LEGe GAMMA SPECTROMETRY

OF

NOPAL I SAMPLES

308 - - - Q200408170020

Supplemental Material, Technical Activity
Supporting Documentation: Experimental Data
for LEGe Gamma Spectrometry of Nopal I
Samples (06/24/1996 through 07/02/1996)

Gamma spectrometry calculations for Nopal I rock powders

Sample= **BL5D_7**

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		6/18/96	6/18/96		6/18/96		6/18/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.66E+05	1.25472309
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.12E+06	1.07636807
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.76E+05	1.11327242
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.20E+05	1.01393249
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.06E+05	1.0096465
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.72E+06	1.01724251
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.86E+04	1.00901304
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.08E+05	1.00461541
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.27E+04	0.98890502
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.56E+04	0.996788
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.80E+03	0.9989789

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	1.0137747	0.962946787
Eu154,155	42.9	1.01300134	0.969189895
Eu154,155	48.6	1.06686759	1.027113548
Eu155	86.4	1.00465854	0.989072743
Eu155	105	1.00483099	0.992723982
Eu154	123	1.01151691	1
Sb125	178	1.01157833	0.998707983
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	0.99778756	0.973230924
Sb125	600	1.03175375	1.009595165
Sb125	636	1.02027904	1.002040126

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+1.029
CF (DM1B) equation = y =0.057logx+0.879

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01350936	0.959269678
231Pa	27.4	1.01318474	0.960951782
210Pb	46.5	1.01065802	0.974044818
227Ac	50	1.01031133	0.97584129
234U+214Pb	53.2	1.01001497	0.977376963
234Th->238U	63.3	1.00918456	0.981680011
230Th	67.6	1.00887059	0.983306962
234Th->238U	92.6	1.00736728	0.991096826
228Ac->228Ra	129	1.00578351	0.999303613
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	6/6/96		6/4/96		6/5/96	
231Th->235U	25.6	2.84E+04	4.93E+02	1.90E+03	1.32E+02	0	0
231Pa	27.4	2.26E+04	4.82E+02	1.63E+03	1.28E+02	0	0
210Pb	46.5	3.23E+05	7.70E+02	2.23E+04	2.03E+02	0	0
227Ac	50	3.22E+04	5.38E+02	2.04E+03	1.43E+02	0	0
234U+214Pb	53.2	8.03E+04	6.21E+02	5.74E+03	1.64E+02	0	0
234Th->238U	63.3	3.01E+05	8.14E+02	2.11E+04	2.15E+02	0	0
230Th	67.6	3.52E+04	6.33E+02	2.47E+03	1.66E+02	0	0
234Th->238U	92.6	3.67E+05	8.96E+02	2.59E+04	2.38E+02	0	0
228Ac->228Ra	129	2.55E+03	5.48E+02	0	0	4.52E+03	1.41E+02
235U+226Ra	186	2.75E+05	8.00E+02	1.85E+04	2.14E+02	0	0
227Th->227Ac	236	1.52E+04	5.27E+02	1.27E+03	1.38E+02	0	0
212Pb->228Th	239	0.00E+00	0.00E+00	0	0	5.20E+04	2.93E+02
214Pb->226Ra	242	2.10E+05	6.72E+02	1.41E+04	1.76E+02	0	0
214Pb->226Ra	295	4.14E+05	8.16E+02	2.74E+04	2.16E+02	0	0
214Pb->226Ra	352	6.17E+05	9.53E+02	4.13E+04	2.50E+02	0	0
208Tl->228Th	583	2.50E+03	4.64E+02	0	0	8.66E+03	1.44E+02
214Bi->226Ra	609	3.03E+05	7.29E+02	2.01E+04	1.95E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.355	0.02375	0	6.69319112	±	0.62530072
231Pa	27.4	0.44395	0.2825	0.020375	0	6.20654916	±	0.62748932
210Pb	46.5	9.361	4.0375	0.27875	0	136.373753	±	8.28244647
227Ac	50	0.44395	0.4025	0.0255	0	7.04565949	±	0.66067457
234U+214Pb	53.2	9.361	1.00375	0.07175	0	131.631664	±	8.80667339
234Th->238U	63.3	9.361	3.7625	0.26375	0	134.116912	±	8.17028598
230Th	67.6	9.361	0.44	0.030875	0	133.939933	±	12.305062
234Th->238U	92.6	9.361	4.5875	0.32375	0	132.978996	±	8.078298
228Ac->228Ra	129	5.5494	0.031875	0	0.0565	3.13371106	±	0.69625504
235U+226Ra	186	9.361	3.4375	0.23125	0	138.480899	±	8.47144538
227Th->227Ac	236	0.44395	0.19	0.015875	0	5.28786781	±	0.68148668
212Pb->228Th	239	5.5494	0	0	0.65	0	±	#DIV/0!
214Pb->226Ra	242	9.361	2.625	0.17625	0	138.748753	±	8.51475117
214Pb->226Ra	295	9.361	5.175	0.3425	0	140.759815	±	8.52268994
214Pb->226Ra	352	9.361	7.7125	0.51625	0	139.175894	±	8.395696
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	0
214Bi->226Ra	609	9.361	3.7875	0.25125	0	140.435039	±	8.54222316

U(ppb) = 10783036.4

Th(ppb) = 0

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.616410686	0.04574293	126.79522	±	7.78118522
234U(295)	53.2	9.361	0.706537707	0.05207943	127.651481	±	7.72900987
234U(352)	53.2	9.361	0.774634238	0.05641373	129.201817	±	7.79401624
235U(63.3)	186	0.44395	0.17485447	0.01225724	6.30267282	±	0.38395336
235U(92.6)	186	0.44395	0.211254375	0.01490869	6.26047122	±	0.38031534
226Ra(63.3)	186	9.361	3.264236875	0.21910431	138.790471	±	8.45499513
226Ra(92.6)	186	9.361	3.226245625	0.21634131	138.92707	±	8.43963565

234U/238U	=	0.953517627	±	0.060171764
230Th/234U	=	1.047364398	±	0.097754521
226Ra/230Th	=	1.036214274	±	0.095821743
230Th/238U	=	0.998680415	±	0.092350879

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-308-GAM2**

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		4/22/96	4/22/96		4/22/96		4/23/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.20E+05	3.92E+05	1.24668305	3.50E+05	1.31299082	3.76E+05	1.27082298
Eu154,155	42.9	1.34E+06	1.16E+06	1.0738582	1.06E+06	1.12177481	1.13E+06	1.08764598
Eu154,155	48.6	2.01E+05	1.95E+05	1.01522921	1.83E+05	1.04764277	1.67E+05	1.09551559
Eu155	86.4	3.41E+05	3.29E+05	1.01801931	3.19E+05	1.0337163	3.19E+05	1.0337163
Eu155	105	2.19E+05	2.13E+05	1.01395409	2.07E+05	1.02844109	2.07E+05	1.02844109
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.74E+06	1.02264407	1.73E+06	1.02557187
Sb125	178	4.14E+04	4.10E+04	1.00486226	4.02E+04	1.01477904	4.01E+04	1.0160371
Eu154	248	1.11E+05	1.12E+05	0.99552237	1.09E+05	1.00911871	1.08E+05	1.01376204
Eu154	592	2.28E+04	2.29E+04	0.99781341	2.25E+04	1.00663723	2.24E+04	1.00887589
Sb125	600	1.58E+04	1.66E+04	0.97550692	1.62E+04	0.98755144	1.67E+04	0.97255635
Sb125	636	9.82E+03	1.10E+04	0.94433573	1.02E+04	0.98113682	1.04E+04	0.97158206

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	1.01936333	0.967884135
Eu154,155	42.9	1.01283948	0.969576041
Eu154,155	48.6	1.07908203	1.045695756
Eu155	86.4	1.01541915	1
Eu155	105	1.01428763	1
Eu154	123	1.01709594	1.002862969
Sb125	178	1.01112076	1.001239735
Eu154	248	1.01832171	1.004601377
Eu154	592	1.01108673	1.002223901
Sb125	600	0.99697535	0.984815892
Sb125	636	1.02885238	0.990261542

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 = -0.003logx+1.021
CF (DM1B) equation = y =-0.061logx+0.876

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01677528	0.961902638
231Pa	27.4	1.01668675	0.963702784
210Pb	46.5	1.01599764	0.97771463
227Ac	50	1.01590309	0.97963717
234U+214Pb	53.2	1.01582227	0.98128061
234Th->238U	63.3	1.01559579	0.985885626
230Th	67.6	1.01551016	0.987626748
234Th->238U	92.6	1.01510017	0.99596327
228Ac->228Ra	129	1.01466823	1.004745972
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) =		3.006		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	4/30/96		4/25/96		4/29/96	
231Th->235U	25.6	1.38E+03	1.01E+02	2.19E+03	1.29E+02	0	0
231Pa	27.4	1.04E+03	1.03E+02	1.74E+03	1.28E+02	0	0
210Pb	46.5	1.48E+04	1.60E+02	2.19E+04	1.92E+02	0	0
227Ac	50	1.19E+03	1.08E+02	2.32E+03	1.39E+02	0	0
234U+214Pb	53.2	3.59E+03	1.19E+02	5.63E+03	1.51E+02	0	0
234Th->238U	63.3	1.09E+04	1.64E+02	2.04E+04	2.13E+02	0	0
230Th	67.6	1.38E+03	1.40E+02	2.54E+03	1.61E+02	0	0
234Th->238U	92.6	1.37E+04	1.81E+02	2.48E+04	2.34E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.57E+03	1.39E+02
235U+226Ra	186	1.13E+04	1.68E+02	1.85E+04	2.12E+02	0	0
227Th->227Ac	236	5.70E+02	1.04E+02	1.16E+03	1.17E+02	0	0
212Pb->228Th	239	1.00E+03	1.02E+02	0	0	4.97E+04	2.94E+02
214Pb->226Ra	242	8.69E+03	1.42E+02	1.35E+04	1.75E+02	0	0
214Pb->226Ra	295	1.68E+04	1.68E+02	2.66E+04	2.08E+02	0	0
214Pb->226Ra	352	2.46E+04	1.90E+02	3.96E+04	2.44E+02	0	0
208Tl->228Th	583	2.05E+02	9.20E+01	0	0	8.28E+03	1.42E+02
214Bi->226Ra	609	1.22E+04	1.50E+02	1.94E+04	1.88E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.01725	0.027375	0	0.28396906	±	0.03165489
231Pa	27.4	0.44395	0.013	0.02175	0	0.26932851	±	0.03694826
210Pb	46.5	9.361	0.185	0.27375	0	6.41666793	±	0.39522383
227Ac	50	0.44395	0.014875	0.029	0	0.23095232	±	0.02868496
234U+214Pb	53.2	9.361	0.044875	0.070375	0	6.0534512	±	0.44558131
234Th->238U	63.3	9.361	0.13625	0.255	0	5.07126711	±	0.31813447
230Th	67.6	9.361	0.01725	0.03175	0	5.15618994	±	0.69003844
234Th->238U	92.6	9.361	0.17125	0.31	0	5.24055218	±	0.32574055
228Ac->228Ra	129	5.5494	0	0	0.057125	0	±	#DIV/0!
235U+226Ra	186	9.361	0.14125	0.23125	0	5.70828935	±	0.35886733
227Th->227Ac	236	0.44395	0.007125	0.0145	0	0.21778499	±	0.0472465
212Pb->228Th	239	5.5494	0.0125	0	0.62125	0.11147222	±	0.01253653
214Pb->226Ra	242	9.361	0.108625	0.16875	0	6.01568757	±	0.38212897
214Pb->226Ra	295	9.361	0.21	0.3325	0	5.90237651	±	0.36198199
214Pb->226Ra	352	9.361	0.3075	0.495	0	5.80549407	±	0.35302078
208Tl->228Th	583	5.5494	0	0	0.1035	0	±	0
214Bi->226Ra	609	9.361	0.1525	0.2425	0	5.87702266	±	0.36442655

U(ppb) = 407731.263

Th(ppb) = 27373.8756

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.02884653	0.04547462	6.02201092	±	0.38253064
234U(295)	53.2	9.361	0.032814211	0.05127875	6.07493341	±	0.37256459
234U(352)	53.2	9.361	0.035740077	0.05567	6.09468465	±	0.3706059
235U(63.3)	186	0.44395	0.006372165	0.01192589	0.23681402	±	0.01485599
235U(92.6)	186	0.44395	0.007886063	0.0142755	0.24483864	±	0.0152186
226Ra(63.3)	186	9.361	0.134975688	0.21950725	5.74653351	±	0.36049578
226Ra(92.6)	186	9.361	0.133363938	0.2169745	5.74419239	±	0.35704566

234U/238U	=	1.195731992	±	0.081355616
230Th/234U	=	0.850312516	±	0.115978193
226Ra/230Th	=	1.114492209	±	0.150539455
230Th/238U	=	1.016745878	±	0.13733642

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-309-GAM2**

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		4/22/96	4/22/96		4/22/96		4/23/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.20E+05	3.92E+05	1.24668305	3.50E+05	1.31299082	3.06E+05	1.39427807
Eu154,155	42.9	1.34E+06	1.16E+06	1.0738582	1.06E+06	1.12177481	1.06E+06	1.12177481
Eu154,155	48.6	2.01E+05	1.95E+05	1.01522921	1.83E+05	1.04764277	1.63E+05	1.10843411
Eu155	86.4	3.41E+05	3.29E+05	1.01801931	3.19E+05	1.0337163	3.17E+05	1.03693416
Eu155	105	2.19E+05	2.13E+05	1.01395409	2.07E+05	1.02844109	2.05E+05	1.03339453
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.74E+06	1.02264407	1.72E+06	1.02852223
Sb125	178	4.14E+04	4.10E+04	1.00486226	4.02E+04	1.01477904	3.98E+04	1.01983644
Eu154	248	1.11E+05	1.12E+05	0.99552237	1.09E+05	1.00911871	1.10E+05	1.00453174
Eu154	592	2.28E+04	2.29E+04	0.99781341	2.25E+04	1.00663723	2.30E+04	0.99563952
Sb125	600	1.58E+04	1.66E+04	0.97550692	1.62E+04	0.98755144	1.67E+04	0.97255635
Sb125	636	9.82E+03	1.10E+04	0.94433573	1.02E+04	0.98113682	1.05E+04	0.96689648

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	1.11839017	1.061909992
Eu154,155	42.9	1.04462098	1
Eu154,155	48.6	1.09180676	1.058026786
Eu155	86.4	1.01858005	1.003112901
Eu155	105	1.0191729	1.004816451
Eu154	123	1.02002191	1.005747995
Sb125	178	1.01490172	1.004983741
Eu154	248	1.0090499	0.995454483
Eu154	592	0.99782134	0.989074797
Sb125	600	0.99697535	0.984815892
Sb125	636	1.0238906	0.985485873

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 = -0.149logx+1.321

CF (DM1B) equation = y =-0.080logx+1.166

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.11117225	1.053340803
231Pa	27.4	1.10677517	1.050979955
210Pb	46.5	1.07254951	1.032603764
227Ac	50	1.06785347	1.0300824
234U+214Pb	53.2	1.06383917	1.027927069
234Th->238U	63.3	1.05259085	1.021887703
230Th	67.6	1.04833794	1.019604264
234Th->238U	92.6	1.02797496	1.008671121
228Ac->228Ra	129	1.00652213	0.997152823
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) =	3.002	3.001	2.994

Isotope	keV	Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
		5/6/96		4/25/96		4/29/96	
231Th->235U	25.6	3.41E+03	1.57E+02	2.19E+03	1.29E+02	0	0
231Pa	27.4	2.68E+03	1.54E+02	1.74E+03	1.28E+02	0	0
210Pb	46.5	3.33E+04	2.42E+02	2.19E+04	1.92E+02	0	0
227Ac	50	3.30E+03	1.69E+02	2.32E+03	1.39E+02	0	0
234U+214Pb	53.2	8.72E+03	1.93E+02	5.63E+03	1.51E+02	0	0
234Th->238U	63.3	3.11E+04	2.59E+02	2.04E+04	2.13E+02	0	0
230Th	67.6	4.04E+03	2.09E+02	2.54E+03	1.61E+02	0	0
234Th->238U	92.6	3.79E+04	2.76E+02	2.48E+04	2.34E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.57E+03	1.39E+02
235U+226Ra	186	2.78E+04	2.55E+02	1.85E+04	2.12E+02	0	0
227Th->227Ac	236	1.50E+03	1.70E+02	1.16E+03	1.17E+02	0	0
212Pb->228Th	239	1.18E+03	1.47E+02	0	0	4.97E+04	2.94E+02
214Pb->226Ra	242	2.00E+04	2.16E+02	1.35E+04	1.75E+02	0	0
214Pb->226Ra	295	3.87E+04	2.50E+02	2.66E+04	2.08E+02	0	0
214Pb->226Ra	352	5.80E+04	2.96E+02	3.96E+04	2.44E+02	0	0
208Tl->228Th	583	2.60E+02	1.01E+02	0	0	8.28E+03	1.42E+02
214Bi->226Ra	609	2.89E+04	2.29E+02	1.94E+04	1.88E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.042625	0.027375	0	0.76785818	±	0.07360822
231Pa	27.4	0.44395	0.0335	0.02175	0	0.75654422	±	0.08395087
210Pb	46.5	9.361	0.41625	0.27375	0	15.2614227	±	0.93203142
227Ac	50	0.44395	0.04125	0.029	0	0.67410413	±	0.06677492
234U+214Pb	53.2	9.361	0.109	0.070375	0	15.4191921	±	1.06929798
234Th->238U	63.3	9.361	0.38875	0.255	0	15.0164531	±	0.92303846
230Th	67.6	9.361	0.0505	0.03175	0	15.603661	±	1.58313982
234Th->238U	92.6	9.361	0.47375	0.31	0	14.7010251	±	0.89929675
228Ac->228Ra	129	5.5494	0	0	0.057125	0	±	#DIV/0!
235U+226Ra	186	9.361	0.3475	0.23125	0	14.0621142	±	0.86860815
227Th->227Ac	236	0.44395	0.01875	0.0145	0	0.57388205	±	0.09362829
212Pb->228Th	239	5.5494	0.01475	0	0.62125	0.13171249	±	0.01755448
214Pb->226Ra	242	9.361	0.25	0.16875	0	13.8635285	±	0.86407475
214Pb->226Ra	295	9.361	0.48375	0.3325	0	13.6146625	±	0.82846942
214Pb->226Ra	352	9.361	0.725	0.495	0	13.7059884	±	0.82963817
208Tl->228Th	583	5.5494	0	0	0.1035	0	±	0
214Bi->226Ra	609	9.361	0.36125	0.2425	0	13.9403496	±	0.85443061

U(ppb) = 1207326.94

Th(ppb) = 32344.2128

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.072110542	0.04547462	15.7864053	±	0.98392226
234U(295)	53.2	9.361	0.081217112	0.05127875	15.7675287	±	0.95947404
234U(352)	53.2	9.361	0.087462376	0.05567	15.6406056	±	0.94674263
235U(63.3)	186	0.44395	0.018843416	0.01236031	0.67658068	±	0.04158838
235U(92.6)	186	0.44395	0.021816188	0.0142755	0.67822985	±	0.04148894
226Ra(63.3)	186	9.361	0.329598063	0.21950725	14.0511974	±	0.86370566
226Ra(92.6)	186	9.361	0.325683813	0.2169745	14.0463999	±	0.85925177

234U/238U	=	1.047618443	± 0.068134986
230Th/234U	=	0.991872859	± 0.102818508
226Ra/230Th	=	0.900506451	± 0.092153124
230Th/238U	=	1.0391043	± 0.106336503

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-310-GAM2**

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		6/18/96	6/18/96		6/18/96		6/18/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.29E+05	1.31726229
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.09E+06	1.09067876
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.67E+05	1.14165508
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.14E+05	1.02351384
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.03E+05	1.01704655
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.72E+06	1.01724251
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.78E+04	1.01958391
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.06E+05	1.0140193
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.20E+04	1.00453174
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.62E+04	0.97807698
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	1.01E+04	0.98398841

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	1.0643043	1.01094297
Eu154,155	42.9	1.02646954	0.982075609
Eu154,155	48.6	1.09406717	1.053299603
Eu155	86.4	1.01415226	0.998419181
Eu155	105	1.01219575	1
Eu154	123	1.01151691	1
Sb125	178	1.02217607	1.009170891
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.01355464	0.988609963
Sb125	600	1.01238638	0.990643733
Sb125	636	1.00496893	0.987003703

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 = -0.094logx+1.207

CF (DM1B) equation = y = -0.022logx+1.048

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.07462544	1.017018721
231Pa	27.4	1.07185145	1.016369488
210Pb	46.5	1.05025942	1.011316035
227Ac	50	1.04729682	1.01062266
234U+214Pb	53.2	1.04476431	1.010029944
234Th->238U	63.3	1.03766805	1.008369118
230Th	67.6	1.03498501	1.007741173
234Th->238U	92.6	1.02213857	1.004734558
228Ac->228Ra	129	1.00860457	1.001567026
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) =	3.008	3.001	2.994	

Isotope	keV	Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
		6/7/96		6/4/96		6/5/96	
231Th->235U	25.6	3.09E+03	1.43E+02	1.90E+03	1.32E+02	0	0
231Pa	27.4	2.28E+03	1.39E+02	1.63E+03	1.28E+02	0	0
210Pb	46.5	2.71E+04	2.20E+02	2.23E+04	2.03E+02	0	0
227Ac	50	2.72E+03	1.53E+02	2.04E+03	1.43E+02	0	0
234U+214Pb	53.2	6.67E+03	1.78E+02	5.74E+03	1.64E+02	0	0
234Th->238U	63.3	2.61E+04	2.34E+02	2.11E+04	2.15E+02	0	0
230Th	67.6	3.04E+03	2.01E+02	2.54E+03	1.93E+02	0	0
234Th->238U	92.6	3.15E+04	2.64E+02	2.59E+04	2.38E+02	0	0
228Ac->228Ra	129	1.77E+02	1.11E+02	0	0	4.52E+03	1.41E+02
235U+226Ra	186	2.28E+04	2.28E+02	1.85E+04	2.14E+02	0	0
227Th->227Ac	236	9.06E+02	1.56E+02	1.27E+03	1.38E+02	0	0
212Pb->228Th	239	1.01E+03	1.22E+02	0	0	5.20E+04	2.93E+02
214Pb->226Ra	242	1.59E+04	1.88E+02	1.41E+04	1.76E+02	0	0
214Pb->226Ra	295	3.11E+04	2.30E+02	2.74E+04	2.16E+02	0	0
214Pb->226Ra	352	4.58E+04	2.68E+02	4.13E+04	2.50E+02	0	0
208Tl->228Th	583	2.85E+02	8.37E+01	0	0	8.66E+03	1.44E+02
214Bi->226Ra	609	2.35E+04	2.00E+02	2.01E+04	1.95E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.038625	0.02375	0	0.7740771	±	0.07957677
231Pa	27.4	0.44395	0.0285	0.020375	0	0.66405502	±	0.0771085
210Pb	46.5	9.361	0.33875	0.27875	0	11.9198674	±	0.72982014
227Ac	50	0.44395	0.034	0.0255	0	0.61848724	±	0.06683612
234U+214Pb	53.2	9.361	0.083375	0.07175	0	11.3381625	±	0.81196635
234Th->238U	63.3	9.361	0.32625	0.26375	0	11.9874527	±	0.73741913
230Th	67.6	9.361	0.038	0.03175	0	11.5686941	±	1.3563154
234Th->238U	92.6	9.361	0.39375	0.32375	0	11.6099667	±	0.71140601
228Ac->228Ra	129	5.5494	0.0022125	0	0.0565	0.21867038	±	0.13768594
235U+226Ra	186	9.361	0.285	0.23125	0	11.5099524	±	0.71267043
227Th->227Ac	236	0.44395	0.0113125	0.015875	0	0.31562187	±	0.06704323
212Pb->228Th	239	5.5494	0.012625	0	0.65	0.10753559	±	0.01395126
214Pb->226Ra	242	9.361	0.19875	0.17625	0	10.5314561	±	0.65731909
214Pb->226Ra	295	9.361	0.38875	0.3425	0	10.6003507	±	0.6462597
214Pb->226Ra	352	9.361	0.5725	0.51625	0	10.3568059	±	0.62749616
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	0
214Bi->226Ra	609	9.361	0.29375	0.25125	0	10.9189836	±	0.67012231

U(ppb) = 963794.475

Th(ppb) = 26407.1695

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.054047881	0.04574293	11.5287815	±	0.719567
234U(295)	53.2	9.361	0.061048183	0.05207943	11.4376097	±	0.69730393
234U(352)	53.2	9.361	0.066367704	0.05641373	11.4789124	±	0.69548214
235U(63.3)	186	0.44395	0.01558973	0.01260319	0.54787348	±	0.03370294
235U(92.6)	186	0.44395	0.018132188	0.01490869	0.53868268	±	0.03300803
226Ra(63.3)	186	9.361	0.269976188	0.21910431	11.5076049	±	0.70790086
226Ra(92.6)	186	9.361	0.266867813	0.21634131	11.520389	±	0.7059171

234U/238U	=	0.957815487	±	0.062570651
230Th/234U	=	1.007570804	±	0.120186704
226Ra/230Th	=	0.994719444	±	0.117399906
230Th/238U	=	0.96506692	±	0.113900222

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-311-GAM2**

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		4/22/96	4/22/96		4/22/96		4/23/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.20E+05	3.92E+05	1.24668305	3.50E+05	1.31299082	2.73E+05	1.46557223
Eu154,155	42.9	1.34E+06	1.16E+06	1.0738582	1.06E+06	1.12177481	1.03E+06	1.1373177
Eu154,155	48.6	2.01E+05	1.95E+05	1.01522921	1.83E+05	1.04764277	1.64E+05	1.1051658
Eu155	86.4	3.41E+05	3.29E+05	1.01801931	3.19E+05	1.0337163	3.15E+05	1.04017904
Eu155	105	2.19E+05	2.13E+05	1.01395409	2.07E+05	1.02844109	2.05E+05	1.03339453
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.74E+06	1.02264407	1.72E+06	1.02852223
Sb125	178	4.14E+04	4.10E+04	1.00486226	4.02E+04	1.01477904	3.93E+04	1.02625399
Eu154	248	1.11E+05	1.12E+05	0.99552237	1.09E+05	1.00911871	1.09E+05	1.00911871
Eu154	592	2.28E+04	2.29E+04	0.99781341	2.25E+04	1.00663723	2.25E+04	1.00663723
Sb125	600	1.58E+04	1.66E+04	0.97550692	1.62E+04	0.98755144	1.69E+04	0.96672561
Sb125	636	9.82E+03	1.10E+04	0.94433573	1.02E+04	0.98113682	1.04E+04	0.97158206

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	1.17557725	1.116209047
Eu154,155	42.9	1.05909486	1.013855629
Eu154,155	48.6	1.08858747	1.054907105
Eu155	86.4	1.02176749	1.006251938
Eu155	105	1.0191729	1.004816451
Eu154	123	1.02002191	1.005747995
Sb125	178	1.02128822	1.011307834
Eu154	248	1.01365749	1
Eu154	592	1.00884316	1
Sb125	600	0.99099821	0.978911656
Sb125	636	1.02885238	0.990261542

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 = 0.219logx+1.457
CF (DM1B) equation = y = -0.146logx+1.296

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.14859545	1.090396965
231Pa	27.4	1.14213263	1.086088418
210Pb	46.5	1.0918278	1.052551869
227Ac	50	1.08492557	1.047950379
234U+214Pb	53.2	1.07902535	1.044016902
234Th->238U	63.3	1.06249259	1.032995058
230Th	67.6	1.05624167	1.028827782
234Th->238U	92.6	1.02631219	1.008874796
228Ac->228Ra	129	0.99478085	0.987853902
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) =			3.004		3.001		2.994	
			Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV		5/8/96		4/25/96		4/29/96	
231Th->235U	25.6		2.40E+03	1.36E+02	2.19E+03	1.29E+02	0	0
231Pa	27.4		1.78E+03	1.31E+02	1.74E+03	1.28E+02	0	0
210Pb	46.5		2.21E+04	2.04E+02	2.19E+04	1.92E+02	0	0
227Ac	50		2.42E+03	1.47E+02	2.32E+03	1.39E+02	0	0
234U+214Pb	53.2		6.16E+03	1.68E+02	5.63E+03	1.51E+02	0	0
234Th->238U	63.3		2.30E+04	2.23E+02	2.04E+04	2.13E+02	0	0
230Th	67.6		2.50E+03	1.63E+02	2.54E+03	1.61E+02	0	0
234Th->238U	92.6		2.82E+04	2.39E+02	2.48E+04	2.34E+02	0	0
228Ac->228Ra	129		0.00E+00	0.00E+00	0	0	4.57E+03	1.39E+02
235U+226Ra	186		2.10E+04	2.22E+02	1.85E+04	2.12E+02	0	0
227Th->227Ac	236		1.02E+03	1.46E+02	1.16E+03	1.17E+02	0	0
212Pb->228Th	239		7.96E+02	1.31E+02	0	0	4.97E+04	2.94E+02
214Pb->226Ra	242		1.51E+04	1.69E+02	1.35E+04	1.75E+02	0	0
214Pb->226Ra	295		2.92E+04	2.17E+02	2.66E+04	2.08E+02	0	0
214Pb->226Ra	352		4.35E+04	2.57E+02	3.96E+04	2.44E+02	0	0
208Tl->228Th	583		1.96E+02	1.05E+02	0	0	8.28E+03	1.42E+02
214Bi->226Ra	609		2.15E+04	1.99E+02	1.94E+04	1.88E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.03	0.027375	0	0.55825722	±	0.05647443
231Pa	27.4	0.44395	0.02225	0.02175	0	0.51818808	±	0.06224266
210Pb	46.5	9.361	0.27625	0.27375	0	10.3036387	±	0.63198101
227Ac	50	0.44395	0.03025	0.029	0	0.50191185	±	0.05235177
234U+214Pb	53.2	9.361	0.077	0.070375	0	11.0405899	±	0.7856019
234Th->238U	63.3	9.361	0.2875	0.255	0	11.202421	±	0.69083831
230Th	67.6	9.361	0.03125	0.03175	0	9.72205118	±	1.10746082
234Th->238U	92.6	9.361	0.3525	0.31	0	10.9135296	±	0.66928122
228Ac->228Ra	129	5.5494	0	0	0.057125	0	±	#DIV/0!
235U+226Ra	186	9.361	0.2625	0.23125	0	10.6153881	±	0.65807481
227Th->227Ac	236	0.44395	0.01275	0.0145	0	0.38997998	±	0.07218468
212Pb->228Th	239	5.5494	0.00995	0	0.62125	0.08879096	±	0.01520588
214Pb->226Ra	242	9.361	0.18875	0.16875	0	10.4599953	±	0.655292
214Pb->226Ra	295	9.361	0.365	0.3325	0	10.2657227	±	0.62581959
214Pb->226Ra	352	9.361	0.54375	0.495	0	10.2726474	±	0.6225657
208Tl->228Th	583	5.5494	0	0	0.1035	0	±	0
214Bi->226Ra	609	9.361	0.26875	0.2425	0	10.3639436	±	0.63715754

U(ppb) = 900677.712

Th(ppb) = 21804.112

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.049148459	0.04547462	10.9058829	±	0.68322572
234U(295)	53.2	9.361	0.056037201	0.05127875	11.0270401	±	0.67223107
234U(352)	53.2	9.361	0.060846782	0.05567	11.0290052	±	0.66840417
235U(63.3)	186	0.44395	0.014066738	0.01247658	0.500032	±	0.0308363
235U(92.6)	186	0.44395	0.016232625	0.0142755	0.50430997	±	0.03092723
226Ra(63.3)	186	9.361	0.249260625	0.21950725	10.6192323	±	0.65487385
226Ra(92.6)	186	9.361	0.246267375	0.2169745	10.6141812	±	0.65092343

234U/238U	=	0.980797757	±	0.064441992
230Th/234U	=	0.884843671	±	0.102771264
226Ra/230Th	=	1.092283115	±	0.125394039
230Th/238U	=	0.867852688	±	0.099629439

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-312-GAM2**

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		6/18/96	6/18/96		6/18/96		6/18/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.67E+05	1.2531462
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.12E+06	1.07636807
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.71E+05	1.12879979
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.17E+05	1.01869303
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.05E+05	1.01209717
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.73E+06	1.01431363
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.83E+04	1.01294267
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.08E+05	1.00461541
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.24E+04	0.99552237
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.58E+04	0.99044567
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.36E+03	1.02210765

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	1.01250063	0.961736594
Eu154,155	42.9	1.01300134	0.969189895
Eu154,155	48.6	1.08174773	1.041439221
Eu155	86.4	1.00937554	0.993716569
Eu155	105	1.00726997	0.995133572
Eu154	123	1.0086045	0.997120758
Sb125	178	1.01551795	1.002597484
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.00446435	0.979743387
Sb125	600	1.02518894	1.00317134
Sb125	636	1.04390095	1.025239753

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 = -0.008logx+1.025
CF (DM1B) equation = y =-0.059logx+0.876

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01373408	0.959086158
231Pa	27.4	1.013498	0.960827283
210Pb	46.5	1.01166038	0.974379724
227Ac	50	1.01140824	0.97623923
234U+214Pb	53.2	1.01119271	0.977828786
234Th->238U	63.3	1.01058877	0.982282819
230Th	67.6	1.01036043	0.983966855
234Th->238U	92.6	1.00926711	0.992030048
228Ac->228Ra	129	1.00811528	1.000524793
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		3.001		2.994		
			Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty	
Isotope	keV		6/10/96		6/4/96		6/5/96		
231Th->235U	25.6		2.26E+03	1.24E+02	1.90E+03	1.32E+02	0	0	
231Pa	27.4		1.76E+03	1.19E+02	1.63E+03	1.28E+02	0	0	
210Pb	46.5		2.01E+04	1.89E+02	2.23E+04	2.03E+02	0	0	
227Ac	50		1.80E+03	1.33E+02	2.04E+03	1.43E+02	0	0	
234U+214Pb	53.2		4.86E+03	1.45E+02	5.74E+03	1.64E+02	0	0	
234Th->238U	63.3		1.91E+04	2.02E+02	2.11E+04	2.15E+02	0	0	
230Th	67.6		2.06E+03	1.71E+02	2.54E+03	1.93E+02	0	0	
234Th->238U	92.6		2.34E+04	2.26E+02	2.59E+04	2.38E+02	0	0	
228Ac->228Ra	129		0.00E+00	0.00E+00	0	0	4.52E+03	1.41E+02	
235U+226Ra	186		1.69E+04	1.92E+02	1.85E+04	2.14E+02	0	0	
227Th->227Ac	236		9.93E+02	1.19E+02	1.27E+03	1.38E+02	0	0	
212Pb->228Th	239		1.35E+03	1.31E+02	0	0	5.20E+04	2.93E+02	
214Pb->226Ra	242		1.17E+04	1.73E+02	1.41E+04	1.76E+02	0	0	
214Pb->226Ra	295		2.29E+04	1.99E+02	2.74E+04	2.16E+02	0	0	
214Pb->226Ra	352		3.44E+03	2.29E+02	4.13E+04	2.50E+02	0	0	
208Tl->228Th	583		0.00E+00	0.00E+00	0	0	8.66E+03	1.44E+02	
214Bi->226Ra	609		1.72E+04	1.73E+02	2.01E+04	1.95E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.02825	0.02375	0	0.53549779	±	0.05726825
231Pa	27.4	0.44395	0.022	0.020375	0	0.48598936	±	0.05819342
210Pb	46.5	9.361	0.25125	0.27875	0	8.53872291	±	0.52436959
227Ac	50	0.44395	0.0225	0.0255	0	0.39632149	±	0.04684866
234U+214Pb	53.2	9.361	0.058125	0.07175	0	7.67082324	±	0.56309764
234Th->238U	63.3	9.361	0.23875	0.26375	0	8.56628198	±	0.52914926
230Th	67.6	9.361	0.02575	0.03175	0	7.67320528	±	0.97857342
234Th->238U	92.6	9.361	0.2925	0.32375	0	8.53864978	±	0.52481243
228Ac->228Ra	129	5.5494	0	0	0.0565	0	±	#DIV/0!
235U+226Ra	186	9.361	0.21125	0.23125	0	8.55425047	±	0.53166437
227Th->227Ac	236	0.44395	0.0124125	0.015875	0	0.34723567	±	0.05991064
212Pb->228Th	239	5.5494	0.016875	0	0.65	0.14411899	±	0.01556014
214Pb->226Ra	242	9.361	0.14625	0.17625	0	7.77022751	±	0.48985985
214Pb->226Ra	295	9.361	0.28625	0.3425	0	7.82621736	±	0.47846682
214Pb->226Ra	352	9.361	0.043	0.51625	0	0.77996547	±	0.07005886
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	#DIV/0!
214Bi->226Ra	609	9.361	0.215	0.25125	0	8.0130781	±	0.49365277

U(ppb) = 688731.414

Th(ppb) = 35390.8362

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.036544667	0.04574293	7.56486052	±	0.47691286
234U(295)	53.2	9.361	0.041684996	0.05207943	7.57904485	±	0.46335558
234U(352)	53.2	9.361	0.056847596	0.05641373	9.54175438	±	0.85706925
235U(63.3)	186	0.44395	0.011110855	0.0122743	0.40200339	±	0.02483222
235U(92.6)	186	0.44395	0.013469625	0.01490869	0.40123138	±	0.02466095
226Ra(63.3)	186	9.361	0.200255563	0.21910431	8.558559	±	0.5286722
226Ra(92.6)	186	9.361	0.197780375	0.21634131	8.56072846	±	0.52616945

234U/238U	=	0.960574643	±	0.090089183
230Th/234U	=	0.932509647	±	0.13591787
226Ra/230Th	=	1.115382513	±	0.143186166
230Th/238U	=	0.895745121	±	0.114990425

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-312B-GAM2**

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		6/18/96	6/18/96		6/18/96		6/18/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.51E+05	1.27905956
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.11E+06	1.0810817
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.65E+05	1.14823426
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.15E+05	1.02190013
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.04E+05	1.01456379
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.73E+06	1.01431363
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.84E+04	1.01162826
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.08E+05	1.00461541
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.27E+04	0.98890502
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.64E+04	0.9720448
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.83E+03	0.99745244

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	1.03343776	0.981623997
Eu154,155	42.9	1.01743747	0.973434174
Eu154,155	48.6	1.10037211	1.059369609
Eu155	86.4	1.01255331	0.996845034
Eu155	105	1.00972483	0.997558853
Eu154	123	1.0086045	0.997120758
Sb125	178	1.0142002	1.001296491
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	0.99778756	0.973230924
Sb125	600	1.0061426	0.984534051
Sb125	636	1.01872004	1.000508993

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 = -0.034logx+1.079
CF (DM1B) equation = y =0.034logx+0.927

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.03111984	0.974880159
231Pa	27.4	1.03011648	0.975883519
210Pb	46.5	1.0223066	0.9836934
227Ac	50	1.02123502	0.98476498
234U+214Pb	53.2	1.020319	0.985680995
234Th->238U	63.3	1.01775227	0.988247726
230Th	67.6	1.01678181	0.989218188
234Th->238U	92.6	1.01213523	0.993864774
228Ac->228Ra	129	1.00723995	0.99876005
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			9/11/96			6/4/96		6/5/96		
231Th->235U	25.6			0.00E+00	0.00E+00		1.90E+03	1.32E+02	0	0	
231Pa	27.4			0.00E+00	0.00E+00		1.63E+03	1.28E+02	0	0	
210Pb	46.5			2.53E+02	3.89E+01		2.23E+04	2.03E+02	0	0	
227Ac	50			0.00E+00	0.00E+00		2.04E+03	1.43E+02	0	0	
234U+214Pb	53.2			0.00E+00	0.00E+00		5.74E+03	1.64E+02	0	0	
234Th->238U	63.3			2.02E+02	5.06E+01		2.11E+04	2.15E+02	0	0	
230Th	67.6			0.00E+00	0.00E+00		2.47E+03	1.66E+02	0	0	
234Th->238U	92.6			5.41E+02	6.44E+01		2.59E+04	2.38E+02	0	0	
228Ac->228Ra	129			9.28E+01	4.05E+01		0	0	4.52E+03	1.41E+02	
235U+226Ra	186			1.79E+02	5.61E+01		1.85E+04	2.14E+02	0	0	
227Th->227Ac	236			0.00E+00	0.00E+00		1.27E+03	1.38E+02	0	0	
212Pb->228Th	239			1.42E+03	6.89E+01		0	0	5.20E+04	2.93E+02	
214Pb->226Ra	242			2.79E+02	4.90E+01		1.41E+04	1.76E+02	0	0	
214Pb->226Ra	295			2.65E+02	4.76E+01		2.74E+04	2.16E+02	0	0	
214Pb->226Ra	352			4.43E+02	4.83E+01		4.13E+04	2.50E+02	0	0	
208Tl->228Th	583			1.83E+02	4.04E+01		0	0	8.66E+03	1.44E+02	
214Bi->226Ra	609			2.22E+02	3.29E+01		2.01E+04	1.95E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0	0.02375	0	0	±	#DIV/0!
231Pa	27.4	0.44395	0	0.020375	0	0	±	#DIV/0!
210Pb	46.5	9.361	0.0031625	0.27875	0	0.1085	±	0.01793484
227Ac	50	0.44395	0	0.0255	0	0	±	#DIV/0!
234U+214Pb	53.2	9.361	0	0.07175	0	0	±	#DIV/0!
234Th->238U	63.3	9.361	0.002525	0.26375	0	0.09114732	±	0.02349615
230Th	67.6	9.361	0	0.030875	0	0	±	#DIV/0!
234Th->238U	92.6	9.361	0.0067625	0.32375	0	0.19777389	±	0.02642683
228Ac->228Ra	129	5.5494	0.00116	0	0.0565	0.11468303	±	0.05046661
235U+226Ra	186	9.361	0.0022375	0.23125	0	0.09051368	±	0.02890184
227Th->227Ac	236	0.44395	0	0.015875	0	0	±	#DIV/0!
212Pb->228Th	239	5.5494	0.01775	0	0.65	0.15144038	±	0.01026566
214Pb->226Ra	242	9.361	0.0034875	0.17625	0	0.18510494	±	0.0349962
214Pb->226Ra	295	9.361	0.0033125	0.3425	0	0.09047492	±	0.01714886
214Pb->226Ra	352	9.361	0.0055375	0.51625	0	0.10034288	±	0.01250227
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	0
214Bi->226Ra	609	9.361	0.002775	0.25125	0	0.10332129	±	0.01654974

U(ppb) = 7328.26946

Th(ppb) = 37188.7279

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	-0.000514608	0.04574293	-0.1073795	±	-0.0203013
234U(295)	53.2	9.361	-0.000190245	0.05207943	-0.034867	±	-0.0066088
234U(352)	53.2	9.361	-0.000164503	0.05641373	-0.0278328	±	-0.0034678
235U(63.3)	186	0.44395	0.00011834	0.0123613	0.00424731	±	0.00109488
235U(92.6)	186	0.44395	0.000311413	0.01490869	0.00926707	±	0.00123828
226Ra(63.3)	186	9.361	0.002121224	0.21910431	0.09056668	±	0.02334647
226Ra(92.6)	186	9.361	0.001926087	0.21634131	0.08328549	±	0.01112872

234U/238U	=	-0.621994437	±	-0.235082874	
230Th/234U	=	0	±	#DIV/0!	
226Ra/230Th	=	#DIV/0!	±	#DIV/0!	
230Th/238U	=	0	±	#DIV/0!	

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-313-GAM2**

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		6/18/96	6/18/96		6/18/96		6/18/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	2.83E+05	1.40875737
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.03E+06	1.12091519
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.58E+05	1.17210486
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.10E+05	1.03003759
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.02E+05	1.01954562
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.70E+06	1.02316877
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.85E+04	1.01031839
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.07E+05	1.0092881
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.19E+04	1.00681825
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.61E+04	0.98113058
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	1.01E+04	0.98398841

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	1.1382293	1.081161569
Eu154,155	42.9	1.05492592	1.009301282
Eu154,155	48.6	1.12324771	1.081392807
Eu155	86.4	1.02061633	1.004782974
Eu155	105	1.0146829	1.002457188
Eu154	123	1.01740981	1.005825805
Sb125	178	1.012887	1
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.01586169	0.990860231
Sb125	600	1.01554709	0.993736565
Sb125	636	1.00496893	0.987003703

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 = -0.175logx+1.368

CF (DM1B) equation = y = -0.099logx+1.201

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.12155801	1.061584243
231Pa	27.4	1.11639365	1.058662694
210Pb	46.5	1.07619573	1.035922158
227Ac	50	1.07068025	1.03280197
234U+214Pb	53.2	1.06596546	1.030134748
234Th->238U	63.3	1.05275435	1.022661033
230Th	67.6	1.04775933	1.019835277
234Th->238U	92.6	1.02384308	1.006305512
228Ac->228Ra	129	0.9986468	0.992051619
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	6/12/96		6/4/96		6/5/96	
231Th->235U	25.6	3.11E+03	1.51E+02	1.90E+03	1.32E+02	0	0
231Pa	27.4	2.45E+03	1.46E+02	1.63E+03	1.28E+02	0	0
210Pb	46.5	2.95E+04	2.32E+02	2.23E+04	2.03E+02	0	0
227Ac	50	3.31E+03	1.64E+02	2.04E+03	1.43E+02	0	0
234U+214Pb	53.2	7.33E+03	1.70E+02	5.74E+03	1.64E+02	0	0
234Th->238U	63.3	3.11E+04	2.57E+02	2.11E+04	2.15E+02	0	0
230Th	67.6	3.55E+03	2.26E+02	2.54E+03	1.93E+02	0	0
234Th->238U	92.6	3.81E+04	2.86E+02	2.59E+04	2.38E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.52E+03	1.41E+02
235U+226Ra	186	2.69E+04	2.41E+02	1.85E+04	2.14E+02	0	0
227Th->227Ac	236	1.33E+03	1.70E+02	1.27E+03	1.38E+02	0	0
212Pb->228Th	239	8.06E+02	1.28E+02	0	0	5.20E+04	2.93E+02
214Pb->226Ra	242	1.89E+04	2.08E+02	1.41E+04	1.76E+02	0	0
214Pb->226Ra	295	3.67E+04	2.49E+02	2.74E+04	2.16E+02	0	0
214Pb->226Ra	352	5.51E+04	2.83E+02	4.13E+04	2.50E+02	0	0
208Tl->228Th	583	1.33E+02	7.60E+01	0	0	8.66E+03	1.44E+02
214Bi->226Ra	609	2.73E+04	2.14E+02	2.01E+04	1.95E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.038875	0.02375	0	0.81500934	±	0.08463546
231Pa	27.4	0.44395	0.030625	0.020375	0	0.74495476	±	0.08596975
210Pb	46.5	9.361	0.36875	0.27875	0	13.3269468	±	0.81553031
227Ac	50	0.44395	0.041375	0.0255	0	0.77124379	±	0.08077328
234U+214Pb	53.2	9.361	0.091625	0.07175	0	12.7425827	±	0.89690152
234Th->238U	63.3	9.361	0.38875	0.26375	0	14.5253707	±	0.89211269
230Th	67.6	9.361	0.044375	0.03175	0	13.7081364	±	1.58839704
234Th->238U	92.6	9.361	0.47625	0.32375	0	14.098758	±	0.86226283
228Ac->228Ra	129	5.5494	0	0	0.0565	0	±	#DIV/0!
235U+226Ra	186	9.361	0.33625	0.23125	0	13.6114	±	0.84061545
227Th->227Ac	236	0.44395	0.016625	0.015875	0	0.46492402	±	0.08283628
212Pb->228Th	239	5.5494	0.010075	0	0.65	0.0860157	±	0.01425398
214Pb->226Ra	242	9.361	0.23625	0.17625	0	12.5477234	±	0.78128332
214Pb->226Ra	295	9.361	0.45875	0.3425	0	12.5382737	±	0.76351578
214Pb->226Ra	352	9.361	0.68875	0.51625	0	12.4888886	±	0.75586379
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	0
214Bi->226Ra	609	9.361	0.34125	0.25125	0	12.714194	±	0.77915981

U(ppb) = 1167843.77

Th(ppb) = 21122.5991

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.056764462	0.04574293	12.3827729	±	0.77101268
234U(295)	53.2	9.361	0.06527792	0.05207943	12.5073551	±	0.761633
234U(352)	53.2	9.361	0.071164257	0.05641373	12.5875878	±	0.76183735
235U(63.3)	186	0.44395	0.018846343	0.01278643	0.65435284	±	0.04018875
235U(92.6)	186	0.44395	0.021931313	0.01490869	0.65306931	±	0.03994092
226Ra(63.3)	186	9.361	0.318348063	0.21910431	13.6010842	±	0.83534529
226Ra(92.6)	186	9.361	0.314318688	0.21634131	13.6004409	±	0.83178637

234U/238U	=	0.860051852	±	0.055871861
230Th/234U	=	1.09730298	±	0.129251747
226Ra/230Th	=	0.992190611	±	0.115702226
230Th/238U	=	0.94373746	±	0.110051963

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-314-GAM2**

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		6/18/96	6/18/96		6/18/96		6/18/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.78E+05	1.23615635
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.14E+06	1.06710502
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.70E+05	1.13197655
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.23E+05	1.00923094
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.07E+05	1.00721162
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.76E+06	1.00566042
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.88E+04	1.0064158
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.10E+05	0.99544071
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.25E+04	0.9933035
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.60E+04	0.98420965
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.57E+03	1.0108924

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	0.99877339	0.9486976
Eu154,155	42.9	1.0042836	0.960849199
Eu154,155	48.6	1.08479208	1.044370126
Eu155	86.4	1	0.984486472
Eu155	105	1.00240773	0.990329913
Eu154	123	1	0.988614224
Sb125	178	1.00897449	0.996137269
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.00222555	0.977559692
Sb125	600	1.01873417	0.996855199
Sb125	636	1.03244657	1.013990139

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 = 0.008logx+1.000
CF (DM1B) equation = y =0.067logx+0.853

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1	0.947352078
231Pa	27.4	1	0.949329288
210Pb	46.5	1	0.964719348
227Ac	50	1	0.96683099
234U+214Pb	53.2	1	0.968636079
234Th->238U	63.3	1	0.973694049
230Th	67.6	1	0.975606429
234Th->238U	92.6	1	0.984762936
228Ac->228Ra	129	1	0.994409511
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) =			60000		80000		80000		
	Weight (g) =			3.003		3.001		2.994		
				Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty	
Isotope	keV			6/13/96		6/4/96		6/5/96		
231Th->235U	25.6			3.02E+03	1.50E+02	1.90E+03	1.32E+02	0	0	
231Pa	27.4			2.54E+03	1.46E+02	1.63E+03	1.28E+02	0	0	
210Pb	46.5			2.70E+04	2.27E+02	2.23E+04	2.03E+02	0	0	
227Ac	50			3.09E+03	1.61E+02	2.04E+03	1.43E+02	0	0	
234U+214Pb	53.2			7.58E+03	1.75E+02	5.74E+03	1.64E+02	0	0	
234Th->238U	63.3			3.14E+04	2.53E+02	2.11E+04	2.15E+02	0	0	
230Th	67.6			3.61E+03	2.19E+02	2.54E+03	1.93E+02	0	0	
234Th->238U	92.6			3.80E+04	2.81E+02	2.59E+04	2.38E+02	0	0	
228Ac->228Ra	129			0.00E+00	0.00E+00	0	0	4.52E+03	1.41E+02	
235U+226Ra	186			2.62E+04	2.43E+02	1.85E+04	2.14E+02	0	0	
227Th->227Ac	236			1.54E+03	1.29E+02	1.27E+03	1.38E+02	0	0	
212Pb->228Th	239			1.21E+03	1.44E+02	0	0	5.20E+04	2.93E+02	
214Pb->226Ra	242			1.78E+04	1.98E+02	1.41E+04	1.76E+02	0	0	
214Pb->226Ra	295			3.44E+04	2.40E+02	2.74E+04	2.16E+02	0	0	
214Pb->226Ra	352			5.09E+04	2.83E+02	4.13E+04	2.50E+02	0	0	
208Tl->228Th	583			1.75E+02	1.06E+02	0	0	8.66E+03	1.44E+02	
214Bi->226Ra	609			2.54E+04	2.17E+02	2.01E+04	1.95E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.03775	0.02375	0	0.70517688	±	0.07360098
231Pa	27.4	0.44395	0.03175	0.020375	0	0.69133865	±	0.0789019
210Pb	46.5	9.361	0.3375	0.27875	0	11.3263978	±	0.69392576
227Ac	50	0.44395	0.038625	0.0255	0	0.67200582	±	0.07120889
234U+214Pb	53.2	9.361	0.09475	0.07175	0	12.3535057	±	0.86908817
234Th->238U	63.3	9.361	0.3925	0.26375	0	13.9213099	±	0.85463101
230Th	67.6	9.361	0.045125	0.03175	0	13.2955526	±	1.51906137
234Th->238U	92.6	9.361	0.475	0.32375	0	13.7251387	±	0.83926988
228Ac->228Ra	129	5.5494	0	0	0.0565	0	±	#DIV/0!
235U+226Ra	186	9.361	0.3275	0.23125	0	13.2483707	±	0.81881262
227Th->227Ac	236	0.44395	0.01925	0.015875	0	0.53797454	±	0.08055993
212Pb->228Th	239	5.5494	0.015125	0	0.65	0.12904427	±	0.0165276
214Pb->226Ra	242	9.361	0.2225	0.17625	0	11.8095622	±	0.73556998
214Pb->226Ra	295	9.361	0.43	0.3425	0	11.7446692	±	0.71544414
214Pb->226Ra	352	9.361	0.63625	0.51625	0	11.5292389	±	0.69821463
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	0
214Bi->226Ra	609	9.361	0.3175	0.25125	0	11.821445	±	0.72556203

U(ppb) = 1119277.12

Th(ppb) = 31688.9865

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.061918382	0.04574293	12.662764	±	0.78871247
234U(295)	53.2	9.361	0.070054099	0.05207943	12.5834653	±	0.76654067
234U(352)	53.2	9.361	0.075848878	0.05641373	12.5775856	±	0.76170286
235U(63.3)	186	0.44395	0.018074625	0.01214569	0.66022493	±	0.04053129
235U(92.6)	186	0.44395	0.02187375	0.01490869	0.65092141	±	0.03980278
226Ra(63.3)	186	9.361	0.309425375	0.21910431	13.2110674	±	0.81102913
226Ra(92.6)	186	9.361	0.30562625	0.21634131	13.2155153	±	0.80810724

234U/238U	=	0.905657471	±	0.058879328
230Th/234U	=	1.054538205	±	0.122579546
226Ra/230Th	=	0.993645603	±	0.114258767
230Th/238U	=	0.955050404	±	0.109820726

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-315-GAM2**

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		4/22/96	4/22/96		4/22/96		4/23/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.20E+05	3.92E+05	1.24668305	3.50E+05	1.31299082	2.91E+05	1.42542751
Eu154,155	42.9	1.34E+06	1.16E+06	1.0738582	1.06E+06	1.12177481	1.05E+06	1.12689125
Eu154,155	48.6	2.01E+05	1.95E+05	1.01522921	1.83E+05	1.04764277	1.69E+05	1.08920765
Eu155	86.4	3.41E+05	3.29E+05	1.01801931	3.19E+05	1.0337163	3.17E+05	1.03693416
Eu155	105	2.19E+05	2.13E+05	1.01395409	2.07E+05	1.02844109	2.06E+05	1.03090984
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.74E+06	1.02264407	1.72E+06	1.02852223
Sb125	178	4.14E+04	4.10E+04	1.00486226	4.02E+04	1.01477904	3.89E+04	1.0314666
Eu154	248	1.11E+05	1.12E+05	0.99552237	1.09E+05	1.00911871	1.09E+05	1.00911871
Eu154	592	2.28E+04	2.29E+04	0.99781341	2.25E+04	1.00663723	2.28E+04	#DIV/0!
Sb125	600	1.58E+04	1.66E+04	0.97550692	1.62E+04	0.98755144	1.62E+04	0.98755144
Sb125	636	9.82E+03	1.10E+04	0.94433573	1.02E+04	0.98113682	1.03E+04	0.97632839

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	1.14337602	1.085634028
Eu154,155	42.9	1.04938553	1.004561026
Eu154,155	48.6	1.07286871	1.039674673
Eu155	86.4	1.01858005	1.003112901
Eu155	105	1.0167224	1.002400472
Eu154	123	1.02002191	1.005747995
Sb125	178	1.0264756	1.016444522
Eu154	248	1.01365749	1
Eu154	592	#DIV/0!	#DIV/0!
Sb125	600	1.01234693	1
Sb125	636	1.03387849	0.995099129

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 = -0.175logx+1.368

CF (DM1B) equation = y = -0.104logx+1.211

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.12155801	1.064543044
231Pa	27.4	1.11639365	1.061473941
210Pb	46.5	1.07619573	1.037584893
227Ac	50	1.07068025	1.03430712
234U+214Pb	53.2	1.06596546	1.03150519
234Th->238U	63.3	1.05275435	1.023654014
230Th	67.6	1.04775933	1.020685544
234Th->238U	92.6	1.02384308	1.006472457
228Ac->228Ra	129	0.9986468	0.99149867
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		5/2/96		4/25/96		4/29/96	
231Th->235U	25.6		2.29E+03	1.25E+02	2.19E+03	1.29E+02	0	0
231Pa	27.4		1.80E+03	1.24E+02	1.74E+03	1.28E+02	0	0
210Pb	46.5		2.05E+04	1.93E+02	2.19E+04	1.92E+02	0	0
227Ac	50		2.00E+03	1.37E+02	2.32E+03	1.39E+02	0	0
234U+214Pb	53.2		5.13E+03	1.67E+02	5.63E+03	1.51E+02	0	0
234Th->238U	63.3		2.09E+04	2.11E+02	2.04E+04	2.13E+02	0	0
230Th	67.6		2.19E+03	1.74E+02	2.54E+03	1.61E+02	0	0
234Th->238U	92.6		2.51E+04	2.35E+02	2.48E+04	2.34E+02	0	0
228Ac->228Ra	129		0.00E+00	0.00E+00	0	0	4.57E+03	1.39E+02
235U+226Ra	186		1.74E+04	2.09E+02	1.85E+04	2.12E+02	0	0
227Th->227Ac	236		8.52E+02	1.36E+02	1.16E+03	1.17E+02	0	0
212Pb->228Th	239		1.29E+03	1.19E+02	0	0	4.97E+04	2.94E+02
214Pb->226Ra	242		1.27E+04	1.72E+02	1.35E+04	1.75E+02	0	0
214Pb->226Ra	295		2.42E+04	2.04E+02	2.66E+04	2.08E+02	0	0
214Pb->226Ra	352		3.62E+04	2.31E+02	3.96E+04	2.44E+02	0	0
208Tl->228Th	583		1.96E+02	8.31E+01	0	0	8.28E+03	1.42E+02
214Bi->226Ra	609		1.86E+04	1.83E+02	1.94E+04	1.88E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.028625	0.027375	0	0.5203048	±	0.0521584
231Pa	27.4	0.44395	0.0225	0.02175	0	0.51237194	±	0.06009672
210Pb	46.5	9.361	0.25625	0.27375	0	9.42397056	±	0.57828925
227Ac	50	0.44395	0.025	0.029	0	0.40949304	±	0.04463646
234U+214Pb	53.2	9.361	0.064	0.070375	0	9.06854493	±	0.65768083
234Th->238U	63.3	9.361	0.26125	0.255	0	10.0896493	±	0.62286252
230Th	67.6	9.361	0.027375	0.03175	0	8.45093658	±	0.99743938
234Th->238U	92.6	9.361	0.31375	0.31	0	9.6936726	±	0.59572218
228Ac->228Ra	129	5.5494	0	0	0.057125	0	±	#DIV/0!
235U+226Ra	186	9.361	0.2175	0.23125	0	8.79853626	±	0.54774653
227Th->227Ac	236	0.44395	0.01065	0.0145	0	0.32585646	±	0.06455998
212Pb->228Th	239	5.5494	0.016125	0	0.62125	0.14394282	±	0.01492688
214Pb->226Ra	242	9.361	0.15875	0.16875	0	8.80040909	±	0.55319931
214Pb->226Ra	295	9.361	0.3025	0.3325	0	8.51072657	±	0.51993547
214Pb->226Ra	352	9.361	0.4525	0.495	0	8.55157863	±	0.51867178
208Tl->228Th	583	5.5494	0	0	0.1035	0	±	0
214Bi->226Ra	609	9.361	0.23125	0.2425	0	8.9207816	±	0.54931734

U(ppb)	=	811210.565
Th(ppb)	=	35347.5766

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.040575194	0.04547462	8.89749209	±	0.55930201
234U(295)	53.2	9.361	0.046626721	0.05127875	9.0672059	±	0.55393178
234U(352)	53.2	9.361	0.050557552	0.05567	9.05609242	±	0.54927163
235U(63.3)	186	0.44395	0.012665227	0.01236223	0.45452821	±	0.02805931
235U(92.6)	186	0.44395	0.014448188	0.0142755	0.44902112	±	0.02759448
226Ra(63.3)	186	9.361	0.205469438	0.21950725	8.75651451	±	0.54056434
226Ra(92.6)	186	9.361	0.203051813	0.2169745	8.75449467	±	0.53800524

234U/238U	=	0.892690107	±	0.059034375
230Th/234U	=	0.938270471	±	0.11295445
226Ra/230Th	=	1.03615906	±	0.123217277
230Th/238U	=	0.837584768	±	0.099603351

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-316-GAM2**

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		6/18/96	6/18/96		6/18/96		6/18/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.60E+05	1.26430177
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.11E+06	1.0810817
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.66E+05	1.14493176
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.15E+05	1.02190013
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.03E+05	1.01704655
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.72E+06	1.01724251
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.82E+04	1.01426166
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.08E+05	1.00461541
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.13E+04	1.02083533
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.55E+04	#DIV/0!
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.96E+03	0.99090892

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	1.02151396	0.970298023
Eu154,155	42.9	1.01743747	0.973434174
Eu154,155	48.6	1.09720727	1.056322696
Eu155	86.4	1.01255331	0.996845034
Eu155	105	1.01219575	1
Eu154	123	1.01151691	1
Sb125	178	1.0168403	1.003903003
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.03000467	1.004655141
Sb125	600	#DIV/0!	#DIV/0!
Sb125	636	1.012037	0.993945423

