211-	2221	2215.58	384.16	2.20E+02	122.51	3.92E+03
	75	2224-	2241	2234.76	387.48	3.71E+02	197.17	6.98E+03
	76	2241-	2256	2248.24	389.82	6.89E+02	179.87	6.31E+03
	77	2288-	2298	2293.05	397.59	1.74E+02	124.71	4.08E+03
	78	2310-	2329	2321.49	402.53	8.64E+02	216.30	7.65E+03
	79	2329-	2352	2341.03	405.92	4.06E+02	261.49	9.70E+03
	80	2391-	2400	2395.23	415.31	2.47E+02	115.53	3.71E+03
	81	2618-	2640	2629.48	455.94	5.48E+02	212.33	6.60E+03
	82	2664-	2676	2670.52	463.06	3.33E+02	125.40	3.61E+03
	83	2695-	2705	2699.53	468.09	1.88E+02	105.48	2.89E+03
	84	2705-	2723	2716.08	470.96	2.88E+02	173.34	5.17E+03
	85	2764-	2789	2777.65	481.64	1.30E+03	220.30	6.30E+03
	86	2806-	2825	2815.47	488.20	3.45E+02	181.26	5.41E+03
	87	2937-	2955	2946.03	510.84	5.21E+02	163.34	4.54E+03
	88	3074-	3093	3083.90	534.75	2.06E+02	167.09	4.61E+03
	89	3339-	3366	3352.14	581.27	5.54E+02	220.58	6.00E+03
	90	3366-	3377	3371.00	584.54	2.28E+02	101.37	2.50E+03
	91	3507-	3534	3521.12	610.58	6.54E+04	341.33	6.38E+03
	92	3831-	3857	3845.12	666.77	1.83E+03	195.14	4.68E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
93	4018-	4035	4027.56	698.41	1.36E+03	92.85	1.28E+03

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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***** B A C K G R O U N D S U B T R A C T R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-115-GAM4
Peak Analysis Performed on: 4-03-96 4:14:48 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.38	2.07E+03	232.67			2.07E+03	2.33E+02
2	6.44	3.95E+03	239.64			3.95E+03	2.40E+02
3	9.27	1.47E+03	203.24			1.47E+03	2.03E+02
4	10.90	2.88E+04	278.29			2.88E+04	2.78E+02
5	13.06	8.28E+04	419.20			8.28E+04	4.19E+02
6	16.33	3.99E+04	429.27			3.99E+04	4.29E+02
7	19.17	1.08E+04	315.91			1.08E+04	3.16E+02
8	19.96	2.45E+03	277.22			2.45E+03	2.77E+02
9	24.01	4.94E+02	218.49			4.94E+02	2.18E+02
10	25.74	7.84E+03	233.09			7.84E+03	2.33E+02
11	27.48	6.05E+03	246.27			6.05E+03	2.46E+02
12	36.76	1.43E+03	221.92			1.43E+03	2.22E+02
13	46.66	8.02E+04	370.13			8.02E+04	3.70E+02
14	50.15	7.67E+03	244.99			7.67E+03	2.45E+02
15	53.36	1.85E+04	284.94			1.85E+04	2.85E+02
16	58.51	3.66E+02	242.04			3.66E+02	2.42E+02
17	63.43	6.38E+04	371.48			6.38E+04	3.71E+02
18	65.15	3.75E+02	209.84			3.75E+02	2.10E+02
19	67.78	7.92E+03	303.48			7.92E+03	3.03E+02
20	74.97	9.88E+04	434.73			9.88E+04	4.35E+02
21	77.26	1.78E+05	514.05			1.78E+05	5.14E+02
22	79.54	7.52E+03	353.73			7.52E+03	3.54E+02
23	81.28	1.19E+04	299.35			1.19E+04	2.99E+02
24	84.00	3.02E+04	324.39			3.02E+04	3.24E+02
25	87.40	5.57E+04	364.77			5.57E+04	3.65E+02
26	90.11	2.15E+04	334.80			2.15E+04	3.35E+02
27	92.76	7.78E+04	416.42	1.89E+02	3.17E+01	7.77E+04	4.18E+02
28	94.97	8.23E+03	275.14			8.23E+03	2.75E+02
29	98.36	6.63E+03	299.47			6.63E+03	2.99E+02
30	100.48	2.45E+02	189.78			2.45E+02	1.90E+02
31	105.73	1.02E+03	279.82			1.02E+03	2.80E+02
32	109.20	1.03E+03	205.67	8.10E+01	3.01E+01	9.54E+02	2.08E+02
33	111.32	5.55E+02	227.66			5.55E+02	2.28E+02
34	113.05	3.06E+03	249.16			3.06E+03	2.49E+02
35	117.68	2.46E+02	179.13			2.46E+02	1.79E+02
36	120.91	4.20E+02	194.77			4.20E+02	1.95E+02
37	122.61	3.70E+02	243.78			3.70E+02	2.44E+02
38	128.09	6.31E+02	268.86			6.31E+02	2.69E+02
39	130.81	8.31E+02	241.64			8.31E+02	2.42E+02
40	141.36	4.74E+02	197.55			4.74E+02	1.98E+02
41	144.15	9.47E+03	271.77			9.47E+03	2.72E+02
42	154.48	4.10E+03	298.01			4.10E+03	2.98E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M 43	159.11	6.85E+02	157.30			6.85E+02	1.57E+02
m 44	160.41	4.30E+02	126.85			4.30E+02	1.27E+02
45	163.66	2.29E+03	252.81			2.29E+03	2.53E+02
46	186.36	6.19E+04	377.69	9.54E+01	3.21E+01	6.18E+04	3.79E+02
47	197.05	7.51E+02	223.02	8.78E+01	2.66E+01	6.64E+02	2.25E+02
48	202.30	8.34E+02	213.35			8.34E+02	2.13E+02
49	205.67	2.30E+03	259.56			2.30E+03	2.60E+02
50	210.99	2.39E+02	157.66			2.39E+02	1.58E+02
51	236.42	3.42E+03	259.02			3.42E+03	2.59E+02
52	239.03	5.44E+02	172.28			5.44E+02	1.72E+02
53	242.46	4.58E+04	315.92			4.58E+04	3.16E+02
54	256.82	1.21E+03	169.55			1.21E+03	1.70E+02
55	259.27	3.01E+03	216.17			3.01E+03	2.16E+02
56	266.08	2.30E+02	119.96			2.30E+02	1.20E+02
57	269.93	1.90E+03	222.70			1.90E+03	2.23E+02
58	271.81	1.65E+03	193.28			1.65E+03	1.93E+02
59	275.12	2.17E+03	229.48			2.17E+03	2.29E+02
60	281.44	6.29E+02	186.41			6.29E+02	1.86E+02
61	286.66	9.76E+02	190.66			9.76E+02	1.91E+02
62	295.80	8.91E+04	382.85	2.87E+01	1.59E+01	8.91E+04	3.83E+02
63	300.74	6.60E+02	132.36			6.60E+02	1.32E+02
64	303.21	1.80E+02	160.00			1.80E+02	1.60E+02
65	305.35	2.57E+02	168.61			2.57E+02	1.69E+02
66	315.08	2.71E+02	147.28			2.71E+02	1.47E+02
67	324.55	3.85E+02	180.83			3.85E+02	1.81E+02
68	330.60	6.43E+02	159.89			6.43E+02	1.60E+02
69	334.49	4.25E+02	253.07			4.25E+02	2.53E+02
70	338.88	3.63E+02	155.09			3.63E+02	1.55E+02
71	342.69	3.56E+02	211.20			3.56E+02	2.11E+02
72	352.62	1.34E+05	445.97	4.33E+01	1.65E+01	1.34E+05	4.46E+02
73	363.09	2.49E+02	167.81			2.49E+02	1.68E+02
74	384.16	2.20E+02	122.51			2.20E+02	1.23E+02
75	387.48	3.71E+02	197.17			3.71E+02	1.97E+02
76	389.82	6.89E+02	179.87			6.89E+02	1.80E+02
77	397.59	1.74E+02	124.71			1.74E+02	1.25E+02
78	402.53	8.64E+02	216.30			8.64E+02	2.16E+02
79	405.92	4.06E+02	261.49			4.06E+02	2.61E+02
80	415.31	2.47E+02	115.53			2.47E+02	1.16E+02
81	455.94	5.48E+02	212.33			5.48E+02	2.12E+02
82	463.06	3.33E+02	125.40			3.33E+02	1.25E+02
83	468.09	1.88E+02	105.48			1.88E+02	1.05E+02
84	470.96	2.88E+02	173.34			2.88E+02	1.73E+02
85	481.64	1.30E+03	220.30			1.30E+03	2.20E+02
86	488.20	3.45E+02	181.26			3.45E+02	1.81E+02
87	510.84	5.21E+02	163.34			5.21E+02	1.63E+02
88	534.75	2.06E+02	167.09			2.06E+02	1.67E+02
89	581.27	5.54E+02	220.58			5.54E+02	2.21E+02
90	584.54	2.28E+02	101.37			2.28E+02	1.01E+02
91	610.58	6.54E+04	341.33			6.54E+04	3.41E+02
92	666.77	1.83E+03	195.14			1.83E+03	1.95E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
93	698.41	1.36E+03	92.85			1.36E+03	9.28E+01

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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*************************************************************************
*****        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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Report Generated On	:	4-03-96 4:18:19 PM
Sample Title	:	NOPI-116-GAM4
Spectrum Description	:	NOPI-116-GAM4
Sample Identification	:	NP116_2
Sample Type	:	
Sample Geometry	:	
Peak Locate Threshold	:	2.00
Peak Locate Range (in channels)	:	1 - 4096
Peak Area Range (in channels)	:	1 - 4096
Identification Energy Tolerance	:	1.000 keV
Sample Size	:	0.000E+00 Unit
Sample Taken On	:	
Acquisition Started	:	3-14-96 1:46:55 PM
Live Time	:	80000.0 seconds
Real Time	:	80063.9 seconds

Energy Calibration Used Done On	:	1-16-96
Efficiency Calibration Used Done On	:	????????

DP13-4

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***** P E A K L O C A T E R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-116-GAM4
Peak Locate Performed on: 4-03-96 4:17:02 PM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.35	0.3239	5.35	6.19
2	37.27	0.2418	6.43	12.52
3	53.04	0.4878	9.30	4.03
4	63.43	0.1394	10.89	29.20
5	76.07	0.1383	13.07	29.84
6	94.38	0.1305	16.33	36.33
7	117.47	0.4956	19.41	2.17
8	121.82	0.4478	21.11	4.07
9	148.99	0.1466	25.75	27.17
10	158.93	0.1583	27.48	22.42
11	212.60	0.3047	36.77	6.04
12	269.64	0.0681	46.67	105.38
13	290.12	0.1521	50.15	22.78
14	308.16	0.0929	53.37	53.91
15	366.20	0.0639	63.44	111.36
16	391.62	0.1284	67.81	27.13
17	421.33	0.3481	72.93	3.50
18	432.94	0.0580	74.98	127.79
19	446.04	0.0505	77.27	167.44
20	458.90	0.1076	79.54	36.49
21	469.03	0.0980	81.28	45.37
22	484.81	0.0876	84.02	48.89
23	504.73	0.0781	87.40	53.44
24	519.62	0.0907	90.11	43.82
25	535.36	0.0625	92.77	74.53
26	547.99	0.1323	94.98	21.58
27	569.22	0.1475	98.40	19.32
28	611.07	0.3020	105.81	4.66
29	631.59	0.2616	109.35	6.14
30	644.03	0.2954	111.50	5.46
31	652.32	0.1368	113.07	20.15
32	661.96	0.4114	115.06	2.33
33	699.18	0.3125	120.95	4.33
34	707.23	0.2579	122.72	5.64
35	739.92	0.3691	127.94	3.18
36	753.61	0.2974	130.70	4.11
37	831.55	0.1030	144.17	29.32
38	891.45	0.1387	154.47	17.61
39	916.98	0.3375	158.88	3.60
40	944.29	0.1508	163.74	15.47
41	1075.21	0.0577	186.37	77.67

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1167.47	0.3266	202.31	2.93
43	1186.80	0.1535	205.75	12.81
44	1217.07	0.2653	210.61	4.67
45	1363.99	0.1231	236.45	19.55
46	1379.13	0.1892	239.12	7.73
47	1398.76	0.0542	242.48	92.28
48	1434.73	0.3605	248.34	2.54
49	1481.11	0.1547	256.79	11.39
50	1496.28	0.1394	259.37	12.83
51	1557.24	0.1156	269.96	20.70
52	1567.81	0.1334	271.85	16.63
53	1588.53	0.1830	275.17	8.26
54	1639.16	0.2772	284.26	3.33
55	1653.27	0.2223	286.69	4.40
56	1706.34	0.0429	295.83	135.12
57	1734.43	0.1827	300.70	7.72
58	1748.77	0.2647	303.19	3.92
59	1759.41	0.2875	305.05	3.86
60	1872.20	0.1930	324.57	5.95
61	1906.70	0.2020	330.74	6.13
62	1954.95	0.2536	338.84	4.45
63	1980.90	0.4127	342.84	2.28
64	1996.82	0.3806	345.96	2.31
65	2016.53	0.3955	349.85	2.19
66	2034.04	0.0381	352.66	158.99
67	2235.70	0.2194	387.60	5.53
68	2248.04	0.1878	389.91	6.37
69	2322.61	0.1770	402.71	6.95
70	2342.78	0.2524	406.01	2.11
71	2629.17	0.2305	455.93	4.24
72	2669.42	0.2986	462.59	2.39
73	2743.04	0.2525	475.71	3.93
74	2778.05	0.1928	481.75	5.54
75	2815.19	0.1765	488.19	6.85
76	2836.31	0.3408	491.56	2.20
77	3083.77	0.2077	534.90	4.48
78	3310.87	0.2788	574.05	2.61
79	3372.15	0.2951	584.61	2.01
80	3521.55	0.0415	610.64	102.79
81	3846.14	0.1326	666.84	9.09
82	3889.28	0.3459	674.98	2.16
83	4029.08	0.1295	698.69	12.06