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 = -0.015logx+1.043
CF (DM1B) equation = y =0.052logx+0.893

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.0218764	0.966228478
231Pa	27.4	1.02143374	0.967763029
210Pb	46.5	1.01798821	0.979707554
227Ac	50	1.01751545	0.98134644
234U+214Pb	53.2	1.01711133	0.982747405
234Th->238U	63.3	1.01597894	0.986672993
230Th	67.6	1.0155508	0.988157228
234Th->238U	92.6	1.01350084	0.995263771
228Ac->228Ra	129	1.01134115	1.002750665
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) =			3.006		3.001		2.994		
				Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty	
Isotope	keV			6/14/96		6/4/96		6/5/96		
231Th->235U	25.6			3.57E+03	1.41E+02	1.90E+03	1.32E+02	0	0	
231Pa	27.4			1.99E+03	1.32E+02	1.63E+03	1.28E+02	0	0	
210Pb	46.5			2.36E+04	2.11E+02	2.23E+04	2.03E+02	0	0	
227Ac	50			2.62E+03	1.48E+02	2.04E+03	1.43E+02	0	0	
234U+214Pb	53.2			6.11E+03	1.62E+02	5.74E+03	1.64E+02	0	0	
234Th->238U	63.3			3.06E+04	2.43E+02	2.11E+04	2.15E+02	0	0	
230Th	67.6			2.69E+03	1.91E+02	2.54E+03	1.93E+02	0	0	
234Th->238U	92.6			3.72E+04	2.70E+02	2.59E+04	2.38E+02	0	0	
228Ac->228Ra	129			3.49E+02	1.60E+02	0	0	4.52E+03	1.41E+02	
235U+226Ra	186			2.30E+04	2.26E+02	1.85E+04	2.14E+02	0	0	
227Th->227Ac	236			9.76E+02	1.64E+02	1.27E+03	1.38E+02	0	0	
212Pb->228Th	239			1.05E+03	1.30E+02	0	0	5.20E+04	2.93E+02	
214Pb->226Ra	242			1.43E+04	1.82E+02	1.41E+04	1.76E+02	0	0	
214Pb->226Ra	295			2.75E+04	2.20E+02	2.74E+04	2.16E+02	0	0	
214Pb->226Ra	352			4.16E+04	2.53E+02	4.13E+04	2.50E+02	0	0	
208Tl->228Th	583			2.04E+02	8.65E+01	0	0	8.66E+03	1.44E+02	
214Bi->226Ra	609			2.07E+04	1.95E+02	2.01E+04	1.95E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.044625	0.02375	0	0.85127242	±	0.08506981
231Pa	27.4	0.44395	0.024875	0.020375	0	0.55288047	±	0.06580549
210Pb	46.5	9.361	0.295	0.27875	0	10.0714883	±	0.6178021
227Ac	50	0.44395	0.03275	0.0255	0	0.57938562	±	0.0626827
234U+214Pb	53.2	9.361	0.076375	0.07175	0	10.1214229	±	0.72418155
234Th->238U	63.3	9.361	0.3825	0.26375	0	13.7742336	±	0.84539348
230Th	67.6	9.361	0.032375	0.03175	0	9.68080482	±	1.17819639
234Th->238U	92.6	9.361	0.465	0.32375	0	13.6085249	±	0.83191626
228Ac->228Ra	129	5.5494	0.0043625	0	0.0565	0.43276509	±	0.1998986
235U+226Ra	186	9.361	0.2875	0.23125	0	11.6225085	±	0.71931597
227Th->227Ac	236	0.44395	0.0122	0.015875	0	0.34072318	±	0.0684031
212Pb->228Th	239	5.5494	0.013125	0	0.65	0.11190603	±	0.01483316
214Pb->226Ra	242	9.361	0.17875	0.17625	0	9.48114283	±	0.59344612
214Pb->226Ra	295	9.361	0.34375	0.3425	0	9.38265819	±	0.5727377
214Pb->226Ra	352	9.361	0.52	0.51625	0	9.4164465	±	0.57073528
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	0
214Bi->226Ra	609	9.361	0.25875	0.25125	0	9.62760031	±	0.59214523

U(ppb) = 1107452.15

Th(ppb) = 27480.4053

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.049999037	0.04574293	10.3932147	±	0.65053476
234U(295)	53.2	9.361	0.056632638	0.05207943	10.3398166	±	0.63116472
234U(352)	53.2	9.361	0.060927325	0.05641373	10.2692701	±	0.62242532
235U(63.3)	186	0.44395	0.01789558	0.01233976	0.64297569	±	0.03946263
235U(92.6)	186	0.44395	0.02141325	0.01490869	0.6367937	±	0.03892847
226Ra(63.3)	186	9.361	0.269885875	0.21910431	11.51524	±	0.70674777
226Ra(92.6)	186	9.361	0.26608675	0.21634131	11.498139	±	0.70290416

234U/238U	=	0.750248676	±	0.049108087
230Th/234U	=	0.936782532	±	0.115985338
226Ra/230Th	=	1.189492012	±	0.145579667
230Th/238U	=	0.702819854	±	0.086016786

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-317-GAM2**

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		6/18/96	6/18/96		6/18/96		6/18/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	2.73E+05	1.4311453
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.02E+06	1.12617903
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.59E+05	1.16861148
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.06E+05	1.03667398
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	1.98E+05	1.02970875
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.68E+06	1.02918836
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.75E+04	1.02362496
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.06E+05	1.0140193
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.18E+04	1.00911871
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.60E+04	0.98420965
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.90E+03	0.99391476

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	1.156318	1.09834336
Eu154,155	42.9	1.05987988	1.014040982
Eu154,155	48.6	1.11989994	1.078169782
Eu155	86.4	1.02719202	1.011256653
Eu155	105	1.02479755	1.012449971
Eu154	123	1.02339552	1.011743364
Sb125	178	1.0262274	1.013170673
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.01818281	0.993124226
Sb125	600	1.01873417	0.996855199
Sb125	636	1.01510693	0.996960468

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 = -0.187logx+1.398
CF (DM1B) equation = y = -0.110logx+1.229

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.13465913	1.074093604
231Pa	27.4	1.12914064	1.070847438
210Pb	46.5	1.0861863	1.045580175
227Ac	50	1.08029261	1.0421133
234U+214Pb	53.2	1.07525452	1.03914972
234Th->238U	63.3	1.06113751	1.030845592
230Th	67.6	1.05579997	1.027705863
234Th->238U	92.6	1.03024375	1.012672791
228Ac->228Ra	129	1.00331972	0.996835132
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) =		3.005		3.001		2.994	
		Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV	6/17/96		6/4/96		6/5/96	
231Th->235U	25.6	2.32E+03	1.36E+02	1.90E+03	1.32E+02	0	0
231Pa	27.4	1.98E+03	1.31E+02	1.63E+03	1.28E+02	0	0
210Pb	46.5	2.47E+04	2.13E+02	2.23E+04	2.03E+02	0	0
227Ac	50	2.39E+03	1.47E+02	2.04E+03	1.43E+02	0	0
234U+214Pb	53.2	6.01E+03	1.60E+02	5.74E+03	1.64E+02	0	0
234Th->238U	63.3	2.30E+04	2.27E+02	2.11E+04	2.15E+02	0	0
230Th	67.6	2.91E+03	1.93E+02	2.54E+03	1.93E+02	0	0
234Th->238U	92.6	2.85E+04	2.48E+02	2.59E+04	2.38E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.52E+03	1.41E+02
235U+226Ra	186	2.10E+04	2.17E+02	1.85E+04	2.14E+02	0	0
227Th->227Ac	236	9.83E+02	1.20E+02	1.27E+03	1.38E+02	0	0
212Pb->228Th	239	1.01E+03	1.49E+02	0	0	5.20E+04	2.93E+02
214Pb->226Ra	242	1.55E+04	1.83E+02	1.41E+04	1.76E+02	0	0
214Pb->226Ra	295	3.01E+04	2.20E+02	2.74E+04	2.16E+02	0	0
214Pb->226Ra	352	4.49E+04	2.59E+02	4.13E+04	2.50E+02	0	0
208Tl->228Th	583	1.98E+02	1.07E+02	0	0	8.66E+03	1.44E+02
214Bi->226Ra	609	2.22E+04	1.94E+02	2.01E+04	1.95E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.029	0.02375	0	0.61426444	±	0.06690402
231Pa	27.4	0.44395	0.02475	0.020375	0	0.60810868	±	0.07232134
210Pb	46.5	9.361	0.30875	0.27875	0	11.2470901	±	0.68940457
227Ac	50	0.44395	0.029875	0.0255	0	0.56113159	±	0.0622243
234U+214Pb	53.2	9.361	0.075125	0.07175	0	10.5248914	±	0.75347294
234Th->238U	63.3	9.361	0.2875	0.26375	0	10.8133637	±	0.66668888
230Th	67.6	9.361	0.036375	0.03175	0	11.3079709	±	1.32705434
234Th->238U	92.6	9.361	0.35625	0.32375	0	10.5981203	±	0.64987841
228Ac->228Ra	129	5.5494	0	0	0.0565	0	±	#DIV/0!
235U+226Ra	186	9.361	0.2625	0.23125	0	10.6118556	±	0.65764285
227Th->227Ac	236	0.44395	0.0122875	0.015875	0	0.34316689	±	0.05974424
212Pb->228Th	239	5.5494	0.012625	0	0.65	0.10764295	±	0.01667747
214Pb->226Ra	242	9.361	0.19375	0.17625	0	10.2767632	±	0.64138854
214Pb->226Ra	295	9.361	0.37625	0.3425	0	10.2697459	±	0.62599691
214Pb->226Ra	352	9.361	0.56125	0.51625	0	10.1634242	±	0.61569855
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	0
214Bi->226Ra	609	9.361	0.2775	0.25125	0	10.3252525	±	0.6340146

U(ppb) = 869397.399

Th(ppb) = 26433.5327

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.04653567	0.04574293	10.2262643	±	0.63823683
234U(295)	53.2	9.361	0.053516087	0.05207943	10.3293546	±	0.62963039
234U(352)	53.2	9.361	0.058451908	0.05641373	10.415232	±	0.63095302
235U(63.3)	186	0.44395	0.014048797	0.01288824	0.48328238	±	0.02979637
235U(92.6)	186	0.44395	0.016405313	0.01490869	0.48786614	±	0.02991603
226Ra(63.3)	186	9.361	0.249260625	0.21910431	10.635221	±	0.65570564
226Ra(92.6)	186	9.361	0.246094688	0.21634131	10.6342421	±	0.6520934

234U/238U	=	0.954709127	±	0.062472691
230Th/234U	=	1.095349708	±	0.130769488
226Ra/230Th	=	0.940506578	±	0.11117721
230Th/238U	=	1.045740363	±	0.123616887

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-318-GAM2**

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		6/18/96	6/18/96		6/18/96		6/18/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	2.66E+05	1.44743687
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.02E+06	1.12617903
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.61E+05	1.16170953
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.12E+05	1.02676184
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.03E+05	1.01704655
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.71E+06	1.02019413
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.86E+04	1.00901304
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.08E+05	1.00461541
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.24E+04	0.99552237
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.62E+04	0.97807698
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.68E+03	1.00514759

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	1.16948105	1.110846448
Eu154,155	42.9	1.05987988	1.014040982
Eu154,155	48.6	1.11328569	1.071801997
Eu155	86.4	1.01737055	1.00158754
Eu155	105	1.01219575	1
Eu154	123	1.01445191	1.002901584
Sb125	178	1.01157833	0.998707983
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.00446435	0.979743387
Sb125	600	1.01238638	0.990643733
Sb125	636	1.02657927	1.008227726

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 = -0.222logx+1.460
CF (DM1B) equation = y =-0.144logx+1.289

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.14737073	1.086213445
231Pa	27.4	1.14081938	1.081963919
210Pb	46.5	1.08982544	1.048886775
227Ac	50	1.08282866	1.044348319
234U+214Pb	53.2	1.07684762	1.040468725
234Th->238U	63.3	1.06008838	1.029597866
230Th	67.6	1.05375183	1.025487676
234Th->238U	92.6	1.02341236	1.005808018
228Ac->228Ra	129	0.99144908	0.985075082
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) =			3.005			3.001		2.994		
				Sample counts	Uncertainty		DP1B counts	Uncertainty	DM1B counts	Uncertainty	
Isotope	keV			6/19/96			6/4/96		6/5/96		
231Th->235U	25.6			2.69E+03	1.38E+02		1.90E+03	1.32E+02	0	0	
231Pa	27.4			2.16E+03	1.35E+02		1.63E+03	1.28E+02	0	0	
210Pb	46.5			2.34E+04	2.10E+02		2.23E+04	2.03E+02	0	0	
227Ac	50			2.72E+03	1.53E+02		2.04E+03	1.43E+02	0	0	
234U+214Pb	53.2			6.14E+03	1.64E+02		5.74E+03	1.64E+02	0	0	
234Th->238U	63.3			2.69E+04	2.35E+02		2.11E+04	2.15E+02	0	0	
230Th	67.6			2.76E+03	2.04E+02		2.54E+03	1.93E+02	0	0	
234Th->238U	92.6			3.29E+04	2.65E+02		2.59E+04	2.38E+02	0	0	
228Ac->228Ra	129			0.00E+00	0.00E+00		0	0	4.52E+03	1.41E+02	
235U+226Ra	186			2.30E+04	2.23E+02		1.85E+04	2.14E+02	0	0	
227Th->227Ac	236			1.14E+03	1.31E+02		1.27E+03	1.38E+02	0	0	
212Pb->228Th	239			1.14E+03	1.59E+02		0	0	5.20E+04	2.93E+02	
214Pb->226Ra	242			1.53E+04	1.92E+02		1.41E+04	1.76E+02	0	0	
214Pb->226Ra	295			2.97E+04	2.27E+02		2.74E+04	2.16E+02	0	0	
214Pb->226Ra	352			4.47E+04	2.60E+02		4.13E+04	2.50E+02	0	0	
208Tl->228Th	583			2.86E+02	1.01E+02		0	0	8.66E+03	1.44E+02	
214Bi->226Ra	609			2.24E+04	1.99E+02		2.01E+04	1.95E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.033625	0.02375	0	0.72020814	±	0.07573631
231Pa	27.4	0.44395	0.027	0.020375	0	0.67025277	±	0.07837326
210Pb	46.5	9.361	0.2925	0.27875	0	10.6908369	±	0.65584657
227Ac	50	0.44395	0.034	0.0255	0	0.64010918	±	0.06917267
234U+214Pb	53.2	9.361	0.07675	0.07175	0	10.7684822	±	0.77126361
234Th->238U	63.3	9.361	0.33625	0.26375	0	12.6344302	±	0.77680132
230Th	67.6	9.361	0.0345	0.03175	0	10.7042803	±	1.30384745
234Th->238U	92.6	9.361	0.41125	0.32375	0	12.1531975	±	0.74416079
228Ac->228Ra	129	5.5494	0	0	0.0565	0	±	#DIV/0!
235U+226Ra	186	9.361	0.2875	0.23125	0	11.6225085	±	0.71907684
227Th->227Ac	236	0.44395	0.01425	0.015875	0	0.39797584	±	0.0673181
212Pb->228Th	239	5.5494	0.01425	0	0.65	0.12149798	±	0.01789515
214Pb->226Ra	242	9.361	0.19125	0.17625	0	10.1441598	±	0.63458064
214Pb->226Ra	295	9.361	0.37125	0.3425	0	10.1332708	±	0.61809314
214Pb->226Ra	352	9.361	0.55875	0.51625	0	10.1181529	±	0.61300262
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	0
214Bi->226Ra	609	9.361	0.28	0.25125	0	10.4182728	±	0.63994347

U(ppb) = 1015811.65

Th(ppb) = 29835.8686

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.048529564	0.04574293	10.6802252	±	0.66811489
234U(295)	53.2	9.361	0.055428249	0.05207943	10.7142794	±	0.65353257
234U(352)	53.2	9.361	0.060151176	0.05641373	10.7338952	±	0.65030703
235U(63.3)	186	0.44395	0.01641474	0.0128755	0.56523026	±	0.03475199
235U(92.6)	186	0.44395	0.018938063	0.01490869	0.56318582	±	0.03448482
226Ra(63.3)	186	9.361	0.272015688	0.21910431	11.6061129	±	0.7135774
226Ra(92.6)	186	9.361	0.268561938	0.21634131	11.6050968	±	0.71059966

234U/238U	=	0.847641437	±	0.055483085
230Th/234U	=	0.999515728	±	0.123799075
226Ra/230Th	=	1.084249715	±	0.132867672
230Th/238U	=	0.847230948	±	0.103822581

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-319-GAM2**

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		4/22/96	4/22/96		4/22/96		4/23/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.20E+05	3.92E+05	1.24668305	3.50E+05	1.31299082	3.68E+05	1.28339149
Eu154,155	42.9	1.34E+06	1.16E+06	1.0738582	1.06E+06	1.12177481	1.12E+06	1.09234929
Eu154,155	48.6	2.01E+05	1.95E+05	1.01522921	1.83E+05	1.04764277	1.69E+05	1.08920765
Eu155	86.4	3.41E+05	3.29E+05	1.01801931	3.19E+05	1.0337163	3.21E+05	1.03052509
Eu155	105	2.19E+05	2.13E+05	1.01395409	2.07E+05	1.02844109	2.07E+05	1.02844109
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.74E+06	1.02264407	1.73E+06	1.02557187
Sb125	178	4.14E+04	4.10E+04	1.00486226	4.02E+04	1.01477904	3.98E+04	1.01983644
Eu154	248	1.11E+05	1.12E+05	0.99552237	1.09E+05	1.00911871	1.10E+05	1.00453174
Eu154	592	2.28E+04	2.29E+04	0.99781341	2.25E+04	1.00663723	2.27E+04	1.00219942
Sb125	600	1.58E+04	1.66E+04	0.97550692	1.62E+04	0.98755144	1.67E+04	0.97255635
Sb125	636	9.82E+03	1.10E+04	0.94433573	1.02E+04	0.98113682	1.03E+04	0.97632839

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	1.02944488	0.97745656
Eu154,155	42.9	1.01721931	0.973768787
Eu154,155	48.6	1.07286871	1.039674673
Eu155	86.4	1.01228442	0.99691287
Eu155	105	1.01428763	1
Eu154	123	1.01709594	1.002862969
Sb125	178	1.01490172	1.004983741
Eu154	248	1.0090499	0.995454483
Eu154	592	1.00439562	0.995591443
Sb125	600	0.99697535	0.984815892
Sb125	636	1.03387849	0.995099129

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 = -0.019logx+1.053
CF (DM1B) equation = y =0.046logx+0.907

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.02624344	0.971779038
231Pa	27.4	1.02568274	0.973136526
210Pb	46.5	1.02131839	0.983702836
227Ac	50	1.02071957	0.98515262
234U+214Pb	53.2	1.02020768	0.986391935
234Th->238U	63.3	1.01877333	0.989864571
230Th	67.6	1.01823101	0.991177548
234Th->238U	92.6	1.01563439	0.997464105
228Ac->228Ra	129	1.0128988	1.004087127
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) =			3.005		3.001		2.994		
				Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty	
Isotope	keV			5/10/96		4/25/96		4/29/96		
231Th->235U	25.6			1.33E+03	9.31E+01	2.19E+03	1.29E+02	0	0	
231Pa	27.4			7.19E+02	8.87E+01	1.74E+03	1.28E+02	0	0	
210Pb	46.5			8.78E+03	1.31E+02	2.19E+04	1.92E+02	0	0	
227Ac	50			1.12E+03	9.38E+01	2.32E+03	1.39E+02	0	0	
234U+214Pb	53.2			2.32E+03	1.07E+02	5.63E+03	1.51E+02	0	0	
234Th->238U	63.3			1.30E+04	1.55E+02	2.04E+04	2.13E+02	0	0	
230Th	67.6			7.70E+02	1.18E+02	2.54E+03	1.61E+02	0	0	
234Th->238U	92.6			1.56E+04	1.72E+02	2.48E+04	2.34E+02	0	0	
228Ac->228Ra	129			0.00E+00	0.00E+00	0	0	4.57E+03	1.39E+02	
235U+226Ra	186			9.18E+03	1.45E+02	1.85E+04	2.12E+02	0	0	
227Th->227Ac	236			4.56E+02	7.09E+01	1.16E+03	1.17E+02	0	0	
212Pb->228Th	239			1.31E+03	9.90E+01	0	0	4.97E+04	2.94E+02	
214Pb->226Ra	242			5.22E+03	1.14E+02	1.35E+04	1.75E+02	0	0	
214Pb->226Ra	295			1.00E+04	1.33E+02	2.66E+04	2.08E+02	0	0	
214Pb->226Ra	352			1.51E+04	1.53E+02	3.96E+04	2.44E+02	0	0	
208Tl->228Th	583			2.80E+02	6.74E+01	0	0	8.28E+03	1.42E+02	
214Bi->226Ra	609			7.56E+03	1.18E+02	1.94E+04	1.88E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.016625	0.027375	0	0.27632075	±	0.03023117
231Pa	27.4	0.44395	0.0089875	0.02175	0	0.1879093	±	0.02925034
210Pb	46.5	9.361	0.10975	0.27375	0	3.8278536	±	0.23903335
227Ac	50	0.44395	0.014	0.029	0	0.21847013	±	0.02603713
234U+214Pb	53.2	9.361	0.029	0.070375	0	3.93017549	±	0.31555327
234Th->238U	63.3	9.361	0.1625	0.255	0	6.06924286	±	0.37664422
230Th	67.6	9.361	0.009625	0.03175	0	2.88567285	±	0.50891302
234Th->238U	92.6	9.361	0.195	0.31	0	5.97247142	±	0.36868067
228Ac->228Ra	129	5.5494	0	0	0.057125	0	±	#DIV/0!
235U+226Ra	186	9.361	0.11475	0.23125	0	4.63889687	±	0.2926849
227Th->227Ac	236	0.44395	0.0057	0.0145	0	0.17428597	±	0.03395131
212Pb->228Th	239	5.5494	0.016375	0	0.62125	0.14607721	±	0.01302891
214Pb->226Ra	242	9.361	0.06525	0.16875	0	3.61476858	±	0.23551497
214Pb->226Ra	295	9.361	0.125	0.3325	0	3.51448851	±	0.21772917
214Pb->226Ra	352	9.361	0.18875	0.495	0	3.56472084	±	0.21802085
208Tl->228Th	583	5.5494	0	0	0.1035	0	±	0
214Bi->226Ra	609	9.361	0.0945	0.2425	0	3.64303908	±	0.22859988

U(ppb) = 487968.786

Th(ppb) = 35871.7104

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.019371851	0.04547462	4.0628842	±	0.26471129
234U(295)	53.2	9.361	0.021820959	0.05127875	4.05852988	±	0.25143355
234U(352)	53.2	9.361	0.023392791	0.05567	4.00768113	±	0.24511261
235U(63.3)	186	0.44395	0.007623608	0.0119632	0.28253273	±	0.01753338
235U(92.6)	186	0.44395	0.00897975	0.0142755	0.27888715	±	0.0172157
226Ra(63.3)	186	9.361	0.107266875	0.21950725	4.56836214	±	0.28350278
226Ra(92.6)	186	9.361	0.10577025	0.2169745	4.55720535	±	0.28131629

234U/238U	=	0.666150923	±	0.046510642
230Th/234U	=	0.713739846	±	0.127928747
226Ra/230Th	=	1.583118524	±	0.280321561
230Th/238U	=	0.475458457	±	0.084189058

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-320-GAM2**

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		6/18/96	6/18/96		6/18/96		6/18/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.68E+05	1.25157482
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.12E+06	1.07636807
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.72E+05	1.1256472
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.12E+05	1.02676184
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.03E+05	1.01704655
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.71E+06	1.02019413
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.85E+04	1.01031839
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.06E+05	1.0140193
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.22E+04	#DIV/0!
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.56E+04	0.996788
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	1.03E+04	0.97432143

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	1.011231	0.960530621
Eu154,155	42.9	1.01300134	0.969189895
Eu154,155	48.6	1.07872655	1.038530617
Eu155	86.4	1.01737055	1.00158754
Eu155	105	1.01219575	1
Eu154	123	1.01445191	1.002901584
Sb125	178	1.012887	1
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	#DIV/0!	#DIV/0!
Sb125	600	1.03175375	1.009595165
Sb125	636	0.99509583	0.977307095

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 = 0.005logx+1.005
CF (DM1B) equation = y =0.071logx+0.857

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.0120412	0.956985038
231Pa	27.4	1.01218875	0.95908029
210Pb	46.5	1.01333726	0.97538916
227Ac	50	1.01349485	0.97762687
234U+214Pb	53.2	1.01362956	0.979539726
234Th->238U	63.3	1.01400702	0.984899663
230Th	67.6	1.01414973	0.986926215
234Th->238U	92.6	1.01483305	0.99662938
228Ac->228Ra	129	1.01555295	1.006851869
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) =		3.004		3.001		2.994	
			Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV		6/20/96		6/4/96		6/5/96	
231Th->235U	25.6		1.37E+03	8.31E+01	1.90E+03	1.32E+02	0	0
231Pa	27.4		6.47E+02	7.72E+01	1.63E+03	1.28E+02	0	0
210Pb	46.5		6.22E+03	1.11E+02	2.23E+04	2.03E+02	0	0
227Ac	50		6.54E+02	8.91E+01	2.04E+03	1.43E+02	0	0
234U+214Pb	53.2		1.66E+03	8.93E+01	5.74E+03	1.64E+02	0	0
234Th->238U	63.3		1.11E+04	1.43E+02	2.11E+04	2.15E+02	0	0
230Th	67.6		6.93E+02	9.65E+01	2.54E+03	1.93E+02	0	0
234Th->238U	92.6		1.42E+04	1.63E+02	2.59E+04	2.38E+02	0	0
228Ac->228Ra	129		0.00E+00	0.00E+00	0	0	4.52E+03	1.41E+02
235U+226Ra	186		7.06E+03	1.27E+02	1.85E+04	2.14E+02	0	0
227Th->227Ac	236		4.06E+02	6.86E+01	1.27E+03	1.38E+02	0	0
212Pb->228Th	239		7.07E+02	1.01E+02	0	0	5.20E+04	2.93E+02
214Pb->226Ra	242		3.57E+03	1.00E+02	1.41E+04	1.76E+02	0	0
214Pb->226Ra	295		6.77E+03	1.21E+02	2.74E+04	2.16E+02	0	0
214Pb->226Ra	352		1.05E+04	1.35E+02	4.13E+04	2.50E+02	0	0
208Tl->228Th	583		0.00E+00	0.00E+00	0	0	8.66E+03	1.44E+02
214Bi->226Ra	609		5.01E+03	1.08E+02	2.01E+04	1.95E+02	0	0

Isotope	keV		An (Bq/g)	Is	In (DP1B)	In (DM1B)		As (Bq/g)		Uncertainty
231Th->235U	25.6		0.44395	0.017125	0.02375	0		0.32364231	±	0.03560927
231Pa	27.4		0.44395	0.0080875	0.020375	0		0.17818794	±	0.02760696
210Pb	46.5		9.361	0.07775	0.27875	0		2.64318675	±	0.1671977
227Ac	50		0.44395	0.010675	0.0255	0		0.18816956	±	0.02620832
234U+214Pb	53.2		9.361	0.02325	0.07175	0		3.07162809	±	0.25182403
234Th->238U	63.3		9.361	0.13875	0.26375	0		4.98849794	±	0.31032291
230Th	67.6		9.361	0.0086625	0.03175	0		2.58755692	±	0.43884896
234Th->238U	92.6		9.361	0.1775	0.32375	0		5.20321171	±	0.32143072
228Ac->228Ra	129		5.5494	0	0	0.0565		0	±	#DIV/0!
235U+226Ra	186		9.361	0.08825	0.23125	0		3.5687924	±	0.22732397
227Th->227Ac	236		0.44395	0.005075	0.015875	0		0.14178244	±	0.02972588
212Pb->228Th	239		5.5494	0.0088375	0	0.65		0.07537515	±	0.01134362
214Pb->226Ra	242		9.361	0.044625	0.17625	0		2.36775856	±	0.15954608
214Pb->226Ra	295		9.361	0.084625	0.3425	0		2.31060877	±	0.14579901
214Pb->226Ra	352		9.361	0.13125	0.51625	0		2.37753851	±	0.14659888
208Tl->228Th	583		5.5494	0	0	0.10825		0	±	#DIV/0!
214Bi->226Ra	609		9.361	0.062625	0.25125	0		2.33093402	±	0.15031937

U(ppb) = 401076.599

Th(ppb) = 18509.6325

Interference Correction

Isotope	keV		An (Bq/g)	Is	In (DP1B)		As (Bq/g)		
234U(242)	53.2		9.361	0.016665232	0.04574293		3.45346404	±	0.23270389
234U(295)	53.2		9.361	0.018389789	0.05207943		3.34717275	±	0.21120602
234U(352)	53.2		9.361	0.019350947	0.05641373		3.25150947	±	0.20048788
235U(63.3)	186		0.44395	0.006478934	0.01231581		0.23331392	±	0.01451392
235U(92.6)	186		0.44395	0.008173875	0.01490869		0.24315808	±	0.0150212
226Ra(63.3)	186		9.361	0.081860563	0.21910431		3.4939132	±	0.21734825
226Ra(92.6)	186		9.361	0.080076125	0.21634131		3.46140089	±	0.21382958

234U/238U	=	0.671688244	±	0.049330309	
230Th/234U	=	0.772240131	±	0.134396497	
226Ra/230Th	=	1.350274917	±	0.230077751	
230Th/238U	=	0.518704618	±	0.088383773	

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-321-GAM2**

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		6/18/96	6/18/96		6/18/96		6/18/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.49E+05	1.28240484
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.09E+06	1.09067876
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.67E+05	1.14165508
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.08E+05	1.0333415
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.00E+05	1.02459345
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.65E+06	1.02918836
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.75E+04	1.02362496
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.06E+05	1.0140193
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.19E+04	1.00681825
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.56E+04	0.996788
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.98E+03	0.98991235

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	1.03614063	0.984191355
Eu154,155	42.9	1.02646954	0.982075609
Eu154,155	48.6	1.09406717	1.053299603
Eu155	86.4	1.02389002	1.008005878
Eu155	105	1.01970665	1.007420405
Eu154	123	1.02339552	1.011743364
Sb125	178	1.0262274	1.013170673
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.01586169	0.990860231
Sb125	600	1.03175375	1.009595165
Sb125	636	1.01101918	0.992945793

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+1.062
CF (DM1B) equation = y =0.049logx+0.910

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.0338352	0.979003758
231Pa	27.4	1.03324499	0.980449778
210Pb	46.5	1.02865094	0.991705195
227Ac	50	1.0280206	0.99324953
234U+214Pb	53.2	1.02748177	0.99456967
234Th->238U	63.3	1.02597193	0.998268782
230Th	67.6	1.02540107	0.999667388
234Th->238U	92.6	1.02266778	1.006363938
228Ac->228Ra	129	1.01978821	1.013418896
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) =			3.006		3.001		2.994	
			Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
Isotope	keV		6/21/96		6/4/96		6/5/96	
231Th->235U	25.6		5.47E+02	6.83E+01	1.90E+03	1.32E+02	0	0
231Pa	27.4		4.08E+02	7.12E+01	1.63E+03	1.28E+02	0	0
210Pb	46.5		4.24E+03	9.29E+01	2.23E+04	2.03E+02	0	0
227Ac	50		4.19E+02	7.14E+01	2.04E+03	1.43E+02	0	0
234U+214Pb	53.2		1.23E+03	7.60E+01	5.74E+03	1.64E+02	0	0
234Th->238U	63.3		5.15E+03	1.09E+02	2.11E+04	2.15E+02	0	0
230Th	67.6		4.53E+02	8.96E+01	2.54E+03	1.93E+02	0	0
234Th->238U	92.6		6.64E+03	1.25E+02	2.59E+04	2.38E+02	0	0
228Ac->228Ra	129		7.94E+01	7.08E+01	0	0	4.52E+03	1.41E+02
235U+226Ra	186		4.81E+03	1.07E+02	1.85E+04	2.14E+02	0	0
227Th->227Ac	236		1.18E+02	5.06E+01	1.27E+03	1.38E+02	0	0
212Pb->228Th	239		1.76E+03	6.99E+01	0	0	5.20E+04	2.93E+02
214Pb->226Ra	242		2.79E+03	9.39E+01	1.41E+04	1.76E+02	0	0
214Pb->226Ra	295		6.35E+03	1.06E+02	2.74E+04	2.16E+02	0	0
214Pb->226Ra	352		7.96E+03	1.16E+02	4.13E+04	2.50E+02	0	0
208Tl->228Th	583		3.13E+02	6.42E+01	0	0	8.66E+03	1.44E+02
214Bi->226Ra	609		4.04E+03	9.37E+01	2.01E+04	1.95E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.0068375	0.02375	0	0.13191559	±	0.02044365
231Pa	27.4	0.44395	0.0051	0.020375	0	0.11462701	±	0.02298843
210Pb	46.5	9.361	0.053	0.27875	0	1.82779837	±	0.11793099
227Ac	50	0.44395	0.005225	0.0255	0	0.09335961	±	0.01812498
234U+214Pb	53.2	9.361	0.015375	0.07175	0	2.0576268	±	0.18671373
234Th->238U	63.3	9.361	0.064375	0.26375	0	2.34023524	±	0.15079156
230Th	67.6	9.361	0.0056625	0.03175	0	1.70906081	±	0.37636405
234Th->238U	92.6	9.361	0.083	0.32375	0	2.45020348	±	0.15571488
228Ac->228Ra	129	5.5494	0.0009925	0	0.0565	0.09924648	±	0.08867377
235U+226Ra	186	9.361	0.060125	0.23125	0	2.42981166	±	0.15800621
227Th->227Ac	236	0.44395	0.001475	0.015875	0	0.04118029	±	0.01838359
212Pb->228Th	239	5.5494	0.022	0	0.65	0.18751343	±	0.01305862
214Pb->226Ra	242	9.361	0.034875	0.17625	0	1.849202	±	0.12929252
214Pb->226Ra	295	9.361	0.066875	0.3425	0	1.82474627	±	0.11619355
214Pb->226Ra	352	9.361	0.09975	0.51625	0	1.80572705	±	0.11201254
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	0
214Bi->226Ra	609	9.361	0.0505	0.25125	0	1.87838483	±	0.12219666

U(ppb) = 188155.554

Th(ppb) = 46047.0701

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.010228921	0.04574293	2.14723312	±	0.15013026
234U(295)	53.2	9.361	0.011534213	0.05207943	2.12664576	±	0.13541747
234U(352)	53.2	9.361	0.01241172	0.05641373	2.11261603	±	0.13104943
235U(63.3)	186	0.44395	0.003041462	0.01246113	0.10817723	±	0.00697033
235U(92.6)	186	0.44395	0.00382215	0.01490869	0.11362644	±	0.00722117
226Ra(63.3)	186	9.361	0.057160531	0.21910431	2.43806116	±	0.15709491
226Ra(92.6)	186	9.361	0.05630285	0.21634131	2.43214903	±	0.15456748

234U/238U	=	0.909665661	±	0.071296928
230Th/234U	=	0.802816331	±	0.180386694
226Ra/230Th	=	1.426550272	±	0.315932624
230Th/238U	=	0.730294448	±	0.161735514

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-322-GAM2**

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		6/18/96	6/18/96		6/18/96		6/19/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.44E+05	1.2908762
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.07E+06	1.10051
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.86E+05	1.08388446
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.02E+05	1.04342634
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	1.96E+05	1.03489307
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.66E+06	1.0353038
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.65E+04	1.03741134
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.04E+05	1.02366223
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.17E+04	1.01143326
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.51E+04	1.0131296
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.61E+03	1.00879325

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	1.04298521	0.990692767
Eu154,155	42.9	1.03572201	0.990927921
Eu154,155	48.6	1.03870462	1
Eu155	86.4	1.03388263	1.017843465
Eu155	105	1.02995715	1.017547399
Eu154	123	1.02947653	1.017755146
Sb125	178	1.04004883	1.026816253
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.02051815	0.99540209
Sb125	600	1.04866859	1.026146732
Sb125	636	1.03030266	1.011884558

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 = -0.019logx+1.069

CF (DM1B) equation = y =0.050logx+0.915

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.04224344	0.985411998
231Pa	27.4	1.04168274	0.986887528
210Pb	46.5	1.03731839	0.998372648
227Ac	50	1.03671957	0.9999485
234U+214Pb	53.2	1.03620768	1.001295582
234Th->238U	63.3	1.03477333	1.005070186
230Th	67.6	1.03423101	1.006497335
234Th->238U	92.6	1.03163439	1.013330549
228Ac->228Ra	129	1.0288988	1.020529486
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	

Isotope	keV	Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
		6/24/96		6/4/96		6/5/96	
231Th->235U	25.6	3.39E+02	4.49E+01	1.90E+03	1.32E+02	0	0
231Pa	27.4	1.93E+02	4.29E+01	1.63E+03	1.28E+02	0	0
210Pb	46.5	1.07E+03	5.53E+01	2.23E+04	2.03E+02	0	0
227Ac	50	1.86E+02	4.86E+01	2.04E+03	1.43E+02	0	0
234U+214Pb	53.2	3.81E+02	5.32E+01	5.74E+03	1.64E+02	0	0
234Th->238U	63.3	2.53E+03	7.43E+01	2.11E+04	2.15E+02	0	0
230Th	67.6	1.46E+02	4.69E+01	2.54E+03	1.93E+02	0	0
234Th->238U	92.6	3.17E+03	8.78E+01	2.59E+04	2.38E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.52E+03	1.41E+02
235U+226Ra	186	1.64E+03	7.31E+01	1.85E+04	2.14E+02	0	0
227Th->227Ac	236	9.37E+01	4.10E+01	1.27E+03	1.38E+02	0	0
212Pb->228Th	239	5.38E+02	6.22E+01	0	0	5.20E+04	2.93E+02
214Pb->226Ra	242	8.12E+02	5.71E+01	1.41E+04	1.76E+02	0	0
214Pb->226Ra	295	1.42E+03	6.90E+01	2.74E+04	2.16E+02	0	0
214Pb->226Ra	352	2.18E+03	8.85E+01	4.13E+04	2.50E+02	0	0
208Tl->228Th	583	0.00E+00	0.00E+00	0	0	8.66E+03	1.44E+02
214Bi->226Ra	609	1.12E+03	5.57E+01	2.01E+04	1.95E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.0042375	0.02375	0	0.08250115	±	0.01329502
231Pa	27.4	0.44395	0.0024125	0.020375	0	0.05472048	±	0.01331124
210Pb	46.5	9.361	0.013375	0.27875	0	0.46561172	±	0.0371146
227Ac	50	0.44395	0.002325	0.0255	0	0.04193617	±	0.01162066
234U+214Pb	53.2	9.361	0.0047625	0.07175	0	0.6434174	±	0.09949816
234Th->238U	63.3	9.361	0.031625	0.26375	0	1.16068989	±	0.07843278
230Th	67.6	9.361	0.001825	0.03175	0	0.5561214	±	0.19388845
234Th->238U	92.6	9.361	0.039625	0.32375	0	1.1811858	±	0.07880885
228Ac->228Ra	129	5.5494	0	0	0.0565	0	±	#DIV/0!
235U+226Ra	186	9.361	0.0205	0.23125	0	0.82928733	±	0.06272272
227Th->227Ac	236	0.44395	0.00117125	0.015875	0	0.03273261	±	0.01488783
212Pb->228Th	239	5.5494	0.006725	0	0.65	0.05737671	±	0.007168
214Pb->226Ra	242	9.361	0.01015	0.17625	0	0.53872834	±	0.05025136
214Pb->226Ra	295	9.361	0.01775	0.3425	0	0.48480902	±	0.03762594
214Pb->226Ra	352	9.361	0.02725	0.51625	0	0.49378666	±	0.03357744
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	#DIV/0!
214Bi->226Ra	609	9.361	0.014	0.25125	0	0.52126057	±	0.04093607

U(ppb) = 93319.7845

Th(ppb) = 14089.8138

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.003264788	0.04574293	0.69184802	±	0.06453402
234U(295)	53.2	9.361	0.003743076	0.05207943	0.69669417	±	0.05407031
234U(352)	53.2	9.361	0.003952982	0.05641373	0.67923461	±	0.04618788
235U(63.3)	186	0.44395	0.001506973	0.01256803	0.05319647	±	0.00359471
235U(92.6)	186	0.44395	0.001824731	0.01490869	0.05430055	±	0.00362294
226Ra(63.3)	186	9.361	0.019043669	0.21910431	0.81307873	±	0.05494321
226Ra(92.6)	186	9.361	0.018675269	0.21634131	0.80753306	±	0.0538787

234U/238U	=	0.593835564	±	0.068004645
230Th/234U	=	0.806839589	±	0.291022831
226Ra/230Th	=	1.4620526	±	0.5117581
230Th/238U	=	0.479130043	±	0.167708522

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-323-GAM2**

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		4/22/96	4/22/96		4/22/96		4/23/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.20E+05	3.92E+05	1.24668305	3.50E+05	1.31299082	3.66E+05	1.28658823
Eu154,155	42.9	1.34E+06	1.16E+06	1.0738582	1.06E+06	1.12177481	1.12E+06	1.09234929
Eu154,155	48.6	2.01E+05	1.95E+05	1.01522921	1.83E+05	1.04764277	2.02E+05	0.99752066
Eu155	86.4	3.41E+05	3.29E+05	1.01801931	3.19E+05	1.0337163	3.21E+05	1.03052509
Eu155	105	2.19E+05	2.13E+05	1.01395409	2.07E+05	1.02844109	2.07E+05	1.02844109
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.74E+06	1.02264407	1.74E+06	1.02264407
Sb125	178	4.14E+04	4.10E+04	1.00486226	4.02E+04	1.01477904	4.02E+04	1.01477904
Eu154	248	1.11E+05	1.12E+05	0.99552237	1.09E+05	1.00911871	1.10E+05	1.00453174
Eu154	592	2.28E+04	2.29E+04	0.99781341	2.25E+04	1.00663723	2.31E+04	0.9934782
Sb125	600	1.58E+04	1.66E+04	0.97550692	1.62E+04	0.98755144	1.70E+04	0.96384482
Sb125	636	9.82E+03	1.10E+04	0.94433573	1.02E+04	0.98113682	1.00E+04	0.99094551

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	1.03200908	0.979891261
Eu154,155	42.9	1.01721931	0.973768787
Eu154,155	48.6	0.98255709	0.952157252
Eu155	86.4	1.01228442	0.99691287
Eu155	105	1.01428763	1
Eu154	123	1.01419234	1
Sb125	178	1.00986879	1
Eu154	248	1.0090499	0.995454483
Eu154	592	0.99565529	0.98692773
Sb125	600	0.98804509	0.975994549
Sb125	636	1.04935722	1.009997269

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+1.032

CF (DM1B) equation = y =0.052logx+0.891

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01650936	0.964228478
231Pa	27.4	1.01618474	0.965763029
210Pb	46.5	1.01365802	0.977707554
227Ac	50	1.01331133	0.97934644
234U+214Pb	53.2	1.01301497	0.980747405
234Th->238U	63.3	1.01218456	0.984672993
230Th	67.6	1.01187059	0.986157228
234Th->238U	92.6	1.01036728	0.993263771
228Ac->228Ra	129	1.00878351	1.000750665
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) =			3.005		3.001		2.994		
				Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty	
Isotope	keV			5/7/96		4/25/96		4/29/96		
231Th->235U	25.6			2.03E+03	1.05E+02	2.19E+03	1.29E+02	0	0	
231Pa	27.4			1.33E+03	1.01E+02	1.74E+03	1.28E+02	0	0	
210Pb	46.5			1.01E+04	1.43E+02	2.19E+04	1.92E+02	0	0	
227Ac	50			1.59E+03	1.06E+02	2.32E+03	1.39E+02	0	0	
234U+214Pb	53.2			3.20E+03	1.22E+02	5.63E+03	1.51E+02	0	0	
234Th->238U	63.3			1.71E+04	1.76E+02	2.04E+04	2.13E+02	0	0	
230Th	67.6			1.14E+03	1.32E+02	2.54E+03	1.61E+02	0	0	
234Th->238U	92.6			2.09E+04	1.95E+02	2.48E+04	2.34E+02	0	0	
228Ac->228Ra	129			0.00E+00	0.00E+00	0	0	4.57E+03	1.39E+02	
235U+226Ra	186			1.16E+04	1.64E+02	1.85E+04	2.12E+02	0	0	
227Th->227Ac	236			7.21E+02	1.00E+02	1.16E+03	1.17E+02	0	0	
212Pb->228Th	239			4.11E+02	9.65E+01	0	0	4.97E+04	2.94E+02	
214Pb->226Ra	242			6.51E+03	1.26E+02	1.35E+04	1.75E+02	0	0	
214Pb->226Ra	295			1.26E+04	1.50E+02	2.66E+04	2.08E+02	0	0	
214Pb->226Ra	352			1.89E+04	1.71E+02	3.96E+04	2.44E+02	0	0	
208Tl->228Th	583			1.69E+02	6.34E+01	0	0	8.28E+03	1.42E+02	
214Bi->226Ra	609			9.34E+03	1.36E+02	1.94E+04	1.88E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.025375	0.027375	0	0.41775233	±	0.04123933
231Pa	27.4	0.44395	0.016625	0.02175	0	0.34437423	±	0.04186436
210Pb	46.5	9.361	0.12625	0.27375	0	4.37031241	±	0.27213129
227Ac	50	0.44395	0.019875	0.029	0	0.30789853	±	0.0332104
234U+214Pb	53.2	9.361	0.04	0.070375	0	5.38271285	±	0.40897498
234Th->238U	63.3	9.361	0.21375	0.255	0	7.93175727	±	0.49006277
230Th	67.6	9.361	0.01425	0.03175	0	4.24560778	±	0.61561262
234Th->238U	92.6	9.361	0.26125	0.31	0	7.96008385	±	0.48914569
228Ac->228Ra	129	5.5494	0	0	0.057125	0	±	#DIV/0!
235U+226Ra	186	9.361	0.145	0.23125	0	5.86178689	±	0.36752985
227Th->227Ac	236	0.44395	0.0090125	0.0145	0	0.27557058	±	0.05006732
212Pb->228Th	239	5.5494	0.0051375	0	0.62125	0.04583033	±	0.01119617
214Pb->226Ra	242	9.361	0.081375	0.16875	0	4.50807346	±	0.29015497
214Pb->226Ra	295	9.361	0.1575	0.3325	0	4.42825552	±	0.27307902
214Pb->226Ra	352	9.361	0.235	0.495	0	4.43819549	±	0.27071894
208Tl->228Th	583	5.5494	0	0	0.1035	0	±	0
214Bi->226Ra	609	9.361	0.116625	0.2425	0	4.49597283	±	0.28100328

U(ppb) = 637715.454

Th(ppb) = 11254.4069

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.027992481	0.04547462	5.82950916	±	0.37520707
234U(295)	53.2	9.361	0.030954408	0.05127875	5.71669072	±	0.35253348
234U(352)	53.2	9.361	0.033018839	0.05567	5.61694531	±	0.34261976
235U(63.3)	186	0.44395	0.009963122	0.01188583	0.37163921	±	0.02296169
235U(92.6)	186	0.44395	0.012030563	0.0142755	0.37363727	±	0.02295994
226Ra(63.3)	186	9.361	0.135156813	0.21950725	5.75615972	±	0.35564371
226Ra(92.6)	186	9.361	0.132969438	0.2169745	5.72910655	±	0.35205255

234U/238U	=	0.721283847	±	0.049362318
230Th/234U	=	0.742103106	±	0.109799114
226Ra/230Th	=	1.355791683	±	0.197603269
230Th/238U	=	0.535266983	±	0.078013833

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-324-GAM2**

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		6/18/96	6/18/96		6/18/96		6/19/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.33E+05	1.31007846
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.10E+06	1.08585155
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.92E+05	1.06723046
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.15E+05	1.02190013
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.04E+05	1.01456379
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.71E+06	1.02019413
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.84E+04	1.01162826
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.08E+05	1.00461541
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.21E+04	1.00225904
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.56E+04	0.996788
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.87E+03	0.99542681

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	1.0585	1.005429685
Eu154,155	42.9	1.02192651	0.977729067
Eu154,155	48.6	1.02274481	0.984634889
Eu155	86.4	1.01255331	0.996845034
Eu155	105	1.00972483	0.997558853
Eu154	123	1.01445191	1.002901584
Sb125	178	1.0142002	1.001296491
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.01126153	0.986373281
Sb125	600	1.03175375	1.009595165
Sb125	636	1.01665122	0.998477152

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 = -0.063logx+1.139
CF (DM1B) equation = y =0.007logx+0.984

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.05028088	0.99385768
231Pa	27.4	1.04842171	0.994064254
210Pb	46.5	1.03395046	0.995672171
227Ac	50	1.03196489	0.99589279
234U+214Pb	53.2	1.03026757	0.996081381
234Th->238U	63.3	1.02551157	0.996609826
230Th	67.6	1.02371336	0.996809627
234Th->238U	92.6	1.01510351	0.997766277
228Ac->228Ra	129	1.00603285	0.998774128
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) =	3.006	3.001	2.994	

Isotope	keV	Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty
		6/25/96		6/4/96		6/5/96	
231Th->235U	25.6	9.83E+02	8.45E+01	1.90E+03	1.32E+02	0	0
231Pa	27.4	7.06E+02	8.08E+01	1.63E+03	1.28E+02	0	0
210Pb	46.5	8.14E+03	1.25E+02	2.23E+04	2.03E+02	0	0
227Ac	50	9.00E+02	9.17E+01	2.04E+03	1.43E+02	0	0
234U+214Pb	53.2	2.11E+03	9.84E+01	5.74E+03	1.64E+02	0	0
234Th->238U	63.3	8.90E+03	1.40E+02	2.11E+04	2.15E+02	0	0
230Th	67.6	1.12E+03	1.03E+02	2.54E+03	1.93E+02	0	0
234Th->238U	92.6	1.10E+04	1.59E+02	2.59E+04	2.38E+02	0	0
228Ac->228Ra	129	0.00E+00	0.00E+00	0	0	4.52E+03	1.41E+02
235U+226Ra	186	7.55E+03	1.35E+02	1.85E+04	2.14E+02	0	0
227Th->227Ac	236	2.43E+02	8.37E+01	1.27E+03	1.38E+02	0	0
212Pb->228Th	239	8.47E+02	8.95E+01	0	0	5.20E+04	2.93E+02
214Pb->226Ra	242	5.23E+03	1.13E+02	1.41E+04	1.76E+02	0	0
214Pb->226Ra	295	9.99E+03	1.33E+02	2.74E+04	2.16E+02	0	0
214Pb->226Ra	352	1.44E+04	1.53E+02	4.13E+04	2.50E+02	0	0
208Tl->228Th	583	0.00E+00	0.00E+00	0	0	8.66E+03	1.44E+02
214Bi->226Ra	609	7.45E+03	1.13E+02	2.01E+04	1.95E+02	0	0

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.0122875	0.02375	0	0.24083326	±	0.03028754
231Pa	27.4	0.44395	0.008825	0.020375	0	0.20126311	±	0.03043324
210Pb	46.5	9.361	0.10175	0.27875	0	3.52710622	±	0.22079465
227Ac	50	0.44395	0.01125	0.0255	0	0.20178475	±	0.02773721
234U+214Pb	53.2	9.361	0.026375	0.07175	0	3.53932021	±	0.28734303
234Th->238U	63.3	9.361	0.11125	0.26375	0	4.04247533	±	0.2541065
230Th	67.6	9.361	0.014	0.03175	0	4.21853776	±	0.5633136
234Th->238U	92.6	9.361	0.1375	0.32375	0	4.02904867	±	0.25140021
228Ac->228Ra	129	5.5494	0	0	0.0565	0	±	#DIV/0!
235U+226Ra	186	9.361	0.094375	0.23125	0	3.81394554	±	0.24282381
227Th->227Ac	236	0.44395	0.0030375	0.015875	0	0.08480347	±	0.03104888
212Pb->228Th	239	5.5494	0.0080875	0	0.65	0.06893249	±	0.01007833
214Pb->226Ra	242	9.361	0.065375	0.17625	0	3.46642526	±	0.22525447
214Pb->226Ra	295	9.361	0.124875	0.3425	0	3.40732994	±	0.21112772
214Pb->226Ra	352	9.361	0.18	0.51625	0	3.25845483	±	0.19952636
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	#DIV/0!
214Bi->226Ra	609	9.361	0.093125	0.25125	0	3.46385321	±	0.21698713

U(ppb) = 325016.123

Th(ppb) = 16927.5309

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.016728407	0.04574293	3.52111227	±	0.22880813
234U(295)	53.2	9.361	0.019203138	0.05207943	3.55022023	±	0.21998161
234U(352)	53.2	9.361	0.021027728	0.05641373	3.58886277	±	0.21975837
235U(63.3)	186	0.44395	0.00525376	0.01245554	0.18694706	±	0.01175133
235U(92.6)	186	0.44395	0.006331875	0.01490869	0.18823657	±	0.01174538
226Ra(63.3)	186	9.361	0.089251938	0.21910431	3.80685199	±	0.23929542
226Ra(92.6)	186	9.361	0.088043125	0.21634131	3.80325332	±	0.23731128

234U/238U	=	0.879015487	±	0.061924282
230Th/234U	=	1.187184002	±	0.162962745
226Ra/230Th	=	0.902410315	±	0.121682619
230Th/238U	=	1.043553123	±	0.140714567

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-325-GAM2**

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		6/18/96	6/18/96		6/18/96		6/19/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	2.71E+05	1.43574627
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.03E+06	1.12091519
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.79E+05	1.12251847
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.13E+05	1.02513439
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.03E+05	1.01704655
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.72E+06	1.01724251
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.85E+04	1.01031839
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.08E+05	1.00461541
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.27E+04	0.98890502
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.62E+04	0.97807698
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.70E+03	1.00411242

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	1.16003543	1.101874406
Eu154,155	42.9	1.05492592	1.009301282
Eu154,155	48.6	1.07572824	1.035644027
Eu155	86.4	1.01575799	1
Eu155	105	1.01219575	1
Eu154	123	1.01151691	1
Sb125	178	1.012887	1
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	0.99778756	0.973230924
Sb125	600	1.01238638	0.990643733
Sb125	636	1.02552202	1.007189381

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 = -0.211logx+1.435
CF (DM1B) equation = y =-0.133logx+1.265

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.13786137	1.077704085
231Pa	27.4	1.13163463	1.073779175
210Pb	46.5	1.08316743	1.043228757
227Ac	50	1.07651733	1.039036989
234U+214Pb	53.2	1.07083265	1.035453753
234Th->238U	63.3	1.05490382	1.025413307
230Th	67.6	1.04888125	1.021617089
234Th->238U	92.6	1.02004508	1.003440739
228Ac->228Ra	129	0.98966557	0.984291569
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		6/26/96		6/4/96		6/5/96		
231Th->235U	25.6		3.24E+02	4.90E+01	1.90E+03	1.32E+02	0	0	
231Pa	27.4		1.99E+02	4.58E+01	1.63E+03	1.28E+02	0	0	
210Pb	46.5		1.82E+03	6.70E+01	2.23E+04	2.03E+02	0	0	
227Ac	50		2.74E+02	5.43E+01	2.04E+03	1.43E+02	0	0	
234U+214Pb	53.2		4.81E+02	5.75E+01	5.74E+03	1.64E+02	0	0	
234Th->238U	63.3		2.94E+03	8.62E+01	2.11E+04	2.15E+02	0	0	
230Th	67.6		1.45E+02	5.38E+01	2.54E+03	1.93E+02	0	0	
234Th->238U	92.6		3.66E+03	9.73E+01	2.59E+04	2.38E+02	0	0	
228Ac->228Ra	129		0.00E+00	0.00E+00	0	0	4.52E+03	1.41E+02	
235U+226Ra	186		2.11E+03	8.36E+01	1.85E+04	2.14E+02	0	0	
227Th->227Ac	236		1.11E+02	4.59E+01	1.27E+03	1.38E+02	0	0	
212Pb->228Th	239		4.49E+02	6.14E+01	0	0	5.20E+04	2.93E+02	
214Pb->226Ra	242		1.33E+03	6.34E+01	1.41E+04	1.76E+02	0	0	
214Pb->226Ra	295		2.46E+03	8.06E+01	2.74E+04	2.16E+02	0	0	
214Pb->226Ra	352		3.84E+03	8.48E+01	4.13E+04	2.50E+02	0	0	
208Tl->228Th	583		0.00E+00	0.00E+00	0	0	8.66E+03	1.44E+02	
214Bi->226Ra	609		2.01E+03	6.25E+01	2.01E+04	1.95E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.00405	0.02375	0	0.0860846	±	0.01543447
231Pa	27.4	0.44395	0.0024875	0.020375	0	0.06129378	±	0.01535234
210Pb	46.5	9.361	0.02275	0.27875	0	0.82698003	±	0.05869856
227Ac	50	0.44395	0.003425	0.0255	0	0.06414845	±	0.01402302
234U+214Pb	53.2	9.361	0.0060125	0.07175	0	0.8394362	±	0.11481193
234Th->238U	63.3	9.361	0.03675	0.26375	0	1.37502517	±	0.09288775
230Th	67.6	9.361	0.0018125	0.03175	0	0.56013604	±	0.21478876
234Th->238U	92.6	9.361	0.04575	0.32375	0	1.34844611	±	0.08935618
228Ac->228Ra	129	5.5494	0	0	0.0565	0	±	#DIV/0!
235U+226Ra	186	9.361	0.026375	0.23125	0	1.06694894	±	0.07770158
227Th->227Ac	236	0.44395	0.0013875	0.015875	0	0.03877609	±	0.01674125
212Pb->228Th	239	5.5494	0.0056125	0	0.65	0.04788502	±	0.00692942
214Pb->226Ra	242	9.361	0.016625	0.17625	0	0.88239987	±	0.06851059
214Pb->226Ra	295	9.361	0.03075	0.3425	0	0.83988041	±	0.0577972
214Pb->226Ra	352	9.361	0.048	0.51625	0	0.86978934	±	0.0558586
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	#DIV/0!
214Bi->226Ra	609	9.361	0.025125	0.25125	0	0.93547656	±	0.06386633

U(ppb) = 110552.4

Th(ppb) = 11758.971

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.003559351	0.04574293	0.77947346	±	0.06051926
234U(295)	53.2	9.361	0.004246456	0.05207943	0.81679849	±	0.05620879
234U(352)	53.2	9.361	0.004586561	0.05641373	0.81443583	±	0.05230375
235U(63.3)	186	0.44395	0.001785253	0.01281253	0.06181724	±	0.00417597
235U(92.6)	186	0.44395	0.002106788	0.01490869	0.06269401	±	0.00415448
226Ra(63.3)	186	9.361	0.024682663	0.21910431	1.05383832	±	0.07119046
226Ra(92.6)	186	9.361	0.024268213	0.21634131	1.04937627	±	0.069538

234U/238U	=	0.584403313	±	0.054357633
230Th/234U	=	0.697060058	±	0.270983661
226Ra/230Th	=	1.881397111	±	0.723796889
230Th/238U	=	0.407364207	±	0.156718081

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-326-GAM2**

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		4/22/96	4/22/96		4/22/96		4/23/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.20E+05	3.92E+05	1.24668305	3.50E+05	1.31299082	2.85E+05	1.43845607
Eu154,155	42.9	1.34E+06	1.16E+06	1.0738582	1.06E+06	1.12177481	1.05E+06	1.12689125
Eu154,155	48.6	2.01E+05	1.95E+05	1.01522921	1.83E+05	1.04764277	1.95E+05	1.01522921
Eu155	86.4	3.41E+05	3.29E+05	1.01801931	3.19E+05	1.0337163	3.21E+05	1.03052509
Eu155	105	2.19E+05	2.13E+05	1.01395409	2.07E+05	1.02844109	2.08E+05	1.02598813
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.74E+06	1.02264407	1.75E+06	1.01973854
Sb125	178	4.14E+04	4.10E+04	1.00486226	4.02E+04	1.01477904	4.11E+04	1.00364079
Eu154	248	1.11E+05	1.12E+05	0.99552237	1.09E+05	1.00911871	1.11E+05	#DIV/0!
Eu154	592	2.28E+04	2.29E+04	0.99781341	2.25E+04	1.00663723	2.30E+04	0.99563952
Sb125	600	1.58E+04	1.66E+04	0.97550692	1.62E+04	0.98755144	1.74E+04	0.95254513
Sb125	636	9.82E+03	1.10E+04	0.94433573	1.02E+04	0.98113682	1.03E+04	0.97632839

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	1.15382661	1.095556842
Eu154,155	42.9	1.04938553	1.004561026
Eu154,155	48.6	1	0.969060486
Eu155	86.4	1.01228442	0.99691287
Eu155	105	1.01186842	0.997614869
Eu154	123	1.01131082	0.997158804
Sb125	178	0.99878444	0.989023963
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	0.99782134	0.989074797
Sb125	600	0.97646168	0.96455242
Sb125	636	1.03387849	0.995099129

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 = -0.175logx+1.354

CF (DM1B) equation = y = -0.104logx+1.196

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.10755801	1.051543044
231Pa	27.4	1.10239365	1.048473941
210Pb	46.5	1.06219573	1.024584893
227Ac	50	1.05668025	1.02130712
234U+214Pb	53.2	1.05196546	1.01850519
234Th->238U	63.3	1.03875435	1.010654014
230Th	67.6	1.03375933	1.007685544
234Th->238U	92.6	1.00984308	0.993472457
228Ac->228Ra	129	0.9846468	0.97849867
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) =			3.007		3.001		2.994		
			Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty	
Isotope	keV		5/9/96		4/25/96		4/29/96		
231Th->235U	25.6		3.38E+02	5.18E+01	2.19E+03	1.29E+02	0	0	
231Pa	27.4		0.00E+00	0.00E+00	1.74E+03	1.28E+02	0	0	
210Pb	46.5		2.46E+03	7.11E+01	2.19E+04	1.92E+02	0	0	
227Ac	50		3.16E+02	5.22E+01	2.32E+03	1.39E+02	0	0	
234U+214Pb	53.2		6.78E+02	6.22E+01	5.63E+03	1.51E+02	0	0	
234Th->238U	63.3		3.22E+03	8.66E+01	2.04E+04	2.13E+02	0	0	
230Th	67.6		1.91E+02	3.44E+01	2.54E+03	1.61E+02	0	0	
234Th->238U	92.6		3.86E+03	9.47E+01	2.48E+04	2.34E+02	0	0	
228Ac->228Ra	129		0.00E+00	0.00E+00	0	0	4.57E+03	1.39E+02	
235U+226Ra	186		2.65E+03	9.07E+01	1.85E+04	2.12E+02	0	0	
227Th->227Ac	236		1.10E+02	4.28E+01	1.16E+03	1.17E+02	0	0	
212Pb->228Th	239		1.95E+02	6.32E+01	0	0	4.97E+04	2.94E+02	
214Pb->226Ra	242		1.74E+03	6.89E+01	1.35E+04	1.75E+02	0	0	
214Pb->226Ra	295		3.25E+03	7.52E+01	2.66E+04	2.08E+02	0	0	
214Pb->226Ra	352		4.81E+03	8.69E+01	3.96E+04	2.44E+02	0	0	
208Tl->228Th	583		0.00E+00	0.00E+00	0	0	8.28E+03	1.42E+02	
214Bi->226Ra	609		2.49E+03	7.12E+01	1.94E+04	1.88E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.004225	0.027375	0	0.07573658	±	0.0132391
231Pa	27.4	0.44395	0	0.02175	0	0	±	#DIV/0!
210Pb	46.5	9.361	0.03075	0.27375	0	1.11468038	±	0.07487644
227Ac	50	0.44395	0.00395	0.029	0	0.06376896	±	0.01184067
234U+214Pb	53.2	9.361	0.008475	0.070375	0	1.18352543	±	0.1335636
234Th->238U	63.3	9.361	0.04025	0.255	0	1.53176934	±	0.10197866
230Th	67.6	9.361	0.0023875	0.03175	0	0.72622953	±	0.14534658
234Th->238U	92.6	9.361	0.04825	0.31	0	1.46839984	±	0.09618781
228Ac->228Ra	129	5.5494	0	0	0.057125	0	±	#DIV/0!
235U+226Ra	186	9.361	0.033125	0.23125	0	1.33822444	±	0.09370215
227Th->227Ac	236	0.44395	0.001375	0.0145	0	0.04201471	±	0.01707498
212Pb->228Th	239	5.5494	0.0024375	0	0.62125	0.02172985	±	0.00711753
214Pb->226Ra	242	9.361	0.02175	0.16875	0	1.20412145	±	0.08795871
214Pb->226Ra	295	9.361	0.040625	0.3325	0	1.14144907	±	0.07394382
214Pb->226Ra	352	9.361	0.060125	0.495	0	1.13476179	±	0.07144824
208Tl->228Th	583	5.5494	0	0	0.1035	0	±	#DIV/0!
214Bi->226Ra	609	9.361	0.031125	0.2425	0	1.19909179	±	0.08054067

U(ppb) = 123154.674

Th(ppb) = 5336.13058

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.005265617	0.04547462	1.13798499	±	0.08312757
234U(295)	53.2	9.361	0.006141812	0.05127875	1.1771054	±	0.07625366
234U(352)	53.2	9.361	0.006688863	0.05567	1.18082988	±	0.07434883
235U(63.3)	186	0.44395	0.001925344	0.01219783	0.06993464	±	0.00465595
235U(92.6)	186	0.44395	0.002221913	0.0142755	0.06896079	±	0.00451729
226Ra(63.3)	186	9.361	0.031271488	0.21950725	1.33092776	±	0.08860748
226Ra(92.6)	186	9.361	0.030903088	0.2169745	1.33060144	±	0.0871613

234U/238U	=	0.760758639	±	0.064234535
230Th/234U	=	0.623208889	±	0.128858721
226Ra/230Th	=	1.832654421	±	0.370576128
230Th/238U	=	0.474111546	±	0.095868822

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-327-GAM2**

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		6/18/96	6/18/96		6/18/96		6/19/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.64E+05	1.25789349
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.12E+06	1.07636807
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.77E+05	1.11023613
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.15E+05	1.02190013
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.04E+05	1.01456379
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.72E+06	1.01724251
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.83E+04	1.01294267
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.07E+05	1.0092881
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.26E+04	0.99109777
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.63E+04	0.9750485
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.37E+03	1.02156603

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	1.01633628	0.965379938
Eu154,155	42.9	1.01300134	0.969189895
Eu154,155	48.6	1.06395786	1.024312246
Eu155	86.4	1.01255331	0.996845034
Eu155	105	1.00972483	0.997558853
Eu154	123	1.01151691	1
Sb125	178	1.01551795	1.002597484
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1	0.975388914
Sb125	600	1.00925167	0.987576345
Sb125	636	1.04334778	1.024696475

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 = -0.008logx+1.027

CF (DM1B) equation = y =0.060logx+0.877

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.01573408	0.961494398
231Pa	27.4	1.015498	0.963265034
210Pb	46.5	1.01366038	0.977047177
227Ac	50	1.01340824	0.9789382
234U+214Pb	53.2	1.01319271	0.980554698
234Th->238U	63.3	1.01258877	0.985084223
230Th	67.6	1.01236043	0.986796802
234Th->238U	92.6	1.01126711	0.994996659
228Ac->228Ra	129	1.01011528	1.003635383
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) =			3.007		3.001		2.994		
			Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty	
Isotope	keV		6/27/96		6/4/96		6/5/96		
231Th->235U	25.6		4.00E+02	5.52E+01	1.90E+03	1.32E+02	0	0	
231Pa	27.4		2.43E+02	3.96E+01	1.63E+03	1.28E+02	0	0	
210Pb	46.5		2.41E+03	7.32E+01	2.23E+04	2.03E+02	0	0	
227Ac	50		4.12E+02	5.61E+01	2.04E+03	1.43E+02	0	0	
234U+214Pb	53.2		6.52E+02	6.64E+01	5.74E+03	1.64E+02	0	0	
234Th->238U	63.3		3.66E+03	9.00E+01	2.11E+04	2.15E+02	0	0	
230Th	67.6		2.88E+02	7.05E+01	2.54E+03	1.93E+02	0	0	
234Th->238U	92.6		4.35E+03	1.07E+02	2.59E+04	2.38E+02	0	0	
228Ac->228Ra	129		0.00E+00	0.00E+00	0	0	4.52E+03	1.41E+02	
235U+226Ra	186		2.76E+03	8.96E+01	1.85E+04	2.14E+02	0	0	
227Th->227Ac	236		1.72E+02	4.38E+01	1.27E+03	1.38E+02	0	0	
212Pb->228Th	239		4.81E+02	6.49E+01	0	0	5.20E+04	2.93E+02	
214Pb->226Ra	242		1.65E+03	6.91E+01	1.41E+04	1.76E+02	0	0	
214Pb->226Ra	295		3.03E+03	8.57E+01	2.74E+04	2.16E+02	0	0	
214Pb->226Ra	352		4.55E+03	9.67E+01	4.13E+04	2.50E+02	0	0	
208Tl->228Th	583		1.01E+02	4.28E+01	0	0	8.66E+03	1.44E+02	
214Bi->226Ra	609		2.27E+03	7.04E+01	2.01E+04	1.95E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.005	0.02375	0	0.09474429	±	0.01570316
231Pa	27.4	0.44395	0.0030375	0.020375	0	0.06707557	±	0.01278375
210Pb	46.5	9.361	0.030125	0.27875	0	1.02343311	±	0.06945344
227Ac	50	0.44395	0.00515	0.0255	0	0.09068138	±	0.01491554
234U+214Pb	53.2	9.361	0.00815	0.07175	0	1.07518345	±	0.12936995
234Th->238U	63.3	9.361	0.04575	0.26375	0	1.64091675	±	0.10770845
230Th	67.6	9.361	0.0036	0.03175	0	1.07238009	±	0.28229592
234Th->238U	92.6	9.361	0.054375	0.32375	0	1.58675615	±	0.1039233
228Ac->228Ra	129	5.5494	0	0	0.0565	0	±	#DIV/0!
235U+226Ra	186	9.361	0.0345	0.23125	0	1.39377338	±	0.0964397
227Th->227Ac	236	0.44395	0.00215	0.015875	0	0.06000554	±	0.01699911
212Pb->228Th	239	5.5494	0.0060125	0	0.65	0.05122953	±	0.0073253
214Pb->226Ra	242	9.361	0.020625	0.17625	0	1.0932504	±	0.08114864
214Pb->226Ra	295	9.361	0.037875	0.3425	0	1.03311074	±	0.06901087
214Pb->226Ra	352	9.361	0.056875	0.51625	0	1.02923882	±	0.06580951
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	0
214Bi->226Ra	609	9.361	0.028375	0.25125	0	1.05507811	±	0.07199266

U(ppb) = 131930.156

Th(ppb) = 12580.2699

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.00510662	0.04574293	1.05671138	±	0.07843646
234U(295)	53.2	9.361	0.005974751	0.05207943	1.08592653	±	0.07253892
234U(352)	53.2	9.361	0.006460411	0.05641373	1.08398231	±	0.06930981
235U(63.3)	186	0.44395	0.002133309	0.01229859	0.07685378	±	0.00504462
235U(92.6)	186	0.44395	0.002503969	0.01490869	0.07441425	±	0.0048737
226Ra(63.3)	186	9.361	0.032393213	0.21910431	1.38120425	±	0.09066113
226Ra(92.6)	186	9.361	0.031996031	0.21634131	1.38169271	±	0.09049284

234U/238U	=	0.655450725	±	0.057022649
230Th/234U	=	0.997061957	±	0.268572011
226Ra/230Th	=	1.28798013	±	0.340779853
230Th/238U	=	0.653524983	±	0.17291272

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-328-GAM2**

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		4/22/96	4/22/96		4/22/96		4/23/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	6.20E+05	3.92E+05	1.24668305	3.50E+05	1.31299082	3.29E+05	1.35006966
Eu154,155	42.9	1.34E+06	1.16E+06	1.0738582	1.06E+06	1.12177481	1.09E+06	1.10679668
Eu154,155	48.6	2.01E+05	1.95E+05	1.01522921	1.83E+05	1.04764277	1.99E+05	1.00500838
Eu155	86.4	3.41E+05	3.29E+05	1.01801931	3.19E+05	1.0337163	3.18E+05	1.03532188
Eu155	105	2.19E+05	2.13E+05	1.01395409	2.07E+05	1.02844109	2.07E+05	1.02844109
Eu154	123	1.82E+06	1.79E+06	1.00833346	1.74E+06	1.02264407	1.73E+06	1.02557187
Sb125	178	4.14E+04	4.10E+04	1.00486226	4.02E+04	1.01477904	3.94E+04	1.02496184
Eu154	248	1.11E+05	1.12E+05	0.99552237	1.09E+05	1.00911871	1.10E+05	1.00453174
Eu154	592	2.28E+04	2.29E+04	0.99781341	2.25E+04	1.00663723	2.31E+04	0.9934782
Sb125	600	1.58E+04	1.66E+04	0.97550692	1.62E+04	0.98755144	1.67E+04	0.97255635
Sb125	636	9.82E+03	1.10E+04	0.94433573	1.02E+04	0.98113682	1.05E+04	0.96689648

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	1.08292934	1.028239986
Eu154,155	42.9	1.03067303	0.98664783
Eu154,155	48.6	0.98993249	0.959304457
Eu155	86.4	1.01699631	1.001553206
Eu155	105	1.01428763	1
Eu154	123	1.01709594	1.002862969
Sb125	178	1.02000232	1.010034496
Eu154	248	1.0090499	0.995454483
Eu154	592	0.99565529	0.98692773
Sb125	600	0.99697535	0.984815892
Sb125	636	1.0238906	0.985485873

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 = -0.093logx+1.201

CF (DM1B) equation = y = -0.024logx+1.048

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.07003368	1.014202241
231Pa	27.4	1.0672892	1.013493986
210Pb	46.5	1.04592688	1.007981129
227Ac	50	1.04299579	1.00722472
234U+214Pb	53.2	1.04049022	1.006578121
234Th->238U	63.3	1.03346945	1.004766311
230Th	67.6	1.03081496	1.004081279
234Th->238U	92.6	1.01810518	1.000801336
228Ac->228Ra	129	1.00471516	0.997345847
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) =		3.004		3.001		2.994		
			Sample counts	Uncertainty	DP1B counts	Uncertainty	DM1B counts	Uncertainty	
Isotope	keV		5/1/96		4/25/96		4/29/96		
231Th->235U	25.6		9.65E+02	7.82E+01	2.19E+03	1.29E+02	0	0	
231Pa	27.4		6.83E+02	7.91E+01	1.74E+03	1.28E+02	0	0	
210Pb	46.5		5.84E+03	1.10E+02	2.19E+04	1.92E+02	0	0	
227Ac	50		8.32E+02	9.17E+01	2.32E+03	1.39E+02	0	0	
234U+214Pb	53.2		1.75E+03	9.30E+01	5.63E+03	1.51E+02	0	0	
234Th->238U	63.3		9.05E+03	1.36E+02	2.04E+04	2.13E+02	0	0	
230Th	67.6		5.81E+02	9.63E+01	2.54E+03	1.61E+02	0	0	
234Th->238U	92.6		1.10E+04	1.48E+02	2.48E+04	2.34E+02	0	0	
228Ac->228Ra	129		0.00E+00	0.00E+00	0	0	4.57E+03	1.39E+02	
235U+226Ra	186		6.52E+03	1.25E+02	1.85E+04	2.12E+02	0	0	
227Th->227Ac	236		2.76E+02	8.30E+01	1.16E+03	1.17E+02	0	0	
212Pb->228Th	239		3.66E+02	8.05E+01	0	0	4.97E+04	2.94E+02	
214Pb->226Ra	242		3.83E+03	9.97E+01	1.35E+04	1.75E+02	0	0	
214Pb->226Ra	295		7.12E+03	1.17E+02	2.66E+04	2.08E+02	0	0	
214Pb->226Ra	352		1.09E+04	1.35E+02	3.96E+04	2.44E+02	0	0	
208Tl->228Th	583		0.00E+00	0.00E+00	0	0	8.28E+03	1.42E+02	
214Bi->226Ra	609		5.55E+03	1.04E+02	1.94E+04	1.88E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.0120625	0.027375	0	0.20911288	±	0.02441931
231Pa	27.4	0.44395	0.0085375	0.02175	0	0.18580342	±	0.02782347
210Pb	46.5	9.361	0.073	0.27375	0	2.60830496	±	0.1656149
227Ac	50	0.44395	0.0104	0.029	0	0.16588917	±	0.02306832
234U+214Pb	53.2	9.361	0.021875	0.070375	0	3.02451657	±	0.25562995
234Th->238U	63.3	9.361	0.113125	0.255	0	4.28750233	±	0.26894801
230Th	67.6	9.361	0.0072625	0.03175	0	2.20501445	±	0.41305281
234Th->238U	92.6	9.361	0.1375	0.31	0	4.22300857	±	0.26271231
228Ac->228Ra	129	5.5494	0	0	0.057125	0	±	#DIV/0!
235U+226Ra	186	9.361	0.0815	0.23125	0	3.29582527	±	0.21100687
227Th->227Ac	236	0.44395	0.00345	0.0145	0	0.10552399	±	0.03406455
212Pb->228Th	239	5.5494	0.004575	0	0.62125	0.040826	±	0.00918539
214Pb->226Ra	242	9.361	0.047875	0.16875	0	2.65309816	±	0.17689757
214Pb->226Ra	295	9.361	0.089	0.3325	0	2.50314881	±	0.15694514
214Pb->226Ra	352	9.361	0.13625	0.495	0	2.57406568	±	0.15849561
208Tl->228Th	583	5.5494	0	0	0.1035	0	±	#DIV/0!
214Bi->226Ra	609	9.361	0.069375	0.2425	0	2.67534359	±	0.17015375

U(ppb) = 344716.36

Th(ppb) = 10025.5088

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.014810669	0.04547462	3.16907083	±	0.21130048
234U(295)	53.2	9.361	0.016763523	0.05127875	3.18093039	±	0.19944142
234U(352)	53.2	9.361	0.017827412	0.05567	3.11597083	±	0.19186289
235U(63.3)	186	0.44395	0.005383762	0.01213577	0.19675172	±	0.01234191
235U(92.6)	186	0.44395	0.006331875	0.0142755	0.19671666	±	0.01223769
226Ra(63.3)	186	9.361	0.076290594	0.21950725	3.25020264	±	0.20387989
226Ra(92.6)	186	9.361	0.075168125	0.2169745	3.23976369	±	0.20154489

234U/238U	=	0.73593523	±	0.053592323
230Th/234U	=	0.698823461	±	0.133434302
226Ra/230Th	=	1.474005142	±	0.277431284
230Th/238U	=	0.514288805	±	0.096797358

Gamma spectrometry calculations for Nopal I rock powders

Sample= **NOPI-329-GAM2**

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		6/18/96	6/18/96		6/18/96		6/19/96	
Isotope	keV	I	T	A/O	T	A/O	T	A/O
Sb125	27.3	5.87E+05	3.77E+05	1.2376745	3.37E+05	1.30300356	3.17E+05	1.33949714
Eu154,155	42.9	1.30E+06	1.15E+06	1.06255346	1.05E+06	1.11058532	1.08E+06	1.0955645
Eu154,155	48.6	2.19E+05	2.01E+05	1.04349633	1.86E+05	1.08388446	1.67E+05	1.14165508
Eu155	86.4	3.29E+05	3.23E+05	1.00923094	3.13E+05	1.02513439	3.14E+05	1.02351384
Eu155	105	2.10E+05	2.08E+05	1.00479236	2.03E+05	1.01704655	2.03E+05	1.01704655
Eu154	123	1.78E+06	1.76E+06	1.00566042	1.72E+06	1.01724251	1.72E+06	1.01724251
Sb125	178	3.93E+04	3.95E+04	0.99746407	3.85E+04	1.01031839	3.84E+04	1.01162826
Eu154	248	1.09E+05	1.09E+05	#DIV/0!	1.09E+05	#DIV/0!	1.08E+05	1.00461541
Eu154	592	2.22E+04	2.26E+04	0.99109777	2.15E+04	1.01610522	2.23E+04	0.99775449
Sb125	600	1.55E+04	1.66E+04	0.96611037	1.59E+04	0.98731456	1.56E+04	0.996788
Sb125	636	9.78E+03	1.02E+04	0.97912322	9.84E+03	0.996945	9.77E+03	1.0005116

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	1.08226932	1.028007279
Eu154,155	42.9	1.03106765	0.986474862
Eu154,155	48.6	1.09406717	1.053299603
Eu155	86.4	1.01415226	0.998419181
Eu155	105	1.01219575	1
Eu154	123	1.01151691	1
Sb125	178	1.0142002	1.001296491
Eu154	248	#DIV/0!	#DIV/0!
Eu154	592	1.00671651	0.981940128
Sb125	600	1.03175375	1.009595165
Sb125	636	1.02184442	1.003577522

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 = -0.069logx+1.211

CF (DM1B) equation = y =-0.027logx+1.052

Isotope	keV	CF (DP1B)	CF (DM1B)
231Th->235U	25.6	1.07158424	1.013977521
231Pa	27.4	1.06866269	1.013180735
210Pb	46.5	1.04592216	1.00697877
227Ac	50	1.04280197	1.00612781
234U+214Pb	53.2	1.04013475	1.005400386
234Th->238U	63.3	1.03266103	1.0033621
230Th	67.6	1.02983528	1.002591439
234Th->238U	92.6	1.01630551	0.998901503
228Ac->228Ra	129	1.00205162	0.995014078
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) =			3.005			3.001		2.994		
			Sample counts	Uncertainty		DP1B counts	Uncertainty	DM1B counts	Uncertainty	
Isotope	keV		7/1/96			6/4/96		6/5/96		
231Th->235U	25.6		4.11E+02	6.43E+01		1.90E+03	1.32E+02	0	0	
231Pa	27.4		2.39E+02	5.52E+01		1.63E+03	1.28E+02	0	0	
210Pb	46.5		2.79E+03	7.72E+01		2.23E+04	2.03E+02	0	0	
227Ac	50		4.91E+02	5.96E+01		2.04E+03	1.43E+02	0	0	
234U+214Pb	53.2		6.93E+02	6.51E+01		5.74E+03	1.64E+02	0	0	
234Th->238U	63.3		3.12E+03	6.87E+01		2.11E+04	2.15E+02	0	0	
230Th	67.6		1.64E+02	6.17E+01		2.54E+03	1.93E+02	0	0	
234Th->238U	92.6		3.88E+03	1.03E+02		2.59E+04	2.38E+02	0	0	
228Ac->228Ra	129		0.00E+00	0.00E+00		0	0	4.52E+03	1.41E+02	
235U+226Ra	186		2.71E+03	9.47E+01		1.85E+04	2.14E+02	0	0	
227Th->227Ac	236		1.34E+02	5.21E+01		1.27E+03	1.38E+02	0	0	
212Pb->228Th	239		3.72E+02	7.08E+01		0	0	5.20E+04	2.93E+02	
214Pb->226Ra	242		1.78E+03	7.50E+01		1.41E+04	1.76E+02	0	0	
214Pb->226Ra	295		3.51E+03	9.14E+01		2.74E+04	2.16E+02	0	0	
214Pb->226Ra	352		5.34E+03	9.86E+01		4.13E+04	2.50E+02	0	0	
208Tl->228Th	583		9.90E+01	3.56E+01		0	0	8.66E+03	1.44E+02	
214Bi->226Ra	609		2.62E+03	7.04E+01		2.01E+04	1.95E+02	0	0	

Isotope	keV	An (Bq/g)	Is	In (DP1B)	In (DM1B)	As (Bq/g)		Uncertainty
231Th->235U	25.6	0.44395	0.0051375	0.02375	0	0.10277089	±	0.01653348
231Pa	27.4	0.44395	0.0029875	0.020375	0	0.06947148	±	0.01745244
210Pb	46.5	9.361	0.034875	0.27875	0	1.22332674	±	0.08159241
227Ac	50	0.44395	0.0061375	0.0255	0	0.11127786	±	0.01696688
234U+214Pb	53.2	9.361	0.0086625	0.07175	0	1.17396382	±	0.13508716
234Th->238U	63.3	9.361	0.039	0.26375	0	1.42749203	±	0.09588734
230Th	67.6	9.361	0.00205	0.03175	0	0.62161525	±	0.24148351
234Th->238U	92.6	9.361	0.0485	0.32375	0	1.42331166	±	0.09429536
228Ac->228Ra	129	5.5494	0	0	0.0565	0	±	#DIV/0!
235U+226Ra	186	9.361	0.033875	0.23125	0	1.3694347	±	0.09639631
227Th->227Ac	236	0.44395	0.001675	0.015875	0	0.04677962	±	0.01909258
212Pb->228Th	239	5.5494	0.00465	0	0.65	0.03964671	±	0.00775487
214Pb->226Ra	242	9.361	0.02225	0.17625	0	1.18017023	±	0.08777128
214Pb->226Ra	295	9.361	0.043875	0.3425	0	1.19756837	±	0.07889623
214Pb->226Ra	352	9.361	0.06675	0.51625	0	1.20874578	±	0.07623322
208Tl->228Th	583	5.5494	0	0	0.10825	0	±	0
214Bi->226Ra	609	9.361	0.03275	0.25125	0	1.21856584	±	0.08097852

U(ppb) = 114770.75

Th(ppb) = 9735.91502

Interference Correction

Isotope	keV	An (Bq/g)	Is	In (DP1B)	As (Bq/g)		
234U(242)	53.2	9.361	0.005379338	0.04574293	1.14350541	±	0.08504445
234U(295)	53.2	9.361	0.006142657	0.05207943	1.14689433	±	0.0755578
234U(352)	53.2	9.361	0.006679553	0.05641373	1.15131986	±	0.07261148
235U(63.3)	186	0.44395	0.001854608	0.01254238	0.06555831	±	0.00440368
235U(92.6)	186	0.44395	0.002233425	0.01490869	0.06641827	±	0.00440026
226Ra(63.3)	186	9.361	0.03207905	0.21910431	1.36871913	±	0.09193945
226Ra(92.6)	186	9.361	0.031641575	0.21634131	1.36729554	±	0.09058425

234U/238U	=	0.803675146	±	0.069882832
230Th/234U	=	0.541835468	±	0.212606514
226Ra/230Th	=	2.201875083	±	0.85795969
230Th/238U	=	0.435459699	±	0.169676686

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

Report Generated On                 :  6-24-96 12:56:09 PM

Sample Title                        : Empty vial attenuation
Spectrum Description                : Empty vial + 4275C
Sample Identification               : JDPATT_7
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                 :  6-18-96  7:37:40 AM

Live Time                           :     1800.0 seconds
Real Time                           :     1995.6 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: Empty vial attenuation
Peak Locate Performed on: 6-24-96 12:56:01 PM
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	18.07	0.2690	3.02	12.85
2	46.81	0.3944	8.09	4.14
3	102.37	0.1188	17.69	30.04
4	123.18	0.2269	21.33	11.59
5	159.72	0.0502	27.58	178.04
6	180.40	0.0755	31.19	89.03
7	192.88	0.1607	33.37	21.23
8	206.57	0.0733	35.73	87.67
9	225.49	0.2771	38.81	5.85
10	250.12	0.0409	43.02	305.80
11	263.27	0.1187	45.61	34.51
12	282.77	0.0513	48.90	172.20
13	290.36	0.0756	50.38	79.47
14	317.99	0.1690	55.02	12.58
15	338.47	0.2389	58.64	6.02
16	348.48	0.1001	60.36	39.69
17	365.14	0.3772	63.15	3.52
18	444.65	0.3093	76.80	4.45
19	502.06	0.0374	86.98	293.48
20	610.67	0.0395	105.83	231.07
21	633.43	0.3635	109.56	3.02
22	656.30	0.2074	113.59	9.15
23	678.11	0.2144	117.52	9.02
24	686.24	0.3159	119.16	3.85
25	713.56	0.0222	123.67	683.68
26	762.85	0.3238	132.26	4.14
27	846.63	0.3178	146.69	3.58
28	870.66	0.2768	150.65	3.18
29	960.68	0.1943	166.38	7.22
30	1001.48	0.2077	173.60	7.78
31	1021.91	0.0556	177.15	100.36
32	1091.07	0.1083	189.07	26.28
33	1182.86	0.1967	204.96	8.38
34	1205.99	0.2333	209.22	5.46
35	1436.76	0.0393	249.09	176.66
36	1462.30	0.2961	253.44	3.00
37	1684.54	0.1484	291.98	9.25
38	1718.37	0.2688	298.20	4.20
39	1866.81	0.3499	322.80	3.07
40	2149.63	0.0967	372.74	25.92
41	2204.58	0.1191	382.19	16.93

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2324.83	0.1573	403.02	9.53
43	2479.25	0.0460	429.88	103.11
44	2575.51	0.1068	446.51	18.02
45	2638.01	0.1293	457.31	13.07
46	2659.07	0.2172	461.05	5.39
47	2684.92	0.0623	465.55	54.96
48	2711.15	0.2310	470.18	3.74
49	2770.77	0.1483	480.43	10.01
50	3230.59	0.1462	560.09	9.65
51	3372.36	0.0905	584.74	22.71
52	3428.77	0.0509	594.57	73.10
53	3480.08	0.0569	603.44	58.85
54	3515.41	0.0857	609.59	26.11
55	3622.40	0.1475	628.04	10.02
56	3638.35	0.1964	631.00	4.24
57	3684.75	0.0678	638.88	40.57
58	3845.33	0.2147	666.61	3.78
59	3890.41	0.1340	674.74	9.67
60	3920.61	0.2098	679.85	3.85
61	4011.85	0.0714	695.65	34.47
62	4029.21	0.1076	698.83	18.77

F rs 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: Empty vial attenuation
Peak Analysis Performed on: 6-24-96 12:56:06 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	15-	20	17.93	3.02	2.77E+03	0.00	5.45E+03
2	43-	49	47.13	8.09	1.24E+03	0.00	1.63E+04
3	99-	106	102.47	17.69	2.20E+04	0.00	2.14E+04
4	120-	127	123.48	21.33	3.29E+03	0.00	1.78E+04
5	155-	163	159.52	27.58	5.87E+05	0.00	5.41E+04
6	176-	184	180.34	31.19	9.81E+04	0.00	5.72E+04
7	189-	197	192.88	33.37	6.34E+03	0.00	3.41E+04
8	202-	211	206.49	35.73	5.88E+04	0.00	3.13E+04
9	220-	230	224.28	38.81	5.61E+03	0.00	6.08E+04
10	240-	254	248.52	43.02	1.30E+06	0.00	8.76E+04
11	258-	268	263.46	45.61	1.02E+04	0.00	3.32E+04
12	277-	287	282.48	48.90	2.19E+05	0.00	7.36E+04
13	287-	295	290.98	50.38	3.02E+04	0.00	5.85E+04
14	312-	323	317.76	55.02	5.31E+03	0.00	1.70E+04
15	333-	343	338.63	58.64	2.40E+03	0.00	1.61E+04
16	343-	353	348.55	60.36	1.23E+04	0.00	1.66E+04
17	359-	370	364.62	63.15	8.59E+02	0.00	1.65E+04
18	438-	450	443.32	76.80	5.94E+02	0.00	2.31E+04
19	495-	508	502.05	86.98	3.29E+05	0.00	3.55E+04
20	604-	617	610.70	105.83	2.10E+05	0.00	3.25E+04
21	626-	640	632.24	109.56	7.34E+02	0.00	3.35E+04
22	649-	663	655.47	113.59	2.37E+03	0.00	3.45E+04
23	671-	682	678.11	117.52	1.02E+03	0.00	3.15E+04
24	682-	693	687.60	119.16	1.50E+03	0.00	3.24E+04
25	706-	720	713.58	123.67	1.78E+06	0.00	3.59E+04
26	757-	770	763.12	132.26	6.41E+02	0.00	1.95E+04
27	839-	854	846.34	146.69	9.58E+02	0.00	2.07E+04
28	863-	878	869.15	150.65	7.99E+02	0.00	2.01E+04
29	952-	968	959.83	166.38	3.04E+03	0.00	1.98E+04
30	997-	1006	1001.51	173.60	7.69E+02	0.00	1.10E+04
31	1013-	1030	1021.93	177.15	3.93E+04	0.00	1.85E+04
32	1082-	1099	1090.69	189.07	5.36E+03	0.00	1.88E+04
33	1174-	1191	1182.33	204.96	1.97E+03	0.00	1.87E+04
34	1200-	1214	1206.84	209.22	9.95E+02	0.00	1.62E+04
35	1427-	1446	1436.76	249.09	1.09E+05	0.00	2.09E+04
36	1456-	1466	1461.82	253.44	4.93E+02	0.00	1.02E+04
37	1674-	1692	1684.07	291.98	2.71E+03	0.00	1.42E+04
38	1714-	1728	1719.96	298.20	4.65E+02	0.00	1.09E+04
39	1851-	1872	1861.76	322.80	1.49E+03	0.00	1.45E+04
40	2143-	2160	2149.74	372.74	3.93E+03	0.00	1.15E+04
41	2193-	2212	2204.26	382.19	2.55E+03	0.00	1.27E+04
42	2315-	2333	2324.36	403.02	1.60E+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	2467-	2491	2479.22	429.88	4.09E+04	0.00	1.56E+04
44	2563-	2587	2575.08	446.51	4.57E+03	0.00	1.43E+04
45	2625-	2650	2637.37	457.31	2.54E+03	0.00	1.49E+04
46	2654-	2667	2658.95	461.05	4.06E+02	0.00	7.92E+03
47	2672-	2697	2684.91	465.55	1.46E+04	0.00	1.45E+04
48	2704-	2717	2711.56	470.18	2.84E+02	0.00	8.07E+03
49	2764-	2779	2770.70	480.43	1.23E+03	0.00	8.98E+03
50	3220-	3239	3229.99	560.09	9.32E+02	0.00	9.82E+03
51	3358-	3385	3372.13	584.74	4.06E+03	0.00	1.24E+04
52	3415-	3442	3428.82	594.57	2.22E+04	0.00	1.22E+04
53	3466-	3493	3480.00	603.44	1.55E+04	0.00	1.18E+04
54	3501-	3529	3515.44	609.59	4.82E+03	0.00	1.14E+04
55	3611-	3629	3621.80	628.04	1.21E+03	0.00	7.74E+03
56	3629-	3648	3638.90	631.00	7.05E+02	0.00	8.27E+03
57	3670-	3698	3684.34	638.88	9.78E+03	0.00	1.18E+04
58	3831-	3854	3844.19	666.61	5.49E+02	0.00	1.00E+04
59	3880-	3904	3891.11	674.74	1.31E+03	0.00	1.03E+04
60	3913-	3932	3920.58	679.85	4.02E+02	0.00	7.96E+03
61	3999-	4026	4011.68	695.65	6.58E+03	0.00	1.04E+04
62	4026-	4035	4030.01	698.83	1.48E+03	0.00	1.12E+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	: 6-24-96 12:59:12 PM
Sample Title	: DP1B attenuation
Spectrum Description	: DP1B attenuation
Sample Identification	: DP1BAT_7
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	: 6-18-96 8:14:18 AM
Live Time	: 1800.0 seconds
Real Time	: 1990.1 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: DP1B attenuation
Peak Locate Performed on: 6-24-96 12:59:04 PM
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	18.08	0.2487	3.03	14.89
2	102.41	0.1380	17.70	23.18
3	123.08	0.2460	21.27	9.65
4	159.76	0.0563	27.59	142.08
5	180.43	0.0832	31.19	74.20
6	192.97	0.1717	33.41	17.84
7	206.65	0.0783	35.73	79.09
8	225.64	0.2805	38.99	6.65
9	250.17	0.0424	43.02	284.97
10	263.29	0.1240	45.60	30.88
11	282.82	0.0525	48.91	165.36
12	290.46	0.0773	50.40	73.50
13	317.99	0.2505	55.03	5.16
14	337.83	0.2893	58.58	5.17
15	348.52	0.1025	60.37	38.94
16	502.13	0.0372	87.00	288.50
17	610.74	0.0399	105.84	231.51
18	656.32	0.2322	113.77	6.61
19	678.20	0.2272	117.52	7.31
20	713.64	0.0224	123.69	690.93
21	763.05	0.2840	132.11	5.22
22	960.32	0.2212	166.36	4.29
23	1001.64	0.2465	173.40	5.97
24	1022.05	0.0556	177.16	100.24
25	1091.12	0.1099	189.16	25.91
26	1183.19	0.1969	205.08	9.01
27	1205.64	0.2148	209.06	6.49
28	1436.93	0.0395	249.12	177.75
29	1462.55	0.2983	253.59	3.58
30	1684.78	0.1753	292.01	7.53
31	1862.40	0.2220	322.99	3.46
32	2149.85	0.0999	372.74	23.66
33	2204.99	0.1213	382.28	15.50
34	2325.43	0.1480	403.18	11.09
35	2479.59	0.0457	429.94	104.73
36	2575.65	0.1104	446.59	17.10
37	2638.32	0.1551	457.37	7.88
38	2685.17	0.0612	465.61	57.05
39	2771.49	0.1465	480.54	9.77
40	3231.37	0.1532	560.18	9.47
41	3372.82	0.0888	584.83	25.23

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	3429.25	0.0506	594.64	74.03
43	3480.43	0.0558	603.54	59.74
44	3515.71	0.0861	609.65	25.72
45	3531.75	0.2694	612.52	3.58
46	3555.33	0.2069	616.43	4.78
47	3623.05	0.1480	628.20	8.74
48	3685.24	0.0665	638.96	41.81
49	3764.10	0.2127	652.68	4.84
50	3890.81	0.1342	674.59	9.62
51	3920.04	0.1925	680.03	5.29
52	4012.34	0.0714	695.80	34.46
53	4029.44	0.1112	698.88	18.58

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: DP1B attenuation
Peak Analysis Performed on: 6-24-96 12:59:09 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	15-	20	17.96	3.03	2.83E+03	0.00	5.29E+03
2	98-	106	102.54	17.70	1.33E+04	0.00	2.23E+04
3	119-	126	123.16	21.27	1.46E+03	0.00	1.79E+04
4	155-	163	159.55	27.59	3.77E+05	0.00	4.51E+04
5	176-	184	180.34	31.19	7.07E+04	0.00	5.05E+04
6	189-	197	193.16	33.41	5.18E+03	0.00	3.40E+04
7	202-	211	206.53	35.73	4.69E+04	0.00	3.30E+04
8	223-	230	225.30	38.99	2.19E+03	0.00	4.79E+04
9	240-	254	248.56	43.02	1.15E+06	0.00	9.09E+04
10	258-	268	263.45	45.60	8.86E+03	0.00	3.32E+04
11	277-	287	282.54	48.91	2.01E+05	0.00	6.89E+04
12	287-	295	291.08	50.40	2.53E+04	0.00	5.70E+04
13	312-	323	317.77	55.03	1.97E+03	0.00	1.72E+04
14	332-	343	338.27	58.58	1.36E+03	0.00	1.74E+04
15	343-	353	348.61	60.37	1.22E+04	0.00	1.60E+04
16	495-	508	502.13	87.00	3.23E+05	0.00	3.74E+04
17	604-	617	610.78	105.84	2.08E+05	0.00	3.64E+04
18	649-	663	656.49	113.77	2.65E+03	0.00	3.95E+04
19	671-	681	678.11	117.52	1.04E+03	0.00	3.30E+04
20	706-	720	713.68	123.69	1.76E+06	0.00	3.97E+04
21	755-	770	762.22	132.11	9.58E+02	0.00	2.21E+04
22	952-	968	959.73	166.36	2.55E+03	0.00	2.03E+04
23	993-	1009	1000.35	173.40	1.42E+03	0.00	1.87E+04
24	1013-	1030	1021.99	177.16	3.95E+04	0.00	1.87E+04
25	1084-	1099	1091.21	189.16	5.73E+03	0.00	1.70E+04
26	1174-	1191	1183.00	205.08	1.74E+03	0.00	1.97E+04
27	1196-	1214	1205.95	209.06	1.45E+03	0.00	2.10E+04
28	1427-	1446	1436.94	249.12	1.09E+05	0.00	2.13E+04
29	1459-	1471	1462.71	253.59	3.24E+02	0.00	1.25E+04
30	1674-	1694	1684.22	292.01	2.13E+03	0.00	1.65E+04
31	1851-	1872	1862.86	322.99	1.15E+03	0.00	1.51E+04
32	2138-	2160	2149.74	372.74	4.81E+03	0.00	1.44E+04
33	2193-	2213	2204.74	382.28	2.72E+03	0.00	1.35E+04
34	2318-	2332	2325.26	403.18	1.39E+03	0.00	1.00E+04
35	2467-	2491	2479.58	429.94	4.22E+04	0.00	1.62E+04
36	2563-	2587	2575.59	446.59	4.15E+03	0.00	1.49E+04
37	2628-	2646	2637.73	457.37	1.37E+03	0.00	1.15E+04
38	2672-	2697	2685.23	465.61	1.52E+04	0.00	1.47E+04
39	2759-	2783	2771.31	480.54	1.56E+03	0.00	1.41E+04
40	3220-	3238	3230.55	560.18	7.45E+02	0.00	9.63E+03
41	3359-	3386	3372.68	584.83	4.06E+03	0.00	1.27E+04
42	3415-	3442	3429.21	594.64	2.26E+04	0.00	1.26E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	3466-	3494	3480.55	603.54	1.66E+04	0.00	1.23E+04
44	3501-	3526	3515.77	609.65	4.15E+03	0.00	1.12E+04
45	3526-	3542	3532.30	612.52	3.05E+02	0.00	7.05E+03
46	3545-	3564	3554.88	616.43	3.95E+02	0.00	8.27E+03
47	3611-	3631	3622.73	628.20	1.03E+03	0.00	8.94E+03
48	3671-	3699	3684.76	638.96	1.02E+04	0.00	1.19E+04
49	3752-	3772	3763.89	652.68	2.89E+02	0.00	8.68E+03
50	3876-	3901	3890.23	674.59	1.49E+03	0.00	1.10E+04
51	3913-	3934	3921.57	680.03	5.33E+02	0.00	8.70E+03
52	4000-	4026	4012.51	695.80	6.99E+03	0.00	9.96E+03
53	4026-	4035	4030.27	698.88	1.38E+03	0.00	1.20E+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              :  6-24-96 12:59:56 PM

Sample Title                     : DM1B attenuation
Spectrum Description             : DM1B attenuation
Sample Identification            : DM1BAT_7
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              :  6-18-96  8:48:58 AM

Live Time                        :     1800.0 seconds
Real Time                        :     1983.9 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: DM1B attenuation
Peak Locate Performed on: 6-24-96 12:59:50 PM
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	18.00	0.2561	3.04	15.25
2	47.35	0.4493	8.19	3.21
3	102.50	0.1435	17.70	20.49
4	123.34	0.2610	21.34	7.33
5	159.78	0.0579	27.59	135.69
6	180.44	0.0850	31.19	71.76
7	193.03	0.1669	33.42	17.35
8	206.65	0.0814	35.77	73.82
9	226.47	0.2836	39.16	3.83
10	250.16	0.0435	43.02	271.06
11	263.30	0.1256	45.60	30.10
12	282.80	0.0536	48.91	159.04
13	290.44	0.0788	50.39	70.85
14	317.51	0.2989	55.05	4.91
15	337.69	0.3110	58.46	3.66
16	348.54	0.1034	60.36	38.02
17	445.57	0.2925	77.14	3.95
18	502.09	0.0378	86.99	282.37
19	610.70	0.0402	105.83	225.71
20	633.84	0.3634	109.77	3.29
21	656.78	0.2143	113.71	8.62
22	678.22	0.2521	117.37	6.36
23	686.25	0.3040	119.03	3.17
24	713.59	0.0225	123.68	670.32
25	762.18	0.2720	132.19	5.29
26	845.69	0.3167	146.68	3.38
27	961.16	0.2140	166.47	4.70
28	1001.22	0.2232	173.69	7.21
29	1021.95	0.0563	177.14	97.00
30	1091.06	0.1087	189.08	27.01
31	1183.02	0.2135	205.01	5.40
32	1206.02	0.2143	209.30	6.95
33	1382.66	0.2704	239.92	3.09
34	1436.77	0.0396	249.09	171.88
35	1685.00	0.1839	291.98	6.54
36	1861.68	0.2027	322.95	4.16
37	2008.59	0.2894	348.24	3.30
38	2149.52	0.1046	372.74	21.22
39	2204.97	0.1243	382.34	14.25
40	2324.92	0.1548	402.98	10.03
41	2364.67	0.2646	409.96	3.08

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2479.27	0.0460	429.90	101.32
43	2575.43	0.1066	446.55	17.97
44	2637.61	0.1754	457.41	6.84
45	2684.89	0.0633	465.53	51.66
46	2771.15	0.1571	480.48	7.28
47	3230.77	0.1489	560.28	8.15
48	3372.45	0.0925	584.86	21.79
49	3428.85	0.0517	594.58	68.98
50	3480.11	0.0581	603.45	54.71
51	3515.36	0.0894	609.58	23.91
52	3622.87	0.1424	628.09	9.98
53	3639.42	0.2342	631.32	3.74
54	3684.86	0.0686	638.82	37.80
55	3764.39	0.2453	652.72	3.19
56	3890.58	0.1340	674.88	10.27
57	3918.98	0.2177	680.19	4.78
58	4012.01	0.0723	695.67	32.30
59	4029.22	0.1067	698.66	19.13

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: DM1B attenuation
Peak Analysis Performed on: 6-24-96 12:59:53 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	15-	20	18.00	3.04	2.90E+03	0.00	5.07E+03
2	44-	50	47.73	8.19	4.87E+02	0.00	1.37E+04
3	99-	106	102.54	17.70	1.27E+04	0.00	1.78E+04
4	119-	127	123.55	21.34	1.61E+03	0.00	1.91E+04
5	155-	163	159.55	27.59	3.37E+05	0.00	4.21E+04
6	176-	184	180.34	31.19	6.43E+04	0.00	4.92E+04
7	189-	197	193.20	33.42	4.64E+03	0.00	3.95E+04
8	205-	211	206.76	35.77	3.83E+04	0.00	2.86E+04
9	222-	231	226.30	39.16	2.42E+03	0.00	5.95E+04
10	240-	254	248.55	43.02	1.05E+06	0.00	8.58E+04
11	258-	268	263.42	45.60	7.64E+03	0.00	3.22E+04
12	277-	287	282.51	48.91	1.86E+05	0.00	6.48E+04
13	287-	295	291.05	50.39	2.43E+04	0.00	5.29E+04
14	312-	322	317.91	55.05	1.70E+03	0.00	1.52E+04
15	332-	343	337.55	58.46	1.54E+03	0.00	1.65E+04
16	343-	353	348.53	60.36	1.12E+04	0.00	1.56E+04
17	439-	451	445.30	77.14	6.87E+02	0.00	2.45E+04
18	495-	508	502.08	86.99	3.13E+05	0.00	3.66E+04
19	604-	617	610.73	105.83	2.03E+05	0.00	3.52E+04
20	627-	640	633.42	109.77	1.25E+03	0.00	3.40E+04
21	649-	663	656.15	113.71	2.10E+03	0.00	3.95E+04
22	671-	681	677.25	117.37	1.03E+03	0.00	3.28E+04
23	681-	693	686.84	119.03	1.14E+03	0.00	4.19E+04
24	706-	720	713.62	123.68	1.72E+06	0.00	3.91E+04
25	759-	769	762.68	132.19	7.16E+02	0.00	1.47E+04
26	838-	853	846.23	146.68	7.98E+02	0.00	2.01E+04
27	953-	969	960.40	166.47	2.12E+03	0.00	1.98E+04
28	998-	1009	1002.02	173.69	8.42E+02	0.00	1.31E+04
29	1013-	1030	1021.89	177.14	3.85E+04	0.00	1.89E+04
30	1082-	1099	1090.75	189.08	5.73E+03	0.00	1.87E+04
31	1174-	1191	1182.57	205.01	7.61E+02	0.00	2.02E+04
32	1199-	1214	1207.33	209.30	1.36E+03	0.00	1.76E+04
33	1378-	1391	1383.91	239.92	6.26E+02	0.00	1.49E+04
34	1428-	1446	1436.78	249.09	1.09E+05	0.00	1.93E+04
35	1675-	1694	1684.10	291.98	2.12E+03	0.00	1.52E+04
36	1853-	1872	1862.62	322.95	1.56E+03	0.00	1.31E+04
37	1999-	2015	2008.49	348.24	6.34E+02	0.00	1.04E+04
38	2141-	2160	2149.73	372.74	4.07E+03	0.00	1.27E+04
39	2195-	2216	2205.11	382.34	2.75E+03	0.00	1.41E+04
40	2313-	2332	2324.10	402.98	1.58E+03	0.00	1.32E+04
41	2353-	2369	2364.36	409.96	2.52E+02	0.00	1.13E+04
42	2470-	2491	2479.30	429.90	4.28E+04	0.00	1.33E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2563-	2587	2575.33	446.55	4.07E+03	0.00	1.44E+04
44	2630-	2649	2637.95	457.41	8.53E+02	0.00	1.19E+04
45	2672-	2697	2684.79	465.53	1.45E+04	0.00	1.46E+04
46	2761-	2783	2770.99	480.48	1.45E+03	0.00	1.30E+04
47	3221-	3243	3231.11	560.28	1.54E+03	0.00	1.08E+04
48	3364-	3385	3372.85	584.86	3.88E+03	0.00	1.00E+04
49	3415-	3442	3428.86	594.58	2.15E+04	0.00	1.32E+04
50	3466-	3493	3480.04	603.45	1.59E+04	0.00	1.19E+04
51	3501-	3529	3515.36	609.58	4.65E+03	0.00	1.16E+04
52	3608-	3632	3622.12	628.09	1.39E+03	0.00	1.03E+04
53	3632-	3651	3640.74	631.32	4.75E+02	0.00	8.26E+03
54	3670-	3698	3684.00	638.82	9.84E+03	0.00	1.18E+04
55	3755-	3775	3764.13	652.72	4.34E+02	0.00	8.48E+03
56	3881-	3904	3891.88	674.88	1.75E+03	0.00	9.41E+03
57	3913-	3933	3922.50	680.19	3.95E+02	0.00	8.28E+03
58	3999-	4023	4011.80	695.67	6.78E+03	0.00	9.11E+03
59	4023-	4035	4029.01	698.66	2.05E+03	0.00	1.64E+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                 :  6-24-96  1:00:35 PM

Sample Title                        : BL5D attenuation
Spectrum Description                : BL5D attenuation
Sample Identification               : BL5DAT_7
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                 :  6-18-96  9:27:50 AM

Live Time                           :     1800.0 seconds
Real Time                           :     1991.9 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: BL5D attenuation
Peak Locate Performed on: 6-24-96 1:00:30 PM
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	102.06	0.1405	17.63	21.16
2	122.62	0.2945	21.23	6.87
3	159.23	0.0575	27.53	132.11
4	180.03	0.0801	31.15	80.14
5	192.49	0.1838	33.31	15.08
6	206.14	0.0764	35.66	82.18
7	225.18	0.3093	38.78	5.17
8	249.69	0.0437	42.94	270.14
9	262.87	0.1222	45.51	32.51
10	270.11	0.1918	46.76	12.87
11	282.14	0.0524	48.81	164.24
12	289.94	0.0763	50.27	78.20
13	308.62	0.3020	53.30	5.04
14	317.54	0.2645	54.99	4.34
15	347.93	0.1029	60.26	42.81
16	366.92	0.1641	63.50	16.92
17	421.95	0.3070	73.04	5.15
18	433.66	0.1306	75.13	22.74
19	446.65	0.1140	77.34	29.18
20	459.35	0.3245	79.57	3.90
21	469.63	0.3061	81.36	3.69
22	486.09	0.2976	84.08	3.05
23	501.36	0.0368	86.87	274.56
24	536.27	0.1808	92.88	9.81
25	548.32	0.2069	95.09	8.36
26	570.11	0.1607	98.78	16.05
27	609.81	0.0404	105.68	230.29
28	655.24	0.2147	113.53	7.82
29	712.60	0.0225	123.51	675.18
30	761.16	0.2810	131.97	5.05
31	845.43	0.2777	146.64	4.31
32	869.77	0.3474	150.73	3.15
33	958.91	0.2178	166.14	5.55
34	1000.40	0.2374	173.39	6.32
35	1020.62	0.0570	176.91	96.04
36	1076.70	0.1494	186.52	12.17
37	1089.64	0.1093	188.90	26.83
38	1181.53	0.1999	204.75	7.82
39	1204.10	0.2567	208.86	4.36
40	1400.60	0.1445	242.80	13.01
41	1434.99	0.0395	248.79	177.53

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1682.80	0.1691	291.63	6.57
43	1708.47	0.0987	296.29	26.57
44	1859.96	0.2040	322.58	3.66
45	2036.95	0.0817	353.14	36.67
46	2147.03	0.1041	372.32	22.92
47	2202.21	0.1217	381.75	15.98
48	2322.76	0.1496	402.66	11.06
49	2476.39	0.0460	429.38	102.43
50	2572.49	0.1077	445.96	18.70
51	2634.66	0.1728	456.91	7.64
52	2655.55	0.2670	460.64	3.05
53	2681.79	0.0631	464.99	52.98
54	2708.14	0.2463	469.38	3.43
55	2767.89	0.1472	479.86	9.70
56	3226.97	0.1500	559.27	9.48
57	3368.62	0.0932	584.08	21.75
58	3424.79	0.0508	593.88	73.63
59	3476.09	0.0570	602.73	57.80
60	3511.19	0.0896	608.82	25.26
61	3526.80	0.0958	611.66	21.26
62	3549.16	0.2321	616.06	4.20
63	3617.66	0.1451	627.43	8.64
64	3680.64	0.0665	638.19	41.38
65	3760.06	0.2177	652.00	3.38
66	3885.68	0.1373	673.78	9.89
67	3914.65	0.1856	678.76	5.20
68	4007.22	0.0726	694.94	33.73
69	4028.67	0.1010	698.55	19.44

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: BL5D attenuation
Peak Analysis Performed on: 6-24-96 1:00:34 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	98-	105	102.16	17.63	1.39E+04	0.00	2.38E+04
2	121-	126	122.88	21.23	1.99E+03	0.00	1.39E+04
3	155-	163	159.21	27.53	3.66E+05	0.00	4.28E+04
4	175-	184	180.12	31.15	7.36E+04	0.00	4.93E+04
5	189-	196	192.56	33.31	5.87E+03	0.00	2.95E+04
6	201-	210	206.08	35.66	4.60E+04	0.00	3.18E+04
7	220-	229	224.08	38.78	3.28E+03	0.00	5.61E+04
8	240-	254	248.10	42.94	1.12E+06	0.00	8.73E+04
9	257-	267	262.88	45.51	2.96E+03	0.00	3.97E+04
10	267-	275	270.11	46.76	4.03E+02	0.00	2.90E+04
11	277-	287	281.95	48.81	1.76E+05	0.00	9.12E+04
12	287-	295	290.34	50.27	4.45E+04	0.00	3.63E+04
13	303-	313	307.81	53.30	5.72E+02	0.00	1.71E+04
14	313-	322	317.59	54.99	1.35E+03	0.00	1.53E+04
15	342-	353	347.95	60.26	1.12E+04	0.00	1.89E+04
16	361-	372	366.64	63.50	4.28E+03	0.00	1.80E+04
17	416-	427	421.62	73.04	8.56E+02	0.00	2.26E+04
18	427-	439	433.70	75.13	6.34E+03	0.00	2.59E+04
19	440-	452	446.46	77.34	1.09E+04	0.00	2.62E+04
20	453-	465	459.32	79.57	4.00E+02	0.00	2.77E+04
21	465-	473	469.62	81.36	6.73E+02	0.00	1.98E+04
22	479-	492	485.33	84.08	1.74E+03	0.00	3.68E+04
23	495-	507	501.37	86.87	3.20E+05	0.00	3.73E+04
24	529-	542	536.05	92.88	4.13E+03	0.00	3.84E+04
25	542-	554	548.79	95.09	2.67E+03	0.00	3.51E+04
26	563-	576	570.05	98.78	5.13E+03	0.00	3.63E+04
27	603-	616	609.85	105.68	2.06E+05	0.00	3.63E+04
28	652-	660	655.10	113.53	1.44E+03	0.00	2.50E+04
29	705-	719	712.64	123.51	1.72E+06	0.00	4.00E+04
30	757-	765	761.43	131.97	4.12E+02	0.00	1.30E+04
31	840-	852	846.02	146.64	3.16E+02	0.00	1.78E+04
32	865-	877	869.63	150.73	5.07E+02	0.00	1.68E+04
33	950-	966	958.49	166.14	2.60E+03	0.00	2.07E+04
34	992-	1008	1000.27	173.39	1.33E+03	0.00	1.97E+04
35	1012-	1028	1020.59	176.91	3.86E+04	0.00	1.90E+04
36	1068-	1085	1075.97	186.52	1.62E+03	0.00	2.20E+04
37	1085-	1097	1089.72	188.90	5.21E+03	0.00	1.47E+04
38	1172-	1190	1181.10	204.75	2.01E+03	0.00	2.11E+04
39	1195-	1212	1204.80	208.86	1.32E+03	0.00	2.04E+04
40	1395-	1409	1400.47	242.80	2.23E+03	0.00	1.71E+04
41	1425-	1444	1435.03	248.79	1.08E+05	0.00	2.18E+04
42	1672-	1692	1682.02	291.63	2.15E+03	0.00	1.67E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1698-	1718	1708.92	296.29	4.59E+03	0.00	1.68E+04
44	1849-	1870	1860.49	322.58	1.75E+03	0.00	1.52E+04
45	2026-	2047	2036.75	353.14	7.42E+03	0.00	1.47E+04
46	2138-	2158	2147.30	372.32	4.29E+03	0.00	1.37E+04
47	2191-	2213	2201.67	381.75	2.91E+03	0.00	1.50E+04
48	2311-	2329	2322.26	402.66	1.74E+03	0.00	1.29E+04
49	2464-	2488	2476.32	429.38	4.24E+04	0.00	1.60E+04
50	2560-	2584	2571.91	445.96	3.95E+03	0.00	1.53E+04
51	2622-	2646	2635.05	456.91	1.53E+03	0.00	1.50E+04
52	2646-	2667	2656.56	460.64	3.15E+02	0.00	1.30E+04
53	2669-	2693	2681.67	464.99	1.38E+04	0.00	1.49E+04
54	2698-	2714	2706.98	469.38	5.44E+02	0.00	9.86E+03
55	2755-	2774	2767.41	479.86	1.28E+03	0.00	1.16E+04
56	3213-	3240	3225.26	559.27	1.21E+03	0.00	1.37E+04
57	3355-	3377	3368.34	584.08	3.63E+03	0.00	1.10E+04
58	3411-	3438	3424.84	593.88	2.27E+04	0.00	1.25E+04
59	3462-	3489	3475.89	602.73	1.56E+04	0.00	1.25E+04
60	3497-	3518	3511.00	608.82	3.75E+03	0.00	1.02E+04
61	3518-	3540	3527.35	611.66	2.66E+03	0.00	1.12E+04
62	3540-	3562	3552.71	616.06	6.98E+02	0.00	9.25E+03
63	3609-	3628	3618.31	627.43	1.08E+03	0.00	8.63E+03
64	3666-	3694	3680.34	638.19	9.80E+03	0.00	1.24E+04
65	3752-	3769	3759.94	652.00	5.42E+02	0.00	7.35E+03
66	3875-	3900	3885.58	673.78	1.43E+03	0.00	1.11E+04
67	3906-	3924	3914.29	678.76	1.01E+03	0.00	7.19E+03
68	3992-	4021	4007.58	694.94	7.06E+03	0.00	1.12E+04
69	4021-	4035	4028.37	698.55	2.42E+03	0.00	2.14E+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                 :  4-24-96  2:01:16 PM

Sample Title                        : NOPI-308-GAM2 attenuation
Spectrum Description                : NOPI-308-GAM2 attenuation
Sample Identification               : NP308AT
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                 :  4-23-96 10:37:30 AM

Live Time                           :     1800.0 seconds
Real Time                           :     1988.7 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: NOPI-308-GAM2 attenuation
Peak Locate Performed on: 4-24-96 2:01:12 PM
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	102.15	0.1318	17.63	24.92
2	122.60	0.2438	21.18	7.90
3	159.17	0.0551	27.51	146.80
4	179.89	0.0779	31.14	88.54
5	192.42	0.1681	33.29	20.55
6	206.00	0.0733	35.63	91.15
7	224.91	0.2958	38.77	6.07
8	249.50	0.0438	42.91	262.13
9	262.68	0.1225	45.48	32.92
10	282.01	0.0509	48.78	177.29
11	289.79	0.0756	50.22	79.88
12	317.56	0.2381	54.90	5.89
13	336.85	0.3029	58.29	3.04
14	347.75	0.1020	60.22	43.86
15	445.29	0.3134	77.03	3.66
16	501.01	0.0374	86.81	298.24
17	609.47	0.0393	105.62	224.38
18	654.93	0.2224	113.44	8.58
19	684.36	0.2353	118.92	4.22
20	712.25	0.0225	123.43	713.43
21	760.94	0.2858	132.09	5.27
22	868.89	0.3548	150.46	3.56
23	959.12	0.2123	166.12	5.41
24	999.62	0.2081	173.30	8.20
25	1020.00	0.0555	176.82	100.89
26	1088.98	0.1059	188.74	28.00
27	1180.84	0.1914	204.66	8.61
28	1203.77	0.2141	208.59	7.33
29	1434.10	0.0394	248.64	178.77
30	1460.02	0.2303	253.25	5.69
31	1681.25	0.1727	291.37	5.56
32	1764.06	0.3276	306.08	3.27
33	1859.50	0.2160	322.53	3.20
34	2035.35	0.2907	353.08	3.20
35	2145.84	0.0999	372.08	24.27
36	2200.64	0.1215	381.54	16.18
37	2320.62	0.1546	402.44	9.72
38	2474.94	0.0452	429.13	106.29
39	2570.89	0.1073	445.69	18.05
40	2633.07	0.1570	456.58	9.21
41	2680.12	0.0621	464.74	54.16

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2707.75	0.2732	469.37	3.33
43	2766.70	0.1577	479.80	7.28
44	3225.45	0.1408	559.28	9.17
45	3366.45	0.0899	583.76	23.82
46	3422.87	0.0513	593.54	71.32
47	3473.97	0.0562	602.42	59.44
48	3509.29	0.0856	608.51	26.10
49	3547.46	0.2134	615.07	4.63
50	3615.94	0.1365	626.78	10.57
51	3678.42	0.0667	637.82	40.43
52	3883.14	0.1364	673.37	9.66
53	3914.10	0.2015	678.74	4.29
54	4004.88	0.0723	694.45	33.09
55	4028.87	0.1023	698.41	18.58