Errors quoted at 1.000 sigma

****
***** P E A K A N A L Y S I S R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-116-GAM4
Peak Analysis Performed on: 4-03-96 4:17:34 PM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	28-	34	31.33	5.35	1.23E+03	205.77	1.46E+04
	2	34-	40	37.59	6.43	3.74E+03	210.50	1.46E+04
	3	49-	56	54.11	9.30	3.33E+02	199.02	1.30E+04
	4	60-	66	63.30	10.89	2.18E+04	243.81	1.35E+04
	5	72-	79	75.83	13.07	6.46E+04	368.39	2.37E+04
	6	92-	97	94.63	16.33	3.36E+04	384.51	4.47E+04
	7	107-	121	112.44	19.41	1.90E+04	399.09	2.94E+04
	8	121-	125	122.19	21.11	3.22E+02	127.90	6.91E+03
	9	144-	153	148.97	25.75	6.63E+03	221.46	1.21E+04
	10	154-	163	158.93	27.48	5.07E+03	215.12	1.17E+04
	11	210-	217	212.53	36.77	9.41E+02	161.87	8.30E+03
	12	264-	274	269.60	46.67	6.14E+04	323.05	1.14E+04
	13	285-	295	289.64	50.15	6.05E+03	216.26	1.08E+04
	14	302-	313	308.25	53.37	1.35E+04	247.93	1.20E+04
	15	360-	371	366.27	63.44	5.43E+04	330.62	1.37E+04
	16	385-	397	391.51	67.81	6.04E+03	267.24	1.53E+04
	17	415-	424	421.01	72.93	2.73E+02	212.15	1.27E+04
	18	427-	438	432.85	74.98	7.20E+04	372.26	1.66E+04
	19	440-	451	446.04	77.27	1.29E+05	441.00	1.64E+04
	20	454-	464	459.12	79.54	9.64E+03	248.96	1.39E+04
	21	464-	475	469.17	81.28	8.23E+03	265.90	1.56E+04
	22	478-	490	484.98	84.02	2.40E+04	287.69	1.38E+04
	23	500-	510	504.45	87.40	4.04E+04	310.49	1.45E+04
	24	513-	525	520.08	90.11	1.58E+04	290.00	1.60E+04
	25	529-	541	535.44	92.77	6.71E+04	356.40	1.41E+04
	26	543-	554	548.15	94.98	6.70E+03	241.42	1.29E+04
	27	560-	575	567.87	98.40	5.52E+03	259.01	1.23E+04
	28	604-	617	610.61	105.81	8.51E+02	216.49	1.02E+04
M	29	624-	647	631.03	109.35	1.04E+03	150.67	1.12E+04
m	30	624-	647	643.42	111.50	6.35E+02	117.28	9.41E+03
	31	647-	659	652.44	113.07	2.39E+03	218.44	1.06E+04
	32	659-	668	663.91	115.06	4.97E+02	157.77	6.93E+03
	33	692-	703	697.92	120.95	3.04E+02	181.43	8.10E+03
	34	703-	714	708.10	122.72	7.39E+02	180.62	7.92E+03
	35	732-	744	738.23	127.94	3.47E+02	195.06	8.83E+03
	36	746-	760	754.13	130.70	9.86E+02	220.67	1.00E+04
	37	824-	839	831.79	144.17	7.74E+03	251.67	1.11E+04
	38	883-	899	891.19	154.47	2.96E+03	259.70	1.23E+04
	39	912-	920	916.58	158.88	2.18E+02	142.76	6.15E+03
	40	936-	952	944.64	163.74	2.32E+03	242.08	1.07E+04
	41	1066-	1083	1075.11	186.37	4.93E+04	327.17	1.05E+04
	42	1158-	1176	1167.02	202.31	1.14E+03	240.91	9.88E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1178-	1195	1186.86	205.75	2.06E+03	224.14	8.75E+03
44	1205-	1221	1214.89	210.61	3.43E+02	202.89	7.76E+03
45	1354-	1373	1363.87	236.45	2.67E+03	225.76	8.04E+03
46	1373-	1386	1379.30	239.12	7.57E+02	158.56	5.40E+03
47	1389-	1408	1398.64	242.48	3.30E+04	274.27	7.04E+03
48	1425-	1439	1432.46	248.34	2.75E+02	155.93	5.05E+03
49	1475-	1486	1481.16	256.79	1.18E+03	137.71	4.44E+03
50	1489-	1505	1496.06	259.37	2.26E+03	178.16	5.59E+03
51	1550-	1563	1557.11	269.96	1.88E+03	164.26	5.54E+03
52	1563-	1577	1567.98	271.85	1.46E+03	167.35	5.54E+03
53	1578-	1598	1587.12	275.17	1.17E+03	211.14	6.92E+03
54	1634-	1646	1639.54	284.26	1.90E+02	139.38	4.50E+03
55	1646-	1659	1653.59	286.69	4.83E+02	150.56	4.92E+03
56	1696-	1716	1706.27	295.83	6.47E+04	328.29	6.89E+03
57	1727-	1742	1734.33	300.70	8.19E+02	156.37	4.71E+03
58	1742-	1753	1748.68	303.19	2.77E+02	119.73	3.50E+03
59	1755-	1765	1759.40	305.05	1.69E+02	112.16	3.28E+03
60	1867-	1878	1871.99	324.57	6.44E+02	119.36	3.38E+03
61	1896-	1917	1907.57	330.74	6.67E+02	206.41	6.45E+03
62	1947-	1965	1954.25	338.84	2.36E+02	190.56	6.26E+03
63	1970-	1985	1977.33	342.84	4.62E+02	162.12	5.14E+03
64	1986-	2004	1995.31	345.96	2.15E+02	195.97	6.63E+03
65	2012-	2021	2017.77	349.85	1.63E+02	112.45	3.55E+03
66	2023-	2044	2033.94	352.66	9.69E+04	379.86	7.30E+03
67	2228-	2241	2235.42	387.60	4.02E+02	135.21	3.96E+03
68	2241-	2256	2248.76	389.91	5.94E+02	153.80	4.60E+03
69	2315-	2328	2322.54	402.71	6.15E+02	137.40	4.05E+03
70	2331-	2350	2341.58	406.01	5.91E+02	185.73	5.65E+03
71	2620-	2641	2629.42	455.93	3.24E+02	176.85	4.75E+03
72	2657-	2681	2667.80	462.59	5.45E+02	192.28	5.01E+03
73	2738-	2748	2743.46	475.71	1.12E+02	93.01	2.27E+03
74	2768-	2790	2778.29	481.75	9.33E+02	170.51	4.16E+03
75	2807-	2827	2815.41	488.19	4.86E+02	158.67	3.93E+03
76	2827-	2841	2834.85	491.56	2.35E+02	112.03	2.58E+03
77	3075-	3094	3084.75	534.90	3.87E+02	141.40	3.26E+03
78	3305-	3317	3310.50	574.05	1.85E+02	94.67	2.05E+03
79	3363-	3379	3371.37	584.61	1.88E+02	121.56	2.78E+03
80	3507-	3535	3521.51	610.64	4.76E+04	297.01	4.93E+03
81	3831-	3857	3845.56	666.84	1.24E+03	171.51	3.64E+03
82	3884-	3903	3892.47	674.98	1.39E+02	124.88	2.57E+03
83	4023-	4035	4029.20	698.69	7.36E+02	60.53	6.10E+02

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-116-GAM4
Peak Analysis Performed on: 4-03-96 4:17:02 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.35	1.23E+03	205.77			1.23E+03	2.06E+02
2	6.43	3.74E+03	210.50			3.74E+03	2.10E+02
3	9.30	3.33E+02	199.02			3.33E+02	1.99E+02
4	10.89	2.18E+04	243.81			2.18E+04	2.44E+02
5	13.07	6.46E+04	368.39			6.46E+04	3.68E+02
6	16.33	3.36E+04	384.51			3.36E+04	3.85E+02
7	19.41	1.90E+04	399.09			1.90E+04	3.99E+02
8	21.11	3.22E+02	127.90			3.22E+02	1.28E+02
9	25.75	6.63E+03	221.46			6.63E+03	2.21E+02
10	27.48	5.07E+03	215.12			5.07E+03	2.15E+02
11	36.77	9.41E+02	161.87			9.41E+02	1.62E+02
12	46.67	6.14E+04	323.05			6.14E+04	3.23E+02
13	50.15	6.05E+03	216.26		6.30	6.05E+03	2.16E+02
14	53.37	1.35E+04	247.93		2.33	1.35E+04	2.48E+02
15	63.44	5.43E+04	330.62			5.43E+04	3.31E+02
16	67.81	6.04E+03	267.24			6.04E+03	2.67E+02
17	72.93	2.73E+02	212.15			2.73E+02	2.12E+02
18	74.98	7.20E+04	372.26			7.20E+04	3.72E+02
19	77.27	1.29E+05	441.00			1.29E+05	4.41E+02
20	79.54	9.64E+03	248.96			9.64E+03	2.49E+02
21	81.28	8.23E+03	265.90			8.23E+03	2.66E+02
22	84.02	2.40E+04	287.69			2.40E+04	2.88E+02
23	87.40	4.04E+04	310.49			4.04E+04	3.10E+02
24	90.11	1.58E+04	290.00			1.58E+04	2.90E+02
25	92.77	6.71E+04	356.40	1.89E+02	3.17E+01	6.69E+04	3.58E+02
26	94.98	6.70E+03	241.42			6.70E+03	2.41E+02
27	98.40	5.52E+03	259.01			5.52E+03	2.59E+02
28	105.81	8.51E+02	216.49			8.51E+02	2.16E+02
M 29	109.35	1.04E+03	150.67	8.10E+01	3.01E+01	9.63E+02	1.54E+02
m 30	111.50	6.35E+02	117.28			6.35E+02	1.17E+02
31	113.07	2.39E+03	218.44			2.39E+03	2.18E+02
32	115.06	4.97E+02	157.77			4.97E+02	1.58E+02
33	120.95	3.04E+02	181.43			3.04E+02	1.81E+02
34	122.72	7.39E+02	180.62			7.39E+02	1.81E+02
35	127.94	3.47E+02	195.06			3.47E+02	1.95E+02
36	130.70	9.86E+02	220.67			9.86E+02	2.21E+02
37	144.17	7.74E+03	251.67			7.74E+03	2.52E+02
38	154.47	2.96E+03	259.70			2.96E+03	2.60E+02
39	158.88	2.18E+02	142.76			2.18E+02	1.43E+02
40	163.74	2.32E+03	242.08			2.32E+03	2.42E+02
41	186.37	4.93E+04	327.17	9.54E+01	3.21E+01	4.92E+04	3.29E+02
42	202.31	1.14E+03	240.91			1.14E+03	2.41E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	205.75	2.06E+03	224.14			2.06E+03	2.24E+02
44	210.61	3.43E+02	202.89			3.43E+02	2.03E+02
45	236.45	2.67E+03	225.76			2.67E+03	2.26E+02
46	239.12	7.57E+02	158.56			7.57E+02	1.59E+02
47	242.48	3.30E+04	274.27			3.30E+04	2.74E+02
48	248.34	2.75E+02	155.93			2.75E+02	1.56E+02
49	256.79	1.18E+03	137.71			1.18E+03	1.38E+02
50	259.37	2.26E+03	178.16			2.26E+03	1.78E+02
51	269.96	1.88E+03	164.26			1.88E+03	1.64E+02
52	271.85	1.46E+03	167.35			1.46E+03	1.67E+02
53	275.17	1.17E+03	211.14			1.17E+03	2.11E+02
54	284.26	1.90E+02	139.38			1.90E+02	1.39E+02
55	286.69	4.83E+02	150.56			4.83E+02	1.51E+02
56	295.83	6.47E+04	328.29	2.87E+01	1.59E+01	6.47E+04	3.29E+02
57	300.70	8.19E+02	156.37			8.19E+02	1.56E+02
58	303.19	2.77E+02	119.73			2.77E+02	1.20E+02
59	305.05	1.69E+02	112.16			1.69E+02	1.12E+02
60	324.57	6.44E+02	119.36			6.44E+02	1.19E+02
61	330.74	6.67E+02	206.41			6.67E+02	2.06E+02
62	338.84	2.36E+02	190.56			2.36E+02	1.91E+02
63	342.84	4.62E+02	162.12			4.62E+02	1.62E+02
64	345.96	2.15E+02	195.97			2.15E+02	1.96E+02
65	349.85	1.63E+02	112.45			1.63E+02	1.12E+02
66	352.66	9.69E+04	379.86	4.33E+01	1.65E+01	9.69E+04	3.80E+02
67	387.60	4.02E+02	135.21			4.02E+02	1.35E+02
68	389.91	5.94E+02	153.80			5.94E+02	1.54E+02
69	402.71	6.15E+02	137.40			6.15E+02	1.37E+02
70	406.01	5.91E+02	185.73			5.91E+02	1.86E+02
71	455.93	3.24E+02	176.85			3.24E+02	1.77E+02
72	462.59	5.45E+02	192.28			5.45E+02	1.92E+02
73	475.71	1.12E+02	93.01			1.12E+02	9.30E+01
74	481.75	9.33E+02	170.51			9.33E+02	1.71E+02
75	488.19	4.86E+02	158.67			4.86E+02	1.59E+02
76	491.56	2.35E+02	112.03			2.35E+02	1.12E+02
77	534.90	3.87E+02	141.40			3.87E+02	1.41E+02
78	574.05	1.85E+02	94.67			1.85E+02	9.47E+01
79	584.61	1.88E+02	121.56			1.88E+02	1.22E+02
80	610.64	4.76E+04	297.01			4.76E+04	2.97E+02
81	666.84	1.24E+03	171.51			1.24E+03	1.72E+02
82	674.98	1.39E+02	124.88			1.39E+02	1.25E+02
83	698.69	7.36E+02	60.53			7.36E+02	6.05E+01

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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*************************************************************************
*****        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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Report Generated On	:	4-03-96 4:20:37 PM
Sample Title	:	NOPI-117-GAM4
Spectrum Description	:	NOPI-117-GAM4
Sample Identification	:	NP117_2
Sample Type	:	
Sample Geometry	:	
Peak Locate Threshold	:	2.00
Peak Locate Range (in channels)	:	1 - 4096
Peak Area Range (in channels)	:	1 - 4096
Identification Energy Tolerance	:	1.000 keV
Sample Size	:	0.000E+00 Unit
Sample Taken On	:	
Acquisition Started	:	3-18-96 11:22:38 AM
Live Time	:	80000.0 seconds
Real Time	:	80048.1 seconds

Energy Calibration Used Done On	:	1-16-96
Efficiency Calibration Used Done On	:	????????

DP1B-4

****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-117-GAM4
Peak Locate Performed on: 4-03-96 4:19:27 PM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.49	0.3634	5.36	3.89
2	37.14	0.3124	6.39	8.79
3	63.40	0.1637	10.89	22.46
4	76.06	0.1598	13.06	20.21
5	94.41	0.1542	16.33	24.90
6	114.05	0.3263	19.34	8.95
7	148.97	0.1709	25.73	19.09
8	158.91	0.1856	27.47	16.64
9	212.58	0.2956	36.89	5.65
10	232.87	0.5650	40.27	2.71
11	269.62	0.0727	46.67	92.40
12	290.19	0.1641	50.15	18.55
13	308.18	0.0975	53.37	49.08
14	366.20	0.0715	63.44	89.10
15	391.57	0.1425	67.79	20.00
16	421.56	0.2864	72.88	5.44
17	432.94	0.0605	74.98	117.63
18	446.04	0.0525	77.27	154.36
19	458.88	0.1083	79.51	36.86
20	469.00	0.1075	81.27	37.17
21	484.84	0.0949	84.02	44.47
22	504.79	0.0809	87.40	52.10
23	519.62	0.0959	90.12	39.10
24	535.30	0.0696	92.77	60.94
25	548.15	0.1489	94.96	18.05
26	569.27	0.1674	98.32	14.29
27	591.05	0.4913	102.83	2.34
28	610.64	0.3301	105.70	3.85
29	643.72	0.3173	111.34	3.51
30	652.35	0.1517	113.07	15.96
31	668.18	0.4827	115.28	2.19
32	753.21	0.2877	130.73	4.80
33	831.51	0.1160	144.15	23.73
34	891.40	0.1499	154.46	14.80
35	905.06	0.3682	157.02	2.10
36	916.43	0.3624	159.30	2.52
37	944.37	0.1710	163.68	11.68
38	966.10	0.4212	167.05	2.87
39	1075.49	0.0617	186.40	67.39
40	1168.61	0.3643	202.65	2.12
41	1186.77	0.1748	205.63	10.62

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1364.17	0.1276	236.43	17.70
43	1379.32	0.1318	239.16	16.21
44	1398.82	0.0566	242.48	85.73
45	1448.19	0.3306	251.08	2.76
46	1480.87	0.1616	256.78	11.27
47	1496.26	0.1475	259.47	12.02
48	1557.23	0.1321	269.96	15.24
49	1567.84	0.1404	271.83	14.84
50	1588.02	0.2028	275.08	6.93
51	1653.41	0.2390	286.60	4.50
52	1706.39	0.0444	295.84	125.86
53	1733.85	0.1946	300.72	6.81
54	1872.12	0.2227	324.17	5.57
55	1907.16	0.2343	330.51	4.17
56	1927.22	0.3148	334.24	2.36
57	1955.54	0.2147	339.06	5.53
58	2013.43	0.3552	349.45	2.58
59	2034.08	0.0395	352.66	150.67
60	2175.06	0.3433	377.64	2.70
61	2235.78	0.2593	387.72	2.63
62	2248.31	0.1896	389.84	6.78
63	2281.66	0.3625	395.15	2.65
64	2322.34	0.2068	402.76	5.16
65	2340.22	0.2507	405.84	3.89
66	2570.11	0.3299	445.54	2.24
67	2628.08	0.2124	455.95	4.85
68	2777.16	0.2012	481.69	6.12
69	2815.01	0.1913	487.75	6.01
70	2903.84	0.3263	503.61	2.32
71	2946.12	0.2456	510.95	3.72
72	3085.52	0.2141	535.10	4.07
73	3354.09	0.2074	581.51	3.78
74	3370.86	0.2339	584.67	2.52
75	3521.61	0.0429	610.66	97.47
76	3845.55	0.1300	666.85	9.99
77	4028.55	0.1426	698.49	9.01