Errors quoted at 0.000 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-308-GAM2 attenuation
Peak Analysis Performed on: 4-24-96 2:01:15 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	99-	105	102.13	17.63	1.46E+04	0.00	1.62E+04
2	118-	126	122.60	21.18	1.49E+03	0.00	2.00E+04
3	155-	163	159.11	27.51	3.76E+05	0.00	4.35E+04
4	175-	184	180.04	31.14	7.81E+04	0.00	5.01E+04
5	191-	196	192.45	33.29	5.92E+03	0.00	2.08E+04
6	201-	210	205.95	35.63	4.77E+04	0.00	3.20E+04
7	220-	229	224.06	38.77	2.75E+03	0.00	5.75E+04
8	240-	254	247.94	42.91	1.13E+06	0.00	8.79E+04
9	257-	267	262.75	45.48	8.25E+03	0.00	3.45E+04
10	276-	287	281.78	48.78	1.67E+05	0.00	1.04E+05
11	287-	294	290.06	50.22	5.02E+04	0.00	2.77E+04
12	312-	322	317.07	54.90	1.90E+03	0.00	1.58E+04
13	331-	342	336.62	58.29	1.09E+03	0.00	1.77E+04
14	342-	353	347.74	60.22	1.21E+04	0.00	1.74E+04
15	439-	451	444.63	77.03	7.29E+02	0.00	2.50E+04
16	494-	507	501.01	86.81	3.19E+05	0.00	3.78E+04
17	602-	616	609.48	105.62	2.07E+05	0.00	3.78E+04
18	648-	661	654.62	113.44	2.20E+03	0.00	3.72E+04
19	683-	691	686.19	118.92	1.86E+03	0.00	3.04E+04
20	705-	719	712.19	123.43	1.73E+06	0.00	4.09E+04
21	757-	768	762.14	132.09	8.37E+02	0.00	1.65E+04
22	861-	876	868.05	150.46	6.23E+02	0.00	1.99E+04
23	951-	967	958.35	166.12	3.21E+03	0.00	1.95E+04
24	996-	1007	999.77	173.30	7.48E+02	0.00	1.34E+04
25	1011-	1028	1020.06	176.82	4.01E+04	0.00	1.89E+04
26	1080-	1097	1088.79	188.74	5.75E+03	0.00	1.93E+04
27	1172-	1189	1180.59	204.66	1.94E+03	0.00	1.96E+04
28	1195-	1209	1203.26	208.59	6.45E+02	0.00	1.70E+04
29	1424-	1443	1434.14	248.64	1.08E+05	0.00	2.23E+04
30	1454-	1469	1460.76	253.25	9.19E+02	0.00	1.48E+04
31	1671-	1691	1680.53	291.37	2.08E+03	0.00	1.65E+04
32	1756-	1774	1765.35	306.08	5.57E+02	0.00	1.31E+04
33	1849-	1869	1860.20	322.53	1.71E+03	0.00	1.41E+04
34	2031-	2041	2036.38	353.08	3.32E+02	0.00	7.06E+03
35	2134-	2156	2145.91	372.08	4.35E+03	0.00	1.48E+04
36	2191-	2211	2200.51	381.54	2.80E+03	0.00	1.34E+04
37	2312-	2328	2320.97	402.44	1.69E+03	0.00	1.11E+04
38	2463-	2486	2474.90	429.13	4.41E+04	0.00	1.55E+04
39	2558-	2582	2570.39	445.69	4.47E+03	0.00	1.45E+04
40	2625-	2645	2633.17	456.58	1.19E+03	0.00	1.29E+04
41	2667-	2692	2680.25	464.74	1.51E+04	0.00	1.49E+04
42	2699-	2713	2706.92	469.37	5.10E+02	0.00	8.50E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2758-	2775	2767.04	479.80	1.21E+03	0.00	1.06E+04
44	3212-	3238	3225.35	559.28	1.41E+03	0.00	1.28E+04
45	3352-	3379	3366.48	583.76	4.41E+03	0.00	1.24E+04
46	3409-	3436	3422.86	593.54	2.24E+04	0.00	1.28E+04
47	3460-	3487	3474.08	602.42	1.67E+04	0.00	1.19E+04
48	3495-	3522	3509.20	608.51	4.69E+03	0.00	1.17E+04
49	3539-	3555	3547.01	615.07	3.47E+02	0.00	6.92E+03
50	3602-	3624	3614.53	626.78	1.43E+03	0.00	9.34E+03
51	3664-	3692	3678.21	637.82	1.04E+04	0.00	1.24E+04
52	3874-	3894	3883.18	673.37	1.19E+03	0.00	9.17E+03
53	3907-	3922	3914.15	678.74	3.28E+02	0.00	6.49E+03
54	3990-	4019	4004.77	694.45	7.20E+03	0.00	1.09E+04
55	4019-	4035	4027.59	698.41	2.81E+03	0.00	2.38E+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                  :  4-24-96  2:03:38 PM

Sample Title                         : NOPI-309-GAM2 attenuation
Spectrum Description                 : NOPI-309-GAM2 attenuation
Sample Identification                : NP309AT
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                  :  4-23-96 11:11:37 AM

Live Time                            :     1800.0 seconds
Real Time                            :     1985.0 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: NOPI-309-GAM2 attenuation
Peak Locate Performed on: 4-24-96 2:03:32 PM
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	102.05	0.1412	17.63	22.30
2	122.63	0.2778	21.22	8.02
3	159.24	0.0587	27.52	127.23
4	179.99	0.0808	31.14	82.10
5	184.65	0.2378	32.03	11.45
6	192.50	0.1716	33.34	17.00
7	206.09	0.0757	35.64	85.49
8	225.12	0.2900	38.73	4.93
9	249.57	0.0440	42.93	270.13
10	262.80	0.1233	45.50	30.91
11	282.08	0.0516	48.80	172.57
12	289.85	0.0756	50.24	80.39
13	317.43	0.3008	54.98	3.84
14	336.29	0.3533	58.33	4.25
15	347.84	0.1030	60.23	42.37
16	433.88	0.3080	75.15	5.03
17	501.16	0.0369	86.83	294.57
18	609.61	0.0394	105.64	229.87
19	655.02	0.2345	113.31	7.45
20	684.13	0.2705	118.95	4.67
21	712.40	0.0222	123.46	693.12
22	761.27	0.2543	132.08	6.14
23	958.99	0.2175	166.18	4.96
24	1000.09	0.2020	173.36	8.48
25	1020.24	0.0553	176.85	102.54
26	1089.24	0.1100	188.83	26.13
27	1180.89	0.1940	204.88	9.05
28	1203.62	0.2285	208.65	6.68
29	1318.37	0.2634	228.77	5.15
30	1434.43	0.0392	248.69	172.25
31	1460.38	0.2792	252.85	4.02
32	1681.62	0.1736	291.57	6.33
33	1860.19	0.1876	322.50	3.70
34	2005.95	0.2928	347.80	3.35
35	2036.34	0.2088	352.95	6.16
36	2146.31	0.1017	372.19	23.33
37	2201.15	0.1182	381.67	16.61
38	2297.15	0.3013	397.77	3.40
39	2321.47	0.1548	402.50	9.10
40	2475.48	0.0455	429.22	103.25
41	2571.21	0.1090	445.77	17.45

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2633.67	0.1815	457.06	6.45
43	2680.78	0.0622	464.83	55.36
44	2766.77	0.1663	479.91	7.63
45	2996.13	0.2581	519.50	3.70
46	3226.13	0.1490	559.25	8.87
47	3367.05	0.0937	583.77	22.30
48	3423.54	0.0509	593.65	71.37
49	3474.66	0.0563	602.49	58.35
50	3510.10	0.0861	608.65	25.56
51	3527.40	0.2640	611.49	3.15
52	3546.76	0.2483	615.37	3.24
53	3617.15	0.1444	627.22	8.38
54	3679.24	0.0662	637.93	42.18
55	3884.57	0.1365	673.67	10.08
56	3913.80	0.1950	678.66	3.80
57	4005.78	0.0724	694.61	32.12
58	4028.76	0.1005	698.49	19.27

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: NOPI-309-GAM2 attenuation
Peak Analysis Performed on: 4-24-96 2:03:35 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	99-	105	102.14	17.63	1.23E+04	0.00	1.58E+04
2	118-	126	122.84	21.22	1.28E+03	0.00	1.95E+04
3	155-	163	159.19	27.52	3.06E+05	0.00	4.02E+04
4	175-	184	180.07	31.14	6.60E+04	0.00	4.84E+04
5	184-	189	185.16	32.03	8.10E+02	0.00	3.56E+04
6	189-	196	192.74	33.34	5.65E+03	0.00	2.90E+04
7	201-	210	206.02	35.64	4.35E+04	0.00	3.15E+04
8	220-	229	223.83	38.73	3.07E+03	0.00	5.63E+04
9	240-	254	248.05	42.93	1.06E+06	0.00	8.60E+04
10	257-	267	262.87	45.50	8.07E+03	0.00	3.38E+04
11	277-	287	281.89	48.80	1.63E+05	0.00	9.29E+04
12	287-	294	290.18	50.24	4.64E+04	0.00	2.93E+04
13	312-	322	317.53	54.98	1.12E+03	0.00	1.55E+04
14	330-	341	336.84	58.33	1.05E+03	0.00	1.71E+04
15	342-	353	347.81	60.23	1.18E+04	0.00	1.73E+04
16	428-	439	433.82	75.15	7.32E+02	0.00	2.21E+04
17	494-	507	501.17	86.83	3.17E+05	0.00	3.77E+04
18	602-	616	609.64	105.64	2.05E+05	0.00	3.87E+04
19	648-	661	653.83	113.31	1.95E+03	0.00	3.74E+04
20	683-	691	686.34	118.95	1.75E+03	0.00	3.05E+04
21	705-	719	712.38	123.46	1.72E+06	0.00	3.97E+04
22	757-	768	762.07	132.08	5.78E+02	0.00	1.65E+04
23	951-	966	958.67	166.18	2.96E+03	0.00	1.84E+04
24	996-	1005	1000.11	173.36	7.22E+02	0.00	1.13E+04
25	1012-	1028	1020.22	176.85	3.98E+04	0.00	1.85E+04
26	1082-	1097	1089.28	188.83	5.41E+03	0.00	1.72E+04
27	1176-	1189	1181.83	204.88	1.58E+03	0.00	1.55E+04
28	1200-	1207	1203.61	208.65	6.02E+02	0.00	9.21E+03
29	1309-	1327	1319.62	228.77	1.21E+03	0.00	1.94E+04
30	1425-	1443	1434.47	248.69	1.10E+05	0.00	2.08E+04
31	1450-	1464	1458.43	252.85	7.39E+02	0.00	1.40E+04
32	1671-	1691	1681.73	291.57	2.14E+03	0.00	1.63E+04
33	1849-	1870	1860.07	322.50	1.48E+03	0.00	1.49E+04
34	2001-	2010	2005.94	347.80	2.03E+02	0.00	6.50E+03
35	2025-	2045	2035.65	352.95	1.21E+03	0.00	1.32E+04
36	2135-	2157	2146.56	372.19	4.62E+03	0.00	1.43E+04
37	2189-	2209	2201.20	381.67	2.64E+03	0.00	1.37E+04
38	2285-	2302	2294.09	397.77	5.23E+02	0.00	1.17E+04
39	2312-	2332	2321.34	402.50	1.47E+03	0.00	1.38E+04
40	2463-	2487	2475.43	429.22	4.50E+04	0.00	1.57E+04
41	2559-	2583	2570.84	445.77	3.84E+03	0.00	1.53E+04
42	2626-	2645	2635.92	457.06	1.00E+03	0.00	1.19E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2668-	2692	2680.72	464.83	1.43E+04	0.00	1.49E+04
44	2758-	2779	2767.70	479.91	1.12E+03	0.00	1.30E+04
45	2987-	3002	2995.96	519.50	4.76E+02	0.00	9.70E+03
46	3212-	3235	3225.17	559.25	1.54E+03	0.00	1.15E+04
47	3353-	3380	3366.56	583.77	4.22E+03	0.00	1.26E+04
48	3409-	3437	3423.51	593.65	2.30E+04	0.00	1.31E+04
49	3461-	3488	3474.48	602.49	1.67E+04	0.00	1.22E+04
50	3496-	3520	3510.02	608.65	4.26E+03	0.00	1.09E+04
51	3520-	3536	3526.40	611.49	4.34E+02	0.00	6.98E+03
52	3536-	3560	3548.76	615.37	5.08E+02	0.00	1.01E+04
53	3607-	3628	3617.10	627.22	1.03E+03	0.00	9.49E+03
54	3665-	3693	3678.84	637.93	1.05E+04	0.00	1.20E+04
55	3874-	3898	3884.94	673.67	1.45E+03	0.00	1.05E+04
56	3903-	3922	3913.69	678.66	5.75E+02	0.00	7.84E+03
57	3991-	4020	4005.65	694.61	6.89E+03	0.00	1.14E+04
58	4020-	4035	4028.06	698.49	2.59E+03	0.00	2.29E+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                 :  6-24-96  1:02:16 PM

Sample Title                        : NOPI-310-GAM2 attenuation
Spectrum Description                : NOPI-310-GAM2 attenuation
Sample Identification               : NP310ATT
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                 :  6-18-96 10:02:04 AM

Live Time                           :     1800.0 seconds
Real Time                           :     1985.4 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: NOPI-310-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:02:11 PM
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	102.06	0.1413	17.62	22.53
2	122.88	0.2696	21.22	7.03
3	159.20	0.0585	27.51	128.75
4	179.96	0.0818	31.14	77.97
5	192.48	0.1808	33.32	16.01
6	206.05	0.0770	35.64	81.91
7	224.89	0.3028	38.80	5.23
8	249.58	0.0448	42.93	256.86
9	262.84	0.1257	45.52	31.66
10	282.07	0.0524	48.80	165.30
11	289.85	0.0771	50.24	76.74
12	317.17	0.2728	55.00	6.27
13	337.12	0.3000	58.32	4.78
14	347.90	0.1046	60.25	40.63
15	444.94	0.3138	77.14	5.05
16	501.20	0.0372	86.84	282.67
17	609.66	0.0400	105.65	225.37
18	633.05	0.3135	109.62	4.20
19	655.36	0.2092	113.49	8.17
20	685.73	0.3061	119.07	4.08
21	712.47	0.0224	123.48	665.07
22	959.23	0.2239	166.23	3.99
23	999.66	0.2622	173.25	5.39
24	1020.37	0.0567	176.88	96.86
25	1089.40	0.1109	188.85	24.62
26	1181.39	0.2155	204.82	7.01
27	1203.96	0.2298	208.81	5.09
28	1319.56	0.2704	228.66	3.43
29	1434.72	0.0394	248.73	175.08
30	1460.93	0.2410	253.30	5.24
31	1682.09	0.1671	291.60	7.68
32	1716.19	0.2969	297.70	4.03
33	1859.26	0.2136	322.54	4.68
34	2036.80	0.2332	353.15	4.85
35	2146.64	0.1011	372.12	23.17
36	2201.49	0.1276	381.63	14.59
37	2298.29	0.2878	398.69	3.13
38	2321.71	0.1442	402.54	12.25
39	2475.90	0.0455	429.31	105.51
40	2571.82	0.1079	445.94	18.78
41	2633.97	0.1604	456.79	8.26

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2681.23	0.0623	464.92	55.75
43	2767.33	0.1514	479.97	10.37
44	3226.38	0.1490	559.38	7.31
45	3367.86	0.0899	583.98	24.68
46	3424.23	0.0508	593.74	73.16
47	3475.44	0.0561	602.65	60.14
48	3510.79	0.0847	608.75	26.24
49	3617.69	0.1403	627.12	9.94
50	3633.03	0.2464	629.93	4.52
51	3679.85	0.0663	638.01	42.72
52	3885.29	0.1254	673.76	11.83
53	3914.56	0.2031	679.05	3.71
54	4006.52	0.0722	694.81	34.06
55	4028.78	0.1011	698.56	19.17

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: NOPI-310-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:02:14 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	99-	105	102.09	17.62	1.26E+04	0.00	1.60E+04
2	120-	126	122.87	21.22	1.62E+03	0.00	1.50E+04
3	155-	163	159.14	27.51	3.29E+05	0.00	4.14E+04
4	175-	184	180.03	31.14	6.89E+04	0.00	4.91E+04
5	189-	196	192.64	33.32	5.03E+03	0.00	2.97E+04
6	201-	210	205.97	35.64	4.36E+04	0.00	3.18E+04
7	220-	229	224.19	38.80	2.13E+03	0.00	5.67E+04
8	240-	254	248.01	42.93	1.09E+06	0.00	8.57E+04
9	257-	267	262.93	45.52	7.00E+03	0.00	3.44E+04
10	277-	287	281.86	48.80	1.67E+05	0.00	9.37E+04
11	287-	294	290.20	50.24	4.53E+04	0.00	3.09E+04
12	311-	322	317.62	55.00	1.68E+03	0.00	1.65E+04
13	331-	342	336.76	58.32	1.05E+03	0.00	1.73E+04
14	342-	353	347.91	60.25	1.21E+04	0.00	1.69E+04
15	439-	450	445.26	77.14	1.44E+03	0.00	2.24E+04
16	495-	507	501.19	86.84	3.14E+05	0.00	3.51E+04
17	603-	616	609.70	105.65	2.03E+05	0.00	3.58E+04
18	628-	639	632.55	109.62	7.11E+02	0.00	3.00E+04
19	648-	662	654.87	113.49	2.42E+03	0.00	4.01E+04
20	682-	692	687.06	119.07	1.46E+03	0.00	3.59E+04
21	705-	719	712.46	123.48	1.72E+06	0.00	4.01E+04
22	951-	967	958.99	166.23	2.42E+03	0.00	1.98E+04
23	991-	1007	999.48	173.25	9.05E+02	0.00	1.91E+04
24	1012-	1028	1020.40	176.88	3.78E+04	0.00	1.84E+04
25	1081-	1097	1089.42	188.85	4.74E+03	0.00	1.87E+04
26	1172-	1188	1181.48	204.82	1.32E+03	0.00	1.85E+04
27	1198-	1212	1204.53	208.81	8.28E+02	0.00	1.71E+04
28	1310-	1328	1318.96	228.66	1.60E+03	0.00	1.88E+04
29	1425-	1444	1434.71	248.73	1.06E+05	0.00	2.18E+04
30	1456-	1466	1461.03	253.30	3.78E+02	0.00	1.04E+04
31	1672-	1689	1681.87	291.60	1.69E+03	0.00	1.44E+04
32	1712-	1722	1717.08	297.70	3.73E+02	0.00	8.26E+03
33	1848-	1869	1860.29	322.54	1.46E+03	0.00	1.47E+04
34	2028-	2047	2036.77	353.15	1.24E+03	0.00	1.21E+04
35	2135-	2155	2146.17	372.12	4.08E+03	0.00	1.35E+04
36	2190-	2212	2201.01	381.63	3.00E+03	0.00	1.46E+04
37	2292-	2306	2299.37	398.69	3.77E+02	0.00	9.84E+03
38	2314-	2327	2321.58	402.54	1.32E+03	0.00	9.45E+03
39	2464-	2487	2475.92	429.31	4.28E+04	0.00	1.47E+04
40	2562-	2583	2571.84	445.94	3.65E+03	0.00	1.33E+04
41	2625-	2646	2634.38	456.79	1.15E+03	0.00	1.30E+04
42	2669-	2693	2681.26	464.92	1.43E+04	0.00	1.44E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2758-	2779	2768.05	479.97	1.33E+03	0.00	1.26E+04
44	3216-	3235	3225.91	559.38	1.38E+03	0.00	9.49E+03
45	3356-	3377	3367.76	583.98	3.91E+03	0.00	1.00E+04
46	3410-	3437	3424.04	593.74	2.20E+04	0.00	1.25E+04
47	3461-	3489	3475.42	602.65	1.62E+04	0.00	1.24E+04
48	3497-	3520	3510.60	608.75	4.32E+03	0.00	1.05E+04
49	3603-	3628	3616.52	627.12	1.13E+03	0.00	1.10E+04
50	3628-	3640	3632.69	629.93	2.86E+02	0.00	5.44E+03
51	3665-	3693	3679.32	638.01	1.01E+04	0.00	1.19E+04
52	3876-	3899	3885.46	673.76	1.72E+03	0.00	9.60E+03
53	3906-	3925	3915.94	679.05	8.24E+02	0.00	7.59E+03
54	3991-	4021	4006.81	694.81	7.07E+03	0.00	1.13E+04
55	4021-	4035	4028.43	698.56	2.37E+03	0.00	2.10E+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	:	4-24-96 2:04:30 PM
Sample Title	:	NOPI-311-GAM2 attenuation
Spectrum Description	:	NOPI-311-GAM2 attenuation
Sample Identification	:	NP311AT
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	:	4-23-96 1:00:06 PM
Live Time	:	1800.0 seconds
Real Time	:	1982.0 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: NOPI-311-GAM2 attenuation
Peak Locate Performed on: 4-24-96 2:04:26 PM
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	102.22	0.1497	17.65	18.70
2	122.89	0.2914	21.27	7.61
3	159.28	0.0608	27.53	118.40
4	180.04	0.0824	31.16	78.09
5	192.53	0.1719	33.32	18.09
6	206.13	0.0771	35.66	81.54
7	225.03	0.3011	38.74	4.76
8	249.67	0.0435	42.95	276.28
9	262.81	0.1213	45.52	33.69
10	282.14	0.0522	48.82	167.86
11	289.93	0.0754	50.26	81.76
12	317.61	0.3162	54.84	3.89
13	336.49	0.3183	58.39	3.79
14	347.93	0.1013	60.26	44.24
15	501.29	0.0365	86.85	288.73
16	609.75	0.0398	105.67	236.40
17	631.93	0.3118	109.67	4.75
18	655.27	0.2189	113.50	8.83
19	684.64	0.2528	118.88	5.42
20	712.54	0.0222	123.49	682.10
21	761.36	0.3143	132.02	3.46
22	959.83	0.2419	166.29	4.50
23	999.76	0.2425	173.05	5.82
24	1020.50	0.0564	176.89	97.55
25	1089.52	0.1101	188.89	25.88
26	1181.40	0.1827	204.68	8.50
27	1204.31	0.2095	208.74	6.88
28	1318.77	0.2343	228.70	4.80
29	1434.80	0.0393	248.75	177.27
30	1460.76	0.3015	253.17	3.49
31	1682.31	0.1735	291.58	8.54
32	1857.56	0.2436	322.03	5.26
33	2146.73	0.1017	372.17	23.15
34	2201.70	0.1130	381.76	18.31
35	2322.42	0.1524	402.54	9.26
36	2475.97	0.0452	429.32	105.76
37	2571.97	0.1029	445.90	20.95
38	2634.57	0.1874	456.61	5.46
39	2681.43	0.0622	464.94	53.79
40	2767.58	0.1529	479.86	9.26
41	3226.21	0.1530	559.23	7.98

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	3367.67	0.0917	584.02	22.26
43	3424.36	0.0510	593.77	70.59
44	3475.44	0.0556	602.63	59.90
45	3510.86	0.0870	608.76	25.44
46	3549.59	0.2126	615.93	4.59
47	3618.48	0.1577	627.29	7.54
48	3634.30	0.2909	630.55	3.06
49	3679.89	0.0659	638.05	41.75
50	3884.89	0.1305	673.86	11.29
51	3914.64	0.2145	678.62	4.35
52	4006.60	0.0710	694.78	34.14
53	4028.69	0.1015	698.51	18.92

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: NOPI-311-GAM2 attenuation
Peak Analysis Performed on: 4-24-96 2:04:28 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	98-	105	102.24	17.65	1.04E+04	0.00	1.81E+04
2	119-	126	123.15	21.27	1.32E+03	0.00	1.68E+04
3	155-	163	159.25	27.53	2.73E+05	0.00	3.70E+04
4	175-	184	180.14	31.16	6.01E+04	0.00	4.62E+04
5	189-	196	192.60	33.32	5.15E+03	0.00	2.85E+04
6	201-	210	206.13	35.66	4.15E+04	0.00	3.06E+04
7	220-	229	223.87	38.74	1.93E+03	0.00	5.45E+04
8	240-	254	248.12	42.95	1.03E+06	0.00	8.15E+04
9	257-	267	262.95	45.52	7.24E+03	0.00	3.28E+04
10	277-	287	281.98	48.82	1.64E+05	0.00	8.62E+04
11	287-	294	290.30	50.26	4.43E+04	0.00	2.99E+04
12	312-	322	316.68	54.84	8.84E+02	0.00	1.51E+04
13	331-	341	337.17	58.39	1.01E+03	0.00	1.53E+04
14	342-	353	347.96	60.26	1.21E+04	0.00	1.68E+04
15	495-	507	501.30	86.85	3.15E+05	0.00	3.48E+04
16	603-	616	609.79	105.67	2.05E+05	0.00	3.47E+04
17	629-	638	632.86	109.67	6.56E+02	0.00	2.42E+04
18	648-	662	654.97	113.50	2.03E+03	0.00	3.93E+04
19	680-	691	685.97	118.88	2.50E+03	0.00	4.00E+04
20	705-	719	712.55	123.49	1.72E+06	0.00	4.04E+04
21	757-	768	761.76	132.02	6.33E+02	0.00	1.62E+04
22	951-	967	959.35	166.29	1.91E+03	0.00	1.99E+04
23	991-	1007	998.31	173.05	1.52E+03	0.00	1.85E+04
24	1012-	1028	1020.47	176.89	3.93E+04	0.00	1.83E+04
25	1081-	1097	1089.63	188.89	5.06E+03	0.00	1.86E+04
26	1172-	1188	1180.66	204.68	1.74E+03	0.00	1.85E+04
27	1198-	1208	1204.13	208.74	7.48E+02	0.00	1.24E+04
28	1313-	1327	1319.17	228.70	8.79E+02	0.00	1.56E+04
29	1425-	1444	1434.80	248.75	1.09E+05	0.00	2.13E+04
30	1451-	1470	1460.27	253.17	5.67E+02	0.00	1.88E+04
31	1672-	1692	1681.76	291.58	2.06E+03	0.00	1.61E+04
32	1852-	1862	1857.34	322.03	3.06E+02	0.00	8.07E+03
33	2135-	2155	2146.43	372.17	3.91E+03	0.00	1.38E+04
34	2190-	2212	2201.77	381.76	2.50E+03	0.00	1.50E+04
35	2310-	2330	2321.58	402.54	1.70E+03	0.00	1.37E+04
36	2464-	2487	2475.97	429.32	4.40E+04	0.00	1.54E+04
37	2560-	2583	2571.59	445.90	4.10E+03	0.00	1.43E+04
38	2624-	2642	2633.33	456.61	1.22E+03	0.00	1.11E+04
39	2669-	2693	2681.35	464.94	1.43E+04	0.00	1.47E+04
40	2758-	2777	2767.38	479.86	1.50E+03	0.00	1.13E+04
41	3212-	3237	3225.05	559.23	1.53E+03	0.00	1.23E+04
42	3359-	3381	3367.99	584.02	3.68E+03	0.00	1.08E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	3410-	3437	3424.24	593.77	2.25E+04	0.00	1.28E+04
44	3461-	3489	3475.28	602.63	1.69E+04	0.00	1.27E+04
45	3497-	3524	3510.62	608.76	4.86E+03	0.00	1.16E+04
46	3542-	3563	3551.97	615.93	5.46E+02	0.00	8.85E+03
47	3604-	3628	3617.50	627.29	1.30E+03	0.00	1.04E+04
48	3628-	3643	3636.30	630.55	2.49E+02	0.00	6.69E+03
49	3665-	3693	3679.52	638.05	1.04E+04	0.00	1.21E+04
50	3876-	3899	3886.01	673.86	1.29E+03	0.00	1.02E+04
51	3900-	3926	3913.49	678.62	4.10E+02	0.00	1.09E+04
52	3994-	4021	4006.62	694.78	7.40E+03	0.00	9.95E+03
53	4021-	4035	4028.16	698.51	2.49E+03	0.00	1.98E+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              :  6-24-96  1:03:06 PM

Sample Title                     : NOPI-312-GAM2 attenuation
Spectrum Description             : NOPI-312-GAM2 attenuation
Sample Identification            : NP312ATT
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              :  6-18-96 10:36:33 AM

Live Time                        :     1800.0 seconds
Real Time                        :     1988.0 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: NOPI-312-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:03:01 PM
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	102.07	0.1350	17.63	25.66
2	122.72	0.2743	21.25	7.12
3	159.17	0.0569	27.50	136.55
4	179.91	0.0801	31.13	82.62
5	192.47	0.1724	33.30	17.93
6	206.03	0.0760	35.64	83.41
7	224.99	0.2972	38.86	4.92
8	249.53	0.0451	42.92	253.75
9	262.81	0.1248	45.50	30.90
10	282.04	0.0519	48.79	169.27
11	289.86	0.0767	50.23	77.02
12	317.53	0.2512	54.91	4.99
13	337.03	0.2884	58.44	3.95
14	347.85	0.1042	60.24	41.88
15	501.14	0.0374	86.83	285.88
16	570.72	0.3582	98.72	3.67
17	609.61	0.0398	105.64	224.75
18	655.35	0.2322	113.47	6.74
19	685.36	0.2900	118.87	3.31
20	712.41	0.0224	123.46	678.00
21	761.57	0.2807	131.98	4.34
22	845.02	0.2605	146.42	5.16
23	959.28	0.2028	166.18	5.40
24	1000.02	0.2221	173.37	7.15
25	1020.30	0.0561	176.85	98.75
26	1089.44	0.1103	188.82	26.25
27	1181.33	0.1896	204.87	9.31
28	1204.24	0.2167	208.93	5.92
29	1343.51	0.2974	232.50	3.89
30	1434.56	0.0392	248.72	172.73
31	1559.82	0.3419	270.37	3.40
32	1682.29	0.1657	291.50	8.26
33	1706.55	0.2842	295.90	3.29
34	1716.36	0.2674	297.56	4.73
35	1860.00	0.2128	322.58	4.11
36	2146.47	0.0992	372.17	24.19
37	2201.66	0.1159	381.71	18.04
38	2321.63	0.1571	402.51	9.37
39	2475.70	0.0456	429.26	105.61
40	2571.76	0.1099	445.84	18.40
41	2634.10	0.1756	456.48	7.76

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2654.34	0.2509	460.33	4.13
43	2681.08	0.0617	464.89	57.01
44	2707.33	0.2713	469.90	3.65
45	2766.92	0.1592	479.94	8.53
46	3226.23	0.1590	559.27	7.56
47	3367.55	0.0907	583.96	23.84
48	3423.92	0.0505	593.71	74.92
49	3475.04	0.0564	602.62	60.15
50	3510.53	0.0847	608.76	26.43
51	3547.58	0.2352	614.62	4.17
52	3617.39	0.1386	627.17	9.50
53	3634.09	0.2294	630.22	3.32
54	3679.56	0.0654	638.00	43.29
55	3758.48	0.2246	651.92	4.16
56	3885.15	0.1360	673.80	10.49
57	3915.01	0.1870	678.82	5.73
58	4006.13	0.0718	694.69	35.02
59	4029.01	0.1022	698.57	18.81

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: NOPI-312-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:03:04 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	98-	105	102.16	17.63	1.42E+04	0.00	1.95E+04
	2	118-	126	123.00	21.25	1.47E+03	0.00	1.98E+04
	3	154-	163	159.07	27.50	3.67E+05	0.00	4.51E+04
	4	175-	184	180.01	31.13	7.42E+04	0.00	5.05E+04
	5	189-	196	192.51	33.30	5.11E+03	0.00	3.00E+04
	6	201-	210	205.97	35.64	4.68E+04	0.00	3.17E+04
	7	222-	229	224.55	38.86	2.47E+03	0.00	4.70E+04
	8	240-	254	247.97	42.92	1.12E+06	0.00	8.58E+04
	9	257-	267	262.86	45.50	7.78E+03	0.00	3.44E+04
	10	277-	287	281.81	48.79	1.71E+05	0.00	9.64E+04
	11	287-	294	290.15	50.23	4.68E+04	0.00	3.03E+04
	12	312-	322	317.12	54.91	1.65E+03	0.00	1.58E+04
	13	331-	342	337.45	58.44	1.05E+03	0.00	1.75E+04
	14	342-	353	347.85	60.24	1.23E+04	0.00	1.69E+04
	15	494-	507	501.14	86.83	3.17E+05	0.00	3.76E+04
	16	564-	574	569.74	98.72	7.80E+02	0.00	2.77E+04
	17	602-	616	609.62	105.64	2.05E+05	0.00	3.84E+04
	18	648-	662	654.78	113.47	1.92E+03	0.00	4.05E+04
	19	681-	692	685.93	118.87	2.32E+03	0.00	3.83E+04
	20	705-	719	712.38	123.46	1.73E+06	0.00	3.99E+04
	21	756-	768	761.51	131.98	7.14E+02	0.00	1.78E+04
	22	837-	849	844.78	146.42	6.84E+02	0.00	1.64E+04
	23	951-	967	958.68	166.18	2.14E+03	0.00	2.03E+04
	24	996-	1008	1000.13	173.37	5.40E+02	0.00	1.47E+04
	25	1012-	1028	1020.24	176.85	3.83E+04	0.00	1.83E+04
	26	1081-	1097	1089.26	188.82	5.19E+03	0.00	1.86E+04
	27	1176-	1189	1181.78	204.87	1.27E+03	0.00	1.56E+04
	28	1199-	1212	1205.22	208.93	1.35E+03	0.00	1.55E+04
	29	1334-	1348	1341.10	232.50	7.38E+02	0.00	1.52E+04
	30	1425-	1443	1434.60	248.72	1.08E+05	0.00	2.04E+04
	31	1556-	1564	1559.48	270.37	2.22E+02	0.00	7.56E+03
	32	1672-	1689	1681.31	291.50	1.42E+03	0.00	1.45E+04
M	33	1701-	1721	1706.65	295.90	3.48E+02	0.00	9.02E+03
m	34	1701-	1721	1716.24	297.56	4.04E+02	0.00	9.09E+03
	35	1849-	1870	1860.50	322.58	2.06E+03	0.00	1.40E+04
	36	2135-	2157	2146.47	372.17	4.37E+03	0.00	1.48E+04
	37	2190-	2209	2201.45	381.71	2.30E+03	0.00	1.33E+04
	38	2310-	2328	2321.39	402.51	1.19E+03	0.00	1.29E+04
	39	2463-	2487	2475.66	429.26	4.26E+04	0.00	1.58E+04
	40	2559-	2583	2571.22	445.84	3.88E+03	0.00	1.51E+04
	41	2622-	2643	2632.61	456.48	9.98E+02	0.00	1.34E+04
	42	2649-	2661	2654.81	460.33	5.10E+02	0.00	7.56E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2668-	2693	2681.10	464.89	1.42E+04	0.00	1.53E+04
44	2699-	2719	2709.94	469.90	3.83E+02	0.00	1.21E+04
45	2760-	2776	2767.86	479.94	1.32E+03	0.00	9.74E+03
46	3213-	3236	3225.29	559.27	1.56E+03	0.00	1.14E+04
47	3358-	3381	3367.67	583.96	3.98E+03	0.00	1.10E+04
48	3410-	3437	3423.86	593.71	2.24E+04	0.00	1.25E+04
49	3465-	3488	3475.26	602.62	1.58E+04	0.00	1.06E+04
50	3499-	3524	3510.67	608.76	4.27E+03	0.00	1.10E+04
51	3533-	3553	3544.41	614.62	3.92E+02	0.00	8.65E+03
52	3603-	3624	3616.80	627.17	1.06E+03	0.00	9.37E+03
53	3628-	3641	3634.41	630.22	3.77E+02	0.00	5.79E+03
54	3665-	3691	3679.24	638.00	9.36E+03	0.00	1.17E+04
55	3751-	3770	3759.49	651.92	3.12E+02	0.00	8.38E+03
56	3876-	3896	3885.70	673.80	1.47E+03	0.00	8.71E+03
57	3906-	3923	3914.60	678.82	5.97E+02	0.00	7.16E+03
58	3991-	4020	4006.13	694.69	7.15E+03	0.00	1.08E+04
59	4020-	4035	4028.50	698.57	2.36E+03	0.00	2.49E+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	: 6-24-96 1:03:56 PM
Sample Title	: NOPI-312B-GAM2 attenuation
Spectrum Description	: NOPI-312B-GAM2
Sample Identification	: NP312BAT
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	: 6-18-96 11:11:37 AM
Live Time	: 1800.0 seconds
Real Time	: 1986.6 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: NOPI-312B-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:03:51 PM
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	0.5687	8.18	3.09
2	102.12	0.1384	17.61	23.45
3	122.62	0.2566	21.22	8.42
4	159.15	0.0572	27.50	134.88
5	179.86	0.0812	31.13	79.19
6	192.48	0.1806	33.30	15.84
7	206.00	0.0760	35.63	83.39
8	224.91	0.3282	38.76	4.46
9	249.50	0.0452	42.91	245.70
10	262.75	0.1250	45.49	31.20
11	282.01	0.0521	48.78	166.21
12	289.79	0.0776	50.22	75.11
13	317.51	0.2585	54.96	5.83
14	336.51	0.3104	58.36	4.51
15	347.77	0.1043	60.22	41.27
16	444.56	0.3124	76.96	3.79
17	501.08	0.0377	86.82	287.00
18	609.55	0.0398	105.63	219.70
19	655.07	0.2355	113.46	6.96
20	676.72	0.2331	117.21	7.58
21	685.39	0.3055	118.92	3.54
22	712.35	0.0225	123.45	686.76
23	761.35	0.3179	132.18	3.60
24	842.97	0.3349	146.46	3.07
25	903.50	0.3088	156.65	3.65
26	959.37	0.2133	166.19	5.08
27	999.55	0.2344	173.26	6.24
28	1020.21	0.0560	176.85	99.67
29	1089.23	0.1088	188.83	26.10
30	1181.17	0.1979	204.78	8.63
31	1203.80	0.2318	208.75	6.28
32	1318.68	0.2661	228.89	3.68
33	1434.42	0.0392	248.69	173.88
34	1459.63	0.2694	253.10	3.87
35	1682.23	0.1629	291.62	8.50
36	2146.46	0.0992	372.11	24.20
37	2201.45	0.1171	381.71	17.38
38	2294.99	0.3284	397.49	3.08
39	2321.93	0.1442	402.62	10.97
40	2475.59	0.0459	429.25	103.62
41	2571.36	0.1071	445.91	18.66

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2633.57	0.1668	456.70	8.35
43	2680.89	0.0625	464.85	54.92
44	2707.05	0.2416	469.35	3.66
45	2766.85	0.1540	479.80	9.40
46	3226.46	0.1609	559.79	8.30
47	3367.29	0.0915	583.81	22.98
48	3423.68	0.0504	593.69	74.73
49	3474.85	0.0565	602.56	59.65
50	3510.36	0.0852	608.72	25.45
51	3616.36	0.1481	627.20	7.85
52	3679.34	0.0665	637.96	41.73
53	3837.55	0.2407	665.96	3.57
54	3883.83	0.1319	673.55	10.64
55	3915.24	0.1969	678.97	5.08
56	4005.89	0.0717	694.66	34.92
57	4028.77	0.1040	698.47	17.80

Errors quoted at 0.000 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-312B-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:03:54 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	44-	49	47.66	8.18	4.10E+02	0.00	1.19E+04
2	99-	105	102.06	17.61	1.31E+04	0.00	1.57E+04
3	118-	126	122.86	21.22	1.67E+03	0.00	1.92E+04
4	154-	163	159.03	27.50	3.51E+05	0.00	4.47E+04
5	175-	184	179.98	31.13	7.29E+04	0.00	4.82E+04
6	191-	196	192.52	33.30	5.68E+03	0.00	2.04E+04
7	201-	210	205.91	35.63	4.51E+04	0.00	3.22E+04
8	220-	229	224.00	38.76	2.78E+03	0.00	5.69E+04
9	240-	254	247.92	42.91	1.11E+06	0.00	8.66E+04
10	257-	267	262.81	45.49	7.58E+03	0.00	3.42E+04
11	276-	287	281.76	48.78	1.65E+05	0.00	1.02E+05
12	287-	294	290.07	50.22	4.75E+04	0.00	2.92E+04
13	312-	322	317.38	54.96	1.76E+03	0.00	1.52E+04
14	331-	341	336.97	58.36	9.27E+02	0.00	1.58E+04
15	342-	353	347.70	60.22	1.21E+04	0.00	1.71E+04
16	438-	450	444.25	76.96	6.25E+02	0.00	2.42E+04
17	494-	507	501.08	86.82	3.15E+05	0.00	3.77E+04
18	602-	616	609.57	105.63	2.04E+05	0.00	3.86E+04
19	648-	661	654.72	113.46	2.79E+03	0.00	3.73E+04
20	669-	680	676.34	117.21	5.16E+02	0.00	3.74E+04
21	680-	692	686.18	118.92	1.48E+03	0.00	4.28E+04
22	705-	719	712.31	123.45	1.73E+06	0.00	3.90E+04
23	756-	768	762.64	132.18	7.68E+02	0.00	1.78E+04
24	839-	850	845.01	146.46	7.40E+02	0.00	1.52E+04
25	899-	907	903.76	156.65	3.15E+02	0.00	1.06E+04
26	951-	967	958.74	166.19	3.17E+03	0.00	1.93E+04
27	995-	1004	999.53	173.26	4.68E+02	0.00	1.14E+04
28	1012-	1028	1020.21	176.85	3.84E+04	0.00	1.81E+04
29	1084-	1097	1089.31	188.83	5.21E+03	0.00	1.50E+04
30	1172-	1189	1181.29	204.78	1.63E+03	0.00	1.96E+04
31	1195-	1212	1204.14	208.75	1.17E+03	0.00	1.99E+04
32	1314-	1327	1320.27	228.89	9.53E+02	0.00	1.43E+04
33	1425-	1443	1434.48	248.69	1.08E+05	0.00	2.08E+04
34	1455-	1469	1459.86	253.10	4.77E+02	0.00	1.40E+04
35	1672-	1692	1681.99	291.62	2.15E+03	0.00	1.63E+04
36	2135-	2157	2146.12	372.11	4.17E+03	0.00	1.48E+04
37	2190-	2212	2201.46	381.71	3.04E+03	0.00	1.45E+04
38	2283-	2306	2292.46	397.49	4.06E+02	0.00	1.59E+04
39	2316-	2329	2322.02	402.62	1.60E+03	0.00	9.35E+03
40	2463-	2487	2475.57	429.25	4.14E+04	0.00	1.62E+04
41	2559-	2583	2571.64	445.91	3.94E+03	0.00	1.50E+04
42	2627-	2645	2633.88	456.70	7.56E+02	0.00	1.17E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2668-	2693	2680.82	464.85	1.34E+04	0.00	1.56E+04
44	2699-	2716	2706.77	469.35	3.30E+02	0.00	1.03E+04
45	2754-	2779	2767.03	479.80	1.41E+03	0.00	1.48E+04
46	3219-	3239	3228.27	559.79	1.07E+03	0.00	1.03E+04
47	3353-	3380	3366.78	583.81	4.19E+03	0.00	1.25E+04
48	3410-	3437	3423.73	593.69	2.27E+04	0.00	1.24E+04
49	3461-	3488	3474.88	602.56	1.64E+04	0.00	1.17E+04
50	3501-	3521	3510.40	608.72	4.50E+03	0.00	8.65E+03
51	3605-	3626	3616.96	627.20	1.34E+03	0.00	9.09E+03
52	3665-	3693	3679.01	637.96	9.83E+03	0.00	1.19E+04
53	3828-	3851	3840.49	665.96	4.55E+02	0.00	9.96E+03
54	3873-	3896	3884.22	673.55	1.68E+03	0.00	9.82E+03
55	3908-	3922	3915.48	678.97	3.79E+02	0.00	6.01E+03
56	3991-	4020	4005.95	694.66	6.61E+03	0.00	1.13E+04
57	4020-	4035	4027.94	698.47	2.56E+03	0.00	2.24E+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              :  6-24-96  1:04:43 PM

Sample Title                     : NOPI-313-GAM2 attenuation
Spectrum Description             : NOPI-313-GAM2 attenuation
Sample Identification            : NP313ATT
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              :  6-18-96 12:39:58 PM

Live Time                        :     1800.0 seconds
Real Time                        :     1981.0 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: NOPI-313-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:04:38 PM
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	102.03	0.1458	17.61	21.56
2	122.82	0.2781	21.21	8.59
3	159.15	0.0606	27.50	120.37
4	179.87	0.0850	31.13	72.25
5	192.51	0.1844	33.31	14.90
6	205.99	0.0784	35.63	79.16
7	224.53	0.3445	38.63	3.99
8	249.51	0.0462	42.91	238.07
9	262.68	0.1260	45.49	29.79
10	282.03	0.0528	48.78	162.39
11	289.82	0.0782	50.23	74.60
12	316.91	0.3188	54.80	3.14
13	336.34	0.3297	58.24	4.28
14	347.73	0.1042	60.23	40.35
15	433.85	0.2952	75.13	5.33
16	446.20	0.2742	77.23	4.20
17	501.09	0.0377	86.82	284.87
18	609.56	0.0399	105.63	218.79
19	655.25	0.2214	113.58	8.32
20	677.22	0.2278	117.32	7.26
21	685.94	0.2792	119.12	3.44
22	712.36	0.0225	123.45	680.19
23	761.13	0.2980	132.13	4.56
24	959.32	0.2330	166.06	3.92
25	991.99	0.3791	172.01	3.09
26	999.84	0.2356	173.30	6.29
27	1020.19	0.0562	176.85	98.14
28	1089.26	0.1088	188.83	26.59
29	1181.20	0.1956	204.65	8.34
30	1204.11	0.2082	208.98	7.15
31	1318.53	0.2770	228.73	3.76
32	1434.46	0.0393	248.70	172.19
33	1681.99	0.1658	291.69	8.59
34	1859.51	0.1797	322.51	5.82
35	2036.31	0.2197	353.06	6.38
36	2146.40	0.1028	372.16	23.05
37	2201.37	0.1177	381.69	17.89
38	2321.51	0.1591	402.52	8.41
39	2475.60	0.0455	429.25	106.67
40	2571.75	0.1091	445.85	19.12
41	2633.77	0.1909	456.77	6.07

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2680.90	0.0624	464.85	54.86
43	2706.78	0.2304	469.68	3.83
44	2767.12	0.1575	479.90	8.43
45	3225.85	0.1488	559.32	9.75
46	3367.52	0.0905	584.00	23.54
47	3423.75	0.0508	593.70	74.02
48	3474.83	0.0565	602.60	59.30
49	3510.44	0.0851	608.68	25.22
50	3617.06	0.1443	627.21	8.86
51	3679.38	0.0665	637.95	42.16
52	3758.24	0.2621	651.72	3.22
53	3884.48	0.1345	673.57	10.15
54	3916.17	0.1974	678.84	3.12
55	4006.01	0.0721	694.72	34.93
56	4028.87	0.1006	698.56	19.16

Errors quoted at 0.000 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-313-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:04:42 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	98-	105	102.03	17.61	1.06E+04	0.00	1.87E+04
	2	118-	126	122.76	21.21	1.09E+03	0.00	1.91E+04
	3	154-	163	159.04	27.50	2.83E+05	0.00	3.98E+04
	4	175-	184	179.98	31.13	6.12E+04	0.00	4.54E+04
	5	191-	196	192.53	33.31	4.97E+03	0.00	1.99E+04
	6	201-	210	205.93	35.63	4.01E+04	0.00	3.08E+04
	7	219-	229	223.24	38.63	3.27E+03	0.00	5.81E+04
	8	240-	254	247.92	42.91	1.03E+06	0.00	8.17E+04
	9	257-	267	262.78	45.49	6.86E+03	0.00	3.29E+04
	10	277-	287	281.76	48.78	1.58E+05	0.00	9.37E+04
	11	287-	294	290.10	50.23	4.60E+04	0.00	2.78E+04
	12	311-	322	316.46	54.80	1.23E+03	0.00	1.63E+04
	13	330-	341	336.32	58.24	1.33E+03	0.00	1.63E+04
	14	342-	353	347.76	60.23	1.17E+04	0.00	1.63E+04
	15	428-	439	433.70	75.13	1.34E+03	0.00	2.15E+04
	16	440-	452	445.80	77.23	1.45E+03	0.00	2.44E+04
	17	494-	507	501.09	86.82	3.10E+05	0.00	3.72E+04
	18	602-	616	609.57	105.63	2.02E+05	0.00	3.72E+04
	19	648-	662	655.41	113.58	1.75E+03	0.00	4.01E+04
	20	670-	681	676.96	117.32	2.22E+03	0.00	3.61E+04
	21	681-	692	687.37	119.12	1.58E+03	0.00	3.85E+04
	22	705-	719	712.32	123.45	1.70E+06	0.00	3.84E+04
	23	753-	768	762.34	132.13	1.24E+03	0.00	2.09E+04
	24	951-	967	957.98	166.06	2.15E+03	0.00	1.98E+04
M	25	988-	1007	992.33	172.01	2.89E+02	0.00	1.11E+04
m	26	988-	1007	999.75	173.30	8.43E+02	0.00	1.30E+04
	27	1012-	1028	1020.24	176.85	3.85E+04	0.00	1.78E+04
	28	1080-	1097	1089.32	188.83	5.58E+03	0.00	1.87E+04
	29	1172-	1189	1180.53	204.65	1.33E+03	0.00	1.95E+04
	30	1198-	1212	1205.51	208.98	1.39E+03	0.00	1.62E+04
	31	1315-	1327	1319.36	228.73	5.10E+02	0.00	1.35E+04
	32	1425-	1443	1434.49	248.70	1.07E+05	0.00	1.96E+04
	33	1676-	1691	1682.37	291.69	1.58E+03	0.00	1.23E+04
	34	1849-	1869	1860.12	322.51	1.62E+03	0.00	1.39E+04
	35	2032-	2043	2036.27	353.06	4.51E+02	0.00	7.74E+03
	36	2135-	2157	2146.39	372.16	3.96E+03	0.00	1.47E+04
	37	2194-	2212	2201.35	381.69	2.71E+03	0.00	1.21E+04
	38	2313-	2328	2321.44	402.52	1.27E+03	0.00	1.05E+04
	39	2463-	2487	2475.58	429.25	4.22E+04	0.00	1.55E+04
	40	2559-	2583	2571.28	445.85	3.81E+03	0.00	1.47E+04
	41	2626-	2645	2634.25	456.77	5.90E+02	0.00	1.20E+04
	42	2668-	2693	2680.86	464.85	1.40E+04	0.00	1.48E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2698-	2719	2708.69	469.68	3.99E+02	0.00	1.25E+04
44	2759-	2779	2767.65	479.90	1.47E+03	0.00	1.18E+04
45	3212-	3237	3225.56	559.32	1.24E+03	0.00	1.25E+04
46	3354-	3380	3367.88	584.00	4.29E+03	0.00	1.19E+04
47	3410-	3437	3423.80	593.70	2.19E+04	0.00	1.23E+04
48	3461-	3488	3475.15	602.60	1.61E+04	0.00	1.19E+04
49	3500-	3520	3510.16	608.68	3.91E+03	0.00	9.23E+03
50	3603-	3627	3617.02	627.21	1.16E+03	0.00	1.04E+04
51	3665-	3693	3678.98	637.95	1.01E+04	0.00	1.17E+04
52	3746-	3768	3758.34	651.72	2.62E+02	0.00	9.55E+03
53	3876-	3893	3884.36	673.57	1.02E+03	0.00	7.75E+03
54	3905-	3928	3914.71	678.84	7.37E+02	0.00	9.22E+03
55	3995-	4020	4006.29	694.72	6.79E+03	0.00	9.44E+03
56	4020-	4035	4028.43	698.56	2.42E+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        *****
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Report Generated On              :  6-24-96  1:06:09 PM

Sample Title                     : NOPI-314-GAM2 attenuation
Spectrum Description             : NOPI-314-GAM2 attenuation
Sample Identification            : NP314ATT
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              :  6-18-96  1:17:39 PM

Live Time                        :     1800.0 seconds
Real Time                        :     1989.1 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: NOPI-314-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:06:03 PM
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	46.91	0.4981	8.06	3.66
2	101.98	0.1345	17.61	26.22
3	122.61	0.2534	21.22	8.77
4	159.15	0.0564	27.50	139.41
5	179.88	0.0801	31.13	82.81
6	192.46	0.1813	33.33	16.50
7	206.00	0.0759	35.63	83.54
8	224.98	0.2702	38.77	7.45
9	249.51	0.0449	42.91	251.40
10	262.76	0.1217	45.50	32.49
11	282.02	0.0518	48.78	168.85
12	289.81	0.0768	50.23	77.24
13	317.09	0.2468	54.94	7.65
14	337.06	0.3295	58.50	3.13
15	347.80	0.1040	60.22	40.98
16	433.98	0.2721	75.19	4.29
17	445.42	0.3249	77.18	3.19
18	501.10	0.0374	86.82	289.57
19	535.12	0.3615	92.74	3.69
20	609.57	0.0396	105.63	223.94
21	633.89	0.3410	109.84	3.54
22	655.20	0.2305	113.54	7.22
23	676.93	0.2307	117.19	7.93
24	712.37	0.0224	123.45	689.03
25	761.48	0.2612	132.04	5.00
26	780.47	0.3818	135.59	3.12
27	868.67	0.3385	150.34	3.37
28	903.63	0.3528	156.75	3.03
29	959.49	0.2144	166.16	5.20
30	1000.37	0.2644	173.18	4.94
31	1020.21	0.0559	176.85	98.74
32	1089.17	0.1108	188.81	25.35
33	1181.04	0.2108	204.93	6.76
34	1204.06	0.2120	208.73	7.77
35	1318.65	0.2856	228.72	3.51
36	1434.46	0.0392	248.70	172.36
37	1461.32	0.2663	253.21	4.38
38	1682.30	0.1753	291.66	7.28
39	1859.75	0.1846	322.49	5.08
40	1991.87	0.2867	345.39	3.67
41	2035.19	0.2161	353.03	5.34

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2146.19	0.0987	372.09	24.89
43	2201.24	0.1198	381.56	17.44
44	2321.50	0.1573	402.39	8.58
45	2475.65	0.0454	429.26	106.36
46	2571.74	0.1054	445.86	20.16
47	2634.26	0.1725	456.68	6.92
48	2656.76	0.2634	460.59	3.51
49	2680.98	0.0620	464.84	55.52
50	2767.08	0.1473	479.85	10.96
51	2997.89	0.2897	519.85	3.08
52	3225.64	0.1645	559.57	7.59
53	3367.36	0.0907	583.95	23.31
54	3423.77	0.0503	593.70	75.36
55	3474.88	0.0563	602.59	59.92
56	3510.39	0.0845	608.67	26.97
57	3526.03	0.2645	611.43	3.97
58	3617.73	0.1538	627.13	8.24
59	3679.44	0.0661	637.96	41.76
60	3884.85	0.1384	673.51	9.42
61	3914.18	0.1987	678.56	5.10
62	4006.07	0.0717	694.69	34.77
63	4028.95	0.1040	698.49	18.18

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: NOPI-314-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:06:07 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	43-	49	46.98	8.06	7.19E+02	0.00	1.41E+04
2	99-	105	102.03	17.61	1.50E+04	0.00	1.61E+04
3	119-	126	122.83	21.22	2.03E+03	0.00	1.73E+04
4	154-	163	159.04	27.50	3.78E+05	0.00	4.39E+04
5	175-	184	180.01	31.13	7.67E+04	0.00	4.95E+04
6	191-	196	192.66	33.33	5.66E+03	0.00	2.06E+04
7	201-	210	205.92	35.63	4.70E+04	0.00	3.13E+04
8	220-	229	224.04	38.77	2.03E+03	0.00	5.66E+04
9	240-	254	247.93	42.91	1.14E+06	0.00	8.48E+04
10	257-	267	262.86	45.50	7.92E+03	0.00	3.45E+04
11	276-	287	281.77	48.78	1.70E+05	0.00	1.03E+05
12	287-	294	290.11	50.23	4.94E+04	0.00	2.93E+04
13	311-	322	317.25	54.94	1.79E+03	0.00	1.70E+04
14	331-	342	337.80	58.50	1.24E+03	0.00	1.74E+04
15	342-	353	347.73	60.22	1.15E+04	0.00	1.79E+04
16	428-	439	434.01	75.19	1.19E+03	0.00	2.17E+04
17	439-	451	445.52	77.18	1.55E+03	0.00	2.41E+04
18	494-	507	501.10	86.82	3.23E+05	0.00	3.77E+04
19	530-	541	535.24	92.74	8.70E+02	0.00	3.07E+04
20	602-	616	609.56	105.63	2.07E+05	0.00	3.84E+04
21	627-	640	633.86	109.84	9.37E+02	0.00	3.47E+04
22	648-	662	655.16	113.54	1.98E+03	0.00	3.97E+04
23	670-	681	676.20	117.19	1.18E+03	0.00	3.61E+04
24	705-	719	712.33	123.45	1.76E+06	0.00	3.88E+04
25	757-	768	761.84	132.04	6.65E+02	0.00	1.67E+04
26	777-	787	782.33	135.59	5.25E+02	0.00	1.47E+04
27	861-	876	867.38	150.34	5.26E+02	0.00	2.01E+04
28	898-	911	904.35	156.75	5.49E+02	0.00	1.66E+04
29	951-	967	958.60	166.16	2.51E+03	0.00	2.02E+04
30	992-	1008	999.06	173.18	1.21E+03	0.00	1.91E+04
31	1012-	1028	1020.20	176.85	3.88E+04	0.00	1.83E+04
32	1080-	1097	1089.18	188.81	5.36E+03	0.00	1.96E+04
33	1176-	1189	1182.12	204.93	1.20E+03	0.00	1.55E+04
34	1200-	1208	1204.03	208.73	6.61E+02	0.00	1.02E+04
35	1312-	1327	1319.31	228.72	6.80E+02	0.00	1.69E+04
36	1425-	1443	1434.50	248.70	1.10E+05	0.00	2.01E+04
37	1454-	1465	1460.49	253.21	4.23E+02	0.00	1.11E+04
38	1672-	1692	1682.22	291.66	2.11E+03	0.00	1.64E+04
39	1849-	1870	1860.01	322.49	1.80E+03	0.00	1.46E+04
40	1986-	1996	1992.06	345.39	2.87E+02	0.00	6.94E+03
41	2030-	2043	2036.06	353.03	9.12E+02	0.00	8.79E+03
42	2137-	2157	2145.97	372.09	4.23E+03	0.00	1.35E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2190-	2209	2200.57	381.56	2.46E+03	0.00	1.30E+04
44	2310-	2330	2320.72	402.39	1.82E+03	0.00	1.38E+04
45	2463-	2487	2475.64	429.26	4.24E+04	0.00	1.63E+04
46	2559-	2583	2571.35	445.86	3.86E+03	0.00	1.52E+04
47	2622-	2643	2633.76	456.68	1.20E+03	0.00	1.32E+04
48	2651-	2664	2656.31	460.59	3.69E+02	0.00	8.25E+03
49	2668-	2693	2680.81	464.84	1.43E+04	0.00	1.51E+04
50	2758-	2779	2767.32	479.85	8.53E+02	0.00	1.29E+04
51	2992-	3004	2998.00	519.85	4.39E+02	0.00	7.94E+03
52	3216-	3238	3227.01	559.57	1.15E+03	0.00	1.12E+04
53	3355-	3380	3367.57	583.95	4.19E+03	0.00	1.17E+04
54	3410-	3437	3423.78	593.70	2.25E+04	0.00	1.27E+04
55	3461-	3488	3475.09	602.59	1.60E+04	0.00	1.23E+04
56	3500-	3521	3510.12	608.67	4.22E+03	0.00	9.47E+03
57	3521-	3534	3526.07	611.43	3.75E+02	0.00	5.73E+03
58	3606-	3624	3616.54	627.13	1.14E+03	0.00	7.92E+03
59	3665-	3693	3679.03	637.96	9.57E+03	0.00	1.23E+04
60	3873-	3894	3884.01	673.51	1.67E+03	0.00	9.15E+03
61	3904-	3922	3913.14	678.56	5.64E+02	0.00	7.62E+03
62	3991-	4020	4006.12	694.69	7.21E+03	0.00	1.09E+04
63	4020-	4035	4028.04	698.49	2.50E+03	0.00	2.23E+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                 :  4-24-96  2:05:08 PM

Sample Title                        : NOPI-315-GAM2 attenuation
Spectrum Description                : NOPI-315-GAM2 attenuation
Sample Identification               : NP315AT
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                 :  4-23-96  1:34:35 PM

Live Time                           :     1800.0 seconds
Real Time                           :     1983.5 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 *****
****

Detector Name: DET01
Sample Title: NOPI-315-GAM2 attenuation
Peak Locate Performed on: 4-24-96 2:05:03 PM
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	102.17	0.1436	17.64	21.27
2	122.84	0.2480	21.23	8.95
3	159.30	0.0601	27.54	120.19
4	180.08	0.0818	31.16	80.24
5	192.58	0.1799	33.32	17.96
6	206.20	0.0770	35.67	82.87
7	225.11	0.2835	38.78	4.73
8	249.70	0.0431	42.95	282.24
9	262.90	0.1224	45.53	32.37
10	282.17	0.0522	48.82	168.18
11	289.96	0.0751	50.27	82.63
12	317.51	0.3435	54.88	3.55
13	347.96	0.1016	60.26	44.25
14	434.03	0.3385	75.15	4.19
15	501.33	0.0363	86.86	287.13
16	609.79	0.0398	105.68	237.56
17	632.71	0.3419	109.54	3.26
18	655.67	0.2303	113.43	7.64
19	684.63	0.2345	118.82	5.28
20	712.57	0.0222	123.50	688.78
21	761.82	0.2808	132.05	4.71
22	844.51	0.3029	146.38	3.73
23	959.02	0.2113	166.14	4.46
24	1000.53	0.2261	173.45	6.75
25	1020.52	0.0563	176.90	98.74
26	1089.52	0.1096	188.88	26.21
27	1181.50	0.1892	204.74	8.44
28	1204.12	0.2372	208.60	6.22
29	1318.76	0.2618	228.47	3.77
30	1343.24	0.2794	232.80	3.64
31	1421.93	0.3244	246.54	4.22
32	1434.88	0.0395	248.76	177.75
33	1682.53	0.1650	291.61	8.22
34	1765.90	0.2731	306.03	3.56
35	1858.22	0.2326	322.61	5.58
36	2036.54	0.2233	353.05	5.30
37	2146.75	0.1015	372.21	24.41
38	2201.75	0.1161	381.72	17.60
39	2321.78	0.1484	402.56	10.93
40	2476.06	0.0451	429.34	106.68
41	2572.12	0.1055	445.92	19.58

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2634.63	0.1725	456.85	7.89
43	2681.35	0.0614	464.97	55.42
44	2767.33	0.1557	479.91	8.62
45	3097.02	0.2698	537.22	3.55
46	3226.38	0.1581	559.62	8.85
47	3367.81	0.0914	583.97	23.25
48	3424.41	0.0509	593.79	71.32
49	3475.51	0.0560	602.68	59.12
50	3510.90	0.0836	608.79	27.39
51	3617.84	0.1458	627.30	8.27
52	3679.99	0.0658	638.04	41.69
53	3757.32	0.2138	651.53	4.85
54	3886.00	0.1321	673.89	10.49
55	3915.51	0.1752	678.95	6.20
56	4006.82	0.0719	694.80	33.29
57	4028.75	0.1005	698.37	18.73