Errors quoted at 1.000 sigma

****
***** P E A K A N A L Y S I S R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-117-GAM4
Peak Analysis Performed on: 4-03-96 4:19:49 PM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	29-	34	31.42	5.36	9.47E+02	151.42	8.52E+03
2	34-	39	37.32	6.39	1.36E+03	154.90	8.96E+03
3	60-	66	63.27	10.89	1.21E+04	194.36	9.23E+03
4	72-	79	75.79	13.06	3.49E+04	279.66	1.44E+04
5	92-	97	94.64	16.33	1.61E+04	287.22	2.59E+04
6	107-	117	112.03	19.34	8.82E+03	267.86	1.67E+04
7	144-	153	148.85	25.73	3.94E+03	192.05	9.37E+03
8	154-	163	158.90	27.47	3.28E+03	187.69	9.10E+03
9	208-	217	213.19	36.89	8.42E+02	171.85	8.16E+03
10	228-	237	232.67	40.27	4.90E+02	174.17	8.46E+03
11	264-	274	269.59	46.67	4.84E+04	287.07	9.08E+03
12	285-	295	289.68	50.15	4.20E+03	190.75	8.51E+03
13	302-	313	308.21	53.37	1.07E+04	219.69	9.39E+03
14	360-	371	366.28	63.44	3.52E+04	284.46	1.14E+04
15	385-	397	391.36	67.79	4.32E+03	237.71	1.22E+04
16	415-	424	420.71	72.88	5.31E+02	192.67	1.04E+04
17	427-	438	432.83	74.98	6.06E+04	339.58	1.37E+04
18	440-	451	446.05	77.27	1.08E+05	399.75	1.30E+04
19	455-	464	458.94	79.51	8.09E+03	206.96	9.74E+03
20	464-	475	469.12	81.27	6.83E+03	231.39	1.17E+04
21	478-	490	484.94	84.02	1.74E+04	251.49	1.08E+04
22	500-	510	504.47	87.40	3.34E+04	278.94	1.16E+04
23	513-	525	520.10	90.12	1.36E+04	253.44	1.19E+04
24	528-	541	535.41	92.77	4.28E+04	311.93	1.21E+04
25	543-	554	548.06	94.96	4.24E+03	212.23	1.02E+04
26	560-	575	567.41	98.32	3.77E+03	229.21	9.71E+03
27	589-	597	593.43	102.83	4.52E+02	128.33	4.89E+03
28	603-	617	609.99	105.70	8.43E+02	200.80	8.28E+03
29	637-	647	642.51	111.34	6.86E+02	161.21	6.72E+03
30	647-	659	652.45	113.07	1.36E+03	194.20	8.51E+03
31	661-	671	665.21	115.28	4.46E+02	153.22	6.10E+03
32	749-	760	754.30	130.73	4.93E+02	167.01	6.82E+03
33	824-	838	831.64	144.15	5.08E+03	211.98	8.38E+03
34	883-	899	891.10	154.46	2.54E+03	228.56	9.44E+03
35	899-	912	905.87	157.02	2.33E+02	188.01	7.77E+03
36	912-	924	919.03	159.30	3.44E+02	171.86	6.86E+03
37	936-	952	944.30	163.68	1.52E+03	216.68	8.63E+03
38	958-	974	963.73	167.05	2.33E+02	208.48	8.19E+03
39	1067-	1083	1075.29	186.40	3.59E+04	280.35	8.13E+03
40	1163-	1177	1168.98	202.65	2.36E+02	174.77	6.36E+03
41	1178-	1191	1186.16	205.63	1.05E+03	161.67	5.57E+03
42	1355-	1370	1363.74	236.43	2.19E+03	161.16	4.76E+03

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1370-	1388	1379.50	239.16	1.57E+03	190.80	6.06E+03
	44	1389-	1408	1398.65	242.48	2.72E+04	249.68	5.86E+03
	45	1444-	1452	1448.26	251.08	1.99E+02	86.51	2.23E+03
	46	1475-	1488	1481.08	256.78	7.75E+02	136.00	3.92E+03
	47	1488-	1505	1496.60	259.47	1.76E+03	163.92	4.56E+03
	48	1549-	1563	1557.09	269.96	1.21E+03	150.25	4.48E+03
	49	1563-	1577	1567.90	271.83	9.48E+02	148.19	4.39E+03
	50	1578-	1593	1586.60	275.08	9.00E+02	145.69	4.06E+03
	51	1645-	1661	1653.04	286.60	3.19E+02	156.11	4.56E+03
	52	1696-	1716	1706.34	295.84	5.35E+04	294.72	5.34E+03
	53	1726-	1743	1734.45	300.72	4.29E+02	153.31	4.19E+03
	54	1861-	1879	1869.68	324.17	6.62E+02	153.76	3.98E+03
	55	1896-	1912	1906.25	330.51	5.08E+02	142.08	3.75E+03
	56	1922-	1932	1927.77	334.24	2.03E+02	99.20	2.56E+03
	57	1950-	1962	1955.56	339.06	2.91E+02	120.48	3.33E+03
	58	2009-	2022	2015.47	349.45	1.61E+02	131.75	3.81E+03
	59	2023-	2044	2033.96	352.66	8.05E+04	340.40	5.44E+03
	60	2171-	2186	2177.99	377.64	1.38E+02	124.16	3.04E+03
	61	2229-	2242	2236.14	387.72	2.77E+02	118.35	3.04E+03
	62	2242-	2254	2248.32	389.84	3.21E+02	113.19	2.93E+03
	63	2273-	2286	2278.97	395.15	1.32E+02	115.99	2.94E+03
	64	2317-	2333	2322.86	402.76	4.05E+02	142.87	3.79E+03
	65	2333-	2351	2340.61	405.84	4.77E+02	155.86	4.12E+03
	66	2562-	2579	2569.48	445.54	2.47E+02	123.80	2.73E+03
	67	2622-	2640	2629.52	455.95	4.46E+02	130.64	2.88E+03
	68	2770-	2789	2777.94	481.69	2.99E+02	132.96	2.89E+03
	69	2802-	2822	2812.92	487.75	3.73E+02	138.79	3.01E+03
	70	2898-	2916	2904.34	503.61	1.31E+02	118.23	2.39E+03
M	71	2933-	2962	2946.66	510.95	4.33E+02	148.15	3.23E+03
	72	3074-	3095	3085.94	535.10	2.44E+02	134.51	2.75E+03
	73	3343-	3362	3353.52	581.51	3.44E+02	119.03	2.30E+03
	74	3362-	3384	3371.71	584.67	3.65E+02	135.60	2.66E+03
	75	3507-	3535	3521.58	610.66	3.95E+04	265.93	3.78E+03
	76	3831-	3859	3845.60	666.85	1.20E+03	152.53	2.68E+03
	77	4021-	4035	4028.07	698.49	6.57E+02	57.14	5.14E+02

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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***** B A C K G R O U N D S U B T R A C T R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-117-GAM4
Peak Analysis Performed on: 4-03-96 4:19:27 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.36	9.47E+02	151.42			9.47E+02	1.51E+02
2	6.39	1.36E+03	154.90			1.36E+03	1.55E+02
3	10.89	1.21E+04	194.36			1.21E+04	1.94E+02
4	13.06	3.49E+04	279.66			3.49E+04	2.80E+02
5	16.33	1.61E+04	287.22			1.61E+04	2.87E+02
6	19.34	8.82E+03	267.86			8.82E+03	2.68E+02
7	25.73	3.94E+03	192.05			3.94E+03	1.92E+02
8	27.47	3.28E+03	187.69			3.28E+03	1.88E+02
9	36.89	8.42E+02	171.85			8.42E+02	1.72E+02
10	40.27	4.90E+02	174.17			4.90E+02	1.74E+02
11	46.67	4.84E+04	287.07			4.84E+04	2.87E+02
12	50.15	4.20E+03	190.75			4.20E+03	1.91E+02
13	53.37	1.07E+04	219.69			1.07E+04	2.20E+02
14	63.44	3.52E+04	284.46			3.52E+04	2.84E+02
15	67.79	4.32E+03	237.71			4.32E+03	2.38E+02
16	72.88	5.31E+02	192.67			5.31E+02	1.93E+02
17	74.98	6.06E+04	339.58			6.06E+04	3.40E+02
18	77.27	1.08E+05	399.75			1.08E+05	4.00E+02
19	79.51	8.09E+03	206.96			8.09E+03	2.07E+02
20	81.27	6.83E+03	231.39			6.83E+03	2.31E+02
21	84.02	1.74E+04	251.49			1.74E+04	2.51E+02
22	87.40	3.34E+04	278.94			3.34E+04	2.79E+02
23	90.12	1.36E+04	253.44			1.36E+04	2.53E+02
24	92.77	4.28E+04	311.93	1.89E+02	3.17E+01	4.26E+04	3.14E+02
25	94.96	4.24E+03	212.23			4.24E+03	2.12E+02
26	98.32	3.77E+03	229.21			3.77E+03	2.29E+02
27	102.83	4.52E+02	128.33			4.52E+02	1.28E+02
28	105.70	8.43E+02	200.80			8.43E+02	2.01E+02
29	111.34	6.86E+02	161.21			6.86E+02	1.61E+02
30	113.07	1.36E+03	194.20			1.36E+03	1.94E+02
31	115.28	4.46E+02	153.22			4.46E+02	1.53E+02
32	130.73	4.93E+02	167.01			4.93E+02	1.67E+02
33	144.15	5.08E+03	211.98			5.08E+03	2.12E+02
34	154.46	2.54E+03	228.56			2.54E+03	2.29E+02
35	157.02	2.33E+02	188.01			2.33E+02	1.88E+02
36	159.30	3.44E+02	171.86			3.44E+02	1.72E+02
37	163.68	1.52E+03	216.68			1.52E+03	2.17E+02
38	167.05	2.33E+02	208.48			2.33E+02	2.08E+02
39	186.40	3.59E+04	280.35	9.54E+01	3.21E+01	3.58E+04	2.82E+02
40	202.65	2.36E+02	174.77			2.36E+02	1.75E+02
41	205.63	1.05E+03	161.67			1.05E+03	1.62E+02
42	236.43	2.19E+03	161.16			2.19E+03	1.61E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	239.16	1.57E+03	190.80			1.57E+03	1.91E+02
44	242.48	2.72E+04	249.68			2.72E+04	2.50E+02
45	251.08	1.99E+02	86.51			1.99E+02	8.65E+01
46	256.78	7.75E+02	136.00			7.75E+02	1.36E+02
47	259.47	1.76E+03	163.92			1.76E+03	1.64E+02
48	269.96	1.21E+03	150.25			1.21E+03	1.50E+02
49	271.83	9.48E+02	148.19			9.48E+02	1.48E+02
50	275.08	9.00E+02	145.69			9.00E+02	1.46E+02
51	286.60	3.19E+02	156.11			3.19E+02	1.56E+02
52	295.84	5.35E+04	294.72	2.87E+01	1.59E+01	5.35E+04	2.95E+02
53	300.72	4.29E+02	153.31			4.29E+02	1.53E+02
54	324.17	6.62E+02	153.76			6.62E+02	1.54E+02
55	330.51	5.08E+02	142.08			5.08E+02	1.42E+02
56	334.24	2.03E+02	99.20			2.03E+02	9.92E+01
57	339.06	2.91E+02	120.48			2.91E+02	1.20E+02
58	349.45	1.61E+02	131.75			1.61E+02	1.32E+02
59	352.66	8.05E+04	340.40	4.33E+01	1.65E+01	8.05E+04	3.41E+02
60	377.64	1.38E+02	124.16			1.38E+02	1.24E+02
61	387.72	2.77E+02	118.35			2.77E+02	1.18E+02
62	389.84	3.21E+02	113.19			3.21E+02	1.13E+02
63	395.15	1.32E+02	115.99			1.32E+02	1.16E+02
64	402.76	4.05E+02	142.87			4.05E+02	1.43E+02
65	405.84	4.77E+02	155.86			4.77E+02	1.56E+02
66	445.54	2.47E+02	123.80			2.47E+02	1.24E+02
67	455.95	4.46E+02	130.64			4.46E+02	1.31E+02
68	481.69	2.99E+02	132.96			2.99E+02	1.33E+02
69	487.75	3.73E+02	138.79			3.73E+02	1.39E+02
70	503.61	1.31E+02	118.23			1.31E+02	1.18E+02
M 71	510.95	4.33E+02	148.15			4.33E+02	1.48E+02
72	535.10	2.44E+02	134.51			2.44E+02	1.35E+02
73	581.51	3.44E+02	119.03			3.44E+02	1.19E+02
74	584.67	3.65E+02	135.60			3.65E+02	1.36E+02
75	610.66	3.95E+04	265.93			3.95E+04	2.66E+02
76	666.85	1.20E+03	152.53			1.20E+03	1.53E+02
77	698.49	6.57E+02	57.14			6.57E+02	5.71E+01

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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*************************************************************************
*****        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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Report Generated On	:	4-03-96 4:22:42 PM
Sample Title	:	NOPI-118-GAM4
Spectrum Description	:	NOPI-118-GAM4
Sample Identification	:	NP118_2
Sample Type	:	
Sample Geometry	:	
Peak Locate Threshold	:	2.00
Peak Locate Range (in channels)	:	1 - 4096
Peak Area Range (in channels)	:	1 - 4096
Identification Energy Tolerance	:	1.000 keV
Sample Size	:	0.000E+00 Unit
Sample Taken On	:	
Acquisition Started	:	3-19-96 8:34:47 AM
Live Time	:	80000.0 seconds
Real Time	:	80032.3 seconds

Energy Calibration Used Done On	:	1-16-96
Efficiency Calibration Used Done On	:	????????

DP1B_4

****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-118-GAM4
Peak Locate Performed on: 4-03-96 4:21:45 PM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.47	0.4422	5.36	2.70
2	37.29	0.2962	6.46	8.14
3	53.00	0.6068	9.32	2.72
4	63.50	0.1940	10.90	13.32
5	76.03	0.1786	13.19	16.00
6	98.00	0.5348	16.40	3.50
7	110.45	0.1754	19.14	17.72
8	114.36	0.3332	20.00	5.74
9	148.91	0.1858	25.72	16.24
10	158.87	0.2022	27.50	14.63
11	186.00	0.5102	32.07	3.84
12	269.66	0.0846	46.67	68.74
13	290.33	0.1892	50.13	14.60
14	308.15	0.1106	53.36	38.09
15	366.28	0.0787	63.44	72.96
16	391.69	0.1527	67.81	19.64
17	421.43	0.3147	72.88	4.58
18	432.94	0.0679	74.98	93.08
19	446.07	0.0588	77.28	123.74
20	458.85	0.1213	79.51	27.89
21	469.06	0.1180	81.29	31.10
22	484.86	0.1062	84.05	36.01
23	504.75	0.0902	87.40	40.11
24	519.69	0.1095	90.13	30.44
25	535.36	0.0769	92.78	49.28
26	548.16	0.1583	94.95	13.85
27	569.18	0.1835	98.38	12.55
28	598.16	0.4266	103.55	2.59
29	611.35	0.3679	105.64	2.49
30	631.34	0.3377	109.35	2.96
31	643.97	0.3751	111.52	3.18
32	652.41	0.1588	113.07	14.29
33	707.47	0.2848	122.69	4.18
34	741.02	0.4574	128.70	2.05
35	831.60	0.1279	144.17	18.87
36	891.36	0.1619	154.50	13.51
37	944.24	0.1829	163.75	9.43
38	1075.55	0.0685	186.40	54.96
39	1187.02	0.1939	205.95	8.58
40	1209.25	0.3324	209.80	2.57
41	1290.17	0.3499	223.62	3.07

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1364.27	0.1480	236.47	12.34
43	1379.34	0.1379	239.15	15.41
44	1398.96	0.0630	242.51	70.41
45	1480.99	0.1875	256.67	8.68
46	1496.23	0.1759	259.49	8.79
47	1557.69	0.1466	270.02	12.98
48	1568.25	0.1667	271.93	10.88
49	1588.47	0.2119	275.51	6.27
50	1653.61	0.2301	286.69	4.80
51	1706.48	0.0496	295.87	100.31
52	1734.17	0.1975	300.67	6.31
53	1749.35	0.2610	303.17	4.93
54	1760.77	0.3101	305.23	2.96
55	1872.58	0.2244	324.65	4.74
56	1907.06	0.2405	330.67	4.84
57	1955.83	0.2519	339.29	3.91
58	2034.30	0.0445	352.70	117.82
59	2060.18	0.3747	357.30	2.23
60	2144.07	0.3505	371.82	2.64
61	2235.59	0.2356	387.56	4.48
62	2248.32	0.2288	389.92	4.19
63	2322.94	0.2244	402.52	4.42
64	2467.86	0.3243	427.68	2.61
65	2485.23	0.3315	431.05	2.88
66	2673.90	0.3082	463.76	2.30
67	2776.88	0.2119	481.70	4.64
68	2815.31	0.2311	488.34	2.78
69	2950.99	0.2704	511.80	3.20
70	3085.86	0.2945	534.55	3.38
71	3371.33	0.2176	584.66	3.81
72	3521.90	0.0478	610.71	78.86
73	3541.53	0.3840	613.73	2.08
74	3642.36	0.4045	631.20	2.02
75	3801.43	0.3347	659.24	2.16
76	3846.08	0.1392	666.96	9.31
77	3947.63	0.2651	684.76	2.76
78	4029.14	0.1508	698.71	9.02

Errors quoted at 1.000 sigma

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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: DET01
Sample Title: NOPI-118-GAM4
Peak Analysis Performed on: 4-03-96 4:22:09 PM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	28-	34	31.40	5.36	7.16E+02	138.05	6.54E+03
2	34-	40	37.77	6.46	1.34E+03	140.98	6.67E+03
3	49-	56	54.25	9.32	2.06E+02	136.16	6.08E+03
4	60-	66	63.33	10.90	6.58E+03	151.61	5.91E+03
5	75-	79	76.52	13.19	1.48E+04	184.49	7.98E+03
6	92-	101	95.04	16.40	1.45E+04	306.52	2.11E+04
7	107-	114	110.88	19.14	3.55E+03	183.92	1.00E+04
8	114-	118	115.80	20.00	1.38E+03	116.24	5.00E+03
9	144-	152	148.80	25.72	2.62E+03	143.11	5.48E+03
10	154-	163	159.05	27.50	1.97E+03	151.41	5.97E+03
11	181-	190	185.40	32.07	3.34E+02	138.13	5.32E+03
12	264-	274	269.61	46.67	2.53E+04	219.30	6.09E+03
13	285-	295	289.53	50.13	2.80E+03	152.77	5.41E+03
14	302-	313	308.19	53.36	6.98E+03	175.66	5.97E+03
15	360-	371	366.32	63.44	2.43E+04	230.49	7.20E+03
16	386-	397	391.49	67.81	3.43E+03	177.88	7.02E+03
17	415-	424	420.75	72.88	2.66E+02	154.21	6.67E+03
18	427-	438	432.85	74.98	3.80E+04	273.01	9.10E+03
19	440-	451	446.08	77.28	6.82E+04	320.56	8.64E+03
20	455-	464	458.96	79.51	5.29E+03	166.32	6.28E+03
21	464-	475	469.22	81.29	4.54E+03	186.87	7.58E+03
22	478-	490	485.12	84.05	1.14E+04	201.33	6.83E+03
23	500-	510	504.43	87.40	2.12E+04	223.64	7.46E+03
24	513-	525	520.18	90.13	8.19E+03	205.83	8.02E+03
25	529-	541	535.47	92.78	2.99E+04	245.94	7.18E+03
26	543-	554	547.98	94.95	2.58E+03	172.34	6.74E+03
27	560-	575	567.73	98.38	2.55E+03	185.47	6.35E+03
28	594-	602	597.57	103.55	1.69E+02	103.48	3.21E+03
29	604-	617	609.64	105.64	4.79E+02	153.52	5.09E+03
30	624-	638	631.02	109.35	4.65E+02	167.30	5.77E+03
31	638-	647	643.51	111.52	2.46E+02	119.31	3.97E+03
32	647-	659	652.43	113.07	1.02E+03	156.11	5.46E+03
33	704-	714	707.92	122.69	3.85E+02	121.58	3.81E+03
34	733-	748	742.58	128.70	5.66E+02	166.89	5.45E+03
35	824-	839	831.78	144.17	3.14E+03	183.52	6.09E+03
36	885-	899	891.32	154.50	1.40E+03	166.56	5.51E+03
37	938-	952	944.69	163.75	1.04E+03	154.99	4.82E+03
38	1067-	1083	1075.31	186.40	2.39E+04	225.85	5.16E+03
39	1182-	1195	1188.04	205.95	9.44E+02	127.64	3.40E+03
40	1205-	1215	1210.24	209.80	2.13E+02	97.92	2.49E+03
41	1284-	1294	1289.92	223.62	1.16E+02	91.00	2.17E+03
42	1355-	1369	1364.00	236.47	1.24E+03	124.27	2.99E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1370-	1388	1379.43	239.15	1.62E+03	150.68	3.66E+03
44	1389-	1408	1398.81	242.51	1.75E+04	197.66	3.60E+03
45	1471-	1487	1480.48	256.67	6.77E+02	127.56	2.97E+03
46	1487-	1505	1496.72	259.49	7.91E+02	142.92	3.42E+03
47	1548-	1562	1557.43	270.02	9.91E+02	118.19	2.74E+03
48	1562-	1574	1568.49	271.93	2.73E+02	110.57	2.80E+03
49	1583-	1598	1589.13	275.51	4.51E+02	118.92	2.72E+03
50	1645-	1660	1653.56	286.69	2.83E+02	118.07	2.73E+03
51	1696-	1716	1706.48	295.87	3.42E+04	234.51	3.33E+03
52	1728-	1741	1734.18	300.67	3.94E+02	98.79	2.07E+03
53	1741-	1754	1748.60	303.17	1.61E+02	96.70	2.04E+03
54	1754-	1767	1760.45	305.23	2.32E+02	95.13	1.95E+03
55	1865-	1878	1872.43	324.65	2.74E+02	95.17	1.95E+03
56	1899-	1915	1907.15	330.67	2.78E+02	114.57	2.44E+03
57	1949-	1963	1956.88	339.29	3.01E+02	107.00	2.35E+03
58	2023-	2045	2034.17	352.70	5.04E+04	274.96	3.74E+03
59	2054-	2071	2060.69	357.30	1.22E+02	114.17	2.33E+03
60	2139-	2149	2144.44	371.82	1.16E+02	72.01	1.34E+03
61	2227-	2241	2235.19	387.56	2.47E+02	101.06	2.09E+03
62	2241-	2256	2248.78	389.92	3.45E+02	108.08	2.26E+03
63	2311-	2330	2321.48	402.52	3.61E+02	130.06	2.76E+03
64	2456-	2473	2466.55	427.68	2.84E+02	115.52	2.37E+03
65	2481-	2490	2485.95	431.05	1.48E+02	63.77	1.11E+03
66	2668-	2683	2674.56	463.76	1.61E+02	91.68	1.64E+03
67	2770-	2789	2777.98	481.70	3.43E+02	105.78	1.80E+03
68	2807-	2827	2816.32	488.34	2.71E+02	112.97	1.99E+03
69	2938-	2963	2951.56	511.80	5.83E+02	128.60	2.13E+03
70	3072-	3093	3082.75	534.55	1.48E+02	108.07	1.77E+03
71	3362-	3381	3371.66	584.66	1.92E+02	100.45	1.65E+03
72	3508-	3535	3521.89	610.71	2.49E+04	206.32	2.21E+03
73	3535-	3548	3539.29	613.73	9.48E+01	65.31	9.13E+02
74	3628-	3656	3640.06	631.20	1.72E+02	123.98	1.84E+03
75	3796-	3810	3801.74	659.24	8.87E+01	67.89	9.42E+02
76	3835-	3857	3846.21	666.96	6.82E+02	102.20	1.44E+03
77	3939-	3957	3948.86	684.76	9.05E+01	83.21	1.19E+03
78	4024-	4035	4029.28	698.71	3.49E+02	36.62	2.22E+02

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-118-GAM4
Peak Analysis Performed on: 4-03-96 4:21:45 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.36	7.16E+02	138.05			7.16E+02	1.38E+02
2	6.46	1.34E+03	140.98			1.34E+03	1.41E+02
3	9.32	2.06E+02	136.16			2.06E+02	1.36E+02
4	10.90	6.58E+03	151.61			6.58E+03	1.52E+02
5	13.19	1.48E+04	184.49			1.48E+04	1.84E+02
6	16.40	1.45E+04	306.52			1.45E+04	3.07E+02
7	19.14	3.55E+03	183.92			3.55E+03	1.84E+02
8	20.00	1.38E+03	116.24			1.38E+03	1.16E+02
9	25.72	2.62E+03	143.11			2.62E+03	1.43E+02
10	27.50	1.97E+03	151.41			1.97E+03	1.51E+02
11	32.07	3.34E+02	138.13			3.34E+02	1.38E+02
12	46.67	2.53E+04	219.30			2.53E+04	2.19E+02
13	50.13	2.80E+03	152.77			2.80E+03	1.53E+02
14	53.36	6.98E+03	175.66			6.98E+03	1.76E+02
15	63.44	2.43E+04	230.49			2.43E+04	2.30E+02
16	67.81	3.43E+03	177.88			3.43E+03	1.78E+02
17	72.88	2.66E+02	154.21			2.66E+02	1.54E+02
18	74.98	3.80E+04	273.01			3.80E+04	2.73E+02
19	77.28	6.82E+04	320.56			6.82E+04	3.21E+02
20	79.51	5.29E+03	166.32			5.29E+03	1.66E+02
21	81.29	4.54E+03	186.87			4.54E+03	1.87E+02
22	84.05	1.14E+04	201.33			1.14E+04	2.01E+02
23	87.40	2.12E+04	223.64			2.12E+04	2.24E+02
24	90.13	8.19E+03	205.83			8.19E+03	2.06E+02
25	92.78	2.99E+04	245.94	1.89E+02	3.17E+01	2.97E+04	2.48E+02
26	94.95	2.58E+03	172.34			2.58E+03	1.72E+02
27	98.38	2.55E+03	185.47			2.55E+03	1.85E+02
28	103.55	1.69E+02	103.48			1.69E+02	1.03E+02
29	105.64	4.79E+02	153.52			4.79E+02	1.54E+02
30	109.35	4.65E+02	167.30	8.10E+01	3.01E+01	3.84E+02	1.70E+02
31	111.52	2.46E+02	119.31			2.46E+02	1.19E+02
32	113.07	1.02E+03	156.11			1.02E+03	1.56E+02
33	122.69	3.85E+02	121.58			3.85E+02	1.22E+02
34	128.70	5.66E+02	166.89			5.66E+02	1.67E+02
35	144.17	3.14E+03	183.52			3.14E+03	1.84E+02
36	154.50	1.40E+03	166.56			1.40E+03	1.67E+02
37	163.75	1.04E+03	154.99			1.04E+03	1.55E+02
38	186.40	2.39E+04	225.85	9.54E+01	3.21E+01	2.38E+04	2.28E+02
39	205.95	9.44E+02	127.64			9.44E+02	1.28E+02
40	209.80	2.13E+02	97.92			2.13E+02	9.79E+01
41	223.62	1.16E+02	91.00			1.16E+02	9.10E+01
42	236.47	1.24E+03	124.27			1.24E+03	1.24E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	239.15	1.62E+03	150.68			1.62E+03	1.51E+02
44	242.51	1.75E+04	197.66			1.75E+04	1.98E+02
45	256.67	6.77E+02	127.56			6.77E+02	1.28E+02
46	259.49	7.91E+02	142.92			7.91E+02	1.43E+02
47	270.02	9.91E+02	118.19			9.91E+02	1.18E+02
48	271.93	2.73E+02	110.57			2.73E+02	1.11E+02
49	275.51	4.51E+02	118.92			4.51E+02	1.19E+02
50	286.69	2.83E+02	118.07			2.83E+02	1.18E+02
51	295.87	3.42E+04	234.51	2.87E+01	1.59E+01	3.41E+04	2.35E+02
52	300.67	3.94E+02	98.79			3.94E+02	9.88E+01
53	303.17	1.61E+02	96.70			1.61E+02	9.67E+01
54	305.23	2.32E+02	95.13			2.32E+02	9.51E+01
55	324.65	2.74E+02	95.17			2.74E+02	9.52E+01
56	330.67	2.78E+02	114.57			2.78E+02	1.15E+02
57	339.29	3.01E+02	107.00			3.01E+02	1.07E+02
58	352.70	5.04E+04	274.96	4.33E+01	1.65E+01	5.04E+04	2.75E+02
59	357.30	1.22E+02	114.17			1.22E+02	1.14E+02
60	371.82	1.16E+02	72.01			1.16E+02	7.20E+01
61	387.56	2.47E+02	101.06			2.47E+02	1.01E+02
62	389.92	3.45E+02	108.08			3.45E+02	1.08E+02
63	402.52	3.61E+02	130.06			3.61E+02	1.30E+02
64	427.68	2.84E+02	115.52			2.84E+02	1.16E+02
65	431.05	1.48E+02	63.77			1.48E+02	6.38E+01
66	463.76	1.61E+02	91.68			1.61E+02	9.17E+01
67	481.70	3.43E+02	105.78			3.43E+02	1.06E+02
68	488.34	2.71E+02	112.97			2.71E+02	1.13E+02
69	511.80	5.83E+02	128.60	2.98E+02	3.37E+01	2.84E+02	1.33E+02
70	534.55	1.48E+02	108.07			1.48E+02	1.08E+02
71	584.66	1.92E+02	100.45			1.92E+02	1.00E+02
72	610.71	2.49E+04	206.32			2.49E+04	2.06E+02
73	613.73	9.48E+01	65.31			9.48E+01	6.53E+01
74	631.20	1.72E+02	123.98			1.72E+02	1.24E+02
75	659.24	8.87E+01	67.89			8.87E+01	6.79E+01
76	666.96	6.82E+02	102.20			6.82E+02	1.02E+02
77	684.76	9.05E+01	83.21			9.05E+01	8.32E+01
78	698.71	3.49E+02	36.62			3.49E+02	3.66E+01

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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*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************

Report Generated On                 :  4-03-96  4:29:55 PM

Sample Title                        : NOPI-119-GAM4
Spectrum Description                : NOPI-119-GAM4
Sample Identification               : NP119_2
Sample Type                         :
Sample Geometry                     :

Peak Locate Threshold               :  2.00
Peak Locate Range (in channels)     :     1 -  4096
Peak Area Range (in channels)       :     1 -  4096
Identification Energy Tolerance     :    1.000 keV

Sample Size                         :   0.000E+00 Unit

Sample Taken On                     :
Acquisition Started                 :  3-20-96  8:39:45 AM

Live Time                           :    80000.0 seconds
Real Time                           :    80029.3 seconds


          Energy Calibration Used Done On        :  1-16-96
          Efficiency Calibration Used Done On    : ????????
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DP1B-4

****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-119-GAM4
Peak Locate Performed on: 4-03-96 4:23:50 PM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.52	0.4576	5.38	2.48
2	37.45	0.3423	6.39	4.59
3	63.55	0.1876	10.89	15.76
4	76.05	0.1864	13.06	16.59
5	94.39	0.1748	16.33	19.97
6	114.00	0.3949	19.37	6.41
7	148.91	0.2032	25.73	14.33
8	158.94	0.2067	27.49	12.22
9	212.72	0.3743	36.69	3.82
10	269.67	0.0845	46.68	68.44
11	290.29	0.1852	50.15	15.02
12	308.20	0.1143	53.37	35.56
13	366.21	0.0818	63.44	67.68
14	375.06	0.4338	65.09	2.37
15	391.78	0.1576	67.81	19.35
16	409.42	0.3653	70.91	2.57
17	421.39	0.3415	72.96	2.97
18	432.96	0.0696	74.99	88.61
19	446.06	0.0606	77.28	115.96
20	458.88	0.1272	79.52	26.54
21	469.02	0.1253	81.30	27.48
22	484.83	0.1094	84.02	33.00
23	504.85	0.0930	87.42	38.27
24	519.63	0.1097	90.13	29.63
25	535.34	0.0795	92.78	46.94
26	548.06	0.1674	94.95	14.30
27	569.33	0.2046	98.34	8.94
28	594.67	0.4177	102.98	2.01
29	611.41	0.3868	105.65	2.40
30	631.53	0.2977	109.39	4.06
31	652.41	0.1790	113.06	10.89
32	707.22	0.3179	122.69	2.59
33	753.16	0.3117	130.86	3.97
34	831.55	0.1346	144.18	16.67
35	891.59	0.1695	154.54	11.64
36	917.94	0.3516	159.04	2.35
37	944.37	0.1928	163.60	9.18
38	1075.49	0.0706	186.41	50.60
39	1187.10	0.2236	205.79	6.55
40	1209.97	0.3502	209.46	2.50
41	1363.96	0.1537	236.50	12.31

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1379.47	0.1446	239.17	13.33
43	1398.93	0.0652	242.52	65.28
44	1481.46	0.1779	256.84	8.92
45	1496.60	0.1649	259.40	9.88
46	1557.53	0.1383	270.01	15.11
47	1568.02	0.1643	271.94	11.12
48	1588.48	0.2124	275.34	6.17
49	1638.71	0.3147	284.17	2.51
50	1706.51	0.0513	295.87	92.53
51	1734.09	0.1954	300.75	7.28
52	1817.82	0.3450	314.99	2.69
53	1871.72	0.2382	324.32	5.20
54	1907.69	0.2638	330.72	2.53
55	1955.84	0.2121	339.02	6.50
56	2034.27	0.0456	352.69	112.76
57	2121.63	0.3831	368.19	2.05
58	2236.43	0.2514	387.76	3.61
59	2248.48	0.2183	389.88	4.60
60	2322.33	0.2090	402.72	4.85
61	2342.20	0.2560	406.24	2.82
62	2522.47	0.2951	437.30	2.51
63	2535.28	0.3146	439.55	2.19
64	2776.80	0.2157	481.50	4.03
65	3084.97	0.2711	535.05	3.00
66	3164.53	0.3817	549.45	2.01
67	3354.45	0.2383	581.44	2.28
68	3370.50	0.2203	584.75	3.71
69	3521.87	0.0491	610.70	73.92
70	3599.95	0.3218	624.08	2.54
71	3820.74	0.2908	661.41	2.51
72	3846.38	0.1366	666.97	9.83
73	3992.57	0.3285	692.73	2.12
74	4028.77	0.1604	698.67	7.88