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: NOPI-315-GAM2 attenuation
Peak Analysis Performed on: 4-24-96 2:05:06 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	99-	105	102.22	17.64	1.20E+04	0.00	1.53E+04
2	118-	126	122.92	21.23	7.87E+02	0.00	1.95E+04
3	155-	163	159.27	27.54	2.91E+05	0.00	3.81E+04
4	175-	184	180.14	31.16	6.16E+04	0.00	4.72E+04
5	189-	197	192.64	33.32	4.12E+03	0.00	3.27E+04
6	201-	210	206.17	35.67	4.26E+04	0.00	3.12E+04
7	220-	229	224.09	38.78	2.85E+03	0.00	5.55E+04
8	240-	254	248.14	42.95	1.05E+06	0.00	8.41E+04
9	257-	267	263.01	45.53	6.92E+03	0.00	3.36E+04
10	277-	287	282.00	48.82	1.69E+05	0.00	8.53E+04
11	287-	295	290.34	50.27	4.33E+04	0.00	3.36E+04
12	312-	322	316.93	54.88	6.73E+02	0.00	1.55E+04
13	342-	353	347.97	60.26	1.15E+04	0.00	1.73E+04
14	428-	439	433.84	75.15	7.17E+02	0.00	2.20E+04
15	495-	507	501.33	86.86	3.17E+05	0.00	3.48E+04
16	603-	616	609.82	105.68	2.06E+05	0.00	3.53E+04
17	625-	635	632.09	109.54	4.90E+02	0.00	2.72E+04
18	648-	662	654.55	113.43	2.07E+03	0.00	3.94E+04
19	683-	691	685.59	118.82	1.85E+03	0.00	3.03E+04
20	705-	719	712.59	123.50	1.72E+06	0.00	3.98E+04
21	758-	765	761.92	132.05	5.61E+02	0.00	1.08E+04
22	839-	849	844.56	146.38	6.18E+02	0.00	1.39E+04
23	951-	966	958.49	166.14	2.52E+03	0.00	1.87E+04
24	996-	1006	1000.61	173.45	7.49E+02	0.00	1.22E+04
25	1012-	1028	1020.53	176.90	3.89E+04	0.00	1.88E+04
26	1081-	1097	1089.60	188.88	4.91E+03	0.00	1.87E+04
27	1172-	1190	1181.04	204.74	2.04E+03	0.00	2.08E+04
28	1195-	1212	1203.32	208.60	1.18E+03	0.00	1.99E+04
29	1311-	1324	1317.85	228.47	8.81E+02	0.00	1.44E+04
30	1339-	1348	1342.82	232.80	2.66E+02	0.00	1.06E+04
31	1418-	1425	1422.06	246.54	4.02E+02	0.00	8.99E+03
32	1425-	1444	1434.87	248.76	1.09E+05	0.00	2.15E+04
33	1672-	1692	1681.94	291.61	2.04E+03	0.00	1.64E+04
34	1761-	1771	1765.07	306.03	5.70E+02	0.00	7.60E+03
35	1852-	1868	1860.71	322.61	1.42E+03	0.00	1.17E+04
36	2031-	2043	2036.21	353.05	4.55E+02	0.00	8.42E+03
37	2139-	2157	2146.68	372.21	3.67E+03	0.00	1.27E+04
38	2190-	2210	2201.55	381.72	2.71E+03	0.00	1.36E+04
39	2317-	2328	2321.68	402.56	1.07E+03	0.00	8.34E+03
40	2464-	2487	2476.08	429.34	4.45E+04	0.00	1.51E+04
41	2560-	2584	2571.72	445.92	3.88E+03	0.00	1.52E+04
42	2626-	2646	2634.74	456.85	1.20E+03	0.00	1.22E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2669-	2693	2681.54	464.97	1.50E+04	0.00	1.45E+04
44	2758-	2779	2767.71	479.91	1.71E+03	0.00	1.23E+04
45	3091-	3107	3098.15	537.22	3.89E+02	0.00	9.23E+03
46	3219-	3235	3227.28	559.62	1.10E+03	0.00	8.19E+03
47	3354-	3381	3367.72	583.97	4.61E+03	0.00	1.22E+04
48	3410-	3437	3424.30	593.79	2.28E+04	0.00	1.26E+04
49	3461-	3489	3475.58	602.68	1.62E+04	0.00	1.29E+04
50	3499-	3521	3510.84	608.79	4.19E+03	0.00	1.01E+04
51	3603-	3626	3617.56	627.30	1.12E+03	0.00	1.01E+04
52	3665-	3693	3679.49	638.04	1.03E+04	0.00	1.21E+04
53	3751-	3767	3757.24	651.53	4.57E+02	0.00	6.75E+03
54	3876-	3900	3886.17	673.89	1.20E+03	0.00	1.09E+04
55	3908-	3924	3915.34	678.95	4.49E+02	0.00	6.82E+03
56	3992-	4017	4006.75	694.80	6.88E+03	0.00	9.61E+03
57	4019-	4035	4027.35	698.37	3.02E+03	0.00	2.26E+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	: 6-24-96 1:07:55 PM
Sample Title	: NOPI-316-GAM2 attenuation
Spectrum Description	: NOPI-316-GAM2 attenuation
Sample Identification	: NP316ATT
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	: 6-18-96 1:51:50 PM
Live Time	: 1800.0 seconds
Real Time	: 1985.5 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: NOPI-316-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:07:49 PM
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	102.02	0.1362	17.62	26.47
2	122.72	0.2707	21.27	7.13
3	159.14	0.0570	27.50	135.50
4	179.90	0.0808	31.13	81.80
5	192.47	0.1860	33.30	15.27
6	206.01	0.0761	35.63	82.13
7	224.93	0.3132	38.75	5.15
8	249.51	0.0454	42.91	248.33
9	262.75	0.1246	45.49	30.88
10	282.03	0.0522	48.78	167.12
11	289.81	0.0768	50.23	77.82
12	317.32	0.2559	54.93	6.15
13	337.13	0.3027	58.46	4.12
14	347.76	0.1048	60.23	39.55
15	433.86	0.3228	75.22	3.27
16	445.40	0.3012	77.19	3.65
17	501.12	0.0375	86.82	285.44
18	609.60	0.0398	105.64	222.17
19	655.22	0.2330	113.47	7.65
20	686.79	0.3116	119.14	3.04
21	712.39	0.0224	123.46	679.76
22	760.77	0.2415	131.95	4.97
23	958.27	0.2098	166.12	3.59
24	999.56	0.2249	173.02	6.43
25	1020.26	0.0563	176.86	97.70
26	1089.22	0.1089	188.81	27.06
27	1180.93	0.1919	204.88	8.70
28	1204.23	0.2108	208.74	7.24
29	1318.69	0.2561	228.78	4.60
30	1421.01	0.3225	246.37	3.54
31	1434.52	0.0393	248.71	171.96
32	1461.06	0.2839	253.23	4.38
33	1681.72	0.1633	291.54	6.94
34	1715.84	0.3159	296.84	3.38
35	1859.21	0.2073	322.52	4.52
36	2146.37	0.1018	372.20	23.73
37	2201.57	0.1204	381.81	16.42
38	2321.65	0.1596	402.54	9.61
39	2475.71	0.0457	429.27	103.83
40	2571.82	0.1074	445.87	18.88
41	2634.31	0.1736	456.76	7.21

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2681.01	0.0619	464.88	55.75
43	2766.92	0.1609	479.80	8.37
44	2941.32	0.2904	510.13	3.06
45	2996.86	0.2853	519.21	3.30
46	3226.60	0.1536	559.57	8.70
47	3367.64	0.0913	583.94	22.98
48	3423.88	0.0514	593.71	72.87
49	3475.08	0.0569	602.57	59.17
50	3510.44	0.0854	608.70	26.19
51	3617.69	0.1487	627.11	8.63
52	3679.60	0.0667	638.00	41.89
53	3884.78	0.1264	673.55	12.16
54	3913.60	0.2115	678.72	3.62
55	4006.21	0.0713	694.70	34.90
56	4028.81	0.1030	698.55	18.63

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: NOPI-316-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:07:52 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	98-	105	102.10	17.62	1.30E+04	0.00	1.93E+04
2	118-	126	123.11	21.27	1.53E+03	0.00	1.94E+04
3	154-	163	159.04	27.50	3.60E+05	0.00	4.37E+04
4	175-	184	180.00	31.13	7.40E+04	0.00	4.87E+04
5	191-	196	192.50	33.30	5.24E+03	0.00	2.08E+04
6	201-	210	205.96	35.63	4.51E+04	0.00	3.19E+04
7	220-	229	223.94	38.75	3.06E+03	0.00	5.55E+04
8	240-	254	247.94	42.91	1.11E+06	0.00	8.49E+04
9	257-	267	262.79	45.49	7.46E+03	0.00	3.40E+04
10	277-	287	281.77	48.78	1.66E+05	0.00	9.74E+04
11	287-	294	290.11	50.23	4.80E+04	0.00	2.93E+04
12	312-	322	317.24	54.93	1.74E+03	0.00	1.55E+04
13	331-	342	337.57	58.46	1.57E+03	0.00	1.69E+04
14	342-	353	347.79	60.23	1.16E+04	0.00	1.75E+04
15	428-	439	434.24	75.22	9.46E+02	0.00	2.17E+04
16	439-	451	445.60	77.19	1.13E+03	0.00	2.43E+04
17	494-	507	501.10	86.82	3.15E+05	0.00	3.75E+04
18	602-	616	609.60	105.64	2.03E+05	0.00	3.78E+04
19	648-	662	654.75	113.47	2.19E+03	0.00	3.95E+04
20	680-	693	687.44	119.14	1.61E+03	0.00	4.45E+04
21	705-	719	712.35	123.46	1.72E+06	0.00	3.90E+04
22	757-	768	761.33	131.95	1.35E+03	0.00	1.60E+04
23	950-	966	958.37	166.12	2.86E+03	0.00	1.96E+04
24	991-	1004	998.12	173.02	1.39E+03	0.00	1.50E+04
25	1012-	1028	1020.25	176.86	3.82E+04	0.00	1.80E+04
26	1080-	1097	1089.16	188.81	5.23E+03	0.00	1.93E+04
27	1172-	1189	1181.82	204.88	1.45E+03	0.00	1.97E+04
28	1195-	1212	1204.12	208.74	1.28E+03	0.00	1.94E+04
29	1314-	1327	1319.63	228.78	7.79E+02	0.00	1.42E+04
30	1416-	1425	1421.08	246.37	3.11E+02	0.00	1.09E+04
31	1425-	1443	1434.57	248.71	1.08E+05	0.00	1.97E+04
32	1451-	1468	1460.62	253.23	9.71E+02	0.00	1.61E+04
33	1674-	1691	1681.53	291.54	2.14E+03	0.00	1.38E+04
34	1705-	1720	1712.11	296.84	7.38E+02	0.00	1.18E+04
35	1848-	1869	1860.16	322.52	1.50E+03	0.00	1.46E+04
36	2139-	2157	2146.63	372.20	4.05E+03	0.00	1.19E+04
37	2190-	2212	2202.05	381.81	2.83E+03	0.00	1.46E+04
38	2310-	2329	2321.56	402.54	1.29E+03	0.00	1.34E+04
39	2463-	2487	2475.72	429.27	4.17E+04	0.00	1.57E+04
40	2559-	2583	2571.41	445.87	4.11E+03	0.00	1.48E+04
41	2625-	2646	2634.19	456.76	1.36E+03	0.00	1.29E+04
42	2668-	2693	2681.00	464.88	1.39E+04	0.00	1.51E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2758-	2776	2767.04	479.80	1.30E+03	0.00	1.07E+04
44	2935-	2947	2941.92	510.13	3.42E+02	0.00	7.42E+03
45	2988-	3003	2994.28	519.21	3.84E+02	0.00	9.70E+03
46	3213-	3239	3227.02	559.57	1.02E+03	0.00	1.32E+04
47	3354-	3381	3367.55	583.94	3.96E+03	0.00	1.26E+04
48	3410-	3437	3423.85	593.71	2.13E+04	0.00	1.28E+04
49	3461-	3488	3474.95	602.57	1.55E+04	0.00	1.22E+04
50	3500-	3521	3510.30	608.70	3.88E+03	0.00	9.37E+03
51	3603-	3626	3616.47	627.11	1.54E+03	0.00	9.61E+03
52	3665-	3693	3679.27	638.00	9.96E+03	0.00	1.21E+04
53	3873-	3894	3884.21	673.55	1.46E+03	0.00	9.21E+03
54	3904-	3924	3914.05	678.72	3.53E+02	0.00	8.43E+03
55	3991-	4020	4006.17	694.70	7.11E+03	0.00	1.08E+04
56	4020-	4035	4028.37	698.55	2.33E+03	0.00	2.39E+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              :  6-24-96  1:10:05 PM

Sample Title                     : NOPI-317-GAM2 attenuation
Spectrum Description             : NOPI-317-GAM2 attenuation
Sample Identification            : NP317ATT
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              :  6-18-96  2:26:17 PM

Live Time                        :     1800.0 seconds
Real Time                        :     1978.5 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 *****
****

Detector Name: DET01
Sample Title: NOPI-317-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:10:00 PM
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	102.02	0.1467	17.62	20.28
2	122.67	0.2979	21.17	7.59
3	159.17	0.0610	27.51	117.73
4	179.91	0.0848	31.14	72.29
5	192.40	0.1777	33.30	18.97
6	206.04	0.0793	35.63	77.32
7	224.95	0.2853	38.78	6.00
8	249.54	0.0460	42.92	244.39
9	262.79	0.1267	45.49	30.09
10	282.04	0.0529	48.79	162.22
11	289.85	0.0778	50.24	75.80
12	317.39	0.3231	54.88	3.25
13	336.34	0.3527	58.17	3.61
14	347.82	0.1042	60.23	41.04
15	433.97	0.2744	75.10	5.64
16	445.32	0.3169	77.12	3.12
17	501.16	0.0376	86.83	281.25
18	609.64	0.0401	105.65	222.17
19	655.08	0.2408	113.55	7.30
20	677.06	0.2498	117.30	4.95
21	685.90	0.3047	119.02	3.60
22	712.44	0.0225	123.47	662.52
23	761.18	0.2811	131.85	5.46
24	958.97	0.2209	166.07	3.68
25	999.69	0.2283	173.16	6.52
26	1020.36	0.0568	176.87	96.22
27	1089.33	0.1115	188.88	24.51
28	1181.17	0.1954	204.77	8.39
29	1204.33	0.2416	208.94	6.03
30	1318.66	0.2761	228.64	4.15
31	1434.68	0.0395	248.73	173.17
32	1682.06	0.1725	291.61	7.94
33	1859.86	0.2085	322.60	3.94
34	2036.69	0.2594	353.30	3.45
35	2146.70	0.1019	372.20	23.13
36	2201.42	0.1200	381.72	17.04
37	2321.55	0.1570	402.45	9.59
38	2359.94	0.2812	409.29	3.07
39	2475.89	0.0456	429.29	105.41
40	2571.68	0.1065	445.85	19.40
41	2634.30	0.1999	456.72	5.42

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2681.17	0.0623	464.92	55.92
43	2706.26	0.2534	469.47	3.46
44	2767.58	0.1577	479.72	8.62
45	2997.11	0.2470	519.60	3.67
46	3226.21	0.1526	559.15	8.74
47	3367.79	0.0906	583.88	23.07
48	3424.26	0.0508	593.78	73.35
49	3475.40	0.0567	602.65	58.74
50	3510.79	0.0874	608.71	25.09
51	3547.76	0.2080	615.22	4.61
52	3617.79	0.1344	627.29	10.54
53	3679.70	0.0667	638.07	41.63
54	3885.21	0.1244	673.50	12.02
55	3914.76	0.2002	678.93	5.17
56	4006.52	0.0721	694.72	33.99
57	4028.90	0.1030	698.34	18.55

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 *****
****

Detector Name: DET01
Sample Title: NOPI-317-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:10:03 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	98-	105	102.07	17.62	1.04E+04	0.00	1.79E+04
2	118-	126	122.57	21.17	1.41E+03	0.00	1.86E+04
3	155-	163	159.10	27.51	2.73E+05	0.00	3.72E+04
4	175-	184	180.04	31.14	6.09E+04	0.00	4.44E+04
5	191-	196	192.50	33.30	5.20E+03	0.00	1.95E+04
6	201-	210	205.92	35.63	4.03E+04	0.00	3.05E+04
7	220-	229	224.09	38.78	2.42E+03	0.00	5.35E+04
8	240-	254	247.98	42.92	1.02E+06	0.00	8.04E+04
9	257-	267	262.81	45.49	6.84E+03	0.00	3.24E+04
10	277-	287	281.81	48.79	1.59E+05	0.00	9.01E+04
11	287-	294	290.16	50.24	4.43E+04	0.00	2.83E+04
12	312-	322	316.91	54.88	8.18E+02	0.00	1.50E+04
13	330-	341	335.93	58.17	1.23E+03	0.00	1.61E+04
14	342-	353	347.76	60.23	1.15E+04	0.00	1.65E+04
15	428-	439	433.54	75.10	9.10E+02	0.00	2.16E+04
16	439-	451	445.14	77.12	8.67E+02	0.00	2.41E+04
17	494-	507	501.17	86.83	3.06E+05	0.00	3.69E+04
18	602-	616	609.65	105.65	1.98E+05	0.00	3.73E+04
19	648-	661	655.24	113.55	1.63E+03	0.00	3.71E+04
20	670-	683	676.82	117.30	9.87E+02	0.00	4.31E+04
21	683-	692	686.79	119.02	1.79E+03	0.00	3.15E+04
22	705-	719	712.42	123.47	1.68E+06	0.00	3.93E+04
23	756-	768	760.73	131.85	8.99E+02	0.00	1.68E+04
24	951-	966	958.04	166.07	2.53E+03	0.00	1.80E+04
25	991-	1007	998.96	173.16	1.39E+03	0.00	1.81E+04
26	1012-	1028	1020.35	176.87	3.75E+04	0.00	1.79E+04
27	1083-	1097	1089.57	188.88	5.22E+03	0.00	1.55E+04
28	1172-	1189	1181.23	204.77	1.37E+03	0.00	1.89E+04
29	1200-	1213	1205.27	208.94	5.52E+02	0.00	1.53E+04
30	1309-	1327	1318.86	228.64	5.23E+02	0.00	1.97E+04
31	1426-	1444	1434.69	248.73	1.06E+05	0.00	1.93E+04
32	1672-	1692	1681.93	291.61	2.42E+03	0.00	1.52E+04
33	1849-	1870	1860.61	322.60	1.06E+03	0.00	1.47E+04
34	2028-	2047	2037.63	353.30	5.27E+02	0.00	1.26E+04
35	2135-	2155	2146.60	372.20	3.99E+03	0.00	1.32E+04
36	2190-	2212	2201.53	381.72	3.38E+03	0.00	1.38E+04
37	2314-	2329	2321.05	402.45	1.42E+03	0.00	1.05E+04
38	2355-	2366	2360.48	409.29	3.64E+02	0.00	7.91E+03
39	2464-	2487	2475.83	429.29	4.17E+04	0.00	1.46E+04
40	2559-	2583	2571.30	445.85	3.80E+03	0.00	1.45E+04
41	2622-	2642	2633.96	456.72	1.32E+03	0.00	1.18E+04
42	2668-	2693	2681.24	464.92	1.35E+04	0.00	1.52E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2699-	2718	2707.49	469.47	6.55E+02	0.00	1.09E+04
44	2755-	2777	2766.59	479.72	1.31E+03	0.00	1.29E+04
45	2991-	3003	2996.52	519.60	5.83E+02	0.00	7.51E+03
46	3213-	3234	3224.61	559.15	1.37E+03	0.00	1.02E+04
47	3354-	3377	3367.19	583.88	4.21E+03	0.00	1.05E+04
48	3410-	3437	3424.26	593.78	2.18E+04	0.00	1.21E+04
49	3461-	3489	3475.41	602.65	1.60E+04	0.00	1.22E+04
50	3497-	3520	3510.34	608.71	3.90E+03	0.00	1.01E+04
51	3541-	3557	3547.87	615.22	2.64E+02	0.00	6.88E+03
52	3607-	3626	3617.49	627.29	1.30E+03	0.00	8.08E+03
53	3665-	3693	3679.64	638.07	9.90E+03	0.00	1.16E+04
54	3870-	3894	3883.95	673.50	1.82E+03	0.00	9.85E+03
55	3904-	3929	3915.27	678.93	6.47E+02	0.00	1.01E+04
56	3991-	4017	4006.27	694.72	6.73E+03	0.00	9.86E+03
57	4017-	4035	4027.19	698.34	2.97E+03	0.00	2.87E+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              :  6-24-96  1:10:50 PM

Sample Title                     : NOPI-318-GAM2 attenuation
Spectrum Description             : NOPI-318-GAM2 attenuation
Sample Identification            : NP318ATT
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              :  6-18-96  3:01:00 PM

Live Time                        :     1800.0 seconds
Real Time                        :     1981.6 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: NOPI-318-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:10:44 PM
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	102.10	0.1532	17.63	18.98
2	123.12	0.2927	21.22	7.20
3	159.19	0.0618	27.51	115.73
4	179.91	0.0859	31.13	71.95
5	192.46	0.1860	33.30	15.66
6	206.04	0.0794	35.63	76.21
7	225.10	0.3031	38.76	4.79
8	249.55	0.0459	42.92	244.47
9	262.79	0.1259	45.50	30.27
10	282.07	0.0530	48.79	160.86
11	289.86	0.0780	50.24	74.66
12	317.01	0.3322	54.96	4.66
13	347.87	0.1051	60.25	41.10
14	433.54	0.3432	75.23	3.41
15	445.28	0.3036	77.15	3.69
16	501.21	0.0372	86.84	282.09
17	609.67	0.0400	105.66	226.21
18	655.43	0.2246	113.43	7.58
19	676.63	0.2323	117.26	7.15
20	685.34	0.2840	118.91	3.58
21	712.47	0.0224	123.48	662.59
22	761.86	0.2880	131.84	4.83
23	780.68	0.3438	135.14	3.18
24	845.46	0.2869	146.49	4.55
25	960.00	0.2305	166.19	4.94
26	999.99	0.2349	173.37	6.70
27	1020.43	0.0569	176.88	95.85
28	1089.53	0.1130	188.92	25.45
29	1181.46	0.2083	204.87	7.83
30	1204.01	0.2330	208.74	5.01
31	1318.58	0.2437	228.57	4.58
32	1434.75	0.0394	248.74	175.71
33	1461.12	0.2773	253.30	3.91
34	1547.93	0.3043	268.75	3.60
35	1682.68	0.1842	291.66	6.42
36	1743.64	0.2950	302.25	3.54
37	1860.41	0.2181	322.62	4.00
38	2036.29	0.2688	353.28	3.88
39	2146.69	0.1029	372.17	23.35
40	2201.76	0.1160	381.69	17.47
41	2321.93	0.1626	402.64	8.93

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2475.98	0.0451	429.31	108.37
43	2572.03	0.1082	446.00	18.88
44	2634.30	0.1839	456.80	5.98
45	2681.35	0.0618	464.95	54.93
46	2767.81	0.1546	479.94	8.31
47	3226.64	0.1364	559.64	11.04
48	3367.94	0.0913	584.06	23.90
49	3424.34	0.0506	593.81	73.91
50	3475.48	0.0560	602.66	60.01
51	3510.97	0.0855	608.75	26.23
52	3549.06	0.2746	616.25	3.83
53	3618.59	0.1547	627.07	8.60
54	3680.10	0.0667	638.15	42.17
55	3758.64	0.2414	652.35	3.42
56	3885.09	0.1375	673.91	10.32
57	3915.95	0.1879	678.56	5.82
58	4006.89	0.0718	694.75	34.73
59	4028.66	0.1015	698.65	18.37

Errors quoted at 0.000 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-318-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:10:48 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	98-	105	102.15	17.63	1.00E+04	0.00	1.80E+04
2	119-	126	122.86	21.22	1.15E+03	0.00	1.69E+04
3	155-	163	159.13	27.51	2.66E+05	0.00	3.72E+04
4	175-	184	180.01	31.13	5.92E+04	0.00	4.51E+04
5	189-	196	192.49	33.30	4.50E+03	0.00	2.93E+04
6	201-	210	205.96	35.63	3.95E+04	0.00	3.10E+04
7	220-	229	223.98	38.76	2.71E+03	0.00	5.46E+04
8	240-	254	247.99	42.92	1.02E+06	0.00	8.24E+04
9	257-	267	262.85	45.50	7.38E+03	0.00	3.30E+04
10	277-	287	281.83	48.79	1.61E+05	0.00	8.99E+04
11	287-	294	290.21	50.24	4.46E+04	0.00	2.90E+04
12	311-	322	317.40	54.96	1.06E+03	0.00	1.63E+04
13	342-	353	347.87	60.25	1.17E+04	0.00	1.67E+04
14	427-	439	434.29	75.23	5.73E+02	0.00	2.34E+04
15	439-	451	445.32	77.15	1.58E+03	0.00	2.41E+04
16	495-	507	501.21	86.84	3.12E+05	0.00	3.51E+04
17	603-	616	609.71	105.66	2.03E+05	0.00	3.61E+04
18	648-	662	654.51	113.43	1.91E+03	0.00	4.04E+04
19	669-	680	676.61	117.26	5.21E+02	0.00	3.72E+04
20	680-	692	686.11	118.91	1.86E+03	0.00	4.19E+04
21	705-	719	712.46	123.48	1.71E+06	0.00	4.00E+04
22	754-	766	760.71	131.84	8.42E+02	0.00	1.73E+04
23	773-	787	779.71	135.14	9.53E+02	0.00	1.90E+04
24	839-	849	845.15	146.49	4.14E+02	0.00	1.40E+04
25	952-	967	958.75	166.19	2.82E+03	0.00	1.83E+04
26	996-	1008	1000.15	173.37	3.61E+02	0.00	1.47E+04
27	1012-	1028	1020.39	176.88	3.86E+04	0.00	1.74E+04
28	1081-	1097	1089.80	188.92	5.37E+03	0.00	1.82E+04
29	1172-	1190	1181.81	204.87	1.40E+03	0.00	2.07E+04
30	1195-	1212	1204.09	208.74	5.56E+02	0.00	2.04E+04
31	1312-	1325	1318.47	228.57	8.54E+02	0.00	1.44E+04
32	1425-	1444	1434.76	248.74	1.08E+05	0.00	2.07E+04
33	1454-	1466	1461.01	253.30	4.33E+02	0.00	1.20E+04
34	1543-	1557	1550.09	268.75	3.08E+02	0.00	1.29E+04
35	1672-	1692	1682.24	291.66	1.93E+03	0.00	1.62E+04
36	1733-	1753	1743.29	302.25	4.68E+02	0.00	1.49E+04
37	1849-	1870	1860.77	322.62	1.68E+03	0.00	1.45E+04
38	2030-	2043	2037.51	353.28	4.56E+02	0.00	8.96E+03
39	2135-	2157	2146.46	372.17	4.26E+03	0.00	1.47E+04
40	2190-	2210	2201.35	381.69	2.99E+03	0.00	1.32E+04
41	2313-	2331	2322.12	402.64	1.06E+03	0.00	1.30E+04
42	2464-	2487	2475.94	429.31	4.26E+04	0.00	1.49E+04

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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                 :  4-24-96  2:05:53 PM

Sample Title                        : NOPI-319-GAM2 attenuation
Spectrum Description                : NOPI-319-GAM2 attenuation
Sample Identification               : NP319AT
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                 :  4-23-96  2:11:10 PM

Live Time                           :     1800.0 seconds
Real Time                           :     1988.8 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: NOPI-319-GAM2 attenuation
Peak Locate Performed on: 4-24-96 2:05:48 PM
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	102.11	0.1326	17.63	25.35
2	122.68	0.2512	21.24	8.76
3	159.19	0.0556	27.51	142.87
4	179.90	0.0781	31.14	88.09
5	192.51	0.1737	33.30	16.82
6	206.03	0.0740	35.64	89.26
7	225.19	0.2645	38.81	5.85
8	249.51	0.0437	42.92	265.96
9	262.72	0.1202	45.49	34.49
10	282.01	0.0509	48.78	176.32
11	289.80	0.0755	50.22	80.44
12	317.40	0.2801	54.95	4.69
13	336.58	0.2992	58.26	3.90
14	347.77	0.1025	60.23	42.37
15	444.60	0.3755	77.14	3.31
16	501.01	0.0373	86.81	299.41
17	609.47	0.0392	105.61	225.47
18	631.90	0.3767	109.69	3.49
19	654.69	0.2422	113.27	6.67
20	684.77	0.2504	118.94	6.14
21	712.26	0.0225	123.43	711.47
22	761.18	0.3119	132.15	4.43
23	844.60	0.3300	146.19	3.03
24	958.57	0.2316	166.06	3.54
25	999.36	0.2346	173.03	6.38
26	1020.01	0.0551	176.81	102.03
27	1088.96	0.1084	188.80	26.51
28	1180.77	0.1907	204.79	9.23
29	1203.77	0.2574	208.49	4.74
30	1318.39	0.2530	228.74	4.94
31	1434.09	0.0394	248.64	178.67
32	1460.01	0.2308	253.17	3.68
33	1681.47	0.1665	291.60	7.30
34	1715.62	0.2472	297.19	4.91
35	1764.71	0.2854	306.14	3.39
36	1859.12	0.1971	322.44	4.55
37	2145.67	0.1016	372.02	24.11
38	2200.88	0.1201	381.59	16.53
39	2321.20	0.1497	402.45	10.59
40	2474.94	0.0452	429.12	106.61
41	2570.88	0.1081	445.69	18.17

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2632.98	0.1572	456.58	8.36
43	2653.99	0.2468	460.32	3.68
44	2680.13	0.0618	464.71	55.72
45	2766.44	0.1456	479.47	10.49
46	3225.30	0.1509	559.22	8.56
47	3283.82	0.2599	569.26	3.21
48	3366.48	0.0908	583.72	23.28
49	3422.72	0.0513	593.53	71.08
50	3473.97	0.0560	602.39	60.03
51	3509.34	0.0836	608.59	27.05
52	3547.97	0.2161	615.30	5.06
53	3616.55	0.1453	626.98	8.96
54	3678.52	0.0675	637.81	39.12
55	3883.74	0.1305	673.42	10.00
56	3912.64	0.2068	678.68	3.80
57	4005.01	0.0725	694.46	32.83
58	4028.84	0.0997	698.32	19.26

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: NOPI-319-GAM2 attenuation
Peak Analysis Performed on: 4-24-96 2:05:51 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	98-	105	102.17	17.63	1.32E+04	0.00	1.97E+04
2	119-	126	122.98	21.24	2.08E+03	0.00	1.73E+04
3	155-	163	159.12	27.51	3.68E+05	0.00	4.26E+04
4	175-	184	180.06	31.14	7.80E+04	0.00	4.90E+04
5	191-	196	192.52	33.30	5.58E+03	0.00	2.10E+04
6	201-	210	206.00	35.64	4.73E+04	0.00	3.24E+04
7	220-	229	224.25	38.81	3.41E+03	0.00	5.78E+04
8	240-	254	247.95	42.92	1.12E+06	0.00	8.94E+04
9	257-	267	262.81	45.49	7.41E+03	0.00	3.53E+04
10	276-	287	281.79	48.78	1.69E+05	0.00	1.03E+05
11	287-	294	290.07	50.22	5.03E+04	0.00	2.76E+04
12	312-	322	317.32	54.95	1.88E+03	0.00	1.57E+04
13	331-	341	336.40	58.26	1.55E+03	0.00	1.60E+04
14	342-	353	347.80	60.23	1.23E+04	0.00	1.71E+04
15	438-	450	445.29	77.14	4.90E+02	0.00	2.50E+04
16	494-	507	501.02	86.81	3.21E+05	0.00	3.74E+04
17	602-	616	609.47	105.61	2.07E+05	0.00	3.85E+04
18	625-	638	632.99	109.69	7.85E+02	0.00	3.49E+04
19	647-	661	653.62	113.27	1.88E+03	0.00	4.00E+04
20	683-	691	686.29	118.94	2.17E+03	0.00	3.05E+04
21	705-	719	712.19	123.43	1.73E+06	0.00	4.00E+04
22	753-	768	762.48	132.15	7.59E+02	0.00	2.21E+04
23	837-	852	843.41	146.19	5.15E+02	0.00	2.09E+04
24	950-	966	958.02	166.06	2.48E+03	0.00	2.02E+04
25	991-	1005	998.19	173.03	1.49E+03	0.00	1.66E+04
26	1011-	1028	1019.99	176.81	3.98E+04	0.00	1.98E+04
27	1082-	1097	1089.15	188.80	5.10E+03	0.00	1.75E+04
28	1174-	1189	1181.35	204.79	1.44E+03	0.00	1.78E+04
29	1195-	1212	1202.68	208.49	1.59E+03	0.00	1.97E+04
30	1309-	1327	1319.43	228.74	9.83E+02	0.00	1.99E+04
31	1424-	1443	1434.18	248.64	1.10E+05	0.00	2.13E+04
32	1452-	1465	1460.26	253.17	3.41E+02	0.00	1.33E+04
33	1674-	1691	1681.91	291.60	2.47E+03	0.00	1.38E+04
34	1705-	1725	1714.10	297.19	1.40E+03	0.00	1.53E+04
35	1754-	1774	1765.71	306.14	6.70E+02	0.00	1.45E+04
36	1850-	1869	1859.72	322.44	1.58E+03	0.00	1.34E+04
37	2134-	2156	2145.61	372.02	4.41E+03	0.00	1.46E+04
38	2191-	2212	2200.79	381.59	2.54E+03	0.00	1.44E+04
39	2312-	2332	2321.05	402.45	1.41E+03	0.00	1.43E+04
40	2463-	2486	2474.84	429.12	4.44E+04	0.00	1.50E+04
41	2558-	2582	2570.38	445.69	4.11E+03	0.00	1.51E+04
42	2626-	2645	2633.19	456.58	1.27E+03	0.00	1.20E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2645-	2663	2654.70	460.32	5.04E+02	0.00	1.12E+04
44	2667-	2692	2680.02	464.71	1.55E+04	0.00	1.47E+04
45	2754-	2776	2765.14	479.47	1.49E+03	0.00	1.33E+04
46	3212-	3238	3224.98	559.22	1.79E+03	0.00	1.26E+04
47	3276-	3291	3282.87	569.26	2.63E+02	0.00	7.42E+03
48	3353-	3379	3366.26	583.72	4.44E+03	0.00	1.19E+04
49	3409-	3436	3422.80	593.53	2.27E+04	0.00	1.27E+04
50	3460-	3487	3473.90	602.39	1.67E+04	0.00	1.23E+04
51	3498-	3523	3509.69	608.59	4.79E+03	0.00	1.10E+04
52	3542-	3556	3548.36	615.30	4.46E+02	0.00	6.19E+03
53	3608-	3623	3615.73	626.98	1.05E+03	0.00	6.78E+03
54	3664-	3692	3678.14	637.81	1.03E+04	0.00	1.23E+04
55	3869-	3898	3883.46	673.42	1.78E+03	0.00	1.23E+04
56	3906-	3924	3913.80	678.68	4.25E+02	0.00	7.58E+03
57	3993-	4017	4004.82	694.46	6.74E+03	0.00	9.41E+03
58	4017-	4035	4027.07	698.32	3.24E+03	0.00	2.83E+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              :  6-24-96  1:11:40 PM

Sample Title                     : NOPI-320-GAM2 attenuation
Spectrum Description             : NOPI-320-GAM2 attenuation
Sample Identification            : NP320ATT
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              :  6-18-96  3:36:25 PM

Live Time                        :     1800.0 seconds
Real Time                        :     1986.1 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: NOPI-320-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:11:35 PM
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	102.13	0.1342	17.63	25.98
2	122.98	0.2597	21.24	8.37
3	159.19	0.0569	27.51	134.61
4	179.96	0.0803	31.14	82.68
5	192.51	0.1826	33.32	15.45
6	206.08	0.0758	35.64	83.45
7	224.96	0.2952	38.77	5.65
8	249.60	0.0445	42.93	260.20
9	262.81	0.1221	45.51	32.63
10	282.09	0.0522	48.80	165.31
11	289.88	0.0768	50.25	77.44
12	317.08	0.2545	54.86	6.57
13	337.39	0.2784	58.37	3.19
14	347.89	0.1030	60.25	42.55
15	444.09	0.3618	77.10	3.32
16	501.26	0.0371	86.84	280.08
17	609.72	0.0402	105.66	226.98
18	632.87	0.3424	109.51	3.50
19	655.29	0.2431	113.56	6.24
20	676.88	0.2240	117.29	8.53
21	712.52	0.0224	123.49	661.46
22	761.27	0.2887	131.95	4.01
23	959.65	0.2040	166.18	5.65
24	999.86	0.2646	173.03	4.75
25	1020.50	0.0571	176.90	95.37
26	1089.56	0.1140	188.86	23.61
27	1181.67	0.2136	204.69	7.35
28	1204.01	0.2165	208.75	5.90
29	1318.82	0.2636	228.63	4.55
30	1342.59	0.3073	232.94	3.58
31	1434.88	0.0396	248.76	177.22
32	1460.90	0.2856	253.39	3.52
33	1682.88	0.1657	291.71	8.83
34	1765.06	0.3380	306.47	3.09
35	1860.30	0.1994	322.66	3.40
36	2005.96	0.2516	347.76	3.37
37	2146.67	0.1033	372.20	22.59
38	2201.64	0.1239	381.79	15.37
39	2321.89	0.1494	402.56	10.41
40	2476.17	0.0455	429.34	106.21
41	2572.12	0.1061	446.00	20.01

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2634.58	0.1660	456.79	7.99
43	2681.53	0.0623	464.99	54.63
44	2708.34	0.2519	469.59	3.30
45	2767.80	0.1619	480.07	8.68
46	3227.41	0.1594	559.58	8.11
47	3368.21	0.0900	584.05	24.95
48	3424.61	0.0503	593.83	74.33
49	3475.71	0.0566	602.68	58.97
50	3511.14	0.0857	608.87	25.70
51	3549.29	0.1912	615.54	4.90
52	3618.69	0.1492	627.34	8.71
53	3633.80	0.2299	630.09	4.05
54	3680.40	0.0666	638.10	41.98
55	3758.37	0.2160	651.60	4.48
56	3885.62	0.1339	673.79	9.15
57	3915.03	0.2046	679.32	4.40
58	4007.01	0.0699	694.84	36.28
59	4029.08	0.1057	698.50	18.33

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 *****
****

Detector Name: DET01
Sample Title: NOPI-320-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:11:38 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	99-	105	102.12	17.63	1.46E+04	0.00	1.57E+04
2	119-	126	122.94	21.24	1.67E+03	0.00	1.74E+04
3	155-	163	159.14	27.51	3.68E+05	0.00	4.30E+04
4	175-	184	180.06	31.14	7.56E+04	0.00	4.91E+04
5	189-	196	192.63	33.32	5.86E+03	0.00	2.94E+04
6	201-	210	206.02	35.64	4.67E+04	0.00	3.18E+04
7	220-	229	224.02	38.77	2.45E+03	0.00	5.76E+04
8	240-	254	248.02	42.93	1.12E+06	0.00	8.77E+04
9	257-	267	262.92	45.51	7.84E+03	0.00	3.40E+04
10	277-	287	281.88	48.80	1.72E+05	0.00	9.34E+04
11	287-	294	290.23	50.25	4.59E+04	0.00	3.12E+04
12	311-	322	316.84	54.86	1.88E+03	0.00	1.68E+04
13	332-	342	337.05	58.37	1.85E+03	0.00	1.52E+04
14	342-	353	347.90	60.25	1.19E+04	0.00	1.69E+04
15	438-	449	445.07	77.10	8.50E+02	0.00	2.22E+04
16	495-	507	501.24	86.84	3.12E+05	0.00	3.51E+04
17	603-	616	609.76	105.66	2.03E+05	0.00	3.59E+04
18	626-	637	631.91	109.51	6.60E+02	0.00	2.99E+04
19	648-	662	655.26	113.56	2.68E+03	0.00	3.96E+04
20	669-	680	676.81	117.29	5.71E+02	0.00	3.71E+04
21	705-	719	712.52	123.49	1.71E+06	0.00	3.97E+04
22	754-	768	761.30	131.95	9.72E+02	0.00	2.04E+04
23	951-	967	958.72	166.18	2.40E+03	0.00	2.00E+04
24	991-	1007	998.19	173.03	1.40E+03	0.00	1.85E+04
25	1012-	1028	1020.48	176.90	3.85E+04	0.00	1.76E+04
26	1081-	1097	1089.47	188.86	4.82E+03	0.00	1.82E+04
27	1173-	1190	1180.73	204.69	1.67E+03	0.00	1.91E+04
28	1199-	1212	1204.17	208.75	6.96E+02	0.00	1.56E+04
29	1315-	1327	1318.81	228.63	2.99E+02	0.00	1.37E+04
30	1336-	1351	1343.63	232.94	6.24E+02	0.00	1.61E+04
31	1425-	1444	1434.87	248.76	1.06E+05	0.00	2.12E+04
32	1454-	1468	1461.59	253.39	7.18E+02	0.00	1.38E+04
33	1672-	1692	1682.49	291.71	1.84E+03	0.00	1.65E+04
34	1761-	1773	1767.65	306.47	3.36E+02	0.00	9.05E+03
35	1853-	1870	1860.96	322.66	1.61E+03	0.00	1.20E+04
36	2000-	2014	2005.72	347.76	4.77E+02	0.00	9.44E+03
37	2139-	2157	2146.63	372.20	3.76E+03	0.00	1.22E+04
38	2194-	2212	2201.95	381.79	2.57E+03	0.00	1.21E+04
39	2315-	2333	2321.67	402.56	1.18E+03	0.00	1.29E+04
40	2464-	2487	2476.10	429.34	4.16E+04	0.00	1.53E+04
41	2560-	2584	2572.16	446.00	4.11E+03	0.00	1.47E+04
42	2622-	2646	2634.36	456.79	1.55E+03	0.00	1.45E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2672-	2693	2681.66	464.99	1.38E+04	0.00	1.28E+04
44	2702-	2715	2708.20	469.59	2.30E+02	0.00	7.81E+03
45	2758-	2780	2768.62	480.07	1.30E+03	0.00	1.31E+04
46	3214-	3240	3227.10	559.58	1.42E+03	0.00	1.27E+04
47	3358-	3377	3368.18	584.05	3.75E+03	0.00	8.98E+03
48	3411-	3438	3424.58	593.83	2.22E+04	0.00	1.26E+04
49	3462-	3489	3475.61	602.68	1.56E+04	0.00	1.21E+04
50	3501-	3524	3511.27	608.87	4.45E+03	0.00	9.91E+03
51	3540-	3560	3549.75	615.54	9.26E+02	0.00	7.87E+03
52	3608-	3627	3617.79	627.34	8.77E+02	0.00	8.51E+03
53	3627-	3643	3633.66	630.09	5.16E+02	0.00	6.93E+03
54	3666-	3694	3679.82	638.10	1.03E+04	0.00	1.20E+04
55	3750-	3767	3757.68	651.60	2.23E+02	0.00	7.35E+03
56	3875-	3896	3885.60	673.79	9.47E+02	0.00	9.66E+03
57	3906-	3929	3917.52	679.32	7.64E+02	0.00	9.14E+03
58	3996-	4021	4006.99	694.84	6.27E+03	0.00	1.01E+04
59	4021-	4035	4028.09	698.50	2.47E+03	0.00	1.90E+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                 :  6-24-96  1:12:25 PM

Sample Title                        : NOPI-321-GAM2 attenuation
Spectrum Description                : NOPI-321-GAM2 attenuation
Sample Identification               : NP321ATT
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                 :  6-18-96  4:16:22 PM

Live Time                           :     1800.0 seconds
Real Time                           :     1982.4 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: NOPI-321-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:12:20 PM
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	102.05	0.1392	17.63	22.87
2	122.68	0.2483	21.21	8.75
3	159.20	0.0577	27.51	132.01
4	179.94	0.0812	31.14	78.96
5	192.49	0.1786	33.32	16.15
6	206.08	0.0766	35.64	81.90
7	225.00	0.2824	38.76	6.12
8	249.60	0.0448	42.93	257.67
9	262.81	0.1241	45.52	32.37
10	282.10	0.0526	48.80	163.48
11	289.88	0.0765	50.25	78.15
12	317.37	0.2510	54.90	5.22
13	336.39	0.3224	58.45	4.39
14	347.90	0.1036	60.25	42.03
15	501.26	0.0372	86.85	277.81
16	609.73	0.0403	105.67	226.87
17	655.25	0.2118	113.52	9.10
18	712.53	0.0225	123.49	657.78
19	761.17	0.2718	132.04	5.85
20	844.78	0.2685	146.50	4.31
21	959.66	0.2339	166.26	4.80
22	999.93	0.2361	173.23	7.24
23	1020.50	0.0572	176.89	94.98
24	1089.57	0.1111	188.86	25.81
25	1181.41	0.2102	204.85	6.80
26	1204.34	0.2393	208.53	6.06
27	1318.66	0.3019	228.40	3.37
28	1434.91	0.0397	248.77	176.65
29	1460.51	0.2967	253.46	3.87
30	1682.40	0.1693	291.60	6.63
31	1860.19	0.2082	322.59	3.22
32	2147.12	0.1016	372.21	24.06
33	2201.64	0.1206	381.92	16.40
34	2321.95	0.1501	402.59	10.59
35	2476.20	0.0456	429.36	105.60
36	2572.10	0.1087	445.90	18.78
37	2634.17	0.1604	456.81	8.65
38	2681.56	0.0626	464.97	53.22
39	2767.98	0.1523	479.92	9.22
40	3227.10	0.1457	559.51	8.91
41	3368.35	0.0904	584.01	25.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	3424.64	0.0506	593.84	73.88
43	3475.77	0.0564	602.76	59.76
44	3511.25	0.0856	608.87	25.58
45	3618.20	0.1348	627.36	10.77
46	3634.48	0.1914	630.25	5.80
47	3680.42	0.0668	638.09	41.07
48	3885.72	0.1332	673.80	11.28
49	3915.37	0.1968	679.43	4.86
50	4007.03	0.0719	694.82	33.97
51	4029.10	0.1025	698.53	19.53

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: NOPI-321-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:12:24 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	99-	105	102.14	17.63	1.35E+04	0.00	1.54E+04
2	118-	126	122.78	21.21	1.63E+03	0.00	1.91E+04
3	155-	163	159.14	27.51	3.49E+05	0.00	4.13E+04
4	175-	184	180.06	31.14	7.15E+04	0.00	4.84E+04
5	189-	196	192.60	33.32	5.38E+03	0.00	2.91E+04
6	201-	210	206.01	35.64	4.57E+04	0.00	3.11E+04
7	220-	229	223.96	38.76	2.77E+03	0.00	5.61E+04
8	240-	254	248.02	42.93	1.09E+06	0.00	8.64E+04
9	257-	267	262.99	45.52	7.39E+03	0.00	3.33E+04
10	277-	287	281.87	48.80	1.67E+05	0.00	9.15E+04
11	287-	294	290.22	50.25	4.50E+04	0.00	3.08E+04
12	312-	322	317.05	54.90	1.64E+03	0.00	1.51E+04
13	331-	341	337.53	58.45	1.00E+03	0.00	1.54E+04
14	342-	353	347.89	60.25	1.10E+04	0.00	1.71E+04
15	495-	507	501.26	86.85	3.08E+05	0.00	3.42E+04
16	603-	616	609.77	105.67	2.00E+05	0.00	3.47E+04
17	648-	662	655.06	113.52	2.03E+03	0.00	3.98E+04
18	705-	719	712.53	123.49	1.68E+06	0.00	3.94E+04
19	757-	768	761.86	132.04	5.34E+02	0.00	1.61E+04
20	841-	850	845.25	146.50	7.43E+02	0.00	1.23E+04
21	951-	967	959.15	166.26	2.00E+03	0.00	1.97E+04
22	991-	1007	999.36	173.23	5.65E+02	0.00	1.88E+04
23	1012-	1028	1020.48	176.89	3.75E+04	0.00	1.79E+04
24	1081-	1097	1089.48	188.86	5.31E+03	0.00	1.77E+04
25	1172-	1190	1181.67	204.85	1.20E+03	0.00	2.04E+04
26	1195-	1210	1202.91	208.53	8.03E+02	0.00	1.77E+04
27	1309-	1327	1317.44	228.40	7.19E+02	0.00	1.95E+04
28	1425-	1444	1434.89	248.77	1.06E+05	0.00	2.08E+04
29	1454-	1469	1461.98	253.46	9.29E+02	0.00	1.42E+04
30	1672-	1692	1681.88	291.60	1.72E+03	0.00	1.58E+04
31	1852-	1870	1860.54	322.59	1.37E+03	0.00	1.23E+04
32	2136-	2154	2146.69	372.21	4.02E+03	0.00	1.19E+04
33	2195-	2212	2202.67	381.92	2.69E+03	0.00	1.13E+04
34	2316-	2329	2321.88	402.59	1.09E+03	0.00	9.30E+03
35	2464-	2487	2476.19	429.36	4.18E+04	0.00	1.46E+04
36	2560-	2584	2571.60	445.90	3.90E+03	0.00	1.45E+04
37	2626-	2646	2634.51	456.81	1.38E+03	0.00	1.22E+04
38	2669-	2693	2681.54	464.97	1.35E+04	0.00	1.42E+04
39	2758-	2775	2767.75	479.92	9.34E+02	0.00	1.02E+04
40	3216-	3235	3226.69	559.51	1.00E+03	0.00	9.47E+03
41	3354-	3378	3367.95	584.01	3.91E+03	0.00	1.12E+04
42	3411-	3438	3424.60	593.84	2.19E+04	0.00	1.22E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	3462-	3489	3476.04	602.76	1.56E+04	0.00	1.19E+04
44	3499-	3524	3511.28	608.87	4.35E+03	0.00	1.06E+04
45	3604-	3627	3617.89	627.36	1.54E+03	0.00	9.50E+03
46	3627-	3642	3634.57	630.25	5.09E+02	0.00	6.39E+03
47	3666-	3694	3679.78	638.09	9.98E+03	0.00	1.15E+04
48	3878-	3895	3885.68	673.80	1.05E+03	0.00	7.54E+03
49	3907-	3929	3918.15	679.43	7.72E+02	0.00	8.61E+03
50	3992-	4021	4006.86	694.82	6.90E+03	0.00	1.07E+04
51	4021-	4035	4028.27	698.53	2.38E+03	0.00	1.96E+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              :  6-24-96  1:13:16 PM

Sample Title                     : NOPI-322-GAM2 attenuation
Spectrum Description             : NOPI-322-GAM2 attenuation
Sample Identification            : NP322ATT
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              :  6-19-96  7:40:07 AM

Live Time                        :     1800.0 seconds
Real Time                        :     1979.2 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: NOPI-322-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:13:10 PM
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	102.43	0.1432	17.70	21.84
2	123.17	0.2576	21.28	7.77
3	159.71	0.0575	27.58	134.62
4	180.42	0.0847	31.19	71.47
5	192.85	0.1725	33.37	20.08
6	206.56	0.0796	35.72	74.60
7	225.53	0.3059	38.82	5.22
8	250.13	0.0430	43.02	277.32
9	263.24	0.1244	45.59	30.70
10	282.77	0.0534	48.91	157.83
11	290.36	0.0783	50.38	74.02
12	318.36	0.2878	55.13	4.80
13	337.40	0.3269	58.42	3.16
14	348.50	0.1036	60.36	37.92
15	444.88	0.3541	77.12	3.65
16	502.08	0.0381	86.99	280.92
17	610.69	0.0404	105.83	222.73
18	634.07	0.3567	109.72	3.24
19	656.24	0.2202	113.72	7.56
20	686.53	0.2986	119.16	3.77
21	713.58	0.0226	123.68	664.36
22	762.37	0.3155	132.36	3.02
23	781.43	0.3520	135.32	3.08
24	871.60	0.3315	150.95	3.49
25	1001.29	0.2348	173.68	6.60
26	1021.96	0.0564	177.15	98.77
27	1091.02	0.1115	189.10	25.57
28	1183.23	0.1952	205.06	7.49
29	1205.35	0.2435	208.95	5.55
30	1436.84	0.0398	249.10	175.12
31	1684.62	0.1738	292.05	8.04
32	1767.90	0.3127	306.79	3.12
33	1862.33	0.2003	323.15	4.69
34	2009.48	0.3201	348.42	3.04
35	2149.76	0.1050	372.75	22.61
36	2204.62	0.1199	382.15	16.75
37	2324.97	0.1584	403.09	9.65
38	2479.37	0.0461	429.91	103.48
39	2575.67	0.1068	446.73	19.32
40	2637.86	0.1685	457.57	7.31
41	2656.87	0.2615	460.75	3.30

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2685.03	0.0632	465.56	53.66
43	2771.06	0.1505	480.38	8.22
44	3102.47	0.2680	537.83	3.25
45	3230.89	0.1506	560.29	9.65
46	3372.42	0.0901	584.87	23.84
47	3429.00	0.0511	594.59	73.00
48	3480.27	0.0570	603.49	58.36
49	3515.64	0.0854	609.62	25.84
50	3554.68	0.2250	615.97	3.96
51	3622.72	0.1413	628.08	9.36
52	3638.47	0.2445	631.11	3.87
53	3684.98	0.0673	638.88	41.35
54	3890.94	0.1325	674.75	10.60
55	3920.16	0.1971	679.99	4.75
56	4012.07	0.0713	695.71	34.69
57	4029.55	0.1081	698.86	19.78

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: NOPI-322-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:13:13 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	98-	106	102.55	17.70	1.23E+04	0.00	2.08E+04
2	119-	127	123.17	21.28	1.68E+03	0.00	1.87E+04
3	155-	163	159.51	27.58	3.44E+05	0.00	4.21E+04
4	176-	184	180.33	31.19	6.57E+04	0.00	4.69E+04
5	189-	197	192.93	33.37	5.07E+03	0.00	3.22E+04
6	202-	211	206.46	35.72	4.39E+04	0.00	3.11E+04
7	220-	230	224.31	38.82	2.85E+03	0.00	6.07E+04
8	240-	254	248.52	43.02	1.07E+06	0.00	8.89E+04
9	258-	268	263.37	45.59	7.86E+03	0.00	3.24E+04
10	277-	287	282.49	48.91	1.86E+05	0.00	6.72E+04
11	287-	295	290.99	50.38	2.67E+04	0.00	5.10E+04
12	313-	323	318.39	55.13	1.65E+03	0.00	1.47E+04
13	332-	342	337.32	58.42	1.10E+03	0.00	1.53E+04
14	343-	353	348.54	60.36	1.19E+04	0.00	1.49E+04
15	442-	450	445.16	77.12	3.72E+02	0.00	1.64E+04
16	495-	508	502.07	86.99	3.02E+05	0.00	3.54E+04
17	604-	617	610.70	105.83	1.96E+05	0.00	3.48E+04
18	627-	637	633.12	109.72	4.80E+02	0.00	2.67E+04
19	649-	663	656.18	113.72	1.73E+03	0.00	3.97E+04
20	682-	693	687.59	119.16	2.04E+03	0.00	3.78E+04
21	706-	720	713.61	123.68	1.66E+06	0.00	3.92E+04
22	757-	769	763.67	132.36	1.06E+03	0.00	1.69E+04
23	774-	786	780.75	135.32	7.26E+02	0.00	1.60E+04
24	866-	879	870.87	150.95	5.11E+02	0.00	1.63E+04
25	998-	1009	1001.92	173.68	5.86E+02	0.00	1.30E+04
26	1013-	1030	1021.93	177.15	3.65E+04	0.00	1.87E+04
27	1082-	1099	1090.83	189.10	5.27E+03	0.00	1.88E+04
28	1174-	1188	1182.90	205.06	1.25E+03	0.00	1.60E+04
29	1201-	1210	1205.30	208.95	5.45E+02	0.00	1.09E+04
30	1427-	1446	1436.81	249.10	1.04E+05	0.00	2.02E+04
31	1674-	1694	1684.47	292.05	1.86E+03	0.00	1.56E+04
32	1763-	1776	1769.45	306.79	4.36E+02	0.00	9.33E+03
33	1854-	1872	1863.77	323.15	1.55E+03	0.00	1.21E+04
34	2005-	2014	2009.51	348.42	2.60E+02	0.00	6.05E+03
35	2140-	2157	2149.78	372.75	3.33E+03	0.00	1.15E+04
36	2193-	2211	2203.99	382.15	2.59E+03	0.00	1.17E+04
37	2313-	2336	2324.71	403.09	2.19E+03	0.00	1.49E+04
38	2467-	2491	2479.36	429.91	4.08E+04	0.00	1.48E+04
39	2567-	2587	2576.34	446.73	4.05E+03	0.00	1.18E+04
40	2627-	2649	2638.88	457.57	1.19E+03	0.00	1.31E+04
41	2649-	2666	2657.23	460.75	5.52E+02	0.00	9.71E+03
42	2672-	2697	2684.93	465.56	1.34E+04	0.00	1.44E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2758-	2783	2770.37	480.38	2.18E+03	0.00	1.33E+04
44	3095-	3109	3101.66	537.83	4.02E+02	0.00	7.81E+03
45	3219-	3244	3231.19	560.29	8.44E+02	0.00	1.24E+04
46	3362-	3385	3372.91	584.87	3.73E+03	0.00	1.06E+04
47	3415-	3442	3428.96	594.59	2.17E+04	0.00	1.20E+04
48	3466-	3493	3480.23	603.49	1.51E+04	0.00	1.19E+04
49	3501-	3529	3515.59	609.62	4.49E+03	0.00	1.15E+04
50	3544-	3562	3552.21	615.97	4.70E+02	0.00	7.35E+03
51	3608-	3631	3622.06	628.08	1.01E+03	0.00	9.45E+03
52	3631-	3648	3639.53	631.11	4.25E+02	0.00	7.06E+03
53	3670-	3696	3684.30	638.88	9.61E+03	0.00	1.07E+04
54	3882-	3901	3891.17	674.75	1.30E+03	0.00	8.03E+03
55	3911-	3930	3921.38	679.99	7.69E+02	0.00	7.17E+03
56	4001-	4026	4012.00	695.71	7.04E+03	0.00	8.59E+03
57	4026-	4035	4030.15	698.86	1.41E+03	0.00	1.05E+03

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

Errors quoted at 0.000 sigma

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

Report Generated On                 :  4-24-96  2:08:07 PM

Sample Title                        : NOPI-323-GAM2 attenuation
Spectrum Description                : NOPI-323-GAM2 attenuation
Sample Identification               : NP323AT
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                 :  4-23-96  2:45:22 PM

Live Time                           :     1800.0 seconds
Real Time                           :     1988.8 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: NOPI-323-GAM2 attenuation
Peak Locate Performed on: 4-24-96 2:08:02 PM
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	102.06	0.1351	17.63	25.88
2	122.79	0.2704	21.21	6.13
3	159.13	0.0555	27.49	144.57
4	179.81	0.0789	31.13	85.80
5	192.33	0.1767	33.28	20.02
6	205.94	0.0738	35.62	90.29
7	224.92	0.2941	38.78	5.87
8	249.46	0.0437	42.90	274.16
9	262.60	0.1249	45.47	30.71
10	281.94	0.0511	48.78	175.37
11	289.71	0.0771	50.26	76.89
12	317.42	0.2683	54.85	5.91
13	337.18	0.2934	58.37	3.31
14	347.54	0.1016	60.19	40.50
15	444.70	0.3248	77.04	3.47
16	500.94	0.0374	86.78	298.04
17	609.32	0.0393	105.59	236.35
18	654.92	0.2561	113.45	5.35
19	684.30	0.2375	118.79	5.02
20	711.99	0.0223	123.40	721.54
21	761.04	0.2701	131.89	6.04
22	844.41	0.2892	146.37	4.08
23	903.95	0.3657	156.69	3.19
24	958.39	0.2257	166.00	3.56
25	999.24	0.2089	173.25	7.38
26	1019.77	0.0552	176.77	102.09
27	1088.89	0.1089	188.72	26.58
28	1180.66	0.1866	204.80	9.28
29	1203.46	0.2108	208.56	5.88
30	1318.63	0.2588	228.39	3.59
31	1373.76	0.3422	238.52	3.00
32	1433.84	0.0394	248.59	177.05
33	1460.01	0.3085	253.45	3.01
34	1681.09	0.1716	291.43	6.42
35	1858.77	0.2040	322.30	3.41
36	2145.22	0.1013	371.91	23.29
37	2200.12	0.1222	381.51	16.05
38	2262.89	0.2949	392.21	3.96
39	2320.36	0.1692	402.48	8.43
40	2415.28	0.2861	418.82	3.37
41	2474.37	0.0455	429.04	105.11

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2570.28	0.1095	445.60	16.96
43	2632.36	0.1645	456.53	7.52
44	2679.64	0.0618	464.65	54.10
45	2706.17	0.2476	469.50	3.54
46	2765.44	0.1531	479.58	9.34
47	3223.80	0.1630	559.30	5.97
48	3365.69	0.0915	583.56	23.08
49	3422.15	0.0508	593.42	72.69
50	3473.27	0.0557	602.29	60.25
51	3508.65	0.0850	608.41	25.58
52	3546.03	0.2274	614.63	4.60
53	3615.99	0.1482	626.89	9.52
54	3677.59	0.0662	637.67	41.54
55	3755.36	0.2241	651.37	3.95
56	3882.66	0.1272	673.29	11.59
57	3913.90	0.1951	678.64	4.59
58	4004.01	0.0717	694.37	34.16
59	4029.01	0.1004	698.62	19.98

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: NOPI-323-GAM2 attenuation
Peak Analysis Performed on: 4-24-96 2:08:05 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	98-	105	102.14	17.63	1.29E+04	0.00	1.99E+04
2	118-	126	122.81	21.21	1.46E+03	0.00	2.00E+04
3	154-	163	159.00	27.49	3.66E+05	0.00	4.49E+04
4	175-	184	179.99	31.13	7.68E+04	0.00	4.86E+04
5	191-	196	192.38	33.28	5.54E+03	0.00	2.10E+04
6	201-	210	205.88	35.62	4.77E+04	0.00	3.22E+04
7	220-	229	224.09	38.78	2.60E+03	0.00	5.78E+04
8	240-	254	247.85	42.90	1.12E+06	0.00	8.60E+04
9	257-	267	262.69	45.47	9.16E+03	0.00	3.35E+04
10	276-	286	281.75	48.78	2.02E+05	0.00	6.15E+04
11	286-	294	290.31	50.26	1.66E+04	0.00	6.50E+04
12	312-	322	316.75	54.85	1.36E+03	0.00	1.59E+04
13	331-	342	337.08	58.37	8.43E+02	0.00	1.77E+04
14	342-	352	347.56	60.19	1.20E+04	0.00	1.59E+04
15	440-	450	444.69	77.04	7.47E+02	0.00	2.11E+04
16	494-	507	500.88	86.78	3.21E+05	0.00	3.82E+04
17	602-	615	609.30	105.59	2.07E+05	0.00	3.65E+04
18	648-	661	654.64	113.45	2.11E+03	0.00	3.75E+04
19	683-	691	685.42	118.79	1.71E+03	0.00	3.08E+04
20	704-	719	712.00	123.40	1.74E+06	0.00	4.20E+04
21	756-	768	760.98	131.89	9.76E+02	0.00	1.77E+04
22	838-	851	844.48	146.37	4.50E+02	0.00	1.85E+04
23	900-	908	903.98	156.69	3.92E+02	0.00	1.07E+04
24	950-	966	957.68	166.00	2.52E+03	0.00	2.02E+04
25	994-	1007	999.46	173.25	1.00E+03	0.00	1.58E+04
26	1011-	1027	1019.76	176.77	4.02E+04	0.00	1.85E+04
27	1080-	1097	1088.65	188.72	5.40E+03	0.00	1.98E+04
28	1172-	1189	1181.40	204.80	2.05E+03	0.00	1.98E+04
29	1197-	1208	1203.06	208.56	9.61E+02	0.00	1.38E+04
30	1309-	1327	1317.39	228.39	5.69E+02	0.00	2.00E+04
31	1369-	1382	1375.80	238.52	4.55E+02	0.00	1.49E+04
32	1424-	1443	1433.85	248.59	1.10E+05	0.00	2.12E+04
33	1455-	1469	1461.88	253.45	4.10E+02	0.00	1.43E+04
34	1671-	1691	1680.88	291.43	2.54E+03	0.00	1.62E+04
35	1848-	1869	1858.91	322.30	1.58E+03	0.00	1.50E+04
36	2134-	2156	2144.97	371.91	4.23E+03	0.00	1.50E+04
37	2192-	2211	2200.28	381.51	2.49E+03	0.00	1.33E+04
38	2258-	2267	2262.03	392.21	3.27E+02	0.00	6.37E+03
39	2315-	2331	2321.24	402.48	1.36E+03	0.00	1.17E+04
40	2411-	2421	2415.42	418.82	2.79E+02	0.00	7.14E+03
41	2462-	2486	2474.37	429.04	4.45E+04	0.00	1.60E+04
42	2558-	2579	2569.84	445.60	4.46E+03	0.00	1.30E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2623-	2642	2632.89	456.53	1.53E+03	0.00	1.20E+04
44	2669-	2691	2679.71	464.65	1.57E+04	0.00	1.28E+04
45	2696-	2718	2707.66	469.50	3.05E+02	0.00	1.35E+04
46	2756-	2777	2765.77	479.58	1.31E+03	0.00	1.28E+04
47	3215-	3237	3225.45	559.30	1.68E+03	0.00	1.08E+04
48	3352-	3379	3365.34	583.56	4.10E+03	0.00	1.27E+04
49	3408-	3435	3422.20	593.42	2.31E+04	0.00	1.26E+04
50	3461-	3486	3473.32	602.29	1.70E+04	0.00	1.15E+04
51	3496-	3519	3508.64	608.41	4.23E+03	0.00	1.05E+04
52	3535-	3553	3544.51	614.63	7.12E+02	0.00	7.63E+03
53	3602-	3625	3615.19	626.89	9.20E+02	0.00	1.04E+04
54	3663-	3691	3677.35	637.67	1.00E+04	0.00	1.25E+04
55	3747-	3769	3756.34	651.37	7.04E+02	0.00	9.33E+03
56	3873-	3891	3882.74	673.29	1.30E+03	0.00	8.43E+03
57	3905-	3928	3913.60	678.64	1.11E+03	0.00	8.72E+03
58	3993-	4018	4004.29	694.37	6.70E+03	0.00	9.78E+03
59	4022-	4035	4028.79	698.62	2.19E+03	0.00	1.85E+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              :  6-24-96  1:13:58 PM

Sample Title                     : NOPI-324-GAM2 attenuation
Spectrum Description             : NOPI-324-GAM2 attenuation
Sample Identification            : NP324ATT
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              :  6-19-96  8:15:13 AM

Live Time                        :     1800.0 seconds
Real Time                        :     1984.2 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: NOPI-324-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:13:52 PM
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	18.00	0.2555	3.03	15.32
2	102.37	0.1447	17.70	20.50
3	123.26	0.2681	21.31	7.93
4	159.78	0.0581	27.59	134.53
5	180.47	0.0861	31.20	68.65
6	192.97	0.1740	33.37	18.47
7	206.65	0.0793	35.73	76.79
8	225.18	0.2808	39.03	6.12
9	250.18	0.0430	43.03	276.77
10	263.33	0.1259	45.60	30.22
11	282.82	0.0530	48.92	161.90
12	290.47	0.0779	50.40	72.47
13	317.65	0.2889	54.97	4.41
14	338.04	0.3147	58.43	3.48
15	348.57	0.1041	60.36	38.69
16	445.12	0.3217	77.17	4.59
17	502.15	0.0374	87.00	285.12
18	610.74	0.0403	105.84	228.09
19	656.04	0.2319	113.61	6.50
20	713.64	0.0225	123.69	684.03
21	762.69	0.3048	132.35	4.08
22	960.26	0.2291	166.49	3.62
23	1001.35	0.2168	173.67	7.02
24	1022.06	0.0559	177.16	99.61
25	1091.10	0.1082	189.16	26.63
26	1183.55	0.1963	204.92	8.49
27	1206.05	0.2166	209.01	7.14
28	1321.00	0.2793	229.24	3.54
29	1436.92	0.0396	249.12	176.87
30	1462.92	0.2853	253.47	3.77
31	1684.27	0.1714	292.03	7.11
32	1718.02	0.2992	297.90	3.43
33	1863.12	0.1986	323.17	4.19
34	2149.69	0.1039	372.77	22.63
35	2204.78	0.1196	382.34	16.11
36	2325.42	0.1532	403.15	10.13
37	2479.52	0.0460	429.93	103.19
38	2575.60	0.1072	446.47	18.33
39	2638.17	0.1741	457.37	7.62
40	2659.08	0.2611	460.89	4.06
41	2685.19	0.0626	465.60	54.92

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2771.50	0.1662	480.63	7.67
43	3230.93	0.1427	560.28	10.54
44	3372.61	0.0929	584.82	21.60
45	3429.24	0.0508	594.62	73.41
46	3480.42	0.0566	603.51	57.77
47	3515.89	0.0871	609.71	25.75
48	3554.40	0.2290	616.29	3.66
49	3622.88	0.1398	628.19	9.36
50	3638.53	0.2443	630.85	3.61
51	3685.16	0.0663	639.00	41.79
52	3763.40	0.2686	652.62	3.11
53	3890.39	0.1267	674.69	11.65
54	3921.03	0.1948	679.98	5.28
55	4012.17	0.0722	695.73	34.20
56	4029.38	0.1075	698.83	19.36

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: NOPI-324-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:13:56 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	15-	20	17.94	3.03	2.81E+03	0.00	5.20E+03
2	99-	106	102.54	17.70	1.28E+04	0.00	1.79E+04
3	119-	127	123.34	21.31	1.48E+03	0.00	1.92E+04
4	155-	163	159.56	27.59	3.33E+05	0.00	4.19E+04
5	176-	184	180.38	31.20	6.37E+04	0.00	4.76E+04
6	189-	197	192.92	33.37	5.34E+03	0.00	3.29E+04
7	202-	211	206.54	35.73	4.36E+04	0.00	3.22E+04
8	224-	229	225.56	39.03	2.25E+03	0.00	3.49E+04
9	240-	255	248.59	43.03	1.10E+06	0.00	8.79E+04
10	258-	268	263.41	45.60	8.28E+03	0.00	3.23E+04
11	277-	287	282.54	48.92	1.92E+05	0.00	6.67E+04
12	287-	295	291.08	50.40	2.48E+04	0.00	5.51E+04
13	312-	322	317.43	54.97	1.81E+03	0.00	1.48E+04
14	332-	343	337.40	58.43	8.40E+02	0.00	1.71E+04
15	343-	353	348.55	60.36	1.22E+04	0.00	1.53E+04
16	442-	449	445.45	77.17	5.44E+02	0.00	1.48E+04
17	495-	508	502.14	87.00	3.15E+05	0.00	3.70E+04
18	604-	617	610.79	105.84	2.04E+05	0.00	3.54E+04
19	649-	662	655.57	113.61	2.51E+03	0.00	3.70E+04
20	706-	720	713.69	123.69	1.71E+06	0.00	3.98E+04
21	758-	769	763.64	132.35	6.46E+02	0.00	1.62E+04
22	952-	968	960.46	166.49	2.53E+03	0.00	1.96E+04
23	996-	1009	1001.86	173.67	8.89E+02	0.00	1.55E+04
24	1013-	1030	1022.02	177.16	3.84E+04	0.00	1.89E+04
25	1085-	1099	1091.19	189.16	5.26E+03	0.00	1.58E+04
26	1174-	1189	1182.06	204.92	1.97E+03	0.00	1.68E+04
27	1197-	1214	1205.66	209.01	1.17E+03	0.00	1.96E+04
28	1316-	1330	1322.28	229.24	7.81E+02	0.00	1.53E+04
29	1427-	1446	1436.94	249.12	1.08E+05	0.00	2.09E+04
30	1456-	1469	1462.03	253.47	6.75E+02	0.00	1.27E+04
31	1676-	1694	1684.37	292.03	2.10E+03	0.00	1.47E+04
32	1714-	1723	1718.19	297.90	2.64E+02	0.00	7.53E+03
33	1855-	1873	1863.93	323.17	1.35E+03	0.00	1.26E+04
34	2142-	2160	2149.90	372.77	3.78E+03	0.00	1.24E+04
35	2198-	2215	2205.07	382.34	2.47E+03	0.00	1.17E+04
36	2317-	2334	2325.07	403.15	1.42E+03	0.00	1.18E+04
37	2467-	2491	2479.53	429.93	4.19E+04	0.00	1.56E+04
38	2563-	2587	2574.89	446.47	4.21E+03	0.00	1.45E+04
39	2626-	2646	2637.72	457.37	1.46E+03	0.00	1.23E+04
40	2648-	2667	2658.04	460.89	6.62E+02	0.00	1.13E+04
41	2672-	2697	2685.15	465.60	1.35E+04	0.00	1.53E+04
42	2759-	2783	2771.81	480.63	1.39E+03	0.00	1.40E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	3221-	3244	3231.08	560.28	1.59E+03	0.00	1.11E+04
44	3359-	3386	3372.58	584.82	4.42E+03	0.00	1.22E+04
45	3415-	3442	3429.14	594.62	2.21E+04	0.00	1.24E+04
46	3466-	3494	3480.38	603.51	1.56E+04	0.00	1.24E+04
47	3505-	3529	3516.11	609.71	4.46E+03	0.00	1.02E+04
48	3547-	3562	3554.07	616.29	4.66E+02	0.00	6.41E+03
49	3613-	3632	3622.66	628.19	9.95E+02	0.00	8.37E+03
50	3632-	3645	3637.99	630.85	3.81E+02	0.00	5.83E+03
51	3671-	3699	3685.02	639.00	9.87E+03	0.00	1.21E+04
52	3754-	3771	3763.57	652.62	2.31E+02	0.00	7.22E+03
53	3881-	3899	3890.78	674.69	1.56E+03	0.00	7.70E+03
54	3913-	3931	3921.32	679.98	2.10E+02	0.00	7.72E+03
55	4001-	4026	4012.14	695.73	6.50E+03	0.00	9.59E+03
56	4026-	4035	4029.98	698.83	1.54E+03	0.00	1.08E+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                 :  6-24-96  1:15:09 PM

Sample Title                        : NOPI-325-GAM2 attenuation
Spectrum Description                : NOPI-325-GAM2 attenuation
Sample Identification               : NP325ATT
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                 :  6-19-96  8:49:18 AM

Live Time                           :     1800.0 seconds
Real Time                           :     1982.3 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: NOPI-325-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:15:03 PM
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	47.78	0.5113	8.13	3.25
2	102.20	0.1530	17.65	18.42
3	122.90	0.2708	21.24	6.80
4	159.48	0.0614	27.55	114.40
5	180.19	0.0857	31.16	69.98
6	192.60	0.1775	33.36	17.13
7	206.27	0.0809	35.69	73.34
8	225.23	0.2897	38.81	6.00
9	249.89	0.0435	42.98	271.33
10	263.04	0.1239	45.55	32.42
11	282.36	0.0535	48.85	150.23
12	290.07	0.0772	50.32	77.87
13	317.62	0.3495	55.06	3.49
14	337.07	0.3260	58.37	3.58
15	348.08	0.1043	60.29	40.96
16	444.84	0.3221	76.89	4.68
17	501.64	0.0369	86.91	273.76
18	610.24	0.0404	105.74	227.05
19	634.03	0.3495	109.67	3.83
20	655.68	0.2479	113.54	5.90
21	677.73	0.2456	117.38	6.57
22	685.60	0.3290	119.16	3.22
23	713.02	0.0226	123.57	692.71
24	761.56	0.2931	132.15	4.12
25	845.30	0.2929	146.57	4.45
26	959.96	0.2074	166.25	5.01
27	1000.64	0.2451	173.49	6.11
28	1021.15	0.0563	177.01	97.35
29	1090.11	0.1099	188.99	26.41
30	1182.33	0.1957	204.81	7.78
31	1204.60	0.2283	208.84	4.74
32	1262.25	0.3032	218.84	3.71
33	1319.44	0.3128	228.79	3.40
34	1435.67	0.0396	248.90	170.91
35	1462.02	0.3317	253.10	3.09
36	1683.71	0.1654	291.88	9.31
37	1860.74	0.2018	322.89	4.22
38	2099.37	0.3032	364.21	3.11
39	2148.05	0.1041	372.45	22.59
40	2203.03	0.1248	381.96	15.30
41	2323.45	0.1523	402.84	10.30

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2452.40	0.3027	425.17	3.39
43	2477.46	0.0462	429.58	99.25
44	2573.56	0.1117	446.14	15.45
45	2636.09	0.2105	456.87	5.35
46	2682.99	0.0629	465.22	53.08
47	2732.11	0.3033	473.64	3.01
48	2769.30	0.1422	480.13	10.69
49	3228.78	0.1522	559.89	8.02
50	3369.90	0.0930	584.31	22.00
51	3426.31	0.0517	594.15	69.41
52	3477.57	0.0570	603.01	56.52
53	3512.98	0.0869	609.20	24.47
54	3549.26	0.2388	615.64	3.74
55	3619.85	0.1490	627.73	7.20
56	3682.17	0.0670	638.44	41.14
57	3760.68	0.2597	652.43	3.07
58	3887.55	0.1377	674.35	9.72
59	3918.69	0.1953	679.67	4.75
60	4008.92	0.0746	695.18	30.99
61	4028.95	0.1049	698.57	18.39

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: NOPI-325-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:15:06 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	44-	50	47.39	8.13	4.76E+02	0.00	1.39E+04
2	99-	105	102.29	17.65	1.02E+04	0.00	1.51E+04
3	119-	126	122.97	21.24	1.47E+03	0.00	1.67E+04
4	155-	163	159.35	27.55	2.71E+05	0.00	3.80E+04
5	175-	184	180.18	31.16	5.70E+04	0.00	4.72E+04
6	189-	197	192.84	33.36	4.32E+03	0.00	3.29E+04
7	201-	210	206.27	35.69	4.06E+04	0.00	3.11E+04
8	220-	229	224.27	38.81	2.70E+03	0.00	5.39E+04
9	240-	254	248.29	42.98	1.03E+06	0.00	8.54E+04
10	258-	267	263.15	45.55	8.90E+03	0.00	2.85E+04
11	277-	287	282.17	48.85	1.73E+05	0.00	7.81E+04
12	287-	295	290.64	50.32	3.70E+04	0.00	3.99E+04
13	312-	322	317.98	55.06	1.02E+03	0.00	1.50E+04
14	331-	342	337.04	58.37	1.51E+03	0.00	1.63E+04
15	342-	353	348.11	60.29	1.13E+04	0.00	1.70E+04
16	438-	450	443.82	76.89	1.17E+03	0.00	2.36E+04
17	495-	507	501.63	86.91	3.13E+05	0.00	3.47E+04
18	603-	616	610.20	105.74	2.03E+05	0.00	3.61E+04
19	627-	637	632.83	109.67	9.99E+02	0.00	2.71E+04
20	648-	662	655.18	113.54	2.38E+03	0.00	3.99E+04
21	670-	681	677.32	117.38	8.69E+02	0.00	3.69E+04
22	681-	692	687.55	119.16	2.03E+03	0.00	3.90E+04
23	705-	720	713.02	123.57	1.72E+06	0.00	4.13E+04
24	754-	768	762.46	132.15	1.06E+03	0.00	1.98E+04
25	840-	852	845.61	146.57	4.46E+02	0.00	1.65E+04
26	952-	967	959.12	166.25	2.47E+03	0.00	1.85E+04
27	997-	1008	1000.82	173.49	4.39E+02	0.00	1.36E+04
28	1013-	1029	1021.17	177.01	3.85E+04	0.00	1.80E+04
29	1081-	1098	1090.22	188.99	5.34E+03	0.00	1.91E+04
30	1173-	1190	1181.42	204.81	1.49E+03	0.00	1.95E+04
31	1198-	1211	1204.66	208.84	6.22E+02	0.00	1.57E+04
32	1258-	1266	1262.37	218.84	2.39E+02	0.00	9.57E+03
33	1310-	1328	1319.71	228.79	1.18E+03	0.00	1.94E+04
34	1426-	1445	1435.70	248.90	1.08E+05	0.00	2.14E+04
35	1452-	1471	1459.87	253.10	7.10E+02	0.00	1.82E+04
36	1675-	1693	1683.48	291.88	2.11E+03	0.00	1.45E+04
37	1850-	1871	1862.29	322.89	1.70E+03	0.00	1.46E+04
38	2095-	2110	2100.56	364.21	4.75E+02	0.00	9.94E+03
39	2136-	2159	2148.06	372.45	4.00E+03	0.00	1.55E+04
40	2194-	2214	2202.88	381.96	2.58E+03	0.00	1.35E+04
41	2311-	2331	2323.32	402.84	1.60E+03	0.00	1.40E+04
42	2448-	2457	2452.05	425.17	2.37E+02	0.00	6.30E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2465-	2489	2477.46	429.58	4.22E+04	0.00	1.59E+04
44	2561-	2582	2572.96	446.14	3.39E+03	0.00	1.36E+04
45	2623-	2648	2634.85	456.87	1.57E+03	0.00	1.49E+04
46	2670-	2695	2682.97	465.22	1.47E+04	0.00	1.48E+04
47	2727-	2737	2731.51	473.64	2.20E+02	0.00	6.13E+03
48	2758-	2778	2768.94	480.13	1.42E+03	0.00	1.19E+04
49	3221-	3239	3228.87	559.89	9.69E+02	0.00	9.32E+03
50	3356-	3383	3369.69	584.31	4.18E+03	0.00	1.24E+04
51	3412-	3439	3426.39	594.15	2.27E+04	0.00	1.21E+04
52	3463-	3491	3477.52	603.01	1.62E+04	0.00	1.26E+04
53	3499-	3526	3513.21	609.20	4.75E+03	0.00	1.16E+04
54	3543-	3559	3550.34	615.64	3.17E+02	0.00	6.85E+03
55	3610-	3629	3620.01	627.73	1.34E+03	0.00	8.08E+03
56	3668-	3696	3681.76	638.44	9.70E+03	0.00	1.23E+04
57	3755-	3771	3762.46	652.43	2.01E+02	0.00	7.09E+03
58	3879-	3901	3888.84	674.35	1.50E+03	0.00	9.63E+03
59	3909-	3931	3919.55	679.67	6.63E+02	0.00	8.99E+03
60	3996-	4021	4008.96	695.18	6.72E+03	0.00	9.52E+03
61	4021-	4035	4028.48	698.57	2.33E+03	0.00	2.19E+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                 :  4-24-96  2:09:28 PM

Sample Title                        : NOPI-326-GAM2 attenuation
Spectrum Description                : NOPI-326-GAM2 attenuation
Sample Identification               : NP326AT
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                 :  4-23-96  3:19:39 PM

Live Time                           :     1800.0 seconds
Real Time                           :     1984.9 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: NOPI-326-GAM2 attenuation
Peak Locate Performed on: 4-24-96 2:09:23 PM
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	0.5467	8.07	3.35
2	102.00	0.1479	17.60	20.39
3	122.72	0.2969	21.20	6.07
4	159.13	0.0590	27.49	129.44
5	179.78	0.0832	31.13	78.61
6	192.36	0.1756	33.28	18.02
7	205.92	0.0763	35.62	84.76
8	224.91	0.2653	38.79	6.11
9	249.45	0.0444	42.90	264.46
10	262.64	0.1251	45.48	31.06
11	281.94	0.0516	48.78	172.90
12	289.69	0.0774	50.26	76.30
13	317.47	0.3091	54.89	4.11
14	336.57	0.3281	58.30	4.34
15	347.60	0.1018	60.20	41.21
16	443.92	0.3308	76.98	4.14
17	500.93	0.0373	86.78	298.11
18	609.30	0.0394	105.58	236.71
19	654.53	0.2176	113.34	8.29
20	684.71	0.2185	118.90	5.09
21	711.98	0.0223	123.39	723.92
22	760.78	0.2874	131.97	3.97
23	844.02	0.3017	146.34	3.84
24	958.98	0.2222	166.04	5.44
25	999.43	0.2333	173.25	6.27
26	1019.76	0.0552	176.77	102.17
27	1088.75	0.1106	188.70	26.86
28	1181.08	0.1829	204.72	8.70
29	1203.49	0.2148	208.82	6.38
30	1317.21	0.2850	228.56	4.25
31	1421.40	0.3874	246.51	3.13
32	1433.81	0.0392	248.58	179.46
33	1681.59	0.1862	291.21	7.04
34	1714.33	0.2767	297.38	3.83
35	1858.85	0.1945	322.40	4.60
36	2145.35	0.1011	371.95	24.05
37	2200.40	0.1196	381.37	16.97
38	2320.40	0.1574	402.32	9.57
39	2474.34	0.0451	429.04	106.85
40	2570.18	0.1096	445.61	18.06
41	2633.11	0.1717	456.48	7.49

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2679.62	0.0613	464.60	56.19
43	2765.52	0.1552	479.49	8.81
44	3224.46	0.1428	559.07	9.92
45	3365.66	0.0920	583.57	22.50
46	3422.12	0.0511	593.39	71.83
47	3473.24	0.0560	602.25	59.99
48	3508.68	0.0846	608.47	26.40
49	3547.32	0.2389	614.78	3.26
50	3615.49	0.1561	626.87	7.62
51	3677.58	0.0665	637.64	41.56
52	3882.94	0.1353	673.28	10.67
53	3912.68	0.1897	678.42	5.55
54	4004.05	0.0713	694.34	33.85
55	4028.55	0.1017	698.67	18.67

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: NOPI-326-GAM2 attenuation
Peak Analysis Performed on: 4-24-96 2:09:26 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	44-	49	47.01	8.07	4.25E+02	0.00	1.22E+04
2	99-	105	102.00	17.60	1.08E+04	0.00	1.53E+04
3	118-	126	122.75	21.20	1.09E+03	0.00	1.95E+04
4	154-	163	159.02	27.49	2.85E+05	0.00	3.99E+04
5	175-	184	179.97	31.13	6.34E+04	0.00	4.68E+04
6	191-	196	192.36	33.28	5.41E+03	0.00	2.01E+04
7	201-	210	205.87	35.62	4.17E+04	0.00	3.16E+04
8	220-	229	224.17	38.79	2.94E+03	0.00	5.47E+04
9	240-	254	247.85	42.90	1.05E+06	0.00	8.05E+04
10	257-	267	262.72	45.48	8.31E+03	0.00	3.22E+04
11	276-	286	281.75	48.78	1.95E+05	0.00	5.93E+04
12	286-	294	290.29	50.26	1.66E+04	0.00	6.27E+04
13	312-	322	316.97	54.89	1.17E+03	0.00	1.51E+04
14	333-	341	336.64	58.30	1.08E+03	0.00	1.27E+04
15	342-	353	347.58	60.20	1.20E+04	0.00	1.70E+04
16	438-	449	444.34	76.98	3.56E+02	0.00	2.27E+04
17	494-	507	500.86	86.78	3.21E+05	0.00	3.66E+04
18	602-	615	609.28	105.58	2.08E+05	0.00	3.57E+04
19	647-	661	653.99	113.34	2.39E+03	0.00	3.87E+04
20	683-	691	686.07	118.90	2.23E+03	0.00	2.99E+04
21	704-	719	711.99	123.39	1.75E+06	0.00	4.21E+04
22	756-	768	761.46	131.97	6.93E+02	0.00	1.77E+04
23	839-	851	844.28	146.34	4.38E+02	0.00	1.67E+04
24	951-	966	957.88	166.04	2.45E+03	0.00	1.90E+04
25	995-	1007	999.45	173.25	7.30E+02	0.00	1.48E+04
26	1011-	1027	1019.77	176.77	4.11E+04	0.00	1.79E+04
27	1080-	1097	1088.57	188.70	5.14E+03	0.00	1.99E+04
28	1172-	1189	1180.92	204.72	2.04E+03	0.00	1.93E+04
29	1194-	1212	1204.55	208.82	1.15E+03	0.00	2.12E+04
30	1308-	1326	1318.36	228.56	6.69E+02	0.00	2.01E+04
31	1418-	1425	1421.88	246.51	2.62E+02	0.00	9.26E+03
32	1425-	1443	1433.82	248.58	1.11E+05	0.00	2.03E+04
33	1671-	1688	1679.65	291.21	2.16E+03	0.00	1.38E+04
34	1704-	1724	1715.19	297.38	6.64E+02	0.00	1.56E+04
35	1848-	1869	1859.45	322.40	1.83E+03	0.00	1.47E+04
36	2134-	2156	2145.17	371.95	3.93E+03	0.00	1.53E+04
37	2189-	2209	2199.53	381.37	2.92E+03	0.00	1.36E+04
38	2312-	2326	2320.31	402.32	1.08E+03	0.00	1.03E+04
39	2462-	2486	2474.38	429.04	4.57E+04	0.00	1.59E+04
40	2558-	2580	2569.90	445.61	3.69E+03	0.00	1.44E+04
41	2621-	2640	2632.61	456.48	9.71E+02	0.00	1.23E+04
42	2667-	2691	2679.44	464.60	1.56E+04	0.00	1.42E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2753-	2777	2765.24	479.49	2.16E+03	0.00	1.38E+04
44	3211-	3233	3224.12	559.07	1.29E+03	0.00	1.14E+04
45	3355-	3376	3365.41	583.57	4.29E+03	0.00	9.88E+03
46	3408-	3435	3422.00	593.39	2.30E+04	0.00	1.27E+04
47	3459-	3486	3473.09	602.25	1.74E+04	0.00	1.20E+04
48	3497-	3522	3509.00	608.47	4.82E+03	0.00	1.07E+04
49	3533-	3559	3545.33	614.78	6.22E+02	0.00	1.10E+04
50	3601-	3626	3615.08	626.87	1.06E+03	0.00	1.13E+04
51	3663-	3691	3677.16	637.64	1.03E+04	0.00	1.25E+04
52	3868-	3897	3882.69	673.28	1.33E+03	0.00	1.30E+04
53	3905-	3922	3912.29	678.42	3.63E+02	0.00	7.29E+03
54	3989-	4018	4004.12	694.34	7.07E+03	0.00	1.13E+04
55	4023-	4035	4029.10	698.67	1.94E+03	0.00	1.76E+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              :  6-24-96  1:15:58 PM

Sample Title                     : NOPI-327-GAM2 attenuation
Spectrum Description             : NOPI-327-GAM2 attenuation
Sample Identification            : NP327ATT
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              :  6-19-96  9:23:20 AM

Live Time                        :     1800.0 seconds
Real Time                        :     1987.0 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: NOPI-327-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:15:53 PM
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	102.09	0.1361	17.64	24.09
2	122.84	0.2655	21.23	7.05
3	159.23	0.0574	27.52	132.42
4	180.01	0.0800	31.15	80.71
5	192.50	0.1742	33.31	16.48
6	206.10	0.0760	35.65	83.01
7	224.84	0.3058	38.69	5.25
8	249.66	0.0439	42.94	267.32
9	262.83	0.1222	45.52	31.95
10	282.12	0.0523	48.81	165.02
11	289.93	0.0763	50.26	78.99
12	317.45	0.2432	54.97	5.25
13	336.68	0.2961	58.46	4.72
14	347.90	0.1037	60.27	42.06
15	444.83	0.3487	77.07	3.80
16	501.32	0.0368	86.86	279.45
17	609.78	0.0403	105.68	230.23
18	655.42	0.2185	113.47	7.72
19	712.57	0.0224	123.50	675.33
20	761.87	0.3266	132.07	3.30
21	844.69	0.3024	146.26	3.54
22	904.12	0.3205	156.93	4.30
23	959.44	0.2028	166.20	5.65
24	999.98	0.2141	173.53	8.43
25	1020.58	0.0569	176.90	95.50
26	1089.55	0.1107	188.87	26.43
27	1181.42	0.1971	204.82	8.13
28	1204.48	0.2226	209.21	6.85
29	1342.45	0.2914	232.57	4.03
30	1434.95	0.0395	248.78	177.35
31	1460.56	0.2940	253.14	3.18
32	1682.97	0.1640	291.67	8.21
33	1860.36	0.2057	322.68	3.71
34	1878.44	0.3214	325.82	3.21
35	2146.99	0.0996	372.23	24.30
36	2202.05	0.1162	381.72	16.62
37	2322.36	0.1467	402.60	11.34
38	2476.27	0.0456	429.37	105.51
39	2572.40	0.1082	445.98	17.90
40	2634.68	0.1574	456.59	8.95
41	2681.72	0.0627	464.98	54.17

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2768.10	0.1503	479.89	8.73
43	3227.54	0.1482	559.72	8.02
44	3368.36	0.0894	584.08	24.62
45	3424.68	0.0508	593.85	73.37
46	3475.87	0.0563	602.71	60.68
47	3511.43	0.0859	608.88	25.96
48	3548.29	0.2162	615.39	4.26
49	3618.67	0.1393	627.39	9.98
50	3634.89	0.2415	630.45	3.70
51	3680.40	0.0673	638.21	40.22
52	3759.73	0.2395	651.81	3.70
53	3838.03	0.2578	665.75	3.06
54	3885.76	0.1338	673.92	10.64
55	3915.38	0.1814	679.06	4.57
56	4007.33	0.0715	694.86	34.86
57	4028.87	0.1014	698.67	19.44

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: NOPI-327-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:15:56 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	99-	105	102.19	17.64	1.40E+04	0.00	1.60E+04
2	118-	126	122.89	21.23	1.05E+03	0.00	1.99E+04
3	155-	163	159.19	27.52	3.64E+05	0.00	4.32E+04
4	175-	184	180.11	31.15	7.42E+04	0.00	4.95E+04
5	189-	196	192.58	33.31	6.35E+03	0.00	2.94E+04
6	201-	210	206.03	35.65	4.65E+04	0.00	3.20E+04
7	220-	229	223.59	38.69	2.91E+03	0.00	5.67E+04
8	240-	254	248.07	42.94	1.12E+06	0.00	8.78E+04
9	257-	267	262.98	45.52	7.31E+03	0.00	3.46E+04
10	277-	287	281.92	48.81	1.77E+05	0.00	9.02E+04
11	287-	295	290.32	50.26	4.45E+04	0.00	3.44E+04
12	312-	322	317.44	54.97	1.84E+03	0.00	1.54E+04
13	331-	342	337.56	58.46	1.21E+03	0.00	1.73E+04
14	342-	353	348.02	60.27	1.22E+04	0.00	1.70E+04
15	442-	450	444.90	77.07	5.35E+02	0.00	1.68E+04
16	495-	507	501.31	86.86	3.15E+05	0.00	3.52E+04
17	603-	616	609.83	105.68	2.04E+05	0.00	3.53E+04
18	648-	662	654.79	113.47	2.10E+03	0.00	4.03E+04
19	705-	719	712.60	123.50	1.72E+06	0.00	4.06E+04
20	757-	769	762.04	132.07	5.19E+02	0.00	1.77E+04
21	837-	852	843.82	146.26	1.05E+03	0.00	2.03E+04
22	898-	911	905.39	156.93	6.36E+02	0.00	1.64E+04
23	951-	967	958.80	166.20	1.76E+03	0.00	2.05E+04
24	996-	1008	1001.09	173.53	8.79E+02	0.00	1.45E+04
25	1012-	1028	1020.53	176.90	3.83E+04	0.00	1.81E+04
26	1081-	1097	1089.55	188.87	5.56E+03	0.00	1.79E+04
27	1172-	1190	1181.51	204.82	1.59E+03	0.00	2.04E+04
28	1201-	1213	1206.81	209.21	1.41E+03	0.00	1.41E+04
29	1337-	1347	1341.52	232.57	6.24E+02	0.00	1.11E+04
30	1425-	1444	1434.96	248.78	1.07E+05	0.00	2.14E+04
31	1455-	1469	1460.13	253.14	4.35E+02	0.00	1.38E+04
32	1672-	1692	1682.26	291.67	1.79E+03	0.00	1.65E+04
33	1853-	1870	1861.07	322.68	1.54E+03	0.00	1.20E+04
34	1874-	1883	1879.22	325.82	2.31E+02	0.00	6.39E+03
35	2135-	2155	2146.80	372.23	3.65E+03	0.00	1.39E+04
36	2193-	2209	2201.51	381.72	3.06E+03	0.00	1.07E+04
37	2316-	2328	2321.93	402.60	1.21E+03	0.00	8.79E+03
38	2464-	2488	2476.28	429.37	4.20E+04	0.00	1.56E+04
39	2560-	2584	2572.07	445.98	3.66E+03	0.00	1.52E+04
40	2622-	2642	2633.24	456.59	1.17E+03	0.00	1.26E+04
41	2669-	2693	2681.60	464.98	1.39E+04	0.00	1.47E+04
42	2755-	2776	2767.59	479.89	1.42E+03	0.00	1.26E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	3218-	3237	3227.89	559.72	1.81E+03	0.00	9.22E+03
44	3354-	3381	3368.35	584.08	4.12E+03	0.00	1.26E+04
45	3411-	3438	3424.68	593.85	2.26E+04	0.00	1.22E+04
46	3462-	3489	3475.74	602.71	1.63E+04	0.00	1.18E+04
47	3497-	3525	3511.34	608.88	4.71E+03	0.00	1.20E+04
48	3541-	3562	3548.90	615.39	6.24E+02	0.00	8.78E+03
49	3606-	3627	3618.08	627.39	1.44E+03	0.00	8.91E+03
50	3627-	3641	3635.73	630.45	5.10E+02	0.00	6.15E+03
51	3666-	3694	3680.44	638.21	9.37E+03	0.00	1.25E+04
52	3751-	3768	3758.85	651.81	3.88E+02	0.00	7.36E+03
53	3825-	3852	3839.24	665.75	9.90E+02	0.00	1.11E+04
54	3876-	3900	3886.34	673.92	1.64E+03	0.00	1.01E+04
55	3907-	3926	3915.98	679.06	6.33E+02	0.00	7.88E+03
56	3992-	4021	4007.11	694.86	6.97E+03	0.00	1.11E+04
57	4023-	4035	4029.06	698.67	2.03E+03	0.00	1.70E+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                 :  4-24-96  2:10:07 PM

Sample Title                        : NOPI-328-GAM2 attenuation
Spectrum Description                : NOPI-328-GAM2 attenuation
Sample Identification               : NP328AT
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                 :  4-23-96  3:53:43 PM

Live Time                           :     1800.0 seconds
Real Time                           :     1985.1 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: NOPI-328-GAM2 attenuation
Peak Locate Performed on: 4-24-96 2:10:03 PM
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	0.5730	8.16	3.05
2	102.05	0.1396	17.62	22.68
3	122.75	0.2543	21.21	10.29
4	159.14	0.0570	27.49	137.59
5	179.80	0.0804	31.13	82.84
6	192.40	0.1740	33.30	19.72
7	205.95	0.0749	35.62	87.14
8	224.81	0.3088	38.72	5.28
9	249.47	0.0441	42.90	268.78
10	262.68	0.1251	45.48	31.34
11	281.95	0.0512	48.78	175.07
12	289.69	0.0772	50.26	76.54
13	316.69	0.3069	54.89	3.58
14	337.05	0.2777	58.31	3.88
15	347.57	0.1014	60.19	41.70
16	500.95	0.0375	86.78	297.04
17	609.34	0.0393	105.59	233.79
18	655.14	0.2471	113.39	6.59
19	684.11	0.2320	118.76	5.01
20	712.02	0.0224	123.40	720.01
21	760.59	0.2520	131.81	6.27
22	843.75	0.3091	146.40	3.21
23	867.34	0.3279	150.31	3.08
24	958.70	0.2223	166.00	4.81
25	999.42	0.2329	173.09	6.11
26	1019.79	0.0553	176.77	101.30
27	1088.82	0.1091	188.73	26.34
28	1180.70	0.1879	204.72	8.63
29	1202.92	0.2238	208.65	6.78
30	1317.78	0.2808	228.52	4.46
31	1376.24	0.3210	238.56	3.32
32	1433.89	0.0394	248.59	178.53
33	1680.54	0.1637	291.44	6.90
34	1827.02	0.3573	316.83	3.24
35	1858.49	0.2063	322.24	3.95
36	2145.41	0.1017	371.94	24.02
37	2200.28	0.1179	381.55	16.77
38	2320.38	0.1529	402.32	9.60
39	2474.47	0.0455	429.06	104.43
40	2570.40	0.1065	445.62	17.69
41	2632.44	0.1748	456.58	7.08

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2679.63	0.0619	464.65	55.48
43	2765.77	0.1560	479.51	9.33
44	3224.58	0.1556	559.24	8.45
45	3365.85	0.0925	583.65	22.92
46	3422.28	0.0509	593.40	71.67
47	3473.41	0.0561	602.30	58.59
48	3508.76	0.0854	608.42	25.52
49	3615.57	0.1506	626.69	7.76
50	3677.66	0.0670	637.64	40.10
51	3882.73	0.1300	673.11	11.17
52	3911.43	0.2008	678.37	3.69
53	4004.03	0.0714	694.37	34.09
54	4028.54	0.0976	698.36	19.49

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: NOPI-328-GAM2 attenuation
Peak Analysis Performed on: 4-24-96 2:10:06 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	44-	49	47.53	8.16	7.61E+02	0.00	1.18E+04
2	99-	105	102.07	17.62	1.26E+04	0.00	1.54E+04
3	118-	126	122.79	21.21	1.47E+03	0.00	1.92E+04
4	154-	163	159.02	27.49	3.29E+05	0.00	4.26E+04
5	175-	184	179.98	31.13	7.10E+04	0.00	4.76E+04
6	191-	196	192.48	33.30	5.60E+03	0.00	2.01E+04
7	201-	210	205.87	35.62	4.55E+04	0.00	3.09E+04
8	220-	229	223.74	38.72	2.31E+03	0.00	5.60E+04
9	240-	254	247.85	42.90	1.09E+06	0.00	8.26E+04
10	257-	267	262.70	45.48	7.74E+03	0.00	3.32E+04
11	276-	286	281.76	48.78	1.99E+05	0.00	5.98E+04
12	286-	294	290.29	50.26	1.59E+04	0.00	6.45E+04
13	311-	321	316.97	54.89	1.46E+03	0.00	1.52E+04
14	331-	342	336.68	58.31	1.31E+03	0.00	1.70E+04
15	342-	352	347.56	60.19	1.19E+04	0.00	1.56E+04
16	494-	507	500.89	86.78	3.18E+05	0.00	3.74E+04
17	602-	615	609.31	105.59	2.07E+05	0.00	3.51E+04
18	648-	661	654.32	113.39	1.79E+03	0.00	3.67E+04
19	683-	691	685.26	118.76	1.11E+03	0.00	3.03E+04
20	704-	719	712.02	123.40	1.73E+06	0.00	4.17E+04
21	753-	767	760.51	131.81	7.52E+02	0.00	2.04E+04
22	838-	851	844.64	146.40	9.87E+02	0.00	1.75E+04
23	862-	874	867.17	150.31	7.28E+02	0.00	1.60E+04
24	950-	966	957.66	166.00	2.78E+03	0.00	1.96E+04
25	991-	1007	998.55	173.09	1.24E+03	0.00	1.90E+04
26	1011-	1027	1019.78	176.77	3.94E+04	0.00	1.81E+04
27	1080-	1097	1088.70	188.73	5.61E+03	0.00	1.92E+04
28	1175-	1189	1180.95	204.72	9.52E+02	0.00	1.70E+04
29	1199-	1211	1203.60	208.65	9.80E+02	0.00	1.45E+04
30	1314-	1326	1318.16	228.52	5.26E+02	0.00	1.35E+04
31	1373-	1380	1376.06	238.56	3.33E+02	0.00	8.51E+03
32	1424-	1443	1433.88	248.59	1.10E+05	0.00	2.13E+04
33	1675-	1690	1680.95	291.44	1.94E+03	0.00	1.26E+04
34	1816-	1837	1827.36	316.83	4.06E+02	0.00	1.47E+04
35	1848-	1868	1858.55	322.24	1.40E+03	0.00	1.44E+04
36	2134-	2154	2145.10	371.94	4.13E+03	0.00	1.32E+04
37	2189-	2211	2200.56	381.55	3.35E+03	0.00	1.42E+04
38	2313-	2327	2320.31	402.32	1.50E+03	0.00	9.90E+03
39	2462-	2486	2474.49	429.06	4.38E+04	0.00	1.60E+04
40	2558-	2582	2570.00	445.62	3.76E+03	0.00	1.53E+04
41	2624-	2644	2633.15	456.58	1.07E+03	0.00	1.26E+04
42	2667-	2691	2679.69	464.65	1.49E+04	0.00	1.45E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2753-	2774	2765.40	479.51	1.01E+03	0.00	1.28E+04
44	3214-	3237	3225.13	559.24	1.75E+03	0.00	1.10E+04
45	3352-	3379	3365.88	583.65	4.42E+03	0.00	1.24E+04
46	3408-	3435	3422.10	593.40	2.31E+04	0.00	1.23E+04
47	3459-	3487	3473.39	602.30	1.67E+04	0.00	1.25E+04
48	3498-	3522	3508.69	608.42	4.59E+03	0.00	1.05E+04
49	3605-	3626	3614.03	626.69	1.04E+03	0.00	9.31E+03
50	3663-	3691	3677.19	637.64	1.05E+04	0.00	1.21E+04
51	3868-	3893	3881.70	673.11	2.17E+03	0.00	1.02E+04
52	3902-	3925	3912.05	678.37	9.86E+02	0.00	9.16E+03
53	3992-	4018	4004.26	694.37	7.15E+03	0.00	9.85E+03
54	4018-	4035	4027.30	698.36	3.14E+03	0.00	2.57E+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	:	6-24-96 1:18:48 PM
Sample Title	:	NOPI-329-GAM2 attenuation
Spectrum Description	:	NOPI-329-GAM2 attenuation
Sample Identification	:	NP329ATT
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	:	6-19-96 9:57:38 AM
Live Time	:	1800.0 seconds
Real Time	:	1985.2 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: NOPI-329-GAM2 attenuation
Peak Locate Performed on: 6-24-96 1:18:41 PM
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	102.12	0.1437	17.63	22.81
2	122.62	0.2748	21.21	7.64
3	159.19	0.0592	27.52	124.42
4	179.97	0.0823	31.14	77.26
5	192.45	0.1801	33.32	17.02
6	206.07	0.0774	35.64	79.76
7	224.89	0.2866	38.78	5.16
8	249.58	0.0450	42.93	255.16
9	262.80	0.1225	45.50	31.75
10	282.08	0.0525	48.80	164.15
11	289.88	0.0773	50.25	76.82
12	317.63	0.2650	54.97	5.45
13	336.68	0.3340	58.37	4.15
14	347.86	0.1044	60.24	40.77
15	501.21	0.0372	86.84	282.59
16	609.69	0.0401	105.66	226.30
17	632.67	0.3061	109.71	4.33
18	655.31	0.2251	113.46	7.76
19	676.98	0.2241	117.29	8.76
20	712.48	0.0224	123.48	664.74
21	761.00	0.2817	132.09	5.21
22	845.35	0.3065	146.23	3.15
23	959.23	0.2393	166.16	3.81
24	999.85	0.2288	173.14	7.49
25	1020.44	0.0568	176.88	96.95
26	1089.30	0.1125	188.85	24.37
27	1181.68	0.1896	204.90	8.66
28	1203.99	0.2428	208.86	4.72
29	1342.97	0.3018	232.65	3.80
30	1434.73	0.0393	248.74	175.96
31	1460.94	0.2949	253.04	3.52
32	1682.25	0.1750	291.64	6.92
33	1717.11	0.2814	298.02	4.57
34	1860.45	0.2079	322.65	3.33
35	2124.53	0.3128	368.53	3.05
36	2146.79	0.1027	372.24	23.49
37	2201.56	0.1241	381.73	15.51
38	2321.70	0.1475	402.63	11.24
39	2334.37	0.3177	404.98	3.07
40	2475.96	0.0453	429.31	106.68
41	2572.16	0.1071	445.91	19.10

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2633.97	0.1652	456.79	9.04
43	2681.18	0.0623	464.96	55.33
44	2706.76	0.2557	469.70	3.43
45	2767.20	0.1539	479.84	8.80
46	3226.75	0.1518	559.50	8.67
47	3367.80	0.0900	584.04	24.24
48	3424.35	0.0506	593.80	73.07
49	3475.44	0.0557	602.65	60.16
50	3510.86	0.0863	608.79	25.72
51	3548.61	0.2240	615.26	3.80
52	3617.97	0.1480	627.27	9.14
53	3679.83	0.0662	638.06	43.15
54	3885.56	0.1324	673.80	10.38
55	3914.54	0.1774	678.80	4.77
56	4006.73	0.0713	694.77	35.39
57	4028.99	0.1020	698.58	19.16

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: NOPI-329-GAM2 attenuation
Peak Analysis Performed on: 6-24-96 1:18:45 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	98-	105	102.16	17.63	1.13E+04	0.00	1.87E+04
2	118-	126	122.78	21.21	1.05E+03	0.00	1.92E+04
3	155-	163	159.15	27.52	3.17E+05	0.00	4.12E+04
4	175-	184	180.05	31.14	6.86E+04	0.00	4.76E+04
5	189-	196	192.59	33.32	5.20E+03	0.00	2.91E+04
6	201-	210	205.98	35.64	4.37E+04	0.00	3.13E+04
7	220-	229	224.09	38.78	2.55E+03	0.00	5.68E+04
8	240-	254	248.02	42.93	1.08E+06	0.00	8.68E+04
9	257-	267	262.86	45.50	7.04E+03	0.00	3.41E+04
10	277-	287	281.86	48.80	1.67E+05	0.00	9.16E+04
11	287-	294	290.24	50.25	4.54E+04	0.00	3.04E+04
12	312-	322	317.43	54.97	1.46E+03	0.00	1.54E+04
13	331-	342	337.03	58.37	1.08E+03	0.00	1.70E+04
14	342-	353	347.83	60.24	1.17E+04	0.00	1.71E+04
15	495-	507	501.21	86.84	3.14E+05	0.00	3.49E+04
16	603-	616	609.72	105.66	2.03E+05	0.00	3.58E+04
17	627-	636	633.11	109.71	7.93E+02	0.00	2.48E+04
18	648-	662	654.73	113.46	1.24E+03	0.00	4.12E+04
19	670-	680	676.81	117.29	1.07E+03	0.00	3.41E+04
20	705-	719	712.47	123.48	1.72E+06	0.00	4.04E+04
21	757-	768	762.15	132.09	9.16E+02	0.00	1.60E+04
22	837-	852	843.66	146.23	8.86E+02	0.00	2.03E+04
23	951-	967	958.56	166.16	1.84E+03	0.00	2.04E+04
24	991-	1007	998.86	173.14	8.64E+02	0.00	1.90E+04
25	1012-	1028	1020.40	176.88	3.84E+04	0.00	1.80E+04
26	1080-	1097	1089.42	188.85	5.62E+03	0.00	1.91E+04
27	1177-	1186	1181.95	204.90	1.11E+03	0.00	1.12E+04
28	1195-	1212	1204.79	208.86	1.09E+03	0.00	2.00E+04
29	1333-	1352	1341.97	232.65	8.88E+02	0.00	2.02E+04
30	1425-	1444	1434.75	248.74	1.08E+05	0.00	2.16E+04
31	1451-	1466	1459.57	253.04	6.63E+02	0.00	1.48E+04
32	1672-	1692	1682.13	291.64	2.11E+03	0.00	1.64E+04
33	1713-	1724	1718.87	298.02	3.99E+02	0.00	8.92E+03
34	1850-	1870	1860.90	322.65	8.49E+02	0.00	1.46E+04
35	2120-	2129	2125.46	368.53	3.43E+02	0.00	6.16E+03
36	2135-	2157	2146.87	372.24	4.35E+03	0.00	1.47E+04
37	2193-	2212	2201.59	381.73	2.56E+03	0.00	1.32E+04
38	2314-	2329	2322.09	402.63	1.76E+03	0.00	1.02E+04
39	2329-	2339	2335.65	404.98	4.05E+02	0.00	7.08E+03
40	2464-	2487	2475.95	429.31	4.27E+04	0.00	1.50E+04
41	2560-	2584	2571.62	445.91	3.99E+03	0.00	1.48E+04
42	2625-	2643	2634.39	456.79	1.15E+03	0.00	1.13E+04

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2669-	2693	2681.49	464.96	1.42E+04	0.00	1.43E+04
44	2698-	2718	2708.82	469.70	6.74E+02	0.00	1.17E+04
45	2758-	2779	2767.31	479.84	1.19E+03	0.00	1.28E+04
46	3217-	3237	3226.59	559.50	1.44E+03	0.00	1.01E+04
47	3357-	3381	3368.10	584.04	4.08E+03	0.00	1.13E+04
48	3412-	3437	3424.38	593.80	2.23E+04	0.00	1.16E+04
49	3461-	3489	3475.43	602.65	1.56E+04	0.00	1.27E+04
50	3497-	3524	3510.80	608.79	4.33E+03	0.00	1.19E+04
51	3540-	3557	3548.11	615.26	2.80E+02	0.00	7.30E+03
52	3604-	3626	3617.40	627.27	6.64E+02	0.00	9.99E+03
53	3665-	3693	3679.61	638.06	9.77E+03	0.00	1.21E+04
54	3871-	3899	3885.68	673.80	1.86E+03	0.00	1.22E+04
55	3904-	3923	3914.52	678.80	4.22E+02	0.00	8.13E+03
56	3992-	4021	4006.58	694.77	7.29E+03	0.00	1.08E+04
57	4021-	4035	4028.58	698.58	2.28E+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              :  6-24-96  3:54:34 PM

Sample Title                     : DP1B standard
Spectrum Description             : DP1B standard
Sample Identification            : DP1B_7
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              :  6-04-96  7:37:20 AM

Live Time                        :    80000.0 seconds
Real Time                        :    80027.9 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: DP1B standard
Peak Locate Performed on: 6-24-96 3:53:49 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	18.49	0.2551	3.10	5.62
2	31.76	0.4743	5.40	3.36
3	37.52	0.3466	6.50	4.30
4	63.62	0.2205	10.96	12.65
5	76.40	0.2101	13.15	13.64
6	94.63	0.1906	16.44	17.33
7	110.70	0.2077	19.16	16.22
8	114.72	0.3758	20.02	5.13
9	149.57	0.2151	25.85	10.87
10	159.45	0.2197	27.59	11.32
11	213.46	0.3692	36.86	3.65
12	270.48	0.0901	46.82	57.29
13	291.20	0.1987	50.29	12.93
14	309.14	0.1192	53.53	32.32
15	367.35	0.0817	63.63	64.81
16	392.91	0.1676	67.98	16.76
17	434.12	0.0721	75.20	81.68
18	447.39	0.0614	77.51	101.46
19	460.16	0.1280	79.73	26.05
20	470.55	0.1273	81.53	24.13
21	486.31	0.1109	84.27	31.04
22	506.27	0.0950	87.63	34.02
23	521.18	0.1159	90.38	28.72
24	536.91	0.0787	93.04	46.14
25	549.57	0.1707	95.29	12.05
26	570.89	0.1840	98.73	13.00
27	633.07	0.3207	109.53	2.53
28	654.27	0.1730	113.42	12.51
29	700.30	0.4331	120.85	2.02
30	762.00	0.4093	131.47	3.16
31	833.83	0.1349	144.49	16.94
32	867.80	0.3436	150.70	3.90
33	894.01	0.1752	154.94	10.83
34	946.63	0.1997	164.02	8.66
35	1078.06	0.0736	186.87	48.69
36	1190.35	0.1985	206.32	8.08
37	1211.62	0.3994	209.88	2.13
38	1221.84	0.3394	211.93	2.06
39	1367.48	0.1586	236.98	11.83
40	1382.69	0.2017	239.73	7.72
41	1402.38	0.0655	243.13	62.68

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1485.03	0.1775	257.46	9.38
43	1500.18	0.1609	260.14	10.90
44	1520.89	0.3330	263.63	2.86
45	1561.24	0.1539	270.68	12.37
46	1571.85	0.1683	272.63	11.07
47	1592.38	0.2227	275.97	4.47
48	1644.27	0.3452	284.99	2.52
49	1657.93	0.2276	287.47	5.44
50	1710.76	0.0528	296.61	91.10
51	1738.54	0.2024	301.45	6.14
52	1752.96	0.3729	303.73	2.02
53	1876.61	0.2275	325.50	5.08
54	1933.61	0.3376	335.30	2.04
55	1959.92	0.2990	339.80	2.08
56	2039.37	0.0467	353.58	108.15
57	2241.80	0.2811	388.43	3.94
58	2253.08	0.2105	390.57	6.40
59	2329.10	0.2203	403.77	3.71
60	2347.38	0.3899	407.44	2.08
61	2474.44	0.2878	429.48	2.73
62	2635.57	0.2538	456.47	3.69
63	2726.36	0.3174	472.79	2.41
64	2783.14	0.2365	482.94	3.75
65	2822.51	0.2442	489.27	3.50
66	3092.40	0.2454	535.93	3.98
67	3201.09	0.3247	555.28	2.28
68	3435.62	0.2948	595.95	2.45
69	3530.55	0.0501	612.21	71.27
70	3650.41	0.2394	633.30	3.11
71	3855.30	0.1541	668.51	6.87
72	3880.84	0.2949	672.93	2.27
73	4028.53	0.1642	698.65	7.32

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: 6-24-96 3:54:06 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	16-	20	18.37	3.10	2.37E+03	87.21	2.01E+03	
2	29-	34	31.61	5.40	6.24E+02	110.42	4.52E+03	
3	34-	40	37.98	6.50	7.99E+02	127.52	5.57E+03	
4	60-	66	63.70	10.96	4.69E+03	132.53	4.67E+03	
5	73-	79	76.29	13.15	1.32E+04	185.19	7.66E+03	
6	92-	98	95.26	16.44	9.40E+03	224.52	1.46E+04	
7	108-	114	110.97	19.16	2.31E+03	150.19	7.19E+03	
8	114-	118	115.91	20.02	1.05E+03	108.02	4.40E+03	
9	145-	153	149.53	25.85	1.90E+03	132.16	4.78E+03	
10	155-	163	159.56	27.59	1.63E+03	127.60	4.49E+03	
11	211-	218	213.04	36.86	3.09E+02	107.28	3.66E+03	
12	265-	275	270.47	46.82	2.23E+04	203.13	5.07E+03	
13	286-	296	290.47	50.29	2.04E+03	143.18	4.87E+03	
14	303-	314	309.17	53.53	5.78E+03	163.17	5.21E+03	
15	361-	372	367.37	63.63	2.12E+04	213.48	6.09E+03	
16	387-	398	392.48	67.98	2.47E+03	166.16	6.25E+03	2.54E+03 ±3.8%
17	428-	439	434.10	75.20	3.12E+04	246.77	7.43E+03	
18	441-	453	447.39	77.51	5.52E+04	296.85	7.75E+03	
19	454-	466	460.21	79.73	2.38E+03	199.38	8.75E+03	
20	466-	476	470.58	81.53	4.19E+03	157.01	5.42E+03	
21	480-	492	486.38	84.27	9.02E+03	187.72	6.16E+03	
22	500-	512	505.75	87.63	1.76E+04	217.58	6.88E+03	
23	514-	527	521.62	90.38	7.20E+03	195.52	6.88E+03	
24	530-	543	536.98	93.04	2.60E+04	235.08	6.49E+03	
25	543-	555	549.96	95.29	3.03E+02	189.91	8.26E+03	
26	560-	577	569.78	98.73	2.16E+03	188.91	6.10E+03	
27	626-	639	632.06	109.53	4.08E+02	147.88	4.73E+03	
28	650-	661	654.46	113.42	1.10E+03	133.55	4.15E+03	
29	693-	704	697.33	120.85	1.68E+02	121.71	3.63E+03	
30	749-	765	758.53	131.47	1.70E+02	165.17	5.16E+03	
31	826-	841	833.63	144.49	2.99E+03	166.22	4.90E+03	
32	864-	875	869.42	150.70	2.79E+02	120.54	3.55E+03	
33	886-	901	893.88	154.94	1.24E+03	161.05	4.93E+03	
34	938-	954	946.23	164.02	8.09E+02	161.43	4.79E+03	
35	1069-	1086	1078.00	186.87	1.86E+04	212.05	4.79E+03	
36	1181-	1198	1190.12	206.32	7.22E+02	148.31	3.86E+03	
37	1207-	1216	1210.66	209.88	1.35E+02	81.05	1.82E+03	
38	1216-	1230	1222.52	211.93	2.38E+02	115.38	2.74E+03	
39	1358-	1376	1366.91	236.98	1.27E+03	137.62	3.06E+03	
40	1376-	1391	1382.77	239.73	3.54E+02	118.24	2.72E+03	
41	1393-	1411	1402.38	243.13	1.41E+04	176.39	2.96E+03	
42	1481-	1490	1485.02	257.46	5.22E+02	75.14	1.45E+03	

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1490-	1509	1500.46	260.14	6.92E+02	138.49	3.08E+03
44	1513-	1530	1520.58	263.63	2.42E+02	115.88	2.39E+03
45	1556-	1566	1561.23	270.68	8.14E+02	85.68	1.73E+03
46	1566-	1579	1572.50	272.63	3.58E+02	106.51	2.44E+03
47	1582-	1602	1591.74	275.97	6.92E+02	138.11	2.93E+03
48	1638-	1651	1643.78	284.99	1.65E+02	93.83	1.91E+03
49	1651-	1667	1658.06	287.47	2.12E+02	115.66	2.49E+03
50	1700-	1720	1710.76	296.61	2.74E+04	213.57	2.91E+03
51	1734-	1745	1738.69	301.45	2.55E+02	80.55	1.54E+03
52	1745-	1757	1751.82	303.73	1.18E+02	84.22	1.63E+03
53	1871-	1884	1877.36	325.50	4.06E+02	85.36	1.52E+03
54	1929-	1938	1933.86	335.30	1.43E+02	68.51	1.29E+03
55	1951-	1970	1959.78	339.80	1.27E+02	129.20	2.75E+03
56	2028-	2050	2039.25	353.58	4.14E+04	248.82	3.05E+03
57	2230-	2246	2240.21	388.43	1.05E+02	103.48	2.02E+03
58	2248-	2258	2252.52	390.57	2.50E+02	71.36	1.28E+03
59	2321-	2338	2328.68	403.77	4.35E+02	107.73	2.02E+03
60	2338-	2358	2349.80	407.44	4.40E+02	122.96	2.35E+03
61	2470-	2486	2476.91	429.48	1.85E+02	102.27	1.95E+03
62	2623-	2641	2632.51	456.47	2.10E+02	98.99	1.66E+03
63	2721-	2731	2726.62	472.79	7.37E+01	57.57	8.61E+02
64	2776-	2793	2785.15	482.94	3.63E+02	84.18	1.22E+03
65	2810-	2830	2821.64	489.27	1.59E+02	102.46	1.65E+03
66	3082-	3099	3090.68	535.93	1.64E+02	81.85	1.19E+03
67	3196-	3207	3202.27	555.28	7.34E+01	53.81	7.05E+02
68	3427-	3444	3436.79	595.95	9.18E+01	81.28	1.18E+03
69	3516-	3544	3530.55	612.21	2.01E+04	195.26	2.18E+03
70	3642-	3659	3652.12	633.30	2.30E+02	69.33	8.32E+02
71	3844-	3866	3855.17	668.51	5.68E+02	91.63	1.16E+03
72	3875-	3889	3880.68	672.93	1.38E+02	58.01	6.68E+02
73	4023-	4035	4028.96	698.65	2.97E+02	38.36	2.41E+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: 6-24-96 3:53:49 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	3.10	2.37E+03	87.21	3.90E+02	4.12E+01	1.98E+03	9.65E+01	
2	5.40	6.24E+02	110.42			6.24E+02	1.10E+02	
3	6.50	7.99E+02	127.52			7.99E+02	1.28E+02	
4	10.96	4.69E+03	132.53	1.65E+02	3.84E+01	4.53E+03	1.38E+02	
5	13.15	1.32E+04	185.19			1.32E+04	1.85E+02	
6	16.44	9.40E+03	224.52			9.40E+03	2.25E+02	
7	19.16	2.31E+03	150.19	4.29E+01	2.25E+01	2.27E+03	1.52E+02	
8	20.02	1.05E+03	108.02			1.05E+03	1.08E+02	
9	25.85	1.90E+03	132.16			1.90E+03	1.32E+02	
10	27.59	1.63E+03	127.60			1.63E+03	1.28E+02	
11	36.86	3.09E+02	107.28			3.09E+02	1.07E+02	
12	46.82	2.23E+04	203.13			2.23E+04	2.03E+02	
13	50.29	2.04E+03	143.18			2.04E+03	1.43E+02	
14	53.53	5.78E+03	163.17	3.59E+01	1.79E+01	5.74E+03	1.64E+02	
15	63.63	2.12E+04	213.48	6.18E+01	2.67E+01	2.11E+04	2.15E+02	
16	67.98	2.47E+03	166.16			2.47E+03	1.66E+02	2.54E+03 ± 3.8%
17	75.20	3.12E+04	246.77	1.05E+02	2.88E+01	3.11E+04	2.48E+02	
18	77.51	5.52E+04	296.85	5.62E+01	2.81E+01	5.52E+04	2.98E+02	
19	79.73	2.38E+03	199.38	3.91E+01	2.94E+01	2.34E+03	2.02E+02	
20	81.53	4.19E+03	157.01			4.19E+03	1.57E+02	
21	84.27	9.02E+03	187.72	5.33E+01	2.88E+01	8.97E+03	1.90E+02	
22	87.63	1.76E+04	217.58	9.34E+01	3.38E+01	1.75E+04	2.20E+02	
23	90.38	7.20E+03	195.52			7.20E+03	1.96E+02	
24	93.04	2.60E+04	235.08	1.47E+02	3.61E+01	2.59E+04	2.38E+02	
25	95.29	3.03E+02	189.91			3.03E+02	1.90E+02	
26	98.73	2.16E+03	188.91			2.16E+03	1.89E+02	
27	109.53	4.08E+02	147.88			4.08E+02	1.48E+02	
28	113.42	1.10E+03	133.55			1.10E+03	1.34E+02	
29	120.85	1.68E+02	121.71			1.68E+02	1.22E+02	
30	131.47	1.70E+02	165.17			1.70E+02	1.65E+02	
31	144.49	2.99E+03	166.22	3.99E+01	3.90E+01	2.95E+03	1.71E+02	
32	150.70	2.79E+02	120.54			2.79E+02	1.21E+02	
33	154.94	1.24E+03	161.05			1.24E+03	1.61E+02	
34	164.02	8.09E+02	161.43			8.09E+02	1.61E+02	
35	186.87	1.86E+04	212.05	1.27E+02	2.61E+01	1.85E+04	2.14E+02	
36	206.32	7.22E+02	148.31			7.22E+02	1.48E+02	
37	209.88	1.35E+02	81.05			1.35E+02	8.10E+01	
38	211.93	2.38E+02	115.38			2.38E+02	1.15E+02	
39	236.98	1.27E+03	137.62			1.27E+03	1.38E+02	
40	239.73	3.54E+02	118.24	7.46E+01	3.11E+01	2.79E+02	1.22E+02	
41	243.13	1.41E+04	176.39			1.41E+04	1.76E+02	
42	257.46	5.22E+02	75.14			5.22E+02	7.51E+01	