Errors quoted at 1.000 sigma

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

Detector Name: DET01
Sample Title: NOPI-119-GAM4
Peak Analysis Performed on: 4-03-96 4:24:13 PM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	29-	34	31.52	5.38	6.32E+02	120.98	5.42E+03
2	34-	40	37.32	6.39	9.07E+02	136.93	6.39E+03
3	60-	66	63.30	10.89	6.51E+03	147.31	5.47E+03
4	72-	79	75.82	13.06	1.98E+04	213.97	8.67E+03
5	92-	97	94.65	16.33	1.00E+04	223.07	1.55E+04
6	107-	117	112.17	19.37	4.97E+03	210.26	1.04E+04
7	144-	152	148.84	25.73	2.41E+03	133.84	4.76E+03
8	154-	163	159.02	27.49	1.97E+03	143.32	5.29E+03
9	208-	217	212.02	36.69	3.46E+02	131.79	4.82E+03
10	264-	274	269.64	46.68	2.52E+04	214.44	5.54E+03
11	285-	295	289.64	50.15	2.58E+03	146.42	4.98E+03
12	304-	313	308.24	53.37	6.16E+03	149.96	4.62E+03
13	360-	371	366.29	63.44	2.15E+04	218.20	6.53E+03
14	373-	380	375.83	65.09	1.82E+02	114.43	4.25E+03
15	386-	397	391.46	67.81	2.66E+03	174.32	6.88E+03
16	405-	415	409.38	70.91	3.39E+02	152.19	6.04E+03
17	415-	424	421.21	72.96	2.68E+02	145.44	5.93E+03
18	427-	438	432.89	74.99	3.48E+04	258.16	7.95E+03
19	440-	451	446.11	77.28	6.16E+04	303.74	7.66E+03
20	455-	464	459.01	79.52	4.43E+03	157.58	5.72E+03
21	464-	475	469.27	81.30	4.10E+03	175.41	6.66E+03
22	478-	490	484.97	84.02	1.07E+04	189.73	5.96E+03
23	500-	511	504.58	87.42	1.93E+04	220.36	7.07E+03
24	513-	525	520.16	90.13	7.55E+03	196.59	7.29E+03
25	529-	541	535.46	92.78	2.62E+04	232.06	6.49E+03
26	543-	554	547.99	94.95	2.49E+03	164.08	6.08E+03
27	561-	575	567.52	98.34	2.08E+03	169.52	5.57E+03
28	588-	601	594.28	102.98	3.04E+02	144.90	4.58E+03
29	604-	618	609.66	105.65	3.71E+02	156.20	5.03E+03
30	624-	638	631.22	109.39	8.83E+02	155.79	4.90E+03
31	647-	659	652.42	113.06	8.74E+02	146.36	4.80E+03
32	703-	714	707.93	122.69	4.83E+02	121.11	3.53E+03
33	749-	760	755.02	130.86	4.82E+02	124.04	3.71E+03
34	824-	839	831.87	144.18	3.59E+03	163.99	4.65E+03
35	885-	899	891.60	154.54	1.26E+03	159.13	5.04E+03
36	913-	922	917.50	159.04	1.49E+02	106.65	3.19E+03
37	936-	952	943.84	163.60	7.18E+02	166.31	5.11E+03
38	1067-	1083	1075.32	186.41	2.11E+04	214.82	4.77E+03
39	1178-	1195	1187.10	205.79	6.20E+02	155.56	4.28E+03
40	1203-	1214	1208.25	209.46	1.89E+02	100.71	2.47E+03
41	1354-	1373	1364.17	236.50	1.14E+03	154.54	3.79E+03
42	1373-	1388	1379.56	239.17	1.20E+03	127.92	3.01E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1389-	1408	1398.86	242.52	1.54E+04	188.48	3.35E+03
44	1475-	1488	1481.43	256.84	4.01E+02	103.68	2.29E+03
45	1488-	1506	1496.21	259.40	1.09E+03	129.48	2.71E+03
46	1550-	1562	1557.40	270.01	9.67E+02	100.90	2.17E+03
47	1562-	1577	1568.50	271.94	3.13E+02	124.63	3.04E+03
48	1578-	1598	1588.13	275.34	7.43E+02	139.80	3.01E+03
49	1634-	1644	1639.05	284.17	1.17E+02	78.94	1.62E+03
50	1696-	1716	1706.49	295.87	3.03E+04	220.83	2.96E+03
51	1728-	1744	1734.64	300.75	4.59E+02	110.12	2.20E+03
52	1810-	1822	1816.73	314.99	1.11E+02	85.77	1.70E+03
53	1861-	1876	1870.53	324.32	2.84E+02	101.19	1.99E+03
54	1902-	1914	1907.42	330.72	2.79E+02	86.82	1.70E+03
55	1945-	1961	1955.28	339.02	2.66E+02	113.32	2.39E+03
56	2023-	2045	2034.13	352.69	4.53E+04	258.57	3.19E+03
57	2117-	2132	2123.47	368.19	1.19E+02	94.49	1.75E+03
58	2230-	2242	2236.35	387.76	2.01E+02	85.20	1.65E+03
59	2242-	2256	2248.54	389.88	2.13E+02	97.21	1.94E+03
60	2315-	2333	2322.61	402.72	3.08E+02	121.67	2.51E+03
61	2336-	2350	2342.91	406.24	2.04E+02	98.74	2.01E+03
62	2517-	2529	2522.00	437.30	1.14E+02	73.93	1.25E+03
63	2529-	2543	2534.99	439.55	9.75E+01	82.73	1.41E+03
64	2769-	2785	2776.85	481.50	1.42E+02	90.81	1.54E+03
65	3077-	3092	3085.61	535.05	1.64E+02	77.83	1.18E+03
66	3159-	3177	3168.68	549.45	9.27E+01	86.88	1.30E+03
67	3345-	3362	3353.12	581.44	2.75E+02	83.12	1.20E+03
68	3362-	3381	3372.21	584.75	2.35E+02	93.25	1.41E+03
69	3508-	3535	3521.81	610.70	2.28E+04	194.16	1.87E+03
70	3592-	3606	3598.98	624.08	8.52E+01	63.66	8.33E+02
71	3800-	3826	3814.22	661.41	1.88E+02	104.48	1.38E+03
72	3836-	3855	3846.30	666.97	6.49E+02	84.45	1.08E+03
73	3987-	4002	3994.82	692.73	1.11E+02	64.79	8.16E+02
74	4023-	4035	4029.07	698.67	3.14E+02	40.44	2.70E+02

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-119-GAM4
Peak Analysis Performed on: 4-03-96 4:23:50 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.38	6.32E+02	120.98			6.32E+02	1.21E+02
2	6.39	9.07E+02	136.93			9.07E+02	1.37E+02
3	10.89	6.51E+03	147.31			6.51E+03	1.47E+02
4	13.06	1.98E+04	213.97			1.98E+04	2.14E+02
5	16.33	1.00E+04	223.07			1.00E+04	2.23E+02
6	19.37	4.97E+03	210.26			4.97E+03	2.10E+02
7	25.73	2.41E+03	133.84			2.41E+03	1.34E+02
8	27.49	1.97E+03	143.32			1.97E+03	1.43E+02
9	36.69	3.46E+02	131.79			3.46E+02	1.32E+02
10	46.68	2.52E+04	214.44			2.52E+04	2.14E+02
11	50.15	2.58E+03	146.42			2.58E+03	1.46E+02
12	53.37	6.16E+03	149.96			6.16E+03	1.50E+02
13	63.44	2.15E+04	218.20			2.15E+04	2.18E+02
14	65.09	1.82E+02	114.43			1.82E+02	1.14E+02
15	67.81	2.66E+03	174.32			2.66E+03	1.74E+02
16	70.91	3.39E+02	152.19			3.39E+02	1.52E+02
17	72.96	2.68E+02	145.44			2.68E+02	1.45E+02
18	74.99	3.48E+04	258.16			3.48E+04	2.58E+02
19	77.28	6.16E+04	303.74			6.16E+04	3.04E+02
20	79.52	4.43E+03	157.58			4.43E+03	1.58E+02
21	81.30	4.10E+03	175.41			4.10E+03	1.75E+02
22	84.02	1.07E+04	189.73			1.07E+04	1.90E+02
23	87.42	1.93E+04	220.36			1.93E+04	2.20E+02
24	90.13	7.55E+03	196.59			7.55E+03	1.97E+02
25	92.78	2.62E+04	232.06	1.89E+02	3.17E+01	2.60E+04	2.34E+02
26	94.95	2.49E+03	164.08			2.49E+03	1.64E+02
27	98.34	2.08E+03	169.52			2.08E+03	1.70E+02
28	102.98	3.04E+02	144.90			3.04E+02	1.45E+02
29	105.65	3.71E+02	156.20			3.71E+02	1.56E+02
30	109.39	8.83E+02	155.79	8.10E+01	3.01E+01	8.02E+02	1.59E+02
31	113.06	8.74E+02	146.36			8.74E+02	1.46E+02
32	122.69	4.83E+02	121.11			4.83E+02	1.21E+02
33	130.86	4.82E+02	124.04			4.82E+02	1.24E+02
34	144.18	3.59E+03	163.99			3.59E+03	1.64E+02
35	154.54	1.26E+03	159.13			1.26E+03	1.59E+02
36	159.04	1.49E+02	106.65			1.49E+02	1.07E+02
37	163.60	7.18E+02	166.31			7.18E+02	1.66E+02
38	186.41	2.11E+04	214.82	9.54E+01	3.21E+01	2.10E+04	2.17E+02
39	205.79	6.20E+02	155.56			6.20E+02	1.56E+02
40	209.46	1.89E+02	100.71			1.89E+02	1.01E+02
41	236.50	1.14E+03	154.54			1.14E+03	1.55E+02
42	239.17	1.20E+03	127.92			1.20E+03	1.28E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	242.52	1.54E+04	188.48			1.54E+04	1.88E+02
44	256.84	4.01E+02	103.68			4.01E+02	1.04E+02
45	259.40	1.09E+03	129.48			1.09E+03	1.29E+02
46	270.01	9.67E+02	100.90			9.67E+02	1.01E+02
47	271.94	3.13E+02	124.63			3.13E+02	1.25E+02
48	275.34	7.43E+02	139.80			7.43E+02	1.40E+02
49	284.17	1.17E+02	78.94			1.17E+02	7.89E+01
50	295.87	3.03E+04	220.83	2.87E+01	1.59E+01	3.02E+04	2.21E+02
51	300.75	4.59E+02	110.12			4.59E+02	1.10E+02
52	314.99	1.11E+02	85.77			1.11E+02	8.58E+01
53	324.32	2.84E+02	101.19			2.84E+02	1.01E+02
54	330.72	2.79E+02	86.82			2.79E+02	8.68E+01
55	339.02	2.66E+02	113.32			2.66E+02	1.13E+02
56	352.69	4.53E+04	258.57	4.33E+01	1.65E+01	4.53E+04	2.59E+02
57	368.19	1.19E+02	94.49			1.19E+02	9.45E+01
58	387.76	2.01E+02	85.20			2.01E+02	8.52E+01
59	389.88	2.13E+02	97.21			2.13E+02	9.72E+01
60	402.72	3.08E+02	121.67			3.08E+02	1.22E+02
61	406.24	2.04E+02	98.74			2.04E+02	9.87E+01
62	437.30	1.14E+02	73.93			1.14E+02	7.39E+01
63	439.55	9.75E+01	82.73			9.75E+01	8.27E+01
64	481.50	1.42E+02	90.81			1.42E+02	9.08E+01
65	535.05	1.64E+02	77.83			1.64E+02	7.78E+01
66	549.45	9.27E+01	86.88			9.27E+01	8.69E+01
67	581.44	2.75E+02	83.12			2.75E+02	8.31E+01
68	584.75	2.35E+02	93.25			2.35E+02	9.32E+01
69	610.70	2.28E+04	194.16			2.28E+04	1.94E+02
70	624.08	8.52E+01	63.66			8.52E+01	6.37E+01
71	661.41	1.88E+02	104.48			1.88E+02	1.04E+02
72	666.97	6.49E+02	84.45			6.49E+02	8.45E+01
73	692.73	1.11E+02	64.79			1.11E+02	6.48E+01
74	698.67	3.14E+02	40.44			3.14E+02	4.04E+01

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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*************************************************************************
*****        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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Report Generated On	: 4-04-96 10:13:26 AM
Sample Title	: NOPI-120-GAM4
Spectrum Description	: NOPI-120-GAM4
Sample Identification	: NP120_2
Sample Type	:
Sample Geometry	:
Peak Locate Threshold	: 2.00
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Sample Size	: 0.000E+00 Unit
Sample Taken On	:
Acquisition Started	: 3-22-96 9:27:56 AM
Live Time	: 80000.0 seconds
Real Time	: 80028.7 seconds

Energy Calibration Used Done On	: 1-16-96
Efficiency Calibration Used Done On	: ????????

DPIB_5

****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-120-GAM4
Peak Locate Performed on: 4-04-96 10:12:33 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	31.46	0.4128	5.40	3.18
2	37.28	0.3396	6.42	6.25
3	53.00	0.5240	9.30	3.64
4	63.48	0.2021	10.91	12.65
5	76.11	0.1930	13.07	16.95
6	94.37	0.1721	16.33	21.25
7	110.44	0.1729	19.16	18.79
8	117.90	0.6302	19.93	2.27
9	121.98	0.5619	21.20	2.27
10	148.99	0.1806	25.76	16.83
11	158.92	0.1959	27.49	15.98
12	212.07	0.3405	36.70	4.62
13	269.63	0.0866	46.67	65.94
14	290.10	0.1879	50.16	14.56
15	308.18	0.1150	53.36	34.64
16	343.06	0.5714	58.89	2.88
17	366.23	0.0783	63.44	74.23
18	391.52	0.1537	67.81	17.31
19	421.32	0.3170	72.89	4.09
20	432.95	0.0713	74.98	84.64
21	446.05	0.0621	77.27	110.42
22	458.81	0.1300	79.53	24.00
23	469.05	0.1229	81.29	28.72
24	484.89	0.1094	84.04	33.37
25	504.73	0.0943	87.39	34.57
26	519.75	0.1142	90.15	29.08
27	535.35	0.0766	92.78	49.48
28	548.29	0.1663	95.00	13.69
29	569.21	0.1818	98.37	12.86
30	644.05	0.3375	111.64	3.62
31	652.50	0.1653	113.12	12.68
32	663.19	0.3734	115.14	3.03
33	699.40	0.3902	120.89	2.96
34	707.38	0.2953	122.66	4.17
35	740.65	0.3418	128.66	3.80
36	831.50	0.1258	144.17	19.95
37	891.47	0.1629	154.52	12.32
38	917.75	0.3137	159.20	3.13
39	944.47	0.1836	163.80	10.45
40	1075.24	0.0715	186.37	48.90
41	1112.12	0.4072	192.51	2.09

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1187.23	0.1928	205.92	8.52
43	1364.07	0.1519	236.42	12.47
44	1379.39	0.1443	239.19	13.59
45	1398.86	0.0671	242.49	61.18
46	1472.25	0.4558	255.34	2.19
47	1481.18	0.1973	256.78	7.30
48	1496.36	0.1812	259.55	8.23
49	1557.45	0.1429	269.95	13.87
50	1567.80	0.1642	271.86	10.59
51	1588.41	0.2226	275.33	5.90
52	1653.09	0.2544	286.56	3.21
53	1706.39	0.0527	295.85	88.64
54	1734.11	0.1957	300.59	7.31
55	1872.77	0.2495	324.78	3.40
56	1907.58	0.2637	330.55	2.50
57	1955.02	0.2138	338.84	5.74
58	1996.74	0.3386	346.18	2.50
59	2034.12	0.0470	352.67	103.95
60	2084.42	0.3809	361.16	2.09
61	2235.86	0.2462	387.55	4.36
62	2248.15	0.2230	389.85	5.06
63	2322.28	0.1962	402.86	5.80
64	2342.05	0.2548	406.25	2.36
65	2627.05	0.2992	455.57	2.90
66	2701.48	0.3141	468.36	2.20
67	2776.29	0.2073	481.59	4.54
68	2815.97	0.2315	488.18	4.44
69	2866.29	0.2998	496.69	2.79
70	2949.60	0.2378	511.61	2.19
71	3084.61	0.2335	534.70	3.56
72	3167.45	0.3658	549.48	2.07
73	3354.13	0.2602	581.54	2.21
74	3371.03	0.2180	584.66	4.16
75	3521.66	0.0511	610.67	67.82
76	3845.83	0.1474	667.17	8.42
77	3966.85	0.3132	688.18	2.08
78	4028.70	0.1513	698.40	8.08

Errors quoted at 1.000 sigma

****
***** P E A K A N A L Y S I S R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-120-GAM4
Peak Analysis Performed on: 4-04-96 10:12:55 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	28-	34	31.64	5.40	4.22E+02	132.66	6.15E+03
2	34-	40	37.52	6.42	1.04E+03	135.81	6.25E+03
3	50-	56	54.10	9.30	2.27E+02	117.17	4.86E+03
4	60-	66	63.38	10.91	5.93E+03	143.11	5.26E+03
5	72-	79	75.85	13.07	1.91E+04	210.80	8.46E+03
6	92-	97	94.63	16.33	1.14E+04	228.48	1.60E+04
7	107-	114	110.99	19.16	3.31E+03	178.15	9.41E+03
8	114-	121	115.42	19.93	6.96E+02	157.16	7.45E+03
9	121-	125	122.74	21.20	2.95E+02	83.15	2.86E+03
10	144-	153	149.03	25.76	2.66E+03	146.82	5.38E+03
11	154-	163	159.02	27.49	1.99E+03	144.00	5.34E+03
12	207-	216	212.11	36.70	3.77E+02	129.19	4.64E+03
13	264-	274	269.61	46.67	2.36E+04	205.54	4.98E+03
14	285-	295	289.72	50.16	2.73E+03	144.29	4.78E+03
15	302-	313	308.18	53.36	5.93E+03	165.22	5.34E+03
16	333-	346	340.05	58.89	2.36E+02	177.50	6.90E+03
17	360-	371	366.29	63.44	2.41E+04	225.57	6.68E+03
18	385-	397	391.48	67.81	3.28E+03	177.45	6.62E+03
19	415-	425	420.76	72.89	2.27E+02	157.91	6.53E+03
20	427-	438	432.85	74.98	3.15E+04	251.42	7.91E+03
21	440-	451	446.06	77.27	5.62E+04	292.89	7.39E+03
22	452-	464	459.07	79.53	2.54E+03	204.13	9.18E+03
23	464-	475	469.21	81.29	3.89E+03	178.81	7.00E+03
24	478-	490	485.08	84.04	1.05E+04	196.68	6.62E+03
25	500-	510	504.40	87.39	1.80E+04	205.65	6.30E+03
26	513-	526	520.28	90.15	7.44E+03	197.76	7.04E+03
27	529-	541	535.44	92.78	2.99E+04	242.86	6.82E+03
28	543-	554	548.27	95.00	2.24E+03	166.65	6.35E+03
29	558-	575	567.71	98.37	2.12E+03	197.53	6.71E+03
30	641-	647	644.21	111.64	1.79E+02	84.97	2.53E+03
31	647-	659	652.78	113.12	1.20E+03	145.56	4.70E+03
32	659-	670	664.38	115.14	2.04E+02	126.23	3.92E+03
33	692-	703	697.55	120.89	2.64E+02	122.14	3.64E+03
34	703-	714	707.73	122.66	1.90E+02	123.35	3.73E+03
35	738-	747	742.36	128.66	2.39E+02	106.03	3.12E+03
36	824-	838	831.77	144.17	3.32E+03	160.49	4.72E+03
37	886-	899	891.47	154.52	1.15E+03	149.84	4.69E+03
38	913-	925	918.43	159.20	1.92E+02	129.85	3.91E+03
39	936-	952	944.95	163.80	1.16E+03	159.60	4.63E+03
40	1066-	1083	1075.13	186.37	2.13E+04	217.55	4.73E+03
41	1105-	1116	1110.54	192.51	1.36E+02	111.09	3.03E+03
42	1178-	1195	1187.86	205.92	1.00E+03	147.72	3.79E+03

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1354-	1373	1363.73	236.42	1.18E+03	151.01	3.59E+03
	44	1373-	1388	1379.66	239.19	1.29E+03	121.51	2.68E+03
	45	1389-	1408	1398.70	242.49	1.39E+04	186.15	3.45E+03
M	46	1468-	1486	1472.82	255.34	1.27E+02	42.45	1.88E+03
m	47	1468-	1486	1481.10	256.78	5.26E+02	76.79	2.06E+03
	48	1486-	1505	1497.06	259.55	7.17E+02	140.15	3.16E+03
	49	1547-	1563	1557.07	269.95	7.44E+02	130.63	3.11E+03
	50	1563-	1577	1568.03	271.86	7.20E+02	112.54	2.49E+03
	51	1578-	1598	1588.04	275.33	3.60E+02	142.97	3.20E+03
	52	1646-	1662	1652.83	286.56	2.52E+02	117.72	2.58E+03
	53	1696-	1716	1706.40	295.85	2.78E+04	217.32	3.11E+03
	54	1728-	1739	1733.71	300.59	4.85E+02	80.82	1.51E+03
	55	1866-	1880	1873.22	324.78	2.69E+02	94.89	1.83E+03
	56	1899-	1914	1906.46	330.55	1.52E+02	105.18	2.17E+03
	57	1948-	1962	1954.29	338.84	4.49E+02	96.78	1.87E+03
	58	1992-	2002	1996.61	346.18	1.26E+02	80.90	1.70E+03
	59	2023-	2044	2034.00	352.67	4.18E+04	249.55	3.16E+03
	60	2075-	2090	2082.97	361.16	1.35E+02	93.82	1.73E+03
	61	2226-	2242	2235.16	387.55	3.16E+02	105.17	2.04E+03
	62	2242-	2255	2248.37	389.85	1.04E+02	92.71	1.88E+03
	63	2310-	2333	2323.43	402.86	3.93E+02	144.64	2.93E+03
	64	2333-	2353	2342.96	406.25	1.66E+02	129.21	2.64E+03
	65	2616-	2639	2627.32	455.57	1.99E+02	124.44	2.18E+03
	66	2696-	2707	2701.10	468.36	1.35E+02	62.32	9.31E+02
	67	2770-	2788	2777.35	481.59	4.28E+02	92.37	1.40E+03
	68	2806-	2828	2815.35	488.18	1.54E+02	115.74	1.95E+03
	69	2857-	2873	2864.47	496.69	1.14E+02	81.22	1.23E+03
	70	2936-	2962	2950.46	511.61	6.09E+02	126.05	1.97E+03
	71	3073-	3090	3083.59	534.70	1.96E+02	84.57	1.26E+03
	72	3162-	3176	3168.82	549.48	9.20E+01	68.03	9.52E+02
	73	3343-	3362	3353.71	581.54	1.14E+02	95.29	1.49E+03
	74	3362-	3379	3371.69	584.66	2.02E+02	84.28	1.25E+03
	75	3507-	3535	3521.65	610.67	2.06E+04	190.85	1.92E+03
	76	3836-	3860	3847.46	667.17	6.06E+02	104.25	1.42E+03
	77	3958-	3975	3968.61	688.18	9.97E+01	74.74	9.97E+02
	78	4020-	4035	4027.51	698.40	4.81E+02	44.01	2.89E+02

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-120-GAM4
Peak Analysis Performed on: 4-04-96 10:12:33 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.40	4.22E+02	132.66			4.22E+02	1.33E+02
2	6.42	1.04E+03	135.81			1.04E+03	1.36E+02
3	9.30	2.27E+02	117.17			2.27E+02	1.17E+02
4	10.91	5.93E+03	143.11			5.93E+03	1.43E+02
5	13.07	1.91E+04	210.80			1.91E+04	2.11E+02
6	16.33	1.14E+04	228.48			1.14E+04	2.28E+02
7	19.16	3.31E+03	178.15			3.31E+03	1.78E+02
8	19.93	6.96E+02	157.16			6.96E+02	1.57E+02
9	21.20	2.95E+02	83.15			2.95E+02	8.32E+01
10	25.76	2.66E+03	146.82			2.66E+03	1.47E+02
11	27.49	1.99E+03	144.00			1.99E+03	1.44E+02
12	36.70	3.77E+02	129.19			3.77E+02	1.29E+02
13	46.67	2.36E+04	205.54			2.36E+04	2.06E+02
14	50.16	2.73E+03	144.29			2.73E+03	1.44E+02
15	53.36	5.93E+03	165.22			5.93E+03	1.65E+02
16	58.89	2.36E+02	177.50			2.36E+02	1.78E+02
17	63.44	2.41E+04	225.57			2.41E+04	2.26E+02
18	67.81	3.28E+03	177.45			3.28E+03	1.77E+02
19	72.89	2.27E+02	157.91			2.27E+02	1.58E+02
20	74.98	3.15E+04	251.42			3.15E+04	2.51E+02
21	77.27	5.62E+04	292.89			5.62E+04	2.93E+02
22	79.53	2.54E+03	204.13			2.54E+03	2.04E+02
23	81.29	3.89E+03	178.81			3.89E+03	1.79E+02
24	84.04	1.05E+04	196.68			1.05E+04	1.97E+02
25	87.39	1.80E+04	205.65			1.80E+04	2.06E+02
26	90.15	7.44E+03	197.76			7.44E+03	1.98E+02
27	92.78	2.99E+04	242.86	1.89E+02	3.17E+01	2.97E+04	2.45E+02
28	95.00	2.24E+03	166.65			2.24E+03	1.67E+02
29	98.37	2.12E+03	197.53			2.12E+03	1.98E+02
30	111.64	1.79E+02	84.97			1.79E+02	8.50E+01
31	113.12	1.20E+03	145.56			1.20E+03	1.46E+02
32	115.14	2.04E+02	126.23			2.04E+02	1.26E+02
33	120.89	2.64E+02	122.14			2.64E+02	1.22E+02
34	122.66	1.90E+02	123.35			1.90E+02	1.23E+02
35	128.66	2.39E+02	106.03			2.39E+02	1.06E+02
36	144.17	3.32E+03	160.49			3.32E+03	1.60E+02
37	154.52	1.15E+03	149.84			1.15E+03	1.50E+02
38	159.20	1.92E+02	129.85			1.92E+02	1.30E+02
39	163.80	1.16E+03	159.60			1.16E+03	1.60E+02
40	186.37	2.13E+04	217.55	9.54E+01	3.21E+01	2.12E+04	2.20E+02
41	192.51	1.36E+02	111.09			1.36E+02	1.11E+02
42	205.92	1.00E+03	147.72			1.00E+03	1.48E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	236.42	1.18E+03	151.01			1.18E+03	1.51E+02
44	239.19	1.29E+03	121.51			1.29E+03	1.22E+02
45	242.49	1.39E+04	186.15			1.39E+04	1.86E+02
M 46	255.34	1.27E+02	42.45			1.27E+02	4.24E+01
m 47	256.78	5.26E+02	76.79			5.26E+02	7.68E+01
48	259.55	7.17E+02	140.15			7.17E+02	1.40E+02
49	269.95	7.44E+02	130.63			7.44E+02	1.31E+02
50	271.86	7.20E+02	112.54			7.20E+02	1.13E+02
51	275.33	3.60E+02	142.97			3.60E+02	1.43E+02
52	286.56	2.52E+02	117.72			2.52E+02	1.18E+02
53	295.85	2.78E+04	217.32	2.87E+01	1.59E+01	2.78E+04	2.18E+02
54	300.59	4.85E+02	80.82			4.85E+02	8.08E+01
55	324.78	2.69E+02	94.89			2.69E+02	9.49E+01
56	330.55	1.52E+02	105.18			1.52E+02	1.05E+02
57	338.84	4.49E+02	96.78			4.49E+02	9.68E+01
58	346.18	1.26E+02	80.90			1.26E+02	8.09E+01
59	352.67	4.18E+04	249.55	4.33E+01	1.65E+01	4.17E+04	2.50E+02
60	361.16	1.35E+02	93.82			1.35E+02	9.38E+01
61	387.55	3.16E+02	105.17			3.16E+02	1.05E+02
62	389.85	1.04E+02	92.71			1.04E+02	9.27E+01
63	402.86	3.93E+02	144.64			3.93E+02	1.45E+02
64	406.25	1.66E+02	129.21			1.66E+02	1.29E+02
65	455.57	1.99E+02	124.44			1.99E+02	1.24E+02
66	468.36	1.35E+02	62.32			1.35E+02	6.23E+01
67	481.59	4.28E+02	92.37			4.28E+02	9.24E+01
68	488.18	1.54E+02	115.74			1.54E+02	1.16E+02
69	496.69	1.14E+02	81.22			1.14E+02	8.12E+01
70	511.61	6.09E+02	126.05	2.98E+02	3.37E+01	3.10E+02	1.30E+02
71	534.70	1.96E+02	84.57			1.96E+02	8.46E+01
72	549.48	9.20E+01	68.03			9.20E+01	6.80E+01
73	581.54	1.14E+02	95.29			1.14E+02	9.53E+01
74	584.66	2.02E+02	84.28			2.02E+02	8.43E+01
75	610.67	2.06E+04	190.85			2.06E+04	1.91E+02
76	667.17	6.06E+02	104.25			6.06E+02	1.04E+02
77	688.18	9.97E+01	74.74			9.97E+01	7.47E+01
78	698.40	4.81E+02	44.01			4.81E+02	4.40E+01

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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*************************************************************************
*****        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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Report Generated On	: 4-04-96 10:15:06 AM
Sample Title	: NOPI-121-GAM4
Spectrum Description	: NOPI-121-GAM4
Sample Identification	: NP121_2
Sample Type	:
Sample Geometry	:
Peak Locate Threshold	: 2.00
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Sample Size	: 0.000E+00 Unit
Sample Taken On	:
Acquisition Started	: 3-21-96 9:07:45 AM
Live Time	: 80000.0 seconds
Real Time	: 80005.7 seconds

Energy Calibration Used Done On	: 1-16-96
Efficiency Calibration Used Done On	: ????????

DP13-5

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***** P E A K L O C A T E R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-121-GAM4
Peak Locate Performed on: 4-04-96 10:14:26 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	63.61	0.3113	10.84	6.31
2	76.08	0.3115	13.13	6.01
3	94.42	0.3021	16.33	6.34
4	114.04	0.4834	19.26	4.10
5	148.98	0.4228	25.74	2.94
6	158.91	0.5416	27.36	2.42
7	230.67	0.5533	39.83	2.19
8	269.61	0.1364	46.66	26.31
9	289.97	0.4057	50.07	2.20
10	308.28	0.2157	53.42	9.82
11	366.18	0.1602	63.44	17.54
12	391.77	0.3450	67.77	3.74
13	432.94	0.1198	75.00	30.23
14	446.05	0.1054	77.27	38.36
15	458.74	0.2365	79.49	7.17
16	469.18	0.2563	81.30	6.62
17	484.92	0.2292	84.14	6.79
18	504.56	0.1649	87.38	11.68
19	519.85	0.1755	90.10	12.70
20	535.28	0.1622	92.84	10.20
21	548.09	0.3364	94.97	3.99
22	569.00	0.3962	98.29	3.20
23	745.80	0.3211	129.14	4.10
24	830.79	0.2813	144.15	4.80
25	889.74	0.3382	154.21	2.47
26	977.66	0.4532	169.03	2.15
27	1075.28	0.1373	186.34	13.23
28	1186.42	0.4208	205.98	2.02
29	1210.14	0.2629	209.79	4.56
30	1238.03	0.4659	214.64	2.08
31	1246.76	0.3574	216.09	2.76
32	1379.18	0.1146	239.10	22.01
33	1398.75	0.1287	242.40	17.01
34	1432.81	0.3332	248.27	3.25
35	1447.89	0.4555	251.28	2.13
36	1502.08	0.4657	259.76	2.02
37	1559.78	0.3162	270.30	2.40
38	1706.30	0.0978	295.82	26.28
39	1735.26	0.2413	300.93	5.11
40	1955.96	0.2017	339.23	5.89
41	2034.04	0.0861	352.66	31.51

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2236.55	0.2737	387.77	3.46
43	2366.67	0.3223	409.91	2.75
44	3294.73	0.2832	571.38	2.96
45	3341.73	0.2841	579.49	2.75
46	3370.83	0.1649	584.37	7.80
47	3521.51	0.0927	610.66	20.27
48	3846.91	0.2846	667.26	3.02
49	4028.12	0.2481	698.59	2.88