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	260.14	6.92E+02	138.49			6.92E+02	1.38E+02
44	263.63	2.42E+02	115.88			2.42E+02	1.16E+02
45	270.68	8.14E+02	85.68			8.14E+02	8.57E+01
46	272.63	3.58E+02	106.51			3.58E+02	1.07E+02
47	275.97	6.92E+02	138.11			6.92E+02	1.38E+02
48	284.99	1.65E+02	93.83			1.65E+02	9.38E+01
49	287.47	2.12E+02	115.66			2.12E+02	1.16E+02
50	296.61	2.74E+04	213.57	3.73E+01	2.91E+01	2.74E+04	2.16E+02
51	301.45	2.55E+02	80.55			2.55E+02	8.05E+01
52	303.73	1.18E+02	84.22			1.18E+02	8.42E+01
53	325.50	4.06E+02	85.36			4.06E+02	8.54E+01
54	335.30	1.43E+02	68.51			1.43E+02	6.85E+01
55	339.80	1.27E+02	129.20			1.27E+02	1.29E+02
56	353.58	4.14E+04	248.82	5.65E+01	2.27E+01	4.13E+04	2.50E+02
57	388.43	1.05E+02	103.48			1.05E+02	1.03E+02
58	390.57	2.50E+02	71.36	3.43E+01	2.83E+01	2.15E+02	7.68E+01
59	403.77	4.35E+02	107.73			4.35E+02	1.08E+02
60	407.44	4.40E+02	122.96			4.40E+02	1.23E+02
61	429.48	1.85E+02	102.27			1.85E+02	1.02E+02
62	456.47	2.10E+02	98.99			2.10E+02	9.90E+01
63	472.79	7.37E+01	57.57			7.37E+01	5.76E+01
64	482.94	3.63E+02	84.18			3.63E+02	8.42E+01
65	489.27	1.59E+02	102.46			1.59E+02	1.02E+02
66	535.93	1.64E+02	81.85			1.64E+02	8.19E+01
67	555.28	7.34E+01	53.81			7.34E+01	5.38E+01
68	595.95	9.18E+01	81.28			9.18E+01	8.13E+01
69	612.21	2.01E+04	195.26			2.01E+04	1.95E+02
70	633.30	2.30E+02	69.33			2.30E+02	6.93E+01
71	668.51	5.68E+02	91.63			5.68E+02	9.16E+01
72	672.93	1.38E+02	58.01			1.38E+02	5.80E+01
73	698.65	2.97E+02	38.36	1.84E+01	7.82E+00	2.78E+02	3.92E+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              :  6-24-96  3:56:27 PM

Sample Title                     : DM1B standard
Spectrum Description             : DM1B standard
Sample Identification            : DM1B_7
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              :  6-05-96  7:22:23 AM

Live Time                        :    80000.0 seconds
Real Time                        :    80019.8 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: 6-24-96 3:55:54 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	18.36	0.2910	3.09	4.58
2	31.66	0.4710	5.41	2.95
3	37.77	0.3777	6.51	5.36
4	63.76	0.4182	11.03	2.72
5	76.18	0.2580	13.18	10.45
6	89.31	0.2590	15.30	10.23
7	94.80	0.1973	16.42	20.29
8	110.80	0.2003	19.21	16.04
9	201.80	0.2534	34.84	6.88
10	231.92	0.1498	40.10	21.25
11	270.54	0.2525	46.79	8.12
12	309.21	0.3894	53.42	3.13
13	335.53	0.1915	58.06	11.62
14	368.56	0.2280	63.85	4.80
15	422.58	0.1725	73.14	13.45
16	434.26	0.0694	75.23	83.55
17	447.49	0.0608	77.53	100.99
18	470.71	0.2766	81.47	6.16
19	489.59	0.1339	84.77	21.55
20	506.39	0.0929	87.66	36.76
21	521.58	0.0923	90.40	41.98
22	541.54	0.0925	93.77	42.18
23	576.99	0.1387	100.00	22.18
24	612.56	0.1583	105.92	14.49
25	635.66	0.4711	109.45	2.01
26	667.99	0.1592	115.79	15.12
27	748.41	0.1030	129.71	32.49
28	762.98	0.3119	132.11	3.18
29	844.99	0.3165	146.60	4.11
30	892.62	0.1564	154.72	12.97
31	952.17	0.4630	165.38	2.12
32	964.38	0.3485	167.54	3.17
33	1025.36	0.3845	177.98	2.54
34	1078.21	0.1970	186.89	6.38
35	1155.56	0.2427	200.25	4.83
36	1212.85	0.0894	210.26	37.29
37	1251.61	0.2290	216.83	5.53
38	1324.65	0.3405	229.18	2.47
39	1383.03	0.0466	239.76	129.57
40	1396.72	0.0910	242.22	35.01
41	1465.35	0.2602	254.00	4.60

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1566.05	0.0986	271.52	28.56
43	1607.34	0.1131	278.72	21.67
44	1669.74	0.2355	289.69	5.60
45	1710.77	0.1303	296.64	14.74
46	1739.47	0.1056	301.61	22.72
47	1865.56	0.3217	323.29	2.42
48	1900.77	0.1093	329.52	21.34
49	1926.71	0.2890	333.91	3.41
50	1960.56	0.0711	339.92	46.93
51	2039.47	0.1106	353.59	19.62
52	2054.30	0.2541	356.05	4.69
53	2145.30	0.3865	372.14	2.07
54	2171.63	0.2785	376.67	2.75
55	2186.01	0.2360	379.38	4.00
56	2372.92	0.1329	411.45	12.81
57	2387.68	0.3536	413.92	2.56
58	2479.78	0.3502	429.74	2.57
59	2552.82	0.3430	442.62	2.36
60	2624.10	0.2390	455.12	4.49
61	2683.06	0.1060	465.25	19.12
62	2918.77	0.2669	506.32	4.03
63	2959.45	0.0920	513.15	24.25
64	2983.17	0.3011	517.48	2.67
65	3379.46	0.0629	586.01	46.82
66	3530.79	0.1255	612.29	12.20
67	3939.18	0.2819	682.98	2.01
68	4012.54	0.2811	695.59	2.05
69	4029.17	0.1630	698.71	7.98

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: DM1B standard
Peak Analysis Performed on: 6-24-96 3:56:04 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	15-	20	18.30	3.09	1.42E+03	68.62	1.25E+03
2	28-	34	31.68	5.41	4.67E+02	103.22	3.67E+03
3	34-	40	38.03	6.51	6.06E+02	103.56	3.61E+03
4	63-	66	64.08	11.03	5.91E+02	67.88	1.92E+03
5	75-	79	76.48	13.18	3.34E+03	108.83	3.58E+03
6	85-	92	88.72	15.30	4.45E+02	190.69	1.08E+04
7	92-	98	95.16	16.42	6.25E+03	162.97	6.85E+03
8	108-	114	111.26	19.21	2.52E+03	116.32	3.98E+03
9	198-	206	201.38	34.84	1.30E+03	106.13	3.02E+03
10	227-	236	231.70	40.10	3.23E+03	117.45	3.01E+03
11	265-	275	270.30	46.79	9.03E+02	108.13	2.86E+03
12	304-	314	308.49	53.42	2.29E+02	105.55	2.89E+03
13	330-	340	335.25	58.06	1.16E+03	116.55	3.28E+03
14	363-	374	368.65	63.85	1.47E+03	137.34	4.33E+03
15	416-	428	422.21	73.14	9.76E+02	168.74	6.36E+03
16	428-	440	434.28	75.23	3.38E+04	247.47	6.46E+03
17	441-	453	447.52	77.53	5.38E+04	279.53	5.72E+03
18	465-	476	470.23	81.47	2.82E+02	123.62	3.72E+03
19	483-	495	489.27	84.77	5.50E+03	152.43	4.15E+03
20	500-	512	505.95	87.66	1.89E+04	192.77	4.26E+03
21	515-	527	521.76	90.40	1.19E+04	171.50	4.13E+03
22	535-	547	541.17	93.77	1.10E+04	168.53	4.07E+03
23	570-	583	577.12	100.00	2.76E+03	134.67	3.41E+03
24	600-	619	611.21	105.92	4.24E+03	181.87	4.80E+03
25	624-	642	631.57	109.45	1.29E+03	170.25	4.77E+03
26	661-	674	668.15	115.79	1.40E+03	125.39	3.18E+03
27	741-	755	748.40	129.71	4.52E+03	140.62	3.21E+03
28	755-	770	762.22	132.11	4.10E+02	131.18	3.35E+03
29	838-	852	845.77	146.60	3.54E+02	117.25	2.82E+03
30	886-	900	892.62	154.72	1.53E+03	118.91	2.63E+03
31	949-	960	954.09	165.38	1.49E+02	88.70	1.92E+03
32	960-	972	966.51	167.54	1.99E+02	94.26	2.04E+03
33	1021-	1033	1026.76	177.98	1.79E+02	91.89	1.93E+03
34	1069-	1086	1078.12	186.89	1.01E+03	127.85	2.79E+03
35	1149-	1164	1155.15	200.25	3.69E+02	111.15	2.37E+03
36	1204-	1221	1212.87	210.26	4.80E+03	134.22	2.40E+03
37	1242-	1260	1250.76	216.83	5.67E+02	119.26	2.37E+03
38	1315-	1329	1321.94	229.18	2.69E+02	99.62	2.02E+03
39	1373-	1392	1382.96	239.76	5.20E+04	291.08	5.43E+03
40	1392-	1405	1397.17	242.22	5.34E+03	115.32	1.70E+03
41	1458-	1469	1465.09	254.00	1.71E+02	70.02	1.18E+03
42	1556-	1575	1566.11	271.52	2.95E+03	121.40	1.96E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1597-	1617	1607.61	278.72	1.69E+03	121.39	2.09E+03
44	1665-	1679	1670.88	289.69	2.19E+02	82.91	1.40E+03
45	1705-	1720	1710.96	296.64	1.14E+03	91.20	1.41E+03
46	1733-	1749	1739.62	301.61	2.19E+03	101.95	1.55E+03
47	1859-	1871	1864.61	323.29	1.18E+02	72.17	1.19E+03
48	1890-	1907	1900.54	329.52	1.92E+03	104.33	1.63E+03
49	1920-	1931	1925.85	333.91	1.03E+02	68.92	1.16E+03
50	1949-	1971	1960.52	339.92	8.03E+03	145.99	1.97E+03
51	2030-	2050	2039.32	353.59	1.70E+03	109.01	1.62E+03
52	2050-	2059	2053.52	356.05	1.02E+02	52.18	7.31E+02
53	2140-	2150	2146.27	372.14	8.34E+01	54.64	7.73E+02
54	2165-	2179	2172.42	376.67	1.39E+02	76.34	1.20E+03
55	2179-	2197	2188.01	379.38	2.34E+02	92.97	1.46E+03
56	2361-	2384	2372.96	411.45	8.10E+02	110.50	1.63E+03
57	2384-	2392	2387.19	413.92	8.43E+01	41.73	5.03E+02
58	2475-	2484	2478.39	429.74	7.32E+01	44.44	5.34E+02
59	2548-	2558	2552.69	442.62	8.10E+01	48.01	5.89E+02
60	2614-	2636	2624.73	455.12	2.66E+02	93.68	1.26E+03
61	2670-	2695	2683.14	465.25	1.63E+03	116.53	1.59E+03
62	2913-	2931	2919.99	506.32	1.28E+02	74.47	9.35E+02
63	2946-	2972	2959.36	513.15	2.99E+03	118.46	1.43E+03
64	2978-	2989	2984.34	517.48	1.01E+02	47.78	5.45E+02
65	3365-	3392	3379.47	586.01	8.68E+03	142.99	1.47E+03
66	3517-	3544	3531.00	612.29	1.13E+03	98.39	1.07E+03
67	3928-	3948	3938.61	682.98	1.15E+02	72.79	8.29E+02
68	4000-	4021	4011.32	695.59	1.61E+02	78.03	9.12E+02
69	4023-	4035	4029.32	698.71	2.42E+02	34.97	2.06E+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: 6-24-96 3:55:54 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	3.09	1.42E+03	68.62	3.90E+02	4.12E+01	1.03E+03	8.01E+01
2	5.41	4.67E+02	103.22			4.67E+02	1.03E+02
3	6.51	6.06E+02	103.56			6.06E+02	1.04E+02
4	11.03	5.91E+02	67.88	1.65E+02	3.84E+01	4.26E+02	7.80E+01
5	13.18	3.34E+03	108.83			3.34E+03	1.09E+02
6	15.30	4.45E+02	190.69			4.45E+02	1.91E+02
7	16.42	6.25E+03	162.97			6.25E+03	1.63E+02
8	19.21	2.52E+03	116.32	4.29E+01	2.25E+01	2.48E+03	1.18E+02
9	34.84	1.30E+03	106.13			1.30E+03	1.06E+02
10	40.10	3.23E+03	117.45			3.23E+03	1.17E+02
11	46.79	9.03E+02	108.13			9.03E+02	1.08E+02
12	53.42	2.29E+02	105.55	3.59E+01	1.79E+01	1.93E+02	1.07E+02
13	58.06	1.16E+03	116.55			1.16E+03	1.17E+02
14	63.85	1.47E+03	137.34	6.18E+01	2.67E+01	1.41E+03	1.40E+02
15	73.14	9.76E+02	168.74			9.76E+02	1.69E+02
16	75.23	3.38E+04	247.47	1.05E+02	2.88E+01	3.37E+04	2.49E+02
17	77.53	5.38E+04	279.53	5.62E+01	2.81E+01	5.38E+04	2.81E+02
18	81.47	2.82E+02	123.62			2.82E+02	1.24E+02
19	84.77	5.50E+03	152.43	5.33E+01	2.88E+01	5.45E+03	1.55E+02
20	87.66	1.89E+04	192.77	9.34E+01	3.38E+01	1.88E+04	1.96E+02
21	90.40	1.19E+04	171.50			1.19E+04	1.71E+02
22	93.77	1.10E+04	168.53	1.47E+02	3.61E+01	1.09E+04	1.72E+02
23	100.00	2.76E+03	134.67			2.76E+03	1.35E+02
24	105.92	4.24E+03	181.87			4.24E+03	1.82E+02
25	109.45	1.29E+03	170.25			1.29E+03	1.70E+02
26	115.79	1.40E+03	125.39			1.40E+03	1.25E+02
27	129.71	4.52E+03	140.62			4.52E+03	1.41E+02
28	132.11	4.10E+02	131.18			4.10E+02	1.31E+02
29	146.60	3.54E+02	117.25			3.54E+02	1.17E+02
30	154.72	1.53E+03	118.91			1.53E+03	1.19E+02
31	165.38	1.49E+02	88.70			1.49E+02	8.87E+01
32	167.54	1.99E+02	94.26			1.99E+02	9.43E+01
33	177.98	1.79E+02	91.89			1.79E+02	9.19E+01
34	186.89	1.01E+03	127.85	1.27E+02	2.61E+01	8.81E+02	1.30E+02
35	200.25	3.69E+02	111.15			3.69E+02	1.11E+02
36	210.26	4.80E+03	134.22			4.80E+03	1.34E+02
37	216.83	5.67E+02	119.26			5.67E+02	1.19E+02
38	229.18	2.69E+02	99.62			2.69E+02	9.96E+01
39	239.76	5.20E+04	291.08	7.46E+01	3.11E+01	5.20E+04	2.93E+02
40	242.22	5.34E+03	115.32			5.34E+03	1.15E+02
41	254.00	1.71E+02	70.02	3.75E+01	2.12E+01	1.33E+02	7.31E+01
42	271.52	2.95E+03	121.40			2.95E+03	1.21E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	278.72	1.69E+03	121.39			1.69E+03	1.21E+02
44	289.69	2.19E+02	82.91	3.94E+01	3.32E+01	1.79E+02	8.93E+01
45	296.64	1.14E+03	91.20	3.73E+01	2.91E+01	1.11E+03	9.57E+01
46	301.61	2.19E+03	101.95			2.19E+03	1.02E+02
47	323.29	1.18E+02	72.17			1.18E+02	7.22E+01
48	329.52	1.92E+03	104.33			1.92E+03	1.04E+02
49	333.91	1.03E+02	68.92			1.03E+02	6.89E+01
50	339.92	8.03E+03	145.99			8.03E+03	1.46E+02
51	353.59	1.70E+03	109.01	5.65E+01	2.27E+01	1.65E+03	1.11E+02
52	356.05	1.02E+02	52.18			1.02E+02	5.22E+01
53	372.14	8.34E+01	54.64			8.34E+01	5.46E+01
54	376.67	1.39E+02	76.34			1.39E+02	7.63E+01
55	379.38	2.34E+02	92.97			2.34E+02	9.30E+01
56	411.45	8.10E+02	110.50			8.10E+02	1.10E+02
57	413.92	8.43E+01	41.73			8.43E+01	4.17E+01
58	429.74	7.32E+01	44.44			7.32E+01	4.44E+01
59	442.62	8.10E+01	48.01			8.10E+01	4.80E+01
60	455.12	2.66E+02	93.68	1.92E+01	9.66E+00	2.46E+02	9.42E+01
61	465.25	1.63E+03	116.53			1.63E+03	1.17E+02
62	506.32	1.28E+02	74.47			1.28E+02	7.45E+01
63	513.15	2.99E+03	118.46	2.06E+02	4.26E+01	2.78E+03	1.26E+02
64	517.48	1.01E+02	47.78			1.01E+02	4.78E+01
65	586.01	8.68E+03	142.99	2.28E+01	1.56E+01	8.66E+03	1.44E+02
66	612.29	1.13E+03	98.39			1.13E+03	9.84E+01
67	682.98	1.15E+02	72.79			1.15E+02	7.28E+01
68	695.59	1.61E+02	78.03	1.44E+01	8.03E+00	1.47E+02	7.84E+01
69	698.71	2.42E+02	34.97	1.84E+01	7.82E+00	2.24E+02	3.58E+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                : 6-24-96  4:13:26 PM

Sample Title                       : BL5D standard
Spectrum Description               : BL5D standard
Sample Identification              : BL5D_7
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                :  6-06-96  7:34:13 AM

Live Time                          :    80000.0 seconds
Real Time                          :    80371.6 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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-0.011 log x + 1.029
0.057 log x + 0.879

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

Detector Name: DET01
Sample Title: BL5D standard
Peak Locate Performed on: 6-24-96 4:12:45 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	31.71	0.2407	5.42	12.22
2	37.48	0.1765	6.48	16.77
3	53.61	0.3661	9.31	4.57
4	63.64	0.1063	10.95	56.45
5	76.45	0.1056	13.23	49.01
6	89.29	0.1399	15.32	36.40
7	98.00	0.3977	16.52	6.32
8	110.76	0.1051	19.17	60.82
9	118.00	0.3037	20.05	10.84
10	149.53	0.1113	25.84	43.14
11	159.53	0.1200	27.59	36.56
12	213.30	0.1985	36.93	12.83
13	270.50	0.0463	46.82	218.25
14	291.14	0.1022	50.32	47.86
15	309.16	0.0608	53.54	124.36
16	367.43	0.0421	63.64	237.91
17	392.91	0.0851	68.02	63.12
18	411.29	0.2751	71.13	6.70
19	422.86	0.1611	73.22	16.85
20	434.18	0.0367	75.21	307.78
21	447.43	0.0313	77.51	385.27
22	460.21	0.0663	79.75	92.77
23	470.46	0.0642	81.53	92.88
24	486.34	0.0572	84.28	113.59
25	506.30	0.0487	87.65	130.25
26	521.21	0.0591	90.39	109.69
27	536.95	0.0404	93.05	176.40
28	549.63	0.0816	95.34	54.73
29	570.94	0.0853	98.75	57.67
30	581.14	0.3178	100.82	4.46
31	594.17	0.2840	103.11	4.27
32	612.91	0.2127	106.09	9.95
33	633.02	0.1728	109.64	13.99
34	645.57	0.1588	111.82	15.30
35	654.30	0.0897	113.40	46.28
36	664.29	0.2365	115.41	6.86
37	680.56	0.3801	117.86	2.88
38	700.77	0.2102	121.43	8.68
39	709.20	0.1616	122.93	15.17
40	742.18	0.2378	128.62	7.24
41	761.72	0.3316	131.32	4.42

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	814.63	0.2977	141.39	4.24
43	833.84	0.0675	144.56	68.31
44	893.90	0.0898	154.96	42.75
45	907.94	0.3438	157.20	3.16
46	919.39	0.2846	159.43	3.39
47	947.05	0.0975	164.14	34.43
48	1078.19	0.0377	186.88	181.56
49	1129.38	0.2946	195.84	3.96
50	1137.53	0.2094	197.18	7.67
51	1151.50	0.3274	199.54	3.27
52	1171.08	0.2174	203.06	7.36
53	1189.93	0.1019	206.31	29.71
54	1220.59	0.2486	211.58	4.26
55	1367.67	0.0799	237.07	44.94
56	1402.42	0.0330	243.13	246.72
57	1450.49	0.3273	251.35	3.01
58	1475.65	0.5317	256.12	2.25
59	1485.06	0.0999	257.46	28.91
60	1500.14	0.0841	260.06	39.13
61	1525.20	0.3411	264.71	2.39
62	1561.45	0.0761	270.68	47.74
63	1571.95	0.0833	272.54	42.48
64	1592.73	0.1123	275.90	22.46
65	1628.91	0.2367	282.47	5.32
66	1643.86	0.1876	284.94	8.83
67	1657.57	0.1278	287.39	15.86
68	1710.82	0.0267	296.62	358.83
69	1738.56	0.1148	301.43	19.61
70	1753.78	0.1714	304.05	9.24
71	1764.94	0.2478	306.29	3.92
72	1822.67	0.2140	316.07	4.52
73	1877.01	0.1330	325.39	14.05
74	1911.79	0.1317	331.47	13.65
75	1934.14	0.2131	335.45	3.80
76	1960.79	0.1766	339.98	8.10
77	2022.09	0.2132	350.57	6.71
78	2039.45	0.0236	353.60	415.62
79	2241.46	0.1472	388.67	11.19
80	2253.90	0.1198	390.89	16.97
81	2328.50	0.1175	403.77	16.69
82	2347.38	0.1561	407.16	7.25
83	2476.21	0.2492	429.62	2.18
84	2635.89	0.1386	457.05	11.84
85	2664.33	0.4024	462.11	2.21
86	2676.48	0.1710	464.04	6.99
87	2749.94	0.2129	476.83	4.89
88	2784.24	0.1180	482.79	15.62
89	2822.70	0.1167	489.57	15.16
90	2952.96	0.2199	512.49	3.97
91	3092.31	0.1450	536.15	9.58

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
92	3146.87	0.2250	545.63	2.67
93	3361.23	0.1311	582.76	11.69
94	3530.68	0.0254	612.24	284.41
95	3855.81	0.0753	668.60	32.62
96	3957.26	0.2656	686.05	2.46
97	3975.02	0.2717	689.30	3.00
98	3989.14	0.2320	691.72	3.81
99	4028.89	0.0838	698.45	27.51

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: BL5D standard
Peak Analysis Performed on: 6-24-96 4:12:56 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	31.72	5.42	6.21E+03	451.94	7.05E+04
	2	34-	40	37.88	6.48	1.40E+04	473.31	7.56E+04
	3	50-	56	54.15	9.31	1.93E+03	408.90	5.94E+04
	4	60-	66	63.64	10.95	9.04E+04	529.78	6.89E+04
	5	75-	79	76.76	13.23	1.89E+05	678.46	1.17E+05
	6	87-	92	88.82	15.32	5.65E+03	850.00	2.45E+05
	7	92-	101	95.72	16.52	1.93E+05	1080.87	2.64E+05
	8	108-	114	111.01	19.17	3.18E+04	568.54	1.04E+05
	9	114-	121	116.11	20.05	7.91E+03	573.75	1.01E+05
	10	145-	153	149.50	25.84	2.84E+04	492.79	6.57E+04
	11	155-	163	159.55	27.59	2.26E+04	481.93	6.42E+04
	12	208-	217	213.45	36.93	4.96E+03	482.47	6.48E+04
	13	265-	275	270.48	46.82	3.23E+05	770.46	7.23E+04
	14	286-	296	290.62	50.32	3.22E+04	537.57	6.78E+04
	15	303-	314	309.19	53.54	8.03E+04	620.57	7.62E+04
	16	361-	372	367.43	63.64	3.01E+05	814.05	9.03E+04
	17	387-	398	392.70	68.02	3.52E+04	632.64	9.09E+04
	18	405-	417	410.64	71.13	2.06E+03	659.93	1.01E+05
	19	417-	426	422.68	73.22	4.01E+03	548.61	8.42E+04
	20	428-	440	434.15	75.21	4.55E+05	987.15	1.22E+05
	21	441-	453	447.43	77.51	8.16E+05	1135.80	1.12E+05
	22	454-	466	460.34	79.75	3.90E+04	750.56	1.23E+05
	23	466-	476	470.60	81.53	5.65E+04	598.06	7.99E+04
	24	480-	492	486.43	84.28	1.33E+05	707.04	8.63E+04
	25	500-	512	505.89	87.65	2.61E+05	827.59	9.85E+04
	26	514-	527	521.70	90.39	9.84E+04	753.76	1.04E+05
	27	530-	543	537.01	93.05	3.67E+05	895.08	9.63E+04
	28	543-	556	550.24	95.34	1.21E+04	756.86	1.22E+05
	29	560-	577	569.89	98.75	3.84E+04	723.35	8.81E+04
	30	577-	587	581.81	100.82	6.79E+02	441.02	5.14E+04
	31	587-	600	595.01	103.11	1.25E+03	535.55	6.33E+04
	32	606-	619	612.23	106.09	4.45E+03	532.57	6.18E+04
M	33	626-	649	632.66	109.64	5.17E+03	303.37	5.98E+04
m	34	626-	649	645.23	111.82	5.39E+03	317.78	5.37E+04
	35	649-	661	654.37	113.40	1.28E+04	543.80	6.62E+04
	36	661-	671	665.95	115.41	3.34E+03	431.25	4.85E+04
	37	675-	687	680.07	117.86	1.40E+03	484.63	5.46E+04
	38	693-	704	700.66	121.43	1.66E+03	451.75	5.04E+04
	39	704-	716	709.29	122.93	1.99E+03	491.98	5.63E+04
	40	735-	749	742.10	128.62	2.55E+03	548.02	6.25E+04
	41	749-	768	757.66	131.32	5.53E+03	711.12	8.32E+04
	42	807-	822	815.73	141.39	2.28E+03	590.65	6.92E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	826-	841	834.03	144.56	4.33E+04	621.95	6.86E+04
	44	886-	901	893.98	154.96	1.54E+04	614.92	7.24E+04
	45	901-	912	906.93	157.20	1.03E+03	459.20	5.22E+04
	46	912-	927	919.80	159.43	1.73E+03	584.68	6.78E+04
	47	939-	954	946.92	164.14	1.11E+04	574.73	6.37E+04
	48	1069-	1086	1078.05	186.88	2.75E+05	799.71	6.63E+04
M	49	1125-	1144	1129.71	195.84	1.11E+03	209.29	3.95E+04
m	50	1125-	1144	1137.42	197.18	1.99E+03	278.27	4.65E+04
	51	1144-	1157	1151.05	199.54	9.10E+02	472.42	4.92E+04
	52	1164-	1179	1171.36	203.06	2.41E+03	522.04	5.39E+04
	53	1183-	1198	1190.06	206.31	1.00E+04	501.85	4.82E+04
	54	1215-	1229	1220.46	211.58	1.67E+03	443.62	4.09E+04
	55	1358-	1376	1367.48	237.07	1.52E+04	526.53	4.55E+04
	56	1393-	1411	1402.41	243.13	2.10E+05	672.87	4.22E+04
	57	1445-	1454	1449.77	251.35	5.50E+02	271.37	2.07E+04
M	58	1472-	1491	1477.28	256.12	6.42E+02	144.41	2.77E+04
m	59	1472-	1491	1485.02	257.46	7.54E+03	295.12	2.95E+04
	60	1491-	1509	1500.00	260.06	1.14E+04	491.34	3.99E+04
	61	1520-	1534	1526.85	264.71	4.40E+02	371.91	2.89E+04
	62	1551-	1567	1561.28	270.68	1.09E+04	459.98	3.82E+04
	63	1567-	1581	1571.99	272.54	7.73E+03	413.09	3.40E+04
	64	1582-	1602	1591.38	275.90	8.29E+03	518.64	4.16E+04
	65	1623-	1638	1629.21	282.47	1.14E+03	399.70	3.16E+04
	66	1638-	1648	1643.47	284.94	1.35E+03	289.56	2.19E+04
	67	1650-	1665	1657.59	287.39	4.47E+03	406.18	3.20E+04
	68	1700-	1720	1710.80	296.62	4.14E+05	815.95	4.03E+04
	69	1730-	1748	1738.55	301.43	3.97E+03	443.57	3.34E+04
	70	1748-	1759	1753.68	304.05	1.46E+03	295.97	2.14E+04
	71	1759-	1775	1766.58	306.29	8.60E+02	401.69	3.05E+04
	72	1816-	1829	1822.95	316.07	1.05E+03	335.63	2.47E+04
	73	1869-	1884	1876.70	325.39	2.87E+03	381.09	2.84E+04
	74	1901-	1922	1911.76	331.47	3.94E+03	506.02	3.87E+04
	75	1923-	1944	1934.72	335.45	1.86E+03	516.65	4.07E+04
	76	1954-	1971	1960.84	339.98	1.64E+03	436.33	3.42E+04
	77	2014-	2027	2021.92	350.57	6.96E+02	366.35	2.95E+04
	78	2028-	2050	2039.35	353.60	6.17E+05	952.79	4.31E+04
	79	2232-	2247	2241.59	388.67	1.23E+03	374.10	2.77E+04
	80	2247-	2265	2254.42	390.89	3.40E+03	436.09	3.24E+04
	81	2319-	2337	2328.65	403.77	3.54E+03	435.78	3.24E+04
	82	2337-	2358	2348.21	407.16	3.15E+03	498.83	3.78E+04
	83	2467-	2487	2477.73	429.62	1.97E+03	466.89	3.45E+04
	84	2623-	2647	2635.85	457.05	3.31E+03	474.04	3.05E+04
M	85	2660-	2684	2665.06	462.11	3.73E+02	134.78	1.80E+04
m	86	2660-	2684	2676.21	464.04	1.67E+03	228.73	2.63E+04
	87	2737-	2762	2749.96	476.83	2.02E+03	470.03	2.92E+04
	88	2771-	2796	2784.29	482.79	3.63E+03	473.87	2.94E+04
	89	2813-	2835	2823.39	489.57	3.29E+03	417.25	2.53E+04
	90	2945-	2965	2955.57	512.49	2.12E+03	361.67	2.06E+04
	91	3079-	3103	3091.96	536.15	2.61E+03	417.84	2.37E+04
	92	3137-	3155	3146.61	545.63	1.15E+03	322.76	1.79E+04

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	93	3347-	3374	3360.73	582.76	2.50E+03	464.27	2.66E+04
	94	3516-	3544	3530.71	612.24	3.03E+05	728.87	2.76E+04
	95	3844-	3868	3855.69	668.60	7.55E+03	383.73	1.92E+04
	96	3949-	3964	3956.30	686.05	5.45E+02	246.58	1.20E+04
M	97	3968-	3998	3975.03	689.30	4.69E+02	129.17	1.28E+04
m	98	3968-	3998	3989.00	691.72	5.60E+02	141.22	1.95E+04
	99	4019-	4035	4027.82	698.45	5.52E+03	180.08	4.92E+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: BL5D standard
Peak Analysis Performed on: 6-24-96 4:12:45 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.42	6.21E+03	451.94			6.21E+03	4.52E+02
2	6.48	1.40E+04	473.31			1.40E+04	4.73E+02
3	9.31	1.93E+03	408.90			1.93E+03	4.09E+02
4	10.95	9.04E+04	529.78	1.65E+02	3.84E+01	9.02E+04	5.31E+02
5	13.23	1.89E+05	678.46			1.89E+05	6.78E+02
6	15.32	5.65E+03	850.00			5.65E+03	8.50E+02
7	16.52	1.93E+05	1080.87			1.93E+05	1.08E+03
8	19.17	3.18E+04	568.54	4.29E+01	2.25E+01	3.17E+04	5.69E+02
9	20.05	7.91E+03	573.75			7.91E+03	5.74E+02
10	25.84	2.84E+04	492.79			2.84E+04	4.93E+02
11	27.59	2.26E+04	481.93			2.26E+04	4.82E+02
12	36.93	4.96E+03	482.47			4.96E+03	4.82E+02
13	46.82	3.23E+05	770.46			3.23E+05	7.70E+02
14	50.32	3.22E+04	537.57			3.22E+04	5.38E+02
15	53.54	8.03E+04	620.57	3.59E+01	1.79E+01	8.03E+04	6.21E+02
16	63.64	3.01E+05	814.05	6.18E+01	2.67E+01	3.01E+05	8.14E+02
17	68.02	3.52E+04	632.64			3.52E+04	6.33E+02
18	71.13	2.06E+03	659.93			2.06E+03	6.60E+02
19	73.22	4.01E+03	548.61			4.01E+03	5.49E+02
20	75.21	4.55E+05	987.15	1.05E+02	2.88E+01	4.55E+05	9.88E+02
21	77.51	8.16E+05	1135.80	5.62E+01	2.81E+01	8.16E+05	1.14E+03
22	79.75	3.90E+04	750.56	3.91E+01	2.94E+01	3.90E+04	7.51E+02
23	81.53	5.65E+04	598.06			5.65E+04	5.98E+02
24	84.28	1.33E+05	707.04	5.33E+01	2.88E+01	1.33E+05	7.08E+02
25	87.65	2.61E+05	827.59	9.34E+01	3.38E+01	2.61E+05	8.28E+02
26	90.39	9.84E+04	753.76			9.84E+04	7.54E+02
27	93.05	3.67E+05	895.08	1.47E+02	3.61E+01	3.67E+05	8.96E+02
28	95.34	1.21E+04	756.86			1.21E+04	7.57E+02
29	98.75	3.84E+04	723.35			3.84E+04	7.23E+02
30	100.82	6.79E+02	441.02			6.79E+02	4.41E+02
31	103.11	1.25E+03	535.55			1.25E+03	5.36E+02
32	106.09	4.45E+03	532.57			4.45E+03	5.33E+02
M 33	109.64	5.17E+03	303.37			5.17E+03	3.03E+02
m 34	111.82	5.39E+03	317.78			5.39E+03	3.18E+02
35	113.40	1.28E+04	543.80			1.28E+04	5.44E+02
36	115.41	3.34E+03	431.25			3.34E+03	4.31E+02
37	117.86	1.40E+03	484.63			1.40E+03	4.85E+02
38	121.43	1.66E+03	451.75			1.66E+03	4.52E+02
39	122.93	1.99E+03	491.98			1.99E+03	4.92E+02
40	128.62	2.55E+03	548.02			2.55E+03	5.48E+02
41	131.32	5.53E+03	711.12			5.53E+03	7.11E+02
42	141.39	2.28E+03	590.65			2.28E+03	5.91E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	144.56	4.33E+04	621.95	3.99E+01	3.90E+01	4.33E+04	6.23E+02
44	154.96	1.54E+04	614.92			1.54E+04	6.15E+02
45	157.20	1.03E+03	459.20			1.03E+03	4.59E+02
46	159.43	1.73E+03	584.68			1.73E+03	5.85E+02
47	164.14	1.11E+04	574.73			1.11E+04	5.75E+02
48	186.88	2.75E+05	799.71	1.27E+02	2.61E+01	2.75E+05	8.00E+02
M 49	195.84	1.11E+03	209.29			1.11E+03	2.09E+02
m 50	197.18	1.99E+03	278.27	1.81E+02	3.66E+01	1.81E+03	2.81E+02
51	199.54	9.10E+02	472.42			9.10E+02	4.72E+02
52	203.06	2.41E+03	522.04			2.41E+03	5.22E+02
53	206.31	1.00E+04	501.85			1.00E+04	5.02E+02
54	211.58	1.67E+03	443.62			1.67E+03	4.44E+02
55	237.07	1.52E+04	526.53			1.52E+04	5.27E+02
56	243.13	2.10E+05	672.87			2.10E+05	6.73E+02
57	251.35	5.50E+02	271.37			5.50E+02	2.71E+02
M 58	256.12	6.42E+02	144.41			6.42E+02	1.44E+02
m 59	257.46	7.54E+03	295.12			7.54E+03	2.95E+02
60	260.06	1.14E+04	491.34			1.14E+04	4.91E+02
61	264.71	4.40E+02	371.91			4.40E+02	3.72E+02
62	270.68	1.09E+04	459.98			1.09E+04	4.60E+02
63	272.54	7.73E+03	413.09			7.73E+03	4.13E+02
64	275.90	8.29E+03	518.64			8.29E+03	5.19E+02
65	282.47	1.14E+03	399.70			1.14E+03	4.00E+02
66	284.94	1.35E+03	289.56			1.35E+03	2.90E+02
67	287.39	4.47E+03	406.18			4.47E+03	4.06E+02
68	296.62	4.14E+05	815.95	3.73E+01	2.91E+01	4.14E+05	8.16E+02
69	301.43	3.97E+03	443.57			3.97E+03	4.44E+02
70	304.05	1.46E+03	295.97			1.46E+03	2.96E+02
71	306.29	8.60E+02	401.69			8.60E+02	4.02E+02
72	316.07	1.05E+03	335.63			1.05E+03	3.36E+02
73	325.39	2.87E+03	381.09			2.87E+03	3.81E+02
74	331.47	3.94E+03	506.02	4.04E+01	1.66E+01	3.90E+03	5.06E+02
75	335.45	1.86E+03	516.65			1.86E+03	5.17E+02
76	339.98	1.64E+03	436.33			1.64E+03	4.36E+02
77	350.57	6.96E+02	366.35			6.96E+02	3.66E+02
78	353.60	6.17E+05	952.79	5.65E+01	2.27E+01	6.17E+05	9.53E+02
79	388.67	1.23E+03	374.10			1.23E+03	3.74E+02
80	390.89	3.40E+03	436.09	3.43E+01	2.83E+01	3.36E+03	4.37E+02
81	403.77	3.54E+03	435.78			3.54E+03	4.36E+02
82	407.16	3.15E+03	498.83			3.15E+03	4.99E+02
83	429.62	1.97E+03	466.89			1.97E+03	4.67E+02
84	457.05	3.31E+03	474.04			3.31E+03	4.74E+02
M 85	462.11	3.73E+02	134.78			3.73E+02	1.35E+02
m 86	464.04	1.67E+03	228.73			1.67E+03	2.29E+02
87	476.83	2.02E+03	470.03	1.36E+01	1.16E+01	2.01E+03	4.70E+02
88	482.79	3.63E+03	473.87			3.63E+03	4.74E+02
89	489.57	3.29E+03	417.25			3.29E+03	4.17E+02
90	512.49	2.12E+03	361.67	2.06E+02	4.26E+01	1.91E+03	3.64E+02
91	536.15	2.61E+03	417.84			2.61E+03	4.18E+02
92	545.63	1.15E+03	322.76			1.15E+03	3.23E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
93	582.76	2.50E+03	464.27			2.50E+03	4.64E+02
94	612.24	3.03E+05	728.87			3.03E+05	7.29E+02
95	668.60	7.55E+03	383.73			7.55E+03	3.84E+02
96	686.05	5.45E+02	246.58			5.45E+02	2.47E+02
M 97	689.30	4.69E+02	129.17			4.69E+02	1.29E+02
m 98	691.72	5.60E+02	141.22			5.60E+02	1.41E+02
99	698.45	5.52E+03	180.08	1.84E+01	7.82E+00	5.51E+03	1.80E+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          *****
*****************************************************************************

Report Generated On                  :  5-01-96  7:44:06 AM

Sample Title                        : NOPI-308-GAM2
Spectrum Description                : NOPI-308-GAM2
Sample Identification               : NP308
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                 :  4-30-96  7:45:21 AM

Live Time                           :    80000.0 seconds
Real Time                           :    80017.9 seconds


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

~~-0.025 log + +1.071~~

~~0.038 log + +0.929~~

-0.003 log + + 1.021

0.061 log + + 0.876

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

Detector Name: DET01
Sample Title: NOPI-308-GAM2
Peak Locate Performed on: 5-01-96 7:42:40 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	37.29	0.3652	6.43	5.29
2	63.56	0.2159	10.93	12.11
3	76.21	0.2083	13.09	11.36
4	94.64	0.2062	16.42	15.14
5	104.15	0.2777	17.97	7.87
6	110.54	0.2012	19.17	13.42
7	114.61	0.3410	19.96	5.22
8	149.45	0.2384	25.83	9.68
9	159.41	0.2580	27.51	8.23
10	251.26	0.5510	43.65	2.43
11	270.08	0.0947	46.76	53.99
12	290.74	0.2471	50.24	7.69
13	308.80	0.1297	53.46	27.46
14	366.96	0.0946	63.55	50.73
15	392.26	0.1987	67.97	10.67
16	433.61	0.0793	75.11	62.36
17	446.87	0.0693	77.40	87.77
18	459.58	0.1433	79.66	18.40
19	469.76	0.1503	81.44	18.34
20	485.66	0.1288	84.17	22.12
21	505.63	0.1089	87.56	28.62
22	520.48	0.1279	90.26	21.22
23	536.16	0.0928	92.93	34.19
24	548.83	0.1942	95.15	10.57
25	570.14	0.2382	98.55	7.80
26	653.60	0.2143	113.28	7.71
27	832.80	0.1603	144.35	12.32
28	892.84	0.2032	154.69	8.63
29	945.80	0.2141	164.00	7.24
30	1077.06	0.0827	186.67	39.77
31	1128.22	0.4443	195.55	2.09
32	1188.59	0.2265	206.21	5.96
33	1366.02	0.1877	236.80	8.37
34	1381.44	0.1390	239.47	13.95
35	1400.88	0.0745	242.84	51.46
36	1483.72	0.2273	256.88	5.85
37	1498.48	0.1829	259.76	8.23
38	1514.66	0.3786	262.60	2.51
39	1559.62	0.1785	270.37	9.31
40	1570.34	0.2049	272.28	6.72
41	1591.64	0.2552	275.75	3.77

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1655.14	0.2656	287.14	4.30
43	1708.85	0.0599	296.28	70.98
44	1736.13	0.2463	301.06	4.50
45	1874.41	0.2631	325.14	4.74
46	1885.82	0.3506	326.98	2.74
47	1909.50	0.2881	331.07	3.08
48	1957.94	0.2344	339.41	4.58
49	2036.98	0.0530	353.17	83.84
50	2238.67	0.2763	388.10	3.22
51	2251.14	0.2796	390.41	2.78
52	2342.71	0.3724	406.23	2.15
53	2350.05	0.3690	407.39	2.41
54	2820.76	0.2530	489.31	3.42
55	3079.23	0.3674	533.83	2.30
56	3089.16	0.3096	535.65	3.22
57	3277.57	0.3844	567.67	2.18
58	3317.64	0.2945	575.36	2.52
59	3359.59	0.2732	582.42	3.16
60	3374.33	0.2241	585.54	3.20
61	3526.65	0.0571	611.53	55.43
62	3559.80	0.3477	617.51	2.22
63	3852.10	0.1679	667.96	7.15
64	4027.83	0.1870	698.40	4.74

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-308-GAM2
Peak Analysis Performed on: 5-01-96 7:42:59 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	
1	34-	40	37.55	6.43	8.34E+02	106.76	3.80E+03	
2	60-	66	63.52	10.93	4.62E+03	116.32	3.22E+03	
3	72-	79	75.96	13.09	1.28E+04	167.91	5.14E+03	
4	92-	98	95.16	16.42	7.32E+03	188.17	9.84E+03	
5	102-	107	104.08	17.97	1.50E+02	101.51	3.97E+03	
6	107-	114	111.05	19.17	1.42E+03	137.01	5.76E+03	
7	114-	118	115.58	19.96	7.51E+02	86.72	2.77E+03	
8	145-	153	149.44	25.83	1.38E+03	101.00	2.71E+03	
9	155-	163	159.12	27.51	1.08E+03	100.61	2.76E+03	
10	247-	256	252.16	43.65	2.27E+02	100.28	2.79E+03	
11	265-	275	270.08	46.76	1.48E+04	160.46	2.93E+03	
12	285-	295	290.20	50.24	1.19E+03	108.23	2.80E+03	
13	303-	313	308.77	53.46	3.59E+03	118.93	2.82E+03	
14	361-	372	366.94	63.55	1.10E+04	161.45	3.77E+03	
15	386-	397	392.41	67.97	1.36E+03	126.53	3.66E+03	1.38E+03 ± 5.06%
16	427-	439	433.58	75.11	1.94E+04	200.14	4.86E+03	
17	440-	452	446.80	77.40	3.47E+04	236.40	4.96E+03	
18	453-	465	459.83	79.66	1.81E+03	153.36	5.10E+03	
19	465-	475	470.08	81.44	2.15E+03	121.52	3.36E+03	
20	479-	491	485.79	84.17	5.55E+03	138.70	3.22E+03	
21	501-	511	505.39	87.56	1.11E+04	158.44	3.67E+03	
22	514-	526	520.96	90.26	4.60E+03	142.85	3.72E+03	
23	529-	542	536.33	92.93	1.39E+04	178.11	3.97E+03	
24	544-	555	549.12	95.15	1.18E+03	122.62	3.45E+03	
25	563-	576	568.74	98.55	8.60E+02	123.21	3.15E+03	
26	648-	660	653.70	113.28	5.06E+02	109.49	2.68E+03	
27	825-	840	832.80	144.35	1.76E+03	127.10	2.87E+03	
28	885-	897	892.45	154.69	4.69E+02	108.41	2.65E+03	
29	939-	953	946.13	164.00	5.84E+02	110.03	2.42E+03	
30	1068-	1085	1076.83	186.67	1.13E+04	163.80	2.81E+03	
31	1125-	1132	1128.06	195.55	1.25E+02	60.85	1.18E+03	
32	1182-	1197	1189.49	206.21	4.92E+02	102.16	1.99E+03	
33	1356-	1373	1365.90	236.80	5.70E+02	104.23	1.87E+03	
34	1373-	1388	1381.28	239.47	1.08E+03	96.17	1.63E+03	
35	1391-	1410	1400.71	242.84	8.69E+03	142.15	1.92E+03	
36	1474-	1490	1481.65	256.88	3.94E+02	90.55	1.47E+03	
37	1490-	1505	1498.28	259.76	3.97E+02	88.93	1.50E+03	
38	1511-	1518	1514.66	262.60	1.10E+02	44.01	6.04E+02	
39	1553-	1564	1559.46	270.37	4.19E+02	72.81	1.22E+03	
40	1564-	1575	1570.49	272.28	2.80E+02	74.40	1.31E+03	
41	1581-	1599	1590.48	275.75	2.34E+02	98.98	1.66E+03	
42	1648-	1663	1656.15	287.14	2.34E+02	82.29	1.31E+03	

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1698-	1718	1708.84	296.28	1.68E+04	167.62	1.81E+03
	44	1732-	1741	1736.42	301.06	1.51E+02	54.31	7.92E+02
	45	1870-	1880	1875.26	325.14	1.55E+02	54.91	7.59E+02
	46	1880-	1890	1885.88	326.98	7.91E+01	53.17	7.31E+02
	47	1905-	1915	1909.48	331.07	1.79E+02	56.12	7.83E+02
	48	1947-	1963	1957.54	339.41	2.50E+02	85.18	1.33E+03
	49	2026-	2047	2036.91	353.17	2.46E+04	190.44	1.79E+03
	50	2229-	2244	2238.32	388.10	1.37E+02	74.37	1.08E+03
	51	2244-	2258	2251.64	390.41	9.46E+01	72.48	1.09E+03
M	52	2336-	2355	2342.85	406.23	1.34E+02	42.31	9.35E+02
m	53	2336-	2355	2349.53	407.39	1.08E+02	39.34	9.75E+02
	54	2808-	2833	2821.88	489.31	2.43E+02	92.25	1.10E+03
M	55	3074-	3096	3078.59	533.83	3.78E+01	11.64	2.47E+02
m	56	3074-	3096	3089.11	535.65	4.82E+01	12.97	2.55E+02
	57	3264-	3283	3273.73	567.67	9.25E+01	66.64	7.24E+02
	58	3312-	3326	3318.04	575.36	6.43E+01	51.54	5.43E+02
	59	3348-	3366	3358.74	582.42	1.43E+02	66.72	7.50E+02
	60	3366-	3392	3376.78	585.54	2.27E+02	90.99	1.03E+03
	61	3512-	3540	3526.59	611.53	1.22E+04	149.88	1.24E+03
	62	3554-	3567	3561.12	617.51	8.38E+01	43.27	3.96E+02
	63	3841-	3860	3852.02	667.96	1.79E+02	68.63	7.55E+02
	64	4020-	4035	4027.52	698.40	2.30E+02	33.35	1.70E+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-308-GAM2
Peak Analysis Performed on: 5-01-96 7:42:40 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	6.43	8.34E+02	106.76			8.34E+02	1.07E+02
2	10.93	4.62E+03	116.32			4.62E+03	1.16E+02
3	13.09	1.28E+04	167.91			1.28E+04	1.68E+02
4	16.42	7.32E+03	188.17			7.32E+03	1.88E+02
5	17.97	1.50E+02	101.51			1.50E+02	1.02E+02
6	19.17	1.42E+03	137.01			1.42E+03	1.37E+02
7	19.96	7.51E+02	86.72			7.51E+02	8.67E+01
8	25.83	1.38E+03	101.00			1.38E+03	1.01E+02
9	27.51	1.08E+03	100.61	3.59E+01	2.20E+01	1.04E+03	1.03E+02
10	43.65	2.27E+02	100.28			2.27E+02	1.00E+02
11	46.76	1.48E+04	160.46			1.48E+04	1.60E+02
12	50.24	1.19E+03	108.23			1.19E+03	1.08E+02
13	53.46	3.59E+03	118.93			3.59E+03	1.19E+02
14	63.55	1.10E+04	161.45	8.22E+01	2.83E+01	1.09E+04	1.64E+02
15	67.97	1.36E+03	126.53			1.36E+03	1.27E+02
16	75.11	1.94E+04	200.14	4.59E+01	3.14E+01	1.93E+04	2.03E+02
17	77.40	3.47E+04	236.40	5.88E+01	2.63E+01	3.47E+04	2.38E+02
18	79.66	1.81E+03	153.36			1.81E+03	1.53E+02
19	81.44	2.15E+03	121.52			2.15E+03	1.22E+02
20	84.17	5.55E+03	138.70			5.55E+03	1.39E+02
21	87.56	1.11E+04	158.44			1.11E+04	1.58E+02
22	90.26	4.60E+03	142.85			4.60E+03	1.43E+02
23	92.93	1.39E+04	178.11	2.14E+02	3.47E+01	1.37E+04	1.81E+02
24	95.15	1.18E+03	122.62			1.18E+03	1.23E+02
25	98.55	8.60E+02	123.21			8.60E+02	1.23E+02
26	113.28	5.06E+02	109.49			5.06E+02	1.09E+02
27	144.35	1.76E+03	127.10			1.76E+03	1.27E+02
28	154.69	4.69E+02	108.41			4.69E+02	1.08E+02
29	164.00	5.84E+02	110.03			5.84E+02	1.10E+02
30	186.67	1.13E+04	163.80	7.15E+01	3.60E+01	1.13E+04	1.68E+02
31	195.55	1.25E+02	60.85			1.25E+02	6.08E+01
32	206.21	4.92E+02	102.16			4.92E+02	1.02E+02
33	236.80	5.70E+02	104.23			5.70E+02	1.04E+02
34	239.47	1.08E+03	96.17	7.99E+01	3.31E+01	1.00E+03	1.02E+02
35	242.84	8.69E+03	142.15			8.69E+03	1.42E+02
36	256.88	3.94E+02	90.55			3.94E+02	9.05E+01
37	259.76	3.97E+02	88.93			3.97E+02	8.89E+01
38	262.60	1.10E+02	44.01			1.10E+02	4.40E+01
39	270.37	4.19E+02	72.81			4.19E+02	7.28E+01
40	272.28	2.80E+02	74.40			2.80E+02	7.44E+01
41	275.75	2.34E+02	98.98			2.34E+02	9.90E+01
42	287.14	2.34E+02	82.29			2.34E+02	8.23E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	296.28	1.68E+04	167.62			1.68E+04	1.68E+02
44	301.06	1.51E+02	54.31			1.51E+02	5.43E+01
45	325.14	1.55E+02	54.91			1.55E+02	5.49E+01
46	326.98	7.91E+01	53.17			7.91E+01	5.32E+01
47	331.07	1.79E+02	56.12			1.79E+02	5.61E+01
48	339.41	2.50E+02	85.18			2.50E+02	8.52E+01
49	353.17	2.46E+04	190.44			2.46E+04	1.90E+02
50	388.10	1.37E+02	74.37			1.37E+02	7.44E+01
51	390.41	9.46E+01	72.48			9.46E+01	7.25E+01
M 52	406.23	1.34E+02	42.31			1.34E+02	4.23E+01
m 53	407.39	1.08E+02	39.34			1.08E+02	3.93E+01
54	489.31	2.43E+02	92.25			2.43E+02	9.22E+01
M 55	533.83	3.78E+01	11.64			3.78E+01	1.16E+01
m 56	535.65	4.82E+01	12.97			4.82E+01	1.30E+01
57	567.67	9.25E+01	66.64			9.25E+01	6.66E+01
58	575.36	6.43E+01	51.54			6.43E+01	5.15E+01
59	582.42	1.43E+02	66.72			1.43E+02	6.67E+01
60	585.54	2.27E+02	90.99	2.17E+01	1.33E+01	2.05E+02	9.20E+01
61	611.53	1.22E+04	149.88			1.22E+04	1.50E+02
62	617.51	8.38E+01	43.27			8.38E+01	4.33E+01
63	667.96	1.79E+02	68.63			1.79E+02	6.86E+01
64	698.40	2.30E+02	33.35			2.30E+02	3.34E+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                 :  5-07-96  7:41:02 AM

Sample Title                        : NOPI-309-GAM2
Spectrum Description                : NOPI-309-GAM2
Sample Identification               : NP309
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                 :  5-06-96  7:55:46 AM

Live Time                           :    80000.0 seconds
Real Time                           :    80038.6 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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$-0.149 \log x + 1.321$

$-0.080 \log x + 1.166$

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

Detector Name: DET01
Sample Title: NOPI-309-GAM2
Peak Locate Performed on: 5-07-96 7:40:04 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	18.43	0.2261	3.10	6.24
2	31.74	0.3743	5.41	5.28
3	37.54	0.2826	6.47	6.70
4	53.89	0.6001	9.23	2.46
5	63.56	0.1841	10.94	16.41
6	76.27	0.1819	13.22	18.88
7	98.00	0.4985	16.47	4.02
8	110.60	0.1683	19.17	21.02
9	114.59	0.3004	19.99	6.51
10	149.35	0.1816	25.81	15.80
11	159.39	0.1971	27.54	15.67
12	187.38	0.4776	32.27	2.31
13	212.95	0.3188	36.83	5.30
14	231.53	0.4561	40.10	2.53
15	270.19	0.0782	46.78	79.49
16	290.80	0.1785	50.29	16.43
17	308.95	0.1048	53.48	41.60
18	367.06	0.0729	63.57	84.84
19	392.53	0.1443	67.94	20.26
20	433.83	0.0653	75.14	97.59
21	446.99	0.0570	77.43	130.57
22	459.74	0.1184	79.71	28.64
23	469.99	0.1132	81.46	34.03
24	485.88	0.1026	84.20	37.69
25	505.73	0.0872	87.57	43.88
26	520.65	0.1033	90.29	34.04
27	536.40	0.0726	92.96	54.56
28	549.18	0.1549	95.14	15.58
29	570.44	0.1713	98.63	12.73
30	612.37	0.3682	105.78	3.05
31	631.91	0.2990	109.57	3.69
32	643.73	0.3438	111.62	2.19
33	653.42	0.1517	113.28	16.14
34	700.59	0.3589	121.08	2.58
35	761.22	0.4290	131.28	2.38
36	833.09	0.1181	144.44	23.01
37	893.10	0.1581	154.76	14.64
38	918.58	0.3737	159.23	2.13
39	933.03	0.4170	161.98	2.72
40	946.30	0.1696	163.96	11.05
41	974.68	0.4374	169.15	2.29

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1077.26	0.0671	186.71	56.16
43	1170.35	0.3049	202.89	3.41
44	1188.78	0.1933	206.07	8.35
45	1366.65	0.1365	236.82	15.16
46	1381.77	0.1501	239.50	12.54
47	1401.22	0.0609	242.92	74.86
48	1483.97	0.1684	257.17	10.45
49	1498.79	0.1552	259.87	10.18
50	1560.18	0.1347	270.46	15.84
51	1570.84	0.1510	272.37	12.79
52	1591.27	0.1886	275.82	7.52
53	1625.54	0.3733	282.36	2.35
54	1657.33	0.2481	287.28	4.07
55	1709.40	0.0484	296.37	105.25
56	1736.99	0.2115	301.22	6.39
57	1752.07	0.2529	303.80	4.57
58	1875.04	0.2192	325.35	3.75
59	1909.43	0.2174	331.11	5.70
60	1947.15	0.3714	337.56	2.18
61	1958.73	0.2279	339.57	3.87
62	1999.47	0.3563	346.08	2.54
63	2037.61	0.0432	353.28	124.23
64	2238.35	0.2907	387.95	2.11
65	2251.45	0.2066	390.43	5.49
66	2269.06	0.3740	393.43	2.16
67	2326.26	0.2360	403.33	3.89
68	2345.08	0.2291	406.87	3.86
69	2746.37	0.2919	476.03	2.91
70	2782.02	0.2148	482.14	3.96
71	2821.45	0.2062	489.22	4.31
72	3089.50	0.2302	535.66	4.36
73	3145.80	0.3398	545.38	2.03
74	3359.41	0.2273	582.38	4.58
75	3375.26	0.2131	585.26	4.22
76	3527.65	0.0465	611.72	82.65
77	3852.33	0.1458	667.99	8.41
78	4029.12	0.1494	698.72	9.79