Errors quoted at 1.000 sigma

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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: DET01
Sample Title: NOPI-121-GAM4
Peak Analysis Performed on: 4-04-96 10:14:42 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	60-	66	63.01	10.84	1.05E+03	62.16	1.01E+03
	2	74-	79	76.22	13.13	2.10E+03	70.75	1.14E+03
	3	92-	97	94.64	16.33	1.21E+03	76.23	1.75E+03
	4	107-	117	111.57	19.26	5.78E+02	76.86	1.41E+03
	5	144-	153	148.92	25.74	1.26E+02	55.39	8.35E+02
	6	154-	163	158.24	27.36	7.95E+01	54.90	8.29E+02
	7	225-	235	230.17	39.83	1.23E+02	55.33	7.79E+02
	8	264-	274	269.52	46.66	3.84E+03	82.46	7.87E+02
	9	284-	295	289.22	50.07	1.86E+02	55.23	7.11E+02
	10	303-	313	308.53	53.42	5.39E+02	55.59	6.80E+02
	11	360-	371	366.31	63.44	1.65E+03	69.94	8.10E+02
	12	386-	397	391.28	67.77	2.86E+02	59.75	8.16E+02
	13	427-	438	432.92	75.00	3.89E+03	88.65	9.94E+02
	14	440-	451	446.05	77.27	6.62E+03	101.72	9.33E+02
	15	455-	464	458.85	79.49	3.58E+02	54.62	7.38E+02
	16	464-	475	469.25	81.30	2.78E+02	59.78	8.20E+02
	17	478-	491	485.66	84.14	8.55E+02	69.56	8.85E+02
	18	498-	510	504.36	87.38	2.18E+03	78.43	9.32E+02
	19	513-	526	520.00	90.10	9.72E+02	73.99	1.00E+03
	20	528-	541	535.82	92.84	2.11E+03	83.23	1.08E+03
	21	545-	554	548.11	94.97	8.70E+01	50.86	7.04E+02
	22	559-	575	567.21	98.29	2.14E+02	69.03	8.63E+02
	23	738-	750	745.10	129.14	1.74E+02	52.67	6.11E+02
	24	825-	838	831.67	144.15	3.27E+02	54.54	5.86E+02
	25	884-	897	889.70	154.21	1.03E+02	56.61	6.85E+02
	26	969-	981	975.12	169.03	8.73E+01	45.40	4.61E+02
	27	1066-	1083	1074.93	186.34	1.77E+03	75.58	7.16E+02
	28	1183-	1195	1188.16	205.98	5.29E+01	44.55	4.52E+02
	29	1205-	1215	1210.15	209.79	1.10E+02	39.84	3.93E+02
M	30	1235-	1250	1238.09	214.64	4.56E+01	20.43	2.52E+02
m	31	1235-	1250	1246.50	216.09	7.14E+01	26.61	2.79E+02
	32	1369-	1388	1379.18	239.10	1.59E+03	74.89	6.70E+02
	33	1389-	1407	1398.20	242.40	1.49E+03	65.29	4.83E+02
	34	1426-	1437	1432.03	248.27	4.42E+01	33.77	2.73E+02
	35	1444-	1453	1449.38	251.28	5.60E+01	28.51	2.16E+02
	36	1492-	1506	1498.27	259.76	9.36E+01	41.09	3.33E+02
	37	1550-	1569	1559.08	270.30	2.34E+02	54.44	4.52E+02
	38	1696-	1716	1706.19	295.82	2.55E+03	73.60	4.57E+02
	39	1727-	1745	1735.66	300.93	8.59E+01	48.53	3.95E+02
	40	1945-	1966	1956.52	339.23	3.03E+02	56.67	4.48E+02
	41	2023-	2044	2033.94	352.66	3.66E+03	81.42	4.56E+02
	42	2229-	2241	2236.42	387.77	4.18E+01	31.48	2.23E+02

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2346-	2371	2364.07	409.91	5.47E+01	60.26	4.75E+02
44	3289-	3303	3295.10	571.38	5.13E+01	26.51	1.36E+02
45	3335-	3348	3341.86	579.49	5.21E+01	23.66	1.12E+02
46	3359-	3381	3370.00	584.37	2.58E+02	45.17	2.64E+02
47	3507-	3535	3521.58	610.66	2.03E+03	62.76	2.32E+02
48	3839-	3857	3847.93	667.26	4.09E+01	31.48	1.65E+02
49	4022-	4035	4028.63	698.59	4.18E+01	18.05	5.43E+01

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-121-GAM4
Peak Analysis Performed on: 4-04-96 10:14:26 AM

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	10.84	1.05E+03	62.16			1.05E+03	6.22E+01
	2	13.13	2.10E+03	70.75			2.10E+03	7.07E+01
	3	16.33	1.21E+03	76.23			1.21E+03	7.62E+01
	4	19.26	5.78E+02	76.86			5.78E+02	7.69E+01
	5	25.74	1.26E+02	55.39			1.26E+02	5.54E+01
	6	27.36	7.95E+01	54.90			7.95E+01	5.49E+01
	7	39.83	1.23E+02	55.33			1.23E+02	5.53E+01
	8	46.66	3.84E+03	82.46			3.84E+03	8.25E+01
	9	50.07	1.86E+02	55.23			1.86E+02	5.52E+01
	10	53.42	5.39E+02	55.59			5.39E+02	5.56E+01
	11	63.44	1.65E+03	69.94			1.65E+03	6.99E+01
	12	67.77	2.86E+02	59.75		256 -	2.86E+02	5.98E+01
	13	75.00	3.89E+03	88.65		13.44	3.89E+03	8.87E+01
	14	77.27	6.62E+03	101.72			6.62E+03	1.02E+02
	15	79.49	3.58E+02	54.62			3.58E+02	5.46E+01
	16	81.30	2.78E+02	59.78			2.78E+02	5.98E+01
	17	84.14	8.55E+02	69.56			8.55E+02	6.96E+01
	18	87.38	2.18E+03	78.43			2.18E+03	7.84E+01
	19	90.10	9.72E+02	73.99			9.72E+02	7.40E+01
	20	92.84	2.11E+03	83.23	1.89E+02	3.17E+01	1.92E+03	8.91E+01
	21	94.97	8.70E+01	50.86			8.70E+01	5.09E+01
	22	98.29	2.14E+02	69.03			2.14E+02	6.90E+01
	23	129.14	1.74E+02	52.67			1.74E+02	5.27E+01
	24	144.15	3.27E+02	54.54			3.27E+02	5.45E+01
	25	154.21	1.03E+02	56.61			1.03E+02	5.66E+01
	26	169.03	8.73E+01	45.40			8.73E+01	4.54E+01
	27	186.34	1.77E+03	75.58	9.54E+01	3.21E+01	1.68E+03	8.21E+01
	28	205.98	5.29E+01	44.55			5.29E+01	4.46E+01
	29	209.79	1.10E+02	39.84			1.10E+02	3.98E+01
M	30	214.64	4.56E+01	20.43			4.56E+01	2.04E+01
m	31	216.09	7.14E+01	26.61			7.14E+01	2.66E+01
	32	239.10	1.59E+03	74.89			1.59E+03	7.49E+01
	33	242.40	1.49E+03	65.29			1.49E+03	6.53E+01
	34	248.27	4.42E+01	33.77			4.42E+01	3.38E+01
	35	251.28	5.60E+01	28.51			5.60E+01	2.85E+01
	36	259.76	9.36E+01	41.09			9.36E+01	4.11E+01
	37	270.30	2.34E+02	54.44			2.34E+02	5.44E+01
	38	295.82	2.55E+03	73.60	2.87E+01	1.59E+01	2.53E+03	7.53E+01
	39	300.93	8.59E+01	48.53			8.59E+01	4.85E+01
	40	339.23	3.03E+02	56.67			3.03E+02	5.67E+01
	41	352.66	3.66E+03	81.42	4.33E+01	1.65E+01	3.62E+03	8.31E+01
	42	387.77	4.18E+01	31.48			4.18E+01	3.15E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	409.91	5.47E+01	60.26			5.47E+01	6.03E+01
44	571.38	5.13E+01	26.51			5.13E+01	2.65E+01
45	579.49	5.21E+01	23.66			5.21E+01	2.37E+01
46	584.37	2.58E+02	45.17			2.58E+02	4.52E+01
47	610.66	2.03E+03	62.76			2.03E+03	6.28E+01
48	667.26	4.09E+01	31.48			4.09E+01	3.15E+01
49	698.59	4.18E+01	18.05			4.18E+01	1.80E+01

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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*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************

Report Generated On                 :  4-04-96 10:16:48 AM

Sample Title                        : NOPI-122-GAM4
Spectrum Description                : NOPI-122-GAM4
Sample Identification               : NP122_2
Sample Type                         :
Sample Geometry                     :

Peak Locate Threshold               :  2.00
Peak Locate Range (in channels)     :     1 -  4096
Peak Area Range (in channels)       :     1 -  4096
Identification Energy Tolerance     :    1.000 keV

Sample Size                         :   0.000E+00 Unit

Sample Taken On                     :
Acquisition Started                 :  3-25-96  8:39:32 AM

Live Time                           :    80000.0 seconds
Real Time                           :    80008.0 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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DPIB-5

****
***** P E A K L O C A T E R E P O R T *****
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Detector Name: DET01
Sample Title: NOPI-122-GAM4
Peak Locate Performed on: 4-04-96 10:16:05 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	37.37	0.5315	6.52	2.22
2	63.47	0.2683	10.89	7.31
3	75.92	0.2614	13.06	8.15
4	94.48	0.2507	16.38	8.25
5	110.41	0.2848	19.14	7.31
6	149.12	0.3357	25.83	5.20
7	159.08	0.3899	27.51	3.42
8	212.18	0.4640	36.71	2.35
9	230.99	0.4082	40.08	3.40
10	269.72	0.1146	46.68	37.69
11	290.32	0.3039	50.20	4.95
12	308.25	0.1775	53.38	14.72
13	366.32	0.1306	63.46	26.91
14	391.96	0.2557	67.87	6.85
15	433.02	0.1039	75.01	39.86
16	446.15	0.0910	77.29	49.75
17	458.84	0.1982	79.61	11.21
18	469.19	0.2019	81.35	10.17
19	485.07	0.1878	84.11	11.21
20	504.93	0.1388	87.43	16.74
21	520.07	0.1690	90.17	14.16
22	535.52	0.1325	92.85	17.26
23	547.90	0.2684	95.02	5.94
24	569.75	0.3166	98.50	3.78
25	616.89	0.4812	106.19	2.19
26	652.69	0.2970	113.13	3.35
27	746.62	0.3346	129.49	3.40
28	775.27	0.3993	134.40	2.81
29	831.21	0.2145	144.04	7.33
30	891.29	0.2818	154.34	4.70
31	944.52	0.3471	163.74	2.64
32	1075.61	0.1144	186.44	18.59
33	1187.31	0.3042	205.85	3.79
34	1210.08	0.2481	209.85	4.70
35	1253.00	0.3147	217.26	3.79
36	1364.51	0.2480	236.53	3.95
37	1379.68	0.1150	239.17	21.43
38	1399.18	0.1019	242.49	27.97
39	1496.83	0.2377	259.44	3.79
40	1558.82	0.2448	270.11	3.97
41	1590.06	0.3228	275.52	2.68

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1639.49	0.3891	284.14	2.06
43	1653.45	0.3784	286.92	2.25
44	1706.81	0.0817	295.91	37.85
45	1735.03	0.3098	300.70	2.41
46	1872.25	0.2805	324.66	3.91
47	1956.13	0.1939	338.97	7.38
48	2034.62	0.0717	352.78	45.79
49	2477.65	0.4147	429.21	2.06
50	3220.77	0.3068	558.64	2.69
51	3371.39	0.1798	584.80	5.47
52	3522.59	0.0762	610.86	31.29
53	3629.09	0.2903	628.81	2.72
54	3845.77	0.2341	667.05	3.73
55	4029.50	0.2043	698.72	5.27

Errors quoted at 1.000 sigma

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

Detector Name: DET01
Sample Title: NOPI-122-GAM4
Peak Analysis Performed on: 4-04-96 10:16:22 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	34-	40	38.11	6.52	2.52E+02	71.76	1.74E+03
2	60-	66	63.28	10.89	1.98E+03	75.20	1.33E+03
3	72-	79	75.81	13.06	4.57E+03	104.43	2.11E+03
4	92-	98	94.95	16.38	2.47E+03	109.58	3.29E+03
5	107-	114	110.87	19.14	6.29E+02	79.59	1.89E+03
6	145-	153	149.41	25.83	4.29E+02	62.69	1.07E+03
7	154-	163	159.14	27.51	1.42E+02	68.59	1.30E+03
8	209-	216	212.17	36.71	7.17E+01	52.54	8.82E+02
9	226-	235	231.60	40.08	1.59E+02	64.21	1.13E+03
10	264-	274	269.63	46.68	7.21E+03	107.25	1.14E+03
11	285-	295	289.97	50.20	2.12E+02	67.78	1.15E+03
12	303-	313	308.29	53.38	9.78E+02	72.14	1.12E+03
13	360-	371	366.38	63.46	3.15E+03	94.03	1.42E+03
14	386-	397	391.82	67.87	4.87E+02	77.16	1.36E+03
15	427-	438	433.03	75.01	6.60E+03	116.61	1.75E+03
16	440-	452	446.17	77.29	1.18E+04	138.11	1.71E+03
17	452-	464	459.51	79.61	5.76E+02	91.04	1.79E+03
18	464-	475	469.54	81.35	3.77E+02	79.66	1.49E+03
19	478-	491	485.47	84.11	1.54E+03	88.64	1.40E+03
20	498-	511	504.61	87.43	3.98E+03	105.62	1.59E+03
21	513-	526	520.42	90.17	1.53E+03	95.44	1.68E+03
22	529-	541	535.88	92.85	4.17E+03	100.97	1.42E+03
23	545-	554	548.41	95.02	3.71E+02	62.50	9.95E+02
24	563-	576	568.48	98.50	2.88E+02	76.22	1.21E+03
25	608-	623	612.79	106.19	9.72E+01	80.27	1.26E+03
26	647-	659	652.81	113.13	9.42E+01	69.85	1.12E+03
27	741-	753	747.12	129.49	7.87E+01	66.58	1.02E+03
28	773-	778	775.46	134.40	8.30E+01	32.50	3.83E+02
29	823-	838	831.06	144.04	4.25E+02	81.78	1.25E+03
30	883-	898	890.44	154.34	2.13E+02	77.16	1.14E+03
31	940-	952	944.65	163.74	1.00E+02	63.54	9.17E+02
32	1067-	1083	1075.49	186.44	3.44E+03	94.37	1.04E+03
33	1182-	1191	1187.41	205.85	6.62E+01	45.13	5.61E+02
34	1204-	1218	1210.52	209.85	1.66E+02	61.21	7.52E+02
35	1250-	1257	1253.23	217.26	7.37E+01	32.64	3.26E+02
36	1358-	1369	1364.34	236.53	1.46E+02	47.97	5.39E+02
37	1370-	1388	1379.53	239.17	1.75E+03	83.19	8.98E+02
38	1389-	1408	1398.72	242.49	2.78E+03	84.58	7.29E+02
39	1490-	1503	1496.46	259.44	1.80E+02	48.46	4.78E+02
40	1549-	1566	1557.98	270.11	1.51E+02	67.16	7.87E+02
41	1580-	1596	1589.18	275.52	6.55E+01	56.68	5.99E+02
42	1636-	1646	1638.86	284.14	5.40E+01	36.26	3.30E+02

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1646-	1661	1654.87	286.92	1.64E+02	47.49	4.18E+02
44	1696-	1716	1706.74	295.91	5.05E+03	97.64	7.18E+02
45	1727-	1740	1734.32	300.70	5.56E+01	46.15	4.59E+02
46	1868-	1877	1872.52	324.66	8.01E+01	31.37	2.57E+02
47	1945-	1961	1955.00	338.97	2.74E+02	55.15	5.27E+02
48	2027-	2045	2034.64	352.78	7.58E+03	104.68	5.78E+02
49	2465-	2482	2475.35	429.21	5.50E+01	49.27	4.31E+02
50	3215-	3226	3221.66	558.64	5.38E+01	23.30	1.22E+02
51	3364-	3384	3372.50	584.80	2.43E+02	48.50	3.38E+02
52	3508-	3536	3522.74	610.86	3.73E+03	86.99	4.64E+02
53	3615-	3635	3626.24	628.81	8.22E+01	35.53	1.89E+02
54	3836-	3855	3846.76	667.05	1.10E+02	39.75	2.45E+02
55	4023-	4035	4029.35	698.72	8.36E+01	18.45	5.64E+01

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-122-GAM4
Peak Analysis Performed on: 4-04-96 10:16:05 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	6.52	2.52E+02	71.76			2.52E+02	7.18E+01
2	10.89	1.98E+03	75.20			1.98E+03	7.52E+01
3	13.06	4.57E+03	104.43			4.57E+03	1.04E+02
4	16.38	2.47E+03	109.58			2.47E+03	1.10E+02
5	19.14	6.29E+02	79.59			6.29E+02	7.96E+01
6	25.83	4.29E+02	62.69			4.29E+02	6.27E+01
7	27.51	1.42E+02	68.59			1.42E+02	6.86E+01
8	36.71	7.17E+01	52.54			7.17E+01	5.25E+01
9	40.08	1.59E+02	64.21			1.59E+02	6.42E+01
10	46.68	7.21E+03	107.25			7.21E+03	1.07E+02
11	50.20	2.12E+02	67.78			2.12E+02	6.78E+01
12	53.38	9.78E+02	72.14			9.78E+02	7.21E+01
13	63.46	3.15E+03	94.03			3.15E+03	9.40E+01
14	67.87	4.87E+02	77.16			4.87E+02	7.72E+01
15	75.01	6.60E+03	116.61			6.60E+03	1.17E+02
16	77.29	1.18E+04	138.11			1.18E+04	1.38E+02
17	79.61	5.76E+02	91.04			5.76E+02	9.10E+01
18	81.35	3.77E+02	79.66			3.77E+02	7.97E+01
19	84.11	1.54E+03	88.64			1.54E+03	8.86E+01
20	87.43	3.98E+03	105.62			3.98E+03	1.06E+02
21	90.17	1.53E+03	95.44			1.53E+03	9.54E+01
22	92.85	4.17E+03	100.97	1.89E+02	3.17E+01	3.98E+03	1.06E+02
23	95.02	3.71E+02	62.50			3.71E+02	6.25E+01
24	98.50	2.88E+02	76.22			2.88E+02	7.62E+01
25	106.19	9.72E+01	80.27			9.72E+01	8.03E+01
26	113.13	9.42E+01	69.85			9.42E+01	6.98E+01
27	129.49	7.87E+01	66.58			7.87E+01	6.66E+01
28	134.40	8.30E+01	32.50			8.30E+01	3.25E+01
29	144.04	4.25E+02	81.78			4.25E+02	8.18E+01
30	154.34	2.13E+02	77.16			2.13E+02	7.72E+01
31	163.74	1.00E+02	63.54			1.00E+02	6.35E+01
32	186.44	3.44E+03	94.37	9.54E+01	3.21E+01	3.34E+03	9.97E+01
33	205.85	6.62E+01	45.13			6.62E+01	4.51E+01
34	209.85	1.66E+02	61.21			1.66E+02	6.12E+01
35	217.26	7.37E+01	32.64			7.37E+01	3.26E+01
36	236.53	1.46E+02	47.97			1.46E+02	4.80E+01
37	239.17	1.75E+03	83.19			1.75E+03	8.32E+01
38	242.49	2.78E+03	84.58			2.78E+03	8.46E+01
39	259.44	1.80E+02	48.46			1.80E+02	4.85E+01
40	270.11	1.51E+02	67.16			1.51E+02	6.72E+01
41	275.52	6.55E+01	56.68			6.55E+01	5.67E+01
42	284.14	5.40E+01	36.26			5.40E+01	3.63E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	286.92	1.64E+02	47.49			1.64E+02	4.75E+01
44	295.91	5.05E+03	97.64	2.87E+01	1.59E+01	5.02E+03	9.89E+01
45	300.70	5.56E+01	46.15			5.56E+01	4.62E+01
46	324.66	8.01E+01	31.37			8.01E+01	3.14E+01
47	338.97	2.74E+02	55.15			2.74E+02	5.52E+01
48	352.78	7.58E+03	104.68	4.33E+01	1.65E+01	7.54E+03	1.06E+02
49	429.21	5.50E+01	49.27			5.50E+01	4.93E+01
50	558.64	5.38E+01	23.30			5.38E+01	2.33E+01
51	584.80	2.43E+02	48.50			2.43E+02	4.85E+01
52	610.86	3.73E+03	86.99			3.73E+03	8.70E+01
53	628.81	8.22E+01	35.53			8.22E+01	3.55E+01
54	667.05	1.10E+02	39.75			1.10E+02	3.97E+01
55	698.72	8.36E+01	18.45			8.36E+01	1.84E+01

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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*************************************************************************
*****        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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Report Generated On	:	4-04-96 10:18:43 AM
Sample Title	:	NOPI-123-GAM4
Spectrum Description	:	NOPI-123-GAM4
Sample Identification	:	NP123_2
Sample Type	:	
Sample Geometry	:	
Peak Locate Threshold	:	2.00
Peak Locate Range (in channels)	:	1 - 4096
Peak Area Range (in channels)	:	1 - 4096
Identification Energy Tolerance	:	1.000 keV
Sample Size	:	0.000E+00 Unit
Sample Taken On	:	
Acquisition Started	:	3-26-96 8:36:00 AM
Live Time	:	80000.0 seconds
Real Time	:	80010.0 seconds

Energy Calibration Used Done On	:	1-16-96
Efficiency Calibration Used Done On	:	????????

DP1B_5

****
***** P E A K L O C A T E R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-123-GAM4
Peak Locate Performed on: 4-04-96 10:18:00 AM
Peak Locate From Channel: 1
Peak Locate To Channel: 4096
Peak Search Sensitivity: 2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
1	37.70	0.5597	6.47	2.22
2	63.39	0.2477	10.87	9.98
3	76.11	0.2660	13.06	10.19
4	94.29	0.2871	16.34	8.61
5	110.37	0.2815	19.18	7.93
6	114.27	0.4700	19.97	3.30
7	148.77	0.3636	25.73	2.47
8	158.73	0.4368	27.43	3.30
9	212.59	0.4433	36.78	3.02
10	269.51	0.1150	46.66	36.41
11	290.12	0.3317	50.17	5.04
12	308.08	0.1547	53.34	19.52
13	335.26	0.5179	57.97	2.78
14	366.12	0.1389	63.42	23.65
15	391.16	0.2883	67.67	5.13
16	432.80	0.0927	74.96	48.21
17	446.00	0.0805	77.26	66.31
18	458.70	0.1662	79.53	15.46
19	468.93	0.2114	81.28	9.64
20	484.65	0.1885	83.99	10.31
21	504.63	0.1256	87.37	21.62
22	519.53	0.1480	90.10	15.79
23	535.12	0.1353	92.78	17.05
24	548.29	0.2663	95.06	5.62
25	574.37	0.5440	98.64	2.13
26	651.72	0.3166	113.01	4.26
27	831.31	0.2651	144.10	4.55
28	890.61	0.3226	154.62	2.82
29	943.94	0.3423	163.51	3.50
30	960.00	0.4123	166.41	2.57
31	967.56	0.4384	167.69	2.01
32	1075.75	0.1022	186.42	27.10
33	1209.40	0.3109	209.88	3.45
34	1364.04	0.2619	236.46	4.39
35	1379.07	0.1185	239.11	20.52
36	1398.61	0.0900	242.45	33.51
37	1496.15	0.2123	259.52	5.48
38	1556.21	0.2935	269.67	2.30
39	1568.01	0.3600	272.08	2.47
40	1588.81	0.2703	275.41	4.24
41	1706.24	0.0705	295.81	50.45

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1733.64	0.2720	300.82	3.08
43	1871.98	0.3221	324.31	2.69
44	1934.02	0.3823	334.58	2.46
45	1955.44	0.2303	338.79	4.96
46	2033.79	0.0629	352.64	58.75
47	2248.31	0.2658	389.84	3.57
48	2630.36	0.3324	455.80	2.52
49	2774.24	0.3046	480.89	2.31
50	2814.63	0.2465	488.02	4.04
51	3244.27	0.2847	562.69	2.55
52	3369.26	0.1785	584.43	5.88
53	3521.31	0.0676	610.59	39.00
54	3662.52	0.2700	634.78	3.32
55	3844.07	0.1935	666.76	4.22
56	4027.91	0.2356	698.42	3.02

Errors quoted at 1.000 sigma

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

Detector Name: DET01
Sample Title: NOPI-123-GAM4
Peak Analysis Performed on: 4-04-96 10:18:15 AM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	34-	40	37.79	6.47	1.58E+02	74.95	1.96E+03
	2	60-	66	63.16	10.87	2.46E+03	85.08	1.72E+03
	3	72-	79	75.79	13.06	5.08E+03	112.50	2.52E+03
	4	92-	97	94.71	16.34	1.78E+03	101.46	3.22E+03
	5	107-	114	111.07	19.18	5.69E+02	82.10	2.05E+03
	6	114-	118	115.66	19.97	2.35E+02	52.22	1.04E+03
	7	144-	152	148.83	25.73	2.47E+02	70.44	1.45E+03
	8	154-	162	158.68	27.43	3.06E+02	69.62	1.39E+03
	9	211-	217	212.54	36.78	1.14E+02	54.64	1.02E+03
	10	264-	274	269.51	46.66	8.29E+03	118.58	1.54E+03
	11	285-	295	289.78	50.17	3.78E+02	73.90	1.35E+03
	12	302-	313	308.04	53.34	1.61E+03	88.93	1.57E+03
	13	329-	340	334.72	57.97	1.00E+02	81.99	1.64E+03
	14	360-	371	366.19	63.42	2.55E+03	104.40	2.09E+03
	15	385-	396	390.70	67.67	5.49E+02	87.80	1.78E+03
	16	426-	438	432.69	74.96	1.04E+04	147.29	2.65E+03
	17	440-	451	445.95	77.26	1.88E+04	168.30	2.37E+03
	18	452-	464	459.04	79.53	7.58E+02	107.65	2.53E+03
	19	464-	474	469.18	81.28	5.98E+02	80.37	1.56E+03
	20	478-	490	484.77	83.99	1.57E+03	93.77	1.70E+03
	21	498-	510	504.25	87.37	6.29E+03	120.52	1.93E+03
	22	513-	525	519.99	90.10	2.45E+03	101.06	1.82E+03
	23	528-	541	535.48	92.78	3.65E+03	110.10	1.89E+03
	24	544-	554	548.59	95.06	3.74E+02	73.96	1.35E+03
	25	562-	577	569.23	98.64	2.43E+02	95.24	1.76E+03
	26	646-	658	652.10	113.01	2.14E+02	76.21	1.31E+03
	27	823-	838	831.36	144.10	3.89E+02	91.35	1.59E+03
	28	885-	898	892.04	154.62	2.50E+02	81.91	1.43E+03
	29	936-	949	943.32	163.51	1.44E+02	75.27	1.23E+03
M	30	952-	975	960.00	166.41	1.03E+02	40.18	1.02E+03
m	31	952-	975	967.40	167.69	8.57E+01	35.87	9.94E+02
	32	1067-	1084	1075.41	186.42	4.65E+03	116.09	1.60E+03
	33	1205-	1218	1210.66	209.88	7.54E+01	66.29	9.55E+02
	34	1361-	1369	1363.92	236.46	7.72E+01	43.81	5.53E+02
	35	1373-	1388	1379.21	239.11	1.53E+03	80.42	9.73E+02
	36	1389-	1407	1398.47	242.45	4.59E+03	103.48	1.07E+03
	37	1490-	1505	1496.88	259.52	3.58E+02	61.37	6.80E+02
	38	1549-	1565	1555.44	269.67	1.27E+02	71.21	9.21E+02
	39	1565-	1573	1569.30	272.08	1.18E+02	38.32	4.12E+02
	40	1584-	1594	1588.51	275.41	1.02E+02	46.11	5.34E+02
	41	1696-	1716	1706.16	295.81	8.98E+03	121.69	9.35E+02
	42	1729-	1743	1735.02	300.82	1.73E+02	52.68	5.43E+02

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1864-	1877	1870.50	324.31	1.28E+02	48.13	4.84E+02
44	1920-	1939	1929.70	334.58	9.08E+01	70.50	8.11E+02
45	1946-	1961	1953.96	338.79	1.62E+02	61.90	7.30E+02
46	2022-	2044	2033.82	352.64	1.28E+04	141.12	1.05E+03
47	2243-	2254	2248.36	389.84	1.51E+02	42.03	4.02E+02
48	2624-	2635	2628.65	455.80	5.23E+01	36.73	3.18E+02
49	2763-	2781	2773.35	480.89	7.09E+01	51.91	4.56E+02
50	2806-	2821	2814.48	488.02	8.67E+01	45.73	4.00E+02
51	3239-	3251	3244.98	562.69	6.61E+01	32.72	2.36E+02
52	3360-	3382	3370.33	584.43	3.17E+02	58.46	4.60E+02
53	3507-	3535	3521.19	610.59	6.49E+03	107.53	6.15E+02
54	3653-	3668	3660.68	634.78	9.20E+01	33.71	2.08E+02
55	3835-	3855	3845.06	666.76	1.65E+02	46.83	3.25E+02
56	4022-	4035	4027.63	698.42	1.11E+02	19.34	5.64E+01

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

Errors quoted at 1.000 sigma

****
***** B A C K G R O U N D S U B T R A C T R E P O R T *****
****

Detector Name: DET01
Sample Title: NOPI-123-GAM4
Peak Analysis Performed on: 4-04-96 10:18:00 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	6.47	1.58E+02	74.95			1.58E+02	7.50E+01
2	10.87	2.46E+03	85.08			2.46E+03	8.51E+01
3	13.06	5.08E+03	112.50			5.08E+03	1.12E+02
4	16.34	1.78E+03	101.46			1.78E+03	1.01E+02
5	19.18	5.69E+02	82.10			5.69E+02	8.21E+01
6	19.97	2.35E+02	52.22			2.35E+02	5.22E+01
7	25.73	2.47E+02	70.44			2.47E+02	7.04E+01
8	27.43	3.06E+02	69.62			3.06E+02	6.96E+01
9	36.78	1.14E+02	54.64			1.14E+02	5.46E+01
10	46.66	8.29E+03	118.58			8.29E+03	1.19E+02
11	50.17	3.78E+02	73.90			3.78E+02	7.39E+01
12	53.34	1.61E+03	88.93			1.61E+03	8.89E+01
13	57.97	1.00E+02	81.99			1.00E+02	8.20E+01
14	63.42	2.55E+03	104.40			2.55E+03	1.04E+02
15	67.67	5.49E+02	87.80			5.49E+02	8.78E+01
16	74.96	1.04E+04	147.29		476 993	1.04E+04	1.47E+02
17	77.26	1.88E+04	168.30			1.88E+04	1.68E+02
18	79.53	7.58E+02	107.65			7.58E+02	1.08E+02
19	81.28	5.98E+02	80.37			5.98E+02	8.04E+01
20	83.99	1.57E+03	93.77			1.57E+03	9.38E+01
21	87.37	6.29E+03	120.52			6.29E+03	1.21E+02
22	90.10	2.45E+03	101.06			2.45E+03	1.01E+02
23	92.78	3.65E+03	110.10	1.89E+02	3.17E+01	3.46E+03	1.15E+02
24	95.06	3.74E+02	73.96			3.74E+02	7.40E+01
25	98.64	2.43E+02	95.24			2.43E+02	9.52E+01
26	113.01	2.14E+02	76.21			2.14E+02	7.62E+01
27	144.10	3.89E+02	91.35			3.89E+02	9.13E+01
28	154.62	2.50E+02	81.91			2.50E+02	8.19E+01
29	163.51	1.44E+02	75.27			1.44E+02	7.53E+01
M 30	166.41	1.03E+02	40.18			1.03E+02	4.02E+01
m 31	167.69	8.57E+01	35.87			8.57E+01	3.59E+01
32	186.42	4.65E+03	116.09	9.54E+01	3.21E+01	4.55E+03	1.20E+02
33	209.88	7.54E+01	66.29			7.54E+01	6.63E+01
34	236.46	7.72E+01	43.81			7.72E+01	4.38E+01
35	239.11	1.53E+03	80.42			1.53E+03	8.04E+01
36	242.45	4.59E+03	103.48			4.59E+03	1.03E+02
37	259.52	3.58E+02	61.37			3.58E+02	6.14E+01
38	269.67	1.27E+02	71.21			1.27E+02	7.12E+01
39	272.08	1.18E+02	38.32			1.18E+02	3.83E+01
40	275.41	1.02E+02	46.11			1.02E+02	4.61E+01
41	295.81	8.98E+03	121.69	2.87E+01	1.59E+01	8.95E+03	1.23E+02
42	300.82	1.73E+02	52.68			1.73E+02	5.27E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	324.31	1.28E+02	48.13			1.28E+02	4.81E+01
44	334.58	9.08E+01	70.50			9.08E+01	7.05E+01
45	338.79	1.62E+02	61.90			1.62E+02	6.19E+01
46	352.64	1.28E+04	141.12	4.33E+01	1.65E+01	1.28E+04	1.42E+02
47	389.84	1.51E+02	42.03			1.51E+02	4.20E+01
48	455.80	5.23E+01	36.73			5.23E+01	3.67E+01
49	480.89	7.09E+01	51.91			7.09E+01	5.19E+01
50	488.02	8.67E+01	45.73			8.67E+01	4.57E+01
51	562.69	6.61E+01	32.72			6.61E+01	3.27E+01
52	584.43	3.17E+02	58.46			3.17E+02	5.85E+01
53	610.59	6.49E+03	107.53			6.49E+03	1.08E+02
54	634.78	9.20E+01	33.71			9.20E+01	3.37E+01
55	666.76	1.65E+02	46.83			1.65E+02	4.68E+01
56	698.42	1.11E+02	19.34			1.11E+02	1.93E+01

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

Errors quoted at 1.000 sigma