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-309-GAM2
Peak Analysis Performed on: 5-07-96 7:40:25 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-	20	18.38	3.10	3.69E+03	104.27	2.78E+03
2	29-	34	31.67	5.41	7.99E+02	134.72	6.75E+03
3	34-	40	37.83	6.47	1.22E+03	157.20	8.45E+03
4	50-	56	53.72	9.23	5.93E+02	133.40	6.18E+03
5	60-	66	63.58	10.94	8.65E+03	167.89	7.08E+03
6	75-	79	76.69	13.22	1.93E+04	208.24	1.03E+04
7	92-	101	95.44	16.47	1.96E+04	343.26	2.64E+04
8	108-	114	111.04	19.17	4.40E+03	188.80	1.11E+04
9	114-	118	115.76	19.99	1.76E+03	134.39	6.60E+03
10	145-	153	149.32	25.81	3.41E+03	157.20	6.52E+03
11	155-	163	159.27	27.54	2.71E+03	152.46	6.28E+03
12	182-	191	186.57	32.27	4.14E+02	152.95	6.52E+03
13	208-	217	212.84	36.83	4.12E+02	151.20	6.37E+03
14	226-	236	231.74	40.10	4.12E+02	164.19	7.04E+03
15	265-	275	270.21	46.78	3.33E+04	241.84	6.72E+03
16	285-	295	290.46	50.29	3.30E+03	168.58	6.69E+03
17	303-	314	308.86	53.48	8.72E+03	193.13	7.13E+03
18	361-	372	367.06	63.57	3.12E+04	257.61	8.80E+03
19	386-	398	392.24	67.94	4.04E+03	208.59	9.25E+03
20	428-	439	433.73	75.14	4.47E+04	297.57	1.09E+04
21	441-	452	446.96	77.43	8.09E+04	346.27	9.77E+03
22	453-	465	460.09	79.71	3.60E+03	237.59	1.24E+04
23	465-	476	470.20	81.46	5.44E+03	203.87	9.02E+03
24	479-	491	486.00	84.20	1.40E+04	221.06	8.20E+03
25	501-	511	505.40	87.57	2.47E+04	243.37	8.94E+03
26	514-	526	521.08	90.29	9.58E+03	224.59	9.59E+03
27	530-	542	536.51	92.96	3.82E+04	273.74	8.64E+03
28	544-	555	549.05	95.14	3.11E+03	189.52	8.16E+03
29	563-	576	569.18	98.63	2.93E+03	183.23	6.77E+03
30	605-	619	610.43	105.78	6.14E+02	176.70	6.39E+03
31	629-	638	632.28	109.57	5.32E+02	130.24	4.64E+03
32	638-	648	644.08	111.62	3.02E+02	142.15	5.29E+03
33	648-	660	653.66	113.28	1.59E+03	169.34	6.35E+03
34	693-	704	698.65	121.08	3.34E+02	141.54	4.89E+03
35	749-	765	757.46	131.28	5.89E+02	195.50	7.15E+03
36	825-	840	833.35	144.44	4.47E+03	194.24	6.65E+03
37	885-	900	892.85	154.76	1.37E+03	194.91	7.30E+03
38	914-	926	918.64	159.23	4.60E+02	148.20	5.02E+03
39	930-	937	934.48	161.98	1.51E+02	96.63	3.05E+03
40	938-	951	945.92	163.96	1.24E+03	160.17	5.42E+03
41	971-	982	975.80	169.15	3.73E+02	131.85	4.22E+03
42	1068-	1085	1077.08	186.71	2.79E+04	252.79	6.55E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1161-	1178	1170.38	202.89	4.06E+02	180.08	5.82E+03
44	1180-	1197	1188.70	206.07	1.16E+03	174.03	5.29E+03
45	1357-	1375	1365.98	236.82	1.50E+03	169.70	4.73E+03
46	1375-	1390	1381.44	239.50	1.26E+03	143.01	3.80E+03
47	1391-	1410	1401.16	242.92	2.00E+04	216.00	4.45E+03
48	1474-	1489	1483.33	257.17	7.74E+02	134.65	3.47E+03
49	1489-	1508	1498.91	259.87	1.15E+03	162.64	4.22E+03
50	1550-	1565	1559.98	270.46	1.22E+03	135.88	3.45E+03
51	1565-	1577	1570.98	272.37	6.53E+02	118.08	3.12E+03
52	1581-	1601	1590.89	275.82	9.13E+02	161.31	4.02E+03
53	1622-	1635	1628.60	282.36	2.39E+02	111.69	2.71E+03
54	1647-	1663	1656.97	287.28	2.69E+02	135.26	3.43E+03
55	1699-	1719	1709.38	296.37	3.87E+04	249.85	3.80E+03
56	1731-	1747	1737.36	301.22	3.12E+02	128.48	3.07E+03
57	1747-	1757	1752.24	303.80	2.17E+02	87.25	1.96E+03
58	1868-	1885	1876.48	325.35	3.77E+02	131.03	3.05E+03
59	1899-	1919	1909.72	331.11	4.37E+02	150.77	3.57E+03
60	1942-	1952	1946.91	337.56	1.10E+02	86.89	1.97E+03
61	1952-	1964	1958.46	339.57	3.82E+02	102.19	2.36E+03
62	1988-	2004	1996.00	346.08	1.50E+02	133.49	3.36E+03
63	2026-	2048	2037.55	353.28	5.80E+04	295.72	4.36E+03
64	2227-	2244	2237.43	387.95	2.22E+02	127.58	2.92E+03
65	2244-	2257	2251.73	390.43	2.03E+02	106.28	2.46E+03
66	2265-	2276	2269.04	393.43	1.16E+02	86.97	1.85E+03
67	2317-	2337	2326.14	403.33	5.02E+02	146.13	3.33E+03
68	2337-	2356	2346.54	406.87	3.56E+02	142.10	3.30E+03
69	2737-	2753	2745.33	476.03	1.76E+02	101.06	1.91E+03
70	2769-	2789	2780.53	482.14	3.23E+02	122.03	2.33E+03
71	2814-	2830	2821.38	489.22	1.05E+02	102.81	1.99E+03
72	3083-	3097	3089.13	535.66	9.06E+01	83.83	1.45E+03
73	3139-	3151	3145.17	545.38	1.12E+02	72.09	1.19E+03
74	3351-	3366	3358.55	582.38	2.13E+02	87.48	1.48E+03
75	3366-	3384	3375.17	585.26	2.82E+02	100.39	1.70E+03
76	3513-	3541	3527.69	611.72	2.89E+04	229.26	2.87E+03
77	3842-	3861	3852.18	667.99	4.87E+02	103.86	1.71E+03
78	4024-	4035	4029.39	698.72	3.74E+02	41.04	2.81E+02

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

Errors quoted at 1.000 sigma

****
***** 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-309-GAM2
Peak Analysis Performed on: 5-07-96 7:40:04 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	3.10	3.69E+03	104.27			3.69E+03	1.04E+02
2	5.41	7.99E+02	134.72			7.99E+02	1.35E+02
3	6.47	1.22E+03	157.20			1.22E+03	1.57E+02
4	9.23	5.93E+02	133.40			5.93E+02	1.33E+02
5	10.94	8.65E+03	167.89			8.65E+03	1.68E+02
6	13.22	1.93E+04	208.24			1.93E+04	2.08E+02
7	16.47	1.96E+04	343.26			1.96E+04	3.43E+02
8	19.17	4.40E+03	188.80			4.40E+03	1.89E+02
9	19.99	1.76E+03	134.39			1.76E+03	1.34E+02
10	25.81	3.41E+03	157.20			3.41E+03	1.57E+02
11	27.54	2.71E+03	152.46	3.59E+01	2.20E+01	2.68E+03	1.54E+02
12	32.27	4.14E+02	152.95			4.14E+02	1.53E+02
13	36.83	4.12E+02	151.20			4.12E+02	1.51E+02
14	40.10	4.12E+02	164.19			4.12E+02	1.64E+02
15	46.78	3.33E+04	241.84			3.33E+04	2.42E+02
16	50.29	3.30E+03	168.58			3.30E+03	1.69E+02
17	53.48	8.72E+03	193.13			8.72E+03	1.93E+02
18	63.57	3.12E+04	257.61	8.22E+01	2.83E+01	3.11E+04	2.59E+02
19	67.94	4.04E+03	208.59			4.04E+03	2.09E+02
20	75.14	4.47E+04	297.57	4.59E+01	3.14E+01	4.47E+04	2.99E+02
21	77.43	8.09E+04	346.27	5.88E+01	2.63E+01	8.08E+04	3.47E+02
22	79.71	3.60E+03	237.59			3.60E+03	2.38E+02
23	81.46	5.44E+03	203.87			5.44E+03	2.04E+02
24	84.20	1.40E+04	221.06			1.40E+04	2.21E+02
25	87.57	2.47E+04	243.37			2.47E+04	2.43E+02
26	90.29	9.58E+03	224.59			9.58E+03	2.25E+02
27	92.96	3.82E+04	273.74	2.14E+02	3.47E+01	3.79E+04	2.76E+02
28	95.14	3.11E+03	189.52			3.11E+03	1.90E+02
29	98.63	2.93E+03	183.23			2.93E+03	1.83E+02
30	105.78	6.14E+02	176.70			6.14E+02	1.77E+02
31	109.57	5.32E+02	130.24	6.16E+01	3.08E+01	4.70E+02	1.34E+02
32	111.62	3.02E+02	142.15			3.02E+02	1.42E+02
33	113.28	1.59E+03	169.34			1.59E+03	1.69E+02
34	121.08	3.34E+02	141.54			3.34E+02	1.42E+02
35	131.28	5.89E+02	195.50			5.89E+02	1.96E+02
36	144.44	4.47E+03	194.24			4.47E+03	1.94E+02
37	154.76	1.37E+03	194.91			1.37E+03	1.95E+02
38	159.23	4.60E+02	148.20			4.60E+02	1.48E+02
39	161.98	1.51E+02	96.63			1.51E+02	9.66E+01
40	163.96	1.24E+03	160.17			1.24E+03	1.60E+02
41	169.15	3.73E+02	131.85			3.73E+02	1.32E+02
42	186.71	2.79E+04	252.79	7.15E+01	3.60E+01	2.78E+04	2.55E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	202.89	4.06E+02	180.08			4.06E+02	1.80E+02
44	206.07	1.16E+03	174.03			1.16E+03	1.74E+02
45	236.82	1.50E+03	169.70			1.50E+03	1.70E+02
46	239.50	1.26E+03	143.01	7.99E+01	3.31E+01	1.18E+03	1.47E+02
47	242.92	2.00E+04	216.00			2.00E+04	2.16E+02
48	257.17	7.74E+02	134.65			7.74E+02	1.35E+02
49	259.87	1.15E+03	162.64			1.15E+03	1.63E+02
50	270.46	1.22E+03	135.88			1.22E+03	1.36E+02
51	272.37	6.53E+02	118.08			6.53E+02	1.18E+02
52	275.82	9.13E+02	161.31			9.13E+02	1.61E+02
53	282.36	2.39E+02	111.69			2.39E+02	1.12E+02
54	287.28	2.69E+02	135.26			2.69E+02	1.35E+02
55	296.37	3.87E+04	249.85			3.87E+04	2.50E+02
56	301.22	3.12E+02	128.48			3.12E+02	1.28E+02
57	303.80	2.17E+02	87.25	2.63E+01	2.09E+01	1.90E+02	8.97E+01
58	325.35	3.77E+02	131.03			3.77E+02	1.31E+02
59	331.11	4.37E+02	150.77			4.37E+02	1.51E+02
60	337.56	1.10E+02	86.89			1.10E+02	8.69E+01
61	339.57	3.82E+02	102.19			3.82E+02	1.02E+02
62	346.08	1.50E+02	133.49			1.50E+02	1.33E+02
63	353.28	5.80E+04	295.72			5.80E+04	2.96E+02
64	387.95	2.22E+02	127.58			2.22E+02	1.28E+02
65	390.43	2.03E+02	106.28			2.03E+02	1.06E+02
66	393.43	1.16E+02	86.97			1.16E+02	8.70E+01
67	403.33	5.02E+02	146.13	2.87E+01	1.13E+01	4.73E+02	1.47E+02
68	406.87	3.56E+02	142.10			3.56E+02	1.42E+02
69	476.03	1.76E+02	101.06			1.76E+02	1.01E+02
70	482.14	3.23E+02	122.03			3.23E+02	1.22E+02
71	489.22	1.05E+02	102.81			1.05E+02	1.03E+02
72	535.66	9.06E+01	83.83			9.06E+01	8.38E+01
73	545.38	1.12E+02	72.09			1.12E+02	7.21E+01
74	582.38	2.13E+02	87.48			2.13E+02	8.75E+01
75	585.26	2.82E+02	100.39	2.17E+01	1.33E+01	2.60E+02	1.01E+02
76	611.72	2.89E+04	229.26			2.89E+04	2.29E+02
77	667.99	4.87E+02	103.86			4.87E+02	1.04E+02
78	698.72	3.74E+02	41.04			3.74E+02	4.10E+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	:	6-24-96 3:52:05 PM
Sample Title	:	NOPI-310-GAM2
Spectrum Description	:	NOPI-310-GAM2
Sample Identification	:	NP310
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	:	6-07-96 8:17:51 AM
Live Time	:	80000.0 seconds
Real Time	:	80032.2 seconds

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

$-0.094 \log x + 1.207$

$-0.022 \log x + 1.048$

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

Detector Name: DET01
Sample Title: NOPI-310-GAM2
Peak Locate Performed on: 6-24-96 3:51:20 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	31.78	0.3953	5.40	4.97
2	37.62	0.3031	6.48	6.76
3	63.68	0.1979	10.94	17.23
4	76.45	0.1879	13.15	15.12
5	98.13	0.6059	16.48	2.37
6	110.73	0.1813	19.18	19.44
7	114.86	0.4030	20.05	5.32
8	149.47	0.1893	25.84	14.80
9	159.47	0.2117	27.57	11.83
10	213.07	0.3404	36.84	4.46
11	270.37	0.0851	46.81	66.90
12	291.16	0.1812	50.30	15.63
13	309.11	0.1119	53.53	36.50
14	367.33	0.0775	63.63	72.16
15	392.78	0.1543	67.98	18.68
16	434.08	0.0692	75.20	89.22
17	447.34	0.0590	77.50	111.95
18	460.13	0.1231	79.73	27.11
19	470.34	0.1178	81.51	27.97
20	486.29	0.1040	84.26	34.55
21	506.24	0.0918	87.64	36.65
22	521.11	0.1107	90.38	30.56
23	536.84	0.0743	93.04	52.44
24	549.81	0.1658	95.23	14.73
25	570.93	0.1782	98.60	13.80
26	581.27	0.4591	100.70	2.15
27	612.55	0.3418	106.03	3.50
28	633.62	0.3240	109.70	4.01
29	645.06	0.3110	111.73	4.75
30	654.22	0.1640	113.38	14.88
31	664.01	0.3971	115.37	3.13
32	709.00	0.3211	123.04	4.07
33	741.69	0.4068	128.72	2.38
34	755.31	0.3030	131.14	4.40
35	833.75	0.1251	144.53	19.52
36	850.38	0.4397	147.52	2.09
37	893.85	0.1637	154.93	13.43
38	926.57	0.3799	160.14	2.54
39	946.65	0.1765	164.13	10.57
40	1078.04	0.0706	186.86	52.94
41	1189.62	0.1865	206.35	9.19

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1221.44	0.3662	212.10	2.46
43	1367.64	0.1430	237.10	14.03
44	1383.01	0.1569	239.67	12.32
45	1402.29	0.0635	243.10	68.02
46	1484.99	0.1928	257.44	6.34
47	1500.01	0.1641	260.02	9.46
48	1561.42	0.1439	270.67	13.45
49	1571.81	0.1585	272.56	11.18
50	1592.91	0.2129	275.93	6.34
51	1658.19	0.2390	287.46	5.29
52	1710.62	0.0507	296.58	97.57
53	1738.58	0.2053	301.38	5.56
54	1753.36	0.2924	304.19	3.84
55	1808.07	0.4312	313.76	2.09
56	1876.04	0.2455	325.32	4.48
57	1911.40	0.2365	331.40	4.83
58	1960.09	0.2109	339.86	6.04
59	2039.23	0.0452	353.55	116.45
60	2125.70	0.3495	368.62	2.05
61	2156.15	0.3949	373.71	2.28
62	2241.09	0.2760	388.48	2.81
63	2253.65	0.2219	390.76	5.20
64	2328.81	0.2087	403.77	5.10
65	2626.00	0.3603	455.41	2.40
66	2636.26	0.2593	457.13	4.05
67	2784.32	0.2093	482.85	5.00
68	2823.45	0.2206	489.45	5.02
69	2841.96	0.3144	492.71	2.42
70	3065.73	0.3068	531.49	2.72
71	3091.45	0.2236	535.79	4.82
72	3148.27	0.2818	545.82	3.12
73	3195.96	0.3388	554.23	2.44
74	3361.47	0.2111	583.01	4.61
75	3530.39	0.0481	612.17	78.47
76	3566.91	0.3706	619.34	2.14
77	3826.10	0.2796	663.49	2.52
78	3855.02	0.1428	668.67	9.21
79	4027.93	0.1526	698.42	8.26

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-310-GAM2
Peak Analysis Performed on: 6-24-96 3:51:33 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	31.60	5.40	7.88E+02	124.46	5.71E+03	
2	34-	40	37.87	6.48	1.36E+03	143.85	6.94E+03	
3	60-	66	63.57	10.94	7.68E+03	155.32	5.95E+03	
4	73-	79	76.31	13.15	2.08E+04	219.96	1.00E+04	
5	92-	101	95.49	16.48	1.72E+04	316.30	2.22E+04	
6	108-	114	111.08	19.18	3.65E+03	172.93	9.34E+03	
7	114-	118	116.07	20.05	1.17E+03	125.52	5.87E+03	
8	145-	153	149.49	25.84	3.09E+03	143.40	5.36E+03	
9	155-	163	159.46	27.57	2.28E+03	139.10	5.23E+03	
10	208-	217	212.89	36.84	4.39E+02	137.64	5.25E+03	
11	265-	275	270.41	46.81	2.71E+04	220.27	5.71E+03	
12	286-	296	290.51	50.30	2.72E+03	153.39	5.49E+03	
13	303-	314	309.13	53.53	6.71E+03	176.65	6.12E+03	
14	361-	372	367.38	63.63	2.61E+04	232.97	7.03E+03	
15	387-	398	392.46	67.98	3.20E+03	178.95	7.16E+03	3.04E+03 ±3.3%
16	428-	439	434.08	75.20	3.65E+04	265.75	8.53E+03	
17	441-	453	447.35	77.50	6.55E+04	319.57	8.64E+03	
18	454-	466	460.20	79.73	3.16E+03	212.15	9.83E+03	
19	466-	476	470.48	81.51	4.83E+03	170.95	6.46E+03	
20	480-	492	486.36	84.26	1.14E+04	201.69	6.89E+03	
21	500-	512	505.83	87.64	2.05E+04	232.43	7.78E+03	
22	514-	527	521.61	90.38	7.74E+03	215.31	8.56E+03	
23	530-	543	536.94	93.04	3.17E+04	261.14	8.11E+03	
24	545-	556	549.58	95.23	3.01E+03	166.42	6.12E+03	
25	561-	577	569.02	98.60	2.79E+03	193.33	6.56E+03	
26	577-	587	581.15	100.70	2.49E+02	124.06	4.01E+03	
27	605-	619	611.85	106.03	4.01E+02	161.30	5.37E+03	
28	626-	640	633.04	109.70	4.58E+02	167.20	5.77E+03	
29	640-	648	644.76	111.73	1.81E+02	109.75	3.62E+03	
30	648-	661	654.26	113.38	1.21E+03	164.09	5.70E+03	
31	661-	670	665.75	115.37	2.19E+02	113.93	3.62E+03	
32	705-	716	709.94	123.04	2.93E+02	130.33	4.15E+03	
33	739-	748	742.69	128.72	1.77E+02	110.95	3.44E+03	
34	748-	762	756.68	131.14	2.83E+02	158.50	5.22E+03	
35	826-	841	833.88	144.53	3.23E+03	178.49	5.71E+03	
36	847-	857	851.10	147.52	1.47E+02	121.61	3.87E+03	
37	886-	901	893.84	154.93	1.75E+03	170.62	5.46E+03	
38	917-	930	923.87	160.14	1.87E+02	146.93	4.74E+03	
39	941-	954	946.87	164.13	8.68E+02	146.98	4.58E+03	
40	1069-	1086	1077.96	186.86	2.29E+04	226.36	5.15E+03	
41	1184-	1198	1190.32	206.35	8.88E+02	136.24	3.71E+03	
42	1218-	1230	1223.50	212.10	1.96E+02	111.74	2.88E+03	

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1358-	1376	1367.61	237.10	9.05E+02	155.64	4.05E+03
	44	1376-	1390	1382.45	239.67	1.09E+03	117.71	2.67E+03
	45	1393-	1411	1402.25	243.10	1.59E+04	188.13	3.39E+03
	46	1478-	1491	1484.91	257.44	6.26E+02	107.21	2.41E+03
	47	1491-	1509	1499.78	260.02	9.13E+02	140.86	3.28E+03
	48	1554-	1566	1561.17	270.67	1.14E+03	102.19	2.19E+03
	49	1566-	1577	1572.09	272.56	5.18E+02	101.71	2.45E+03
	50	1583-	1598	1591.54	275.93	5.55E+02	118.13	2.68E+03
	51	1651-	1663	1658.00	287.46	2.57E+02	97.93	2.19E+03
	52	1700-	1720	1710.62	296.58	3.11E+04	227.74	3.32E+03
	53	1731-	1746	1738.26	301.38	4.71E+02	108.18	2.24E+03
	54	1746-	1763	1754.47	304.19	1.36E+02	121.29	2.64E+03
	55	1803-	1815	1809.67	313.76	1.01E+02	86.64	1.74E+03
	56	1867-	1886	1876.32	325.32	4.65E+02	129.34	2.70E+03
	57	1904-	1916	1911.35	331.40	2.51E+02	92.50	1.95E+03
	58	1951-	1967	1960.15	339.86	3.64E+02	115.31	2.46E+03
	59	2028-	2050	2039.10	353.55	4.59E+04	267.18	3.79E+03
	60	2121-	2133	2125.96	368.62	2.02E+02	81.26	1.49E+03
	61	2148-	2161	2155.33	373.71	1.31E+02	89.51	1.75E+03
	62	2232-	2248	2240.50	388.48	1.81E+02	112.51	2.37E+03
	63	2248-	2259	2253.65	390.76	2.42E+02	82.72	1.64E+03
	64	2324-	2333	2328.68	403.77	2.88E+02	71.58	1.37E+03
M	65	2622-	2642	2626.44	455.41	8.00E+01	37.08	1.10E+03
	66	2622-	2642	2636.31	457.13	1.49E+02	52.08	1.32E+03
	67	2778-	2796	2784.63	482.85	1.60E+02	102.51	1.78E+03
	68	2810-	2835	2822.68	489.45	2.58E+02	132.03	2.29E+03
	69	2835-	2846	2841.51	492.71	9.06E+01	62.33	9.46E+02
	70	3060-	3071	3065.11	531.49	1.41E+02	58.29	8.10E+02
	71	3081-	3097	3089.88	535.79	1.60E+02	84.35	1.32E+03
	72	3143-	3155	3147.72	545.82	1.53E+02	65.38	9.57E+02
	73	3189-	3201	3196.20	554.23	9.50E+01	64.95	9.69E+02
	74	3353-	3369	3362.18	583.01	2.85E+02	83.69	1.28E+03
	75	3516-	3544	3530.32	612.17	2.35E+04	200.31	2.02E+03
	76	3561-	3580	3571.67	619.34	1.42E+02	88.49	1.28E+03
	77	3819-	3832	3826.23	663.49	1.06E+02	60.78	7.96E+02
	78	3845-	3869	3856.10	668.67	6.51E+02	105.95	1.45E+03
	79	4019-	4035	4027.64	698.42	4.54E+02	52.39	4.16E+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-310-GAM2
Peak Analysis Performed on: 6-24-96 3:51:20 PM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	5.40	7.88E+02	124.46			7.88E+02	1.24E+02	
2	6.48	1.36E+03	143.85			1.36E+03	1.44E+02	
3	10.94	7.68E+03	155.32	1.65E+02	3.84E+01	7.51E+03	1.60E+02	
4	13.15	2.08E+04	219.96			2.08E+04	2.20E+02	
5	16.48	1.72E+04	316.30			1.72E+04	3.16E+02	
6	19.18	3.65E+03	172.93	4.29E+01	2.25E+01	3.61E+03	1.74E+02	
7	20.05	1.17E+03	125.52			1.17E+03	1.26E+02	
8	25.84	3.09E+03	143.40			3.09E+03	1.43E+02	
9	27.57	2.28E+03	139.10			2.28E+03	1.39E+02	
10	36.84	4.39E+02	137.64			4.39E+02	1.38E+02	
11	46.81	2.71E+04	220.27			2.71E+04	2.20E+02	
12	50.30	2.72E+03	153.39			2.72E+03	1.53E+02	
13	53.53	6.71E+03	176.65	3.59E+01	1.79E+01	6.67E+03	1.78E+02	
14	63.63	2.61E+04	232.97	6.18E+01	2.67E+01	2.61E+04	2.34E+02	
15	67.98	3.20E+03	178.95			3.20E+03	1.79E+02	3.04E03 ± 33%
16	75.20	3.65E+04	265.75	1.05E+02	2.88E+01	3.64E+04	2.67E+02	
17	77.50	6.55E+04	319.57	5.62E+01	2.81E+01	6.54E+04	3.21E+02	
18	79.73	3.16E+03	212.15	3.91E+01	2.94E+01	3.12E+03	2.14E+02	
19	81.51	4.83E+03	170.95			4.83E+03	1.71E+02	
20	84.26	1.14E+04	201.69	5.33E+01	2.88E+01	1.13E+04	2.04E+02	
21	87.64	2.05E+04	232.43	9.34E+01	3.38E+01	2.04E+04	2.35E+02	
22	90.38	7.74E+03	215.31			7.74E+03	2.15E+02	
23	93.04	3.17E+04	261.14	1.47E+02	3.61E+01	3.15E+04	2.64E+02	
24	95.23	3.01E+03	166.42			3.01E+03	1.66E+02	
25	98.60	2.79E+03	193.33			2.79E+03	1.93E+02	
26	100.70	2.49E+02	124.06			2.49E+02	1.24E+02	
27	106.03	4.01E+02	161.30			4.01E+02	1.61E+02	
28	109.70	4.58E+02	167.20			4.58E+02	1.67E+02	
29	111.73	1.81E+02	109.75			1.81E+02	1.10E+02	
30	113.38	1.21E+03	164.09			1.21E+03	1.64E+02	
31	115.37	2.19E+02	113.93			2.19E+02	1.14E+02	
32	123.04	2.93E+02	130.33			2.93E+02	1.30E+02	
33	128.72	1.77E+02	110.95			1.77E+02	1.11E+02	
34	131.14	2.83E+02	158.50			2.83E+02	1.59E+02	
35	144.53	3.23E+03	178.49	3.99E+01	3.90E+01	3.19E+03	1.83E+02	
36	147.52	1.47E+02	121.61			1.47E+02	1.22E+02	
37	154.93	1.75E+03	170.62			1.75E+03	1.71E+02	
38	160.14	1.87E+02	146.93			1.87E+02	1.47E+02	
39	164.13	8.68E+02	146.98			8.68E+02	1.47E+02	
40	186.86	2.29E+04	226.36	1.27E+02	2.61E+01	2.28E+04	2.28E+02	
41	206.35	8.88E+02	136.24			8.88E+02	1.36E+02	
42	212.10	1.96E+02	111.74			1.96E+02	1.12E+02	

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	237.10	9.05E+02	155.64			9.05E+02	1.56E+02
44	239.67	1.09E+03	117.71	7.46E+01	3.11E+01	1.01E+03	1.22E+02
45	243.10	1.59E+04	188.13			1.59E+04	1.88E+02
46	257.44	6.26E+02	107.21			6.26E+02	1.07E+02
47	260.02	9.13E+02	140.86			9.13E+02	1.41E+02
48	270.67	1.14E+03	102.19			1.14E+03	1.02E+02
49	272.56	5.18E+02	101.71			5.18E+02	1.02E+02
50	275.93	5.55E+02	118.13			5.55E+02	1.18E+02
51	287.46	2.57E+02	97.93			2.57E+02	9.79E+01
52	296.58	3.11E+04	227.74	3.73E+01	2.91E+01	3.11E+04	2.30E+02
53	301.38	4.71E+02	108.18	4.02E+01	2.33E+01	4.30E+02	1.11E+02
54	304.19	1.36E+02	121.29			1.36E+02	1.21E+02
55	313.76	1.01E+02	86.64			1.01E+02	8.66E+01
56	325.32	4.65E+02	129.34			4.65E+02	1.29E+02
57	331.40	2.51E+02	92.50	4.04E+01	1.66E+01	2.11E+02	9.40E+01
58	339.86	3.64E+02	115.31			3.64E+02	1.15E+02
59	353.55	4.59E+04	267.18	5.65E+01	2.27E+01	4.58E+04	2.68E+02
60	368.62	2.02E+02	81.26	3.42E+01	2.84E+01	1.68E+02	8.61E+01
61	373.71	1.31E+02	89.51			1.31E+02	8.95E+01
62	388.48	1.81E+02	112.51			1.81E+02	1.13E+02
63	390.76	2.42E+02	82.72	3.43E+01	2.83E+01	2.08E+02	8.74E+01
64	403.77	2.88E+02	71.58			2.88E+02	7.16E+01
M 65	455.41	8.00E+01	37.08			8.00E+01	3.71E+01
66	457.13	1.49E+02	52.08			1.49E+02	5.21E+01
67	482.85	1.60E+02	102.51			1.60E+02	1.03E+02
68	489.45	2.58E+02	132.03			2.58E+02	1.32E+02
69	492.71	9.06E+01	62.33			9.06E+01	6.23E+01
70	531.49	1.41E+02	58.29	3.43E+01	1.87E+01	1.07E+02	6.12E+01
71	535.79	1.60E+02	84.35			1.60E+02	8.44E+01
72	545.82	1.53E+02	65.38			1.53E+02	6.54E+01
73	554.23	9.50E+01	64.95			9.50E+01	6.50E+01
74	583.01	2.85E+02	83.69			2.85E+02	8.37E+01
75	612.17	2.35E+04	200.31			2.35E+04	2.00E+02
76	619.34	1.42E+02	88.49			1.42E+02	8.85E+01
77	663.49	1.06E+02	60.78			1.06E+02	6.08E+01
78	668.67	6.51E+02	105.95			6.51E+02	1.06E+02
79	698.42	4.54E+02	52.39	1.84E+01	7.82E+00	4.36E+02	5.30E+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                  :  5-09-96  7:38:59 AM

Sample Title                         : NOPI-311-GAM2
Spectrum Description                 : NOPI-311-GAM2
Sample Identification                : NP311
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                  :  5-08-96  7:44:47 AM

Live Time                            :    80000.0 seconds
Real Time                            :    80029.4 seconds


          Energy Calibration Used Done On        :  1-16-96
          Efficiency Calibration Used Done On    : ????????
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$-0.219105x + 1.457$

$-0.146109x + 1.296$

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

Detector Name: DET01
Sample Title: NOPI-311-GAM2
Peak Locate Performed on: 5-09-96 7:38:17 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	31.29	0.4917	5.39	2.18
2	37.46	0.3153	6.44	5.40
3	63.56	0.2235	10.94	11.20
4	76.39	0.2045	13.14	14.64
5	94.58	0.1794	16.41	18.00
6	110.58	0.1896	19.20	16.22
7	118.00	0.6025	19.95	2.75
8	149.38	0.2002	25.79	13.36
9	159.42	0.2187	27.55	11.86
10	212.83	0.3365	36.84	4.96
11	270.14	0.0864	46.77	64.20
12	290.72	0.2003	50.21	12.87
13	308.89	0.1138	53.49	35.04
14	367.02	0.0790	63.56	72.12
15	392.43	0.1671	67.95	14.26
16	409.81	0.4500	71.15	2.33
17	433.73	0.0696	75.12	83.74
18	446.97	0.0616	77.42	111.99
19	459.61	0.1269	79.69	24.08
20	469.92	0.1273	81.45	26.68
21	485.79	0.1112	84.20	30.94
22	505.74	0.0942	87.57	38.36
23	520.63	0.1122	90.26	28.38
24	536.34	0.0785	92.95	47.23
25	549.17	0.1659	95.13	13.09
26	570.29	0.1910	98.59	10.88
27	597.75	0.4154	103.36	2.50
28	611.05	0.3532	105.97	2.89
29	653.47	0.1708	113.29	12.26
30	681.75	0.3941	118.17	2.57
31	709.10	0.3019	123.07	4.81
32	833.11	0.1299	144.44	18.88
33	893.01	0.1757	154.86	10.94
34	945.82	0.1916	163.85	8.69
35	1077.26	0.0720	186.70	48.17
36	1188.74	0.2047	206.01	6.51
37	1211.01	0.3663	209.46	2.50
38	1253.89	0.4388	216.91	2.02
39	1366.63	0.1540	236.91	11.65
40	1381.54	0.1569	239.57	10.68
41	1401.14	0.0656	242.91	65.11

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1483.97	0.2103	257.31	6.31
43	1498.54	0.1594	259.86	10.75
44	1560.12	0.1494	270.45	12.43
45	1570.51	0.1723	272.31	10.40
46	1591.36	0.2260	275.77	6.04
47	1642.47	0.3286	284.67	2.12
48	1656.16	0.2561	287.04	4.72
49	1709.32	0.0523	296.36	90.88
50	1725.30	0.3677	298.96	2.47
51	1736.90	0.2036	301.21	5.82
52	1875.14	0.2358	325.08	5.02
53	1909.60	0.2888	330.72	3.28
54	1959.03	0.2337	339.42	4.42
55	2037.54	0.0465	353.27	106.52
56	2198.78	0.3346	381.01	2.37
57	2251.95	0.2346	390.39	4.83
58	2326.50	0.2527	403.28	3.63
59	2345.99	0.3434	406.82	2.08
60	2472.55	0.3240	428.58	2.32
61	2783.15	0.2692	482.51	2.77
62	2820.08	0.2215	489.17	5.07
63	3088.46	0.2719	535.74	2.63
64	3356.51	0.2362	581.97	2.15
65	3377.84	0.2487	585.97	3.43
66	3527.57	0.0505	611.69	69.49
67	3852.04	0.1495	668.06	8.10
68	4027.82	0.1494	698.63	8.09

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-311-GAM2
Peak Analysis Performed on: 5-09-96 7:38:34 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	28-	34	31.57	5.39	3.51E+02	127.21	5.68E+03
2	34-	40	37.60	6.44	8.69E+02	131.67	5.94E+03
3	60-	66	63.57	10.94	5.17E+03	136.68	4.90E+03
4	73-	79	76.25	13.14	1.42E+04	189.20	7.85E+03
5	92-	98	95.14	16.41	1.16E+04	227.98	1.43E+04
6	107-	114	111.21	19.20	2.64E+03	169.37	8.64E+03
7	114-	121	115.55	19.95	5.15E+02	153.99	7.21E+03
8	145-	153	149.19	25.79	2.40E+03	134.88	4.83E+03
9	155-	163	159.34	27.55	1.82E+03	129.60	4.59E+03
10	208-	217	212.89	36.84	2.57E+02	129.59	4.70E+03
11	265-	275	270.18	46.77	2.21E+04	204.26	5.23E+03
12	285-	295	290.01	50.21	2.42E+03	146.81	5.07E+03
13	303-	314	308.90	53.49	6.16E+03	167.52	5.47E+03
14	361-	372	367.00	63.56	2.31E+04	220.99	6.44E+03
15	386-	398	392.28	67.95	2.50E+03	183.05	7.27E+03
16	409-	415	410.77	71.15	2.29E+02	105.01	3.85E+03
17	427-	439	433.66	75.12	3.36E+04	265.19	8.64E+03
18	441-	452	446.91	77.42	6.02E+04	300.36	7.50E+03
19	453-	465	459.97	79.69	2.32E+03	206.86	9.48E+03
20	465-	475	470.12	81.45	3.92E+03	163.99	6.12E+03
21	479-	491	486.00	84.20	9.86E+03	190.48	6.21E+03
22	501-	511	505.40	87.57	1.85E+04	209.72	6.65E+03
23	514-	526	520.95	90.26	7.49E+03	194.37	7.12E+03
24	530-	542	536.45	92.95	2.84E+04	236.64	6.47E+03
25	545-	555	549.04	95.13	2.26E+03	150.79	5.40E+03
26	563-	576	569.00	98.59	2.35E+03	159.20	5.07E+03
27	591-	604	596.45	103.36	4.00E+02	144.66	4.53E+03
28	604-	617	611.55	105.97	3.87E+02	145.81	4.63E+03
29	648-	660	653.70	113.29	1.39E+03	144.76	4.58E+03
30	678-	685	681.87	118.17	1.20E+02	87.40	2.48E+03
31	705-	716	710.10	123.07	4.00E+02	122.75	3.65E+03
32	825-	840	833.33	144.44	3.21E+03	171.82	5.26E+03
33	887-	900	893.40	154.86	1.13E+03	149.00	4.67E+03
34	937-	953	945.24	163.85	8.95E+02	166.17	5.07E+03
35	1068-	1085	1077.03	186.70	2.10E+04	218.88	4.89E+03
36	1182-	1197	1188.36	206.01	7.12E+02	138.96	3.69E+03
37	1202-	1215	1208.23	209.46	4.05E+02	113.62	2.77E+03
38	1245-	1257	1251.21	216.91	2.10E+02	103.51	2.46E+03
39	1357-	1375	1366.52	236.91	1.02E+03	145.64	3.51E+03
40	1375-	1390	1381.84	239.57	8.76E+02	127.08	3.04E+03
41	1391-	1410	1401.15	242.91	1.51E+04	188.69	3.41E+03
42	1479-	1490	1484.17	257.31	3.21E+02	92.89	2.07E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1490-	1508	1498.84	259.86	8.83E+02	134.37	2.98E+03
44	1553-	1566	1559.93	270.45	7.59E+02	110.74	2.54E+03
45	1566-	1577	1570.65	272.31	5.73E+02	92.34	1.97E+03
46	1581-	1601	1590.62	275.77	7.71E+02	139.42	2.98E+03
47	1638-	1649	1641.95	284.67	1.02E+02	86.64	1.83E+03
48	1649-	1661	1655.61	287.04	2.46E+02	93.39	1.99E+03
49	1699-	1719	1709.30	296.36	2.92E+04	217.16	2.88E+03
50	1721-	1730	1724.29	298.96	1.09E+02	67.58	1.26E+03
51	1730-	1747	1737.30	301.21	3.37E+02	114.73	2.32E+03
52	1868-	1881	1874.94	325.08	2.46E+02	92.24	1.83E+03
53	1899-	1914	1907.44	330.72	3.43E+02	104.70	2.12E+03
54	1948-	1964	1957.59	339.42	4.60E+02	112.67	2.33E+03
55	2026-	2048	2037.50	353.27	4.35E+04	257.47	3.38E+03
56	2192-	2205	2197.44	381.01	1.46E+02	84.35	1.54E+03
57	2243-	2263	2251.49	390.39	3.04E+02	129.40	2.62E+03
58	2315-	2335	2325.86	403.28	3.86E+02	126.64	2.50E+03
59	2335-	2357	2346.27	406.82	2.50E+02	139.27	2.83E+03
60	2468-	2479	2471.71	428.58	1.37E+02	76.86	1.42E+03
61	2773-	2795	2782.67	482.51	1.71E+02	114.15	1.90E+03
62	2816-	2828	2821.07	489.17	1.67E+02	69.76	1.10E+03
63	3080-	3099	3089.60	535.74	2.00E+02	93.31	1.42E+03
64	3346-	3369	3356.16	581.97	1.50E+02	111.17	1.74E+03
65	3369-	3391	3379.21	585.97	2.17E+02	104.32	1.58E+03
66	3513-	3541	3527.56	611.69	2.15E+04	199.38	2.21E+03
67	3843-	3866	3852.59	668.06	5.16E+02	102.68	1.43E+03
68	4022-	4035	4028.84	698.63	3.44E+02	44.08	3.17E+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-311-GAM2
Peak Analysis Performed on: 5-09-96 7:38:17 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.39	3.51E+02	127.21			3.51E+02	1.27E+02
2	6.44	8.69E+02	131.67			8.69E+02	1.32E+02
3	10.94	5.17E+03	136.68			5.17E+03	1.37E+02
4	13.14	1.42E+04	189.20			1.42E+04	1.89E+02
5	16.41	1.16E+04	227.98			1.16E+04	2.28E+02
6	19.20	2.64E+03	169.37			2.64E+03	1.69E+02
7	19.95	5.15E+02	153.99			5.15E+02	1.54E+02
8	25.79	2.40E+03	134.88			2.40E+03	1.35E+02
9	27.55	1.82E+03	129.60	3.59E+01	2.20E+01	1.78E+03	1.31E+02
10	36.84	2.57E+02	129.59			2.57E+02	1.30E+02
11	46.77	2.21E+04	204.26			2.21E+04	2.04E+02
12	50.21	2.42E+03	146.81			2.42E+03	1.47E+02
13	53.49	6.16E+03	167.52			6.16E+03	1.68E+02
14	63.56	2.31E+04	220.99	8.22E+01	2.83E+01	2.30E+04	2.23E+02
15	67.95	2.50E+03	183.05			2.50E+03	1.83E+02
16	71.15	2.29E+02	105.01			2.29E+02	1.05E+02
17	75.12	3.36E+04	265.19	4.59E+01	3.14E+01	3.36E+04	2.67E+02
18	77.42	6.02E+04	300.36	5.88E+01	2.63E+01	6.02E+04	3.02E+02
19	79.69	2.32E+03	206.86			2.32E+03	2.07E+02
20	81.45	3.92E+03	163.99			3.92E+03	1.64E+02
21	84.20	9.86E+03	190.48			9.86E+03	1.90E+02
22	87.57	1.85E+04	209.72			1.85E+04	2.10E+02
23	90.26	7.49E+03	194.37			7.49E+03	1.94E+02
24	92.95	2.84E+04	236.64	2.14E+02	3.47E+01	2.82E+04	2.39E+02
25	95.13	2.26E+03	150.79			2.26E+03	1.51E+02
26	98.59	2.35E+03	159.20			2.35E+03	1.59E+02
27	103.36	4.00E+02	144.66			4.00E+02	1.45E+02
28	105.97	3.87E+02	145.81			3.87E+02	1.46E+02
29	113.29	1.39E+03	144.76			1.39E+03	1.45E+02
30	118.17	1.20E+02	87.40			1.20E+02	8.74E+01
31	123.07	4.00E+02	122.75			4.00E+02	1.23E+02
32	144.44	3.21E+03	171.82			3.21E+03	1.72E+02
33	154.86	1.13E+03	149.00			1.13E+03	1.49E+02
34	163.85	8.95E+02	166.17			8.95E+02	1.66E+02
35	186.70	2.10E+04	218.88	7.15E+01	3.60E+01	2.10E+04	2.22E+02
36	206.01	7.12E+02	138.96			7.12E+02	1.39E+02
37	209.46	4.05E+02	113.62			4.05E+02	1.14E+02
38	216.91	2.10E+02	103.51			2.10E+02	1.04E+02
39	236.91	1.02E+03	145.64			1.02E+03	1.46E+02
40	239.57	8.76E+02	127.08	7.99E+01	3.31E+01	7.96E+02	1.31E+02
41	242.91	1.51E+04	188.69			1.51E+04	1.89E+02
42	257.31	3.21E+02	92.89			3.21E+02	9.29E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	259.86	8.83E+02	134.37			8.83E+02	1.34E+02
44	270.45	7.59E+02	110.74			7.59E+02	1.11E+02
45	272.31	5.73E+02	92.34			5.73E+02	9.23E+01
46	275.77	7.71E+02	139.42			7.71E+02	1.39E+02
47	284.67	1.02E+02	86.64			1.02E+02	8.66E+01
48	287.04	2.46E+02	93.39			2.46E+02	9.34E+01
49	296.36	2.92E+04	217.16			2.92E+04	2.17E+02
50	298.96	1.09E+02	67.58			1.09E+02	6.76E+01
51	301.21	3.37E+02	114.73			3.37E+02	1.15E+02
52	325.08	2.46E+02	92.24			2.46E+02	9.22E+01
53	330.72	3.43E+02	104.70			3.43E+02	1.05E+02
54	339.42	4.60E+02	112.67			4.60E+02	1.13E+02
55	353.27	4.35E+04	257.47			4.35E+04	2.57E+02
56	381.01	1.46E+02	84.35			1.46E+02	8.44E+01
57	390.39	3.04E+02	129.40			3.04E+02	1.29E+02
58	403.28	3.86E+02	126.64	2.87E+01	1.13E+01	3.58E+02	1.27E+02
59	406.82	2.50E+02	139.27			2.50E+02	1.39E+02
60	428.58	1.37E+02	76.86			1.37E+02	7.69E+01
61	482.51	1.71E+02	114.15			1.71E+02	1.14E+02
62	489.17	1.67E+02	69.76			1.67E+02	6.98E+01
63	535.74	2.00E+02	93.31			2.00E+02	9.33E+01
64	581.97	1.50E+02	111.17			1.50E+02	1.11E+02
65	585.97	2.17E+02	104.32	2.17E+01	1.33E+01	1.96E+02	1.05E+02
66	611.69	2.15E+04	199.38			2.15E+04	1.99E+02
67	668.06	5.16E+02	102.68			5.16E+02	1.03E+02
68	698.63	3.44E+02	44.08			3.44E+02	4.41E+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              :  6-25-96  7:42:48 AM

Sample Title                     : NOPI-312-GAM2
Spectrum Description             : NOPI-312-GAM2
Sample Identification            : NP312
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              :  6-10-96 10:07:46 AM

Live Time                        :    80000.0 seconds
Real Time                        :    80024.8 seconds


          Energy Calibration Used Done On        :  1-16-96
          Efficiency Calibration Used Done On    : ????????
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-0.008 log x + 1.025
0.059 log y + 0.876

****
***** 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-312-GAM2
Peak Locate Performed on: 6-25-96 7:42:13 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	31.63	0.4540	5.44	2.37
2	37.52	0.3160	6.49	5.24
3	63.69	0.2158	10.97	14.79
4	76.57	0.1927	13.16	13.01
5	98.06	0.5664	16.51	2.92
6	111.06	0.1898	19.18	18.94
7	115.00	0.3733	20.05	7.18
8	149.67	0.2041	25.87	13.45
9	159.67	0.2223	27.62	11.55
10	212.98	0.4182	36.85	2.71
11	270.70	0.0906	46.86	59.53
12	291.24	0.2108	50.31	10.65
13	309.37	0.1241	53.57	28.45
14	367.74	0.0841	63.67	62.05
15	393.07	0.1654	68.09	16.96
16	434.44	0.0731	75.25	71.48
17	447.66	0.0635	77.55	96.99
18	460.45	0.1352	79.82	21.15
19	470.82	0.1281	81.58	25.81
20	486.62	0.1149	84.33	27.38
21	506.49	0.0994	87.69	33.39
22	521.46	0.1161	90.43	26.42
23	537.19	0.0808	93.09	44.38
24	549.88	0.1747	95.29	12.93
25	571.13	0.2048	98.79	10.25
26	581.22	0.5463	100.69	2.44
27	612.89	0.4194	106.11	2.24
28	632.92	0.2871	109.54	5.11
29	654.61	0.1771	113.45	11.61
30	756.17	0.3665	131.25	2.94
31	821.46	0.5126	141.72	2.05
32	834.20	0.1386	144.63	16.38
33	894.38	0.1736	155.01	11.30
34	947.26	0.2088	164.08	6.42
35	1078.61	0.0748	186.95	45.28
36	1190.80	0.2051	206.58	7.10
37	1333.24	0.4160	231.20	2.14
38	1368.43	0.1613	237.09	10.73
39	1383.61	0.1346	239.85	15.22
40	1403.04	0.0685	243.23	59.64
41	1485.69	0.2016	257.57	6.95

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1500.90	0.1731	260.18	8.75
43	1562.07	0.1432	270.84	13.82
44	1572.63	0.1635	272.73	11.32
45	1594.20	0.2226	276.29	5.93
46	1658.44	0.2706	287.68	3.76
47	1711.54	0.0546	296.74	83.27
48	1738.93	0.2134	301.49	5.42
49	1754.85	0.2998	304.22	3.02
50	1764.99	0.3346	306.13	2.63
51	1877.17	0.2532	325.65	4.04
52	1961.90	0.2409	340.22	5.08
53	2022.32	0.3305	350.68	2.72
54	2040.24	0.0486	353.73	100.87
55	2243.10	0.3341	388.93	2.64
56	2254.83	0.2557	390.88	3.60
57	2329.61	0.2129	403.86	5.74
58	2461.59	0.3396	426.55	2.39
59	2578.95	0.3252	447.24	2.20
60	2637.00	0.2737	457.60	3.06
61	2680.03	0.2936	464.68	2.76
62	2739.06	0.3532	474.55	2.40
63	2784.69	0.2116	483.27	5.71
64	2823.57	0.2381	489.79	4.37
65	2961.96	0.2440	513.51	2.62
66	3532.02	0.0517	612.46	69.81
67	3766.54	0.3350	653.09	2.08
68	3857.68	0.1541	668.83	7.36
69	4028.20	0.1664	698.35	6.04

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-312-GAM2
Peak Analysis Performed on: 6-25-96 7:42:23 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	31.86	5.44	2.91E+02	123.37	5.33E+03	
2	34-	40	37.89	6.49	1.20E+03	127.78	5.45E+03	
3	60-	66	63.75	10.97	5.82E+03	135.68	4.57E+03	
4	73-	79	76.38	13.16	1.64E+04	194.05	7.72E+03	
5	92-	101	95.66	16.51	1.38E+04	277.48	1.70E+04	
6	108-	114	111.07	19.18	2.45E+03	152.09	7.33E+03	
7	114-	118	116.10	20.05	9.90E+02	110.81	4.53E+03	
8	145-	153	149.65	25.87	2.26E+03	123.74	4.01E+03	
9	155-	163	159.77	27.62	1.76E+03	118.83	3.80E+03	
10	208-	217	212.95	36.85	5.14E+02	116.55	3.71E+03	
11	265-	275	270.66	46.86	2.01E+04	188.69	4.12E+03	
12	286-	296	290.61	50.31	1.80E+03	132.60	4.17E+03	
13	304-	314	309.36	53.57	4.69E+03	143.65	4.24E+03	
14	362-	373	367.64	63.67	1.91E+04	200.55	5.26E+03	
15	387-	398	393.13	68.09	2.10E+03	154.05	5.40E+03	2.06E+03 ± 4.15%
16	428-	440	434.41	75.25	2.71E+04	237.58	6.91E+03	
17	441-	453	447.64	77.55	4.82E+04	275.28	6.49E+03	
18	454-	466	460.73	79.82	2.17E+03	181.97	7.28E+03	
19	466-	476	470.90	81.58	3.52E+03	147.21	4.83E+03	
20	480-	492	486.72	84.33	8.39E+03	171.53	4.95E+03	
21	500-	512	506.10	87.69	1.55E+04	199.40	5.66E+03	
22	515-	527	521.92	90.43	6.16E+03	173.29	5.61E+03	
23	530-	543	537.28	93.09	2.35E+04	223.28	5.87E+03	
24	545-	556	549.97	95.29	2.12E+03	147.43	4.88E+03	
25	564-	577	570.11	98.79	1.94E+03	142.45	4.06E+03	
26	577-	584	581.08	100.69	1.55E+02	83.04	2.23E+03	
27	605-	619	612.30	106.11	3.99E+02	140.27	4.05E+03	
28	626-	639	632.12	109.54	3.02E+02	138.30	4.16E+03	
29	649-	661	654.64	113.45	9.56E+02	133.08	3.93E+03	
30	748-	763	757.31	131.25	2.88E+02	146.27	4.22E+03	
31	811-	824	817.65	141.72	1.45E+02	129.21	3.66E+03	
32	826-	841	834.45	144.63	2.89E+03	152.60	4.08E+03	
33	888-	899	894.31	155.01	9.90E+02	118.36	3.25E+03	
34	939-	952	946.61	164.08	7.95E+02	125.13	3.30E+03	
35	1070-	1086	1078.47	186.95	1.71E+04	190.89	3.69E+03	
36	1186-	1199	1191.63	206.58	7.66E+02	109.52	2.48E+03	
37	1329-	1337	1333.58	231.20	1.73E+02	64.01	1.20E+03	
38	1359-	1375	1367.59	237.09	9.93E+02	118.61	2.49E+03	
39	1375-	1392	1383.46	239.85	1.42E+03	127.24	2.68E+03	
40	1393-	1412	1402.95	243.23	1.17E+04	172.81	3.03E+03	
41	1479-	1492	1485.68	257.57	3.46E+02	94.05	1.88E+03	
42	1492-	1510	1500.72	260.18	8.06E+02	119.15	2.32E+03	

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1556-	1567	1562.18	270.84	7.91E+02	85.21	1.61E+03
	44	1567-	1580	1573.08	272.73	3.40E+02	100.41	2.16E+03
	45	1584-	1600	1593.60	276.29	3.09E+02	109.85	2.24E+03
	46	1650-	1668	1659.25	287.68	1.41E+02	118.28	2.41E+03
	47	1701-	1721	1711.51	296.74	2.29E+04	196.38	2.50E+03
	48	1732-	1749	1738.92	301.49	2.01E+02	107.75	2.07E+03
M	49	1749-	1775	1754.63	304.22	1.67E+02	51.26	1.56E+03
m	50	1749-	1775	1765.68	306.13	1.76E+02	52.16	1.95E+03
	51	1871-	1887	1878.22	325.65	2.88E+02	97.30	1.74E+03
	52	1957-	1968	1962.24	340.22	1.62E+02	75.98	1.40E+03
	53	2017-	2027	2022.51	350.68	1.23E+02	71.80	1.33E+03
	54	2029-	2051	2040.13	353.73	3.44E+04	228.35	2.64E+03
	55	2235-	2248	2243.11	388.93	1.26E+02	80.88	1.42E+03
	56	2248-	2262	2254.33	390.88	2.84E+02	85.33	1.46E+03
	57	2322-	2334	2329.19	403.86	2.36E+02	78.19	1.38E+03
	58	2454-	2467	2460.01	426.55	9.14E+01	78.41	1.34E+03
	59	2571-	2584	2579.33	447.24	1.25E+02	68.24	1.01E+03
	60	2630-	2647	2639.02	457.60	1.99E+02	85.33	1.29E+03
	61	2673-	2686	2679.87	464.68	1.13E+02	67.87	9.96E+02
	62	2730-	2744	2736.77	474.55	8.50E+01	68.43	9.66E+02
	63	2778-	2802	2787.09	483.27	2.58E+02	109.71	1.62E+03
	64	2817-	2836	2824.64	489.79	1.51E+02	91.47	1.36E+03
	65	2952-	2974	2961.41	513.51	4.09E+02	103.14	1.51E+03
	66	3518-	3545	3531.99	612.46	1.72E+04	173.21	1.59E+03
	67	3760-	3776	3766.24	653.09	8.81E+01	63.25	7.39E+02
	68	3843-	3871	3857.03	668.83	5.01E+02	104.61	1.27E+03
	69	4020-	4035	4027.22	698.35	3.98E+02	39.27	2.28E+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-312-GAM2
Peak Analysis Performed on: 6-25-96 7:42:13 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.44	2.91E+02	123.37			2.91E+02	1.23E+02
2	6.49	1.20E+03	127.78			1.20E+03	1.28E+02
3	10.97	5.82E+03	135.68	1.65E+02	3.84E+01	5.65E+03	1.41E+02
4	13.16	1.64E+04	194.05			1.64E+04	1.94E+02
5	16.51	1.38E+04	277.48			1.38E+04	2.77E+02
6	19.18	2.45E+03	152.09	4.29E+01	2.25E+01	2.41E+03	1.54E+02
7	20.05	9.90E+02	110.81			9.90E+02	1.11E+02
8	25.87	2.26E+03	123.74			2.26E+03	1.24E+02
9	27.62	1.76E+03	118.83			1.76E+03	1.19E+02
10	36.85	5.14E+02	116.55			5.14E+02	1.17E+02
11	46.86	2.01E+04	188.69			2.01E+04	1.89E+02
12	50.31	1.80E+03	132.60			1.80E+03	1.33E+02
13	53.57	4.69E+03	143.65	3.59E+01	1.79E+01	4.65E+03	1.45E+02
14	63.67	1.91E+04	200.55	6.18E+01	2.67E+01	1.91E+04	2.02E+02
15	68.09	2.10E+03	154.05			2.10E+03	1.54E+02
16	75.25	2.71E+04	237.58	1.05E+02	2.88E+01	2.70E+04	2.39E+02
17	77.55	4.82E+04	275.28	5.62E+01	2.81E+01	4.81E+04	2.77E+02
18	79.82	2.17E+03	181.97	3.91E+01	2.94E+01	2.13E+03	1.84E+02
19	81.58	3.52E+03	147.21			3.52E+03	1.47E+02
20	84.33	8.39E+03	171.53	5.33E+01	2.88E+01	8.33E+03	1.74E+02
21	87.69	1.55E+04	199.40	9.34E+01	3.38E+01	1.54E+04	2.02E+02
22	90.43	6.16E+03	173.29			6.16E+03	1.73E+02
23	93.09	2.35E+04	223.28	1.47E+02	3.61E+01	2.34E+04	2.26E+02
24	95.29	2.12E+03	147.43			2.12E+03	1.47E+02
25	98.79	1.94E+03	142.45			1.94E+03	1.42E+02
26	100.69	1.55E+02	83.04			1.55E+02	8.30E+01
27	106.11	3.99E+02	140.27			3.99E+02	1.40E+02
28	109.54	3.02E+02	138.30			3.02E+02	1.38E+02
29	113.45	9.56E+02	133.08			9.56E+02	1.33E+02
30	131.25	2.88E+02	146.27			2.88E+02	1.46E+02
31	141.72	1.45E+02	129.21			1.45E+02	1.29E+02
32	144.63	2.89E+03	152.60	3.99E+01	3.90E+01	2.85E+03	1.58E+02
33	155.01	9.90E+02	118.36			9.90E+02	1.18E+02
34	164.08	7.95E+02	125.13			7.95E+02	1.25E+02
35	186.95	1.71E+04	190.89	1.27E+02	2.61E+01	1.69E+04	1.93E+02
36	206.58	7.66E+02	109.52			7.66E+02	1.10E+02
37	231.20	1.73E+02	64.01			1.73E+02	6.40E+01
38	237.09	9.93E+02	118.61			9.93E+02	1.19E+02
39	239.85	1.42E+03	127.24	7.46E+01	3.11E+01	1.35E+03	1.31E+02
40	243.23	1.17E+04	172.81			1.17E+04	1.73E+02
41	257.57	3.46E+02	94.05			3.46E+02	9.41E+01
42	260.18	8.06E+02	119.15			8.06E+02	1.19E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	270.84	7.91E+02	85.21			7.91E+02	8.52E+01
44	272.73	3.40E+02	100.41			3.40E+02	1.00E+02
45	276.29	3.09E+02	109.85			3.09E+02	1.10E+02
46	287.68	1.41E+02	118.28			1.41E+02	1.18E+02
47	296.74	2.29E+04	196.38	3.73E+01	2.91E+01	2.29E+04	1.99E+02
48	301.49	2.01E+02	107.75			2.01E+02	1.08E+02
M 49	304.22	1.67E+02	51.26			1.67E+02	5.13E+01
m 50	306.13	1.76E+02	52.16			1.76E+02	5.22E+01
51	325.65	2.88E+02	97.30			2.88E+02	9.73E+01
52	340.22	1.62E+02	75.98			1.62E+02	7.60E+01
53	350.68	1.23E+02	71.80			1.23E+02	7.18E+01
54	353.73	3.44E+04	228.35	5.65E+01	2.27E+01	3.44E+04	2.29E+02
55	388.93	1.26E+02	80.88			1.26E+02	8.09E+01
56	390.88	2.84E+02	85.33	3.43E+01	2.83E+01	2.50E+02	8.99E+01
57	403.86	2.36E+02	78.19			2.36E+02	7.82E+01
58	426.55	9.14E+01	78.41			9.14E+01	7.84E+01
59	447.24	1.25E+02	68.24			1.25E+02	6.82E+01
60	457.60	1.99E+02	85.33			1.99E+02	8.53E+01
61	464.68	1.13E+02	67.87			1.13E+02	6.79E+01
62	474.55	8.50E+01	68.43			8.50E+01	6.84E+01
63	483.27	2.58E+02	109.71			2.58E+02	1.10E+02
64	489.79	1.51E+02	91.47			1.51E+02	9.15E+01
65	513.51	4.09E+02	103.14	2.06E+02	4.26E+01	2.03E+02	1.12E+02
66	612.46	1.72E+04	173.21			1.72E+04	1.73E+02
67	653.09	8.81E+01	63.25			8.81E+01	6.33E+01
68	668.83	5.01E+02	104.61			5.01E+02	1.05E+02
69	698.35	3.98E+02	39.27	1.84E+01	7.82E+00	3.79E+02	4.00E+01

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

Errors quoted at 1.000 sigma

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

Report Generated On              :  6-25-96  7:44:13 AM

Sample Title                     : NOPI-312B-GAM2
Spectrum Description             : NOPI-312B-GAM2
Sample Identification            : NP312B
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              :  6-11-96  9:08:40 AM

Live Time                        :    80000.0 seconds
Real Time                        :    80004.3 seconds


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

$-0.034 \log x + 1.079$

$0.034 \log x + 0.927$

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

Detector Name: DET01
Sample Title: NOPI-312B-GAM2
Peak Locate Performed on: 6-25-96 7:43:50 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	76.21	0.5995	13.12	2.01
2	94.59	0.3994	16.39	3.69
3	111.02	0.3894	19.26	3.71
4	179.00	0.6770	31.13	2.18
5	232.18	0.4032	40.19	3.08
6	270.70	0.2833	46.86	6.35
7	350.48	0.4771	60.41	2.26
8	367.60	0.2807	63.71	6.63
9	434.26	0.1607	75.24	15.51
10	447.59	0.1399	77.54	20.35
11	488.30	0.3105	84.59	2.52
12	506.34	0.2313	87.67	7.22
13	521.49	0.2394	90.46	5.57
14	539.19	0.2472	93.35	3.40
15	612.83	0.3786	106.05	3.22
16	637.06	0.3374	110.31	3.21
17	748.45	0.2714	129.59	5.05
18	1077.11	0.2314	186.70	5.84
19	1212.80	0.2867	210.29	2.74
20	1383.11	0.1152	239.77	21.49
21	1402.73	0.3096	242.71	3.75
22	1566.58	0.3025	271.26	3.38
23	1607.35	0.2916	278.90	3.79
24	1711.05	0.1794	296.66	8.19
25	1814.04	0.4425	315.01	2.06
26	1960.66	0.1892	339.87	7.00
27	2039.68	0.1435	353.68	11.81
28	2518.12	0.3109	436.61	2.18
29	2540.95	0.2703	440.68	3.44
30	2960.52	0.2180	513.45	3.69
31	3379.27	0.1687	586.04	6.58
32	3530.90	0.1635	612.36	7.21
33	3834.72	0.3437	664.91	2.15

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-312B-GAM2
Peak Analysis Performed on: 6-25-96 7:43:57 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	72-	79	76.11	13.12	3.14E+02	49.77	7.19E+02
2	91-	98	95.01	16.39	3.25E+02	53.63	8.34E+02
3	107-	114	111.52	19.26	1.47E+02	41.64	5.25E+02
4	178-	183	179.99	31.13	3.65E+01	24.36	2.17E+02
5	227-	236	232.20	40.19	1.45E+02	35.94	3.27E+02
6	265-	275	270.67	46.86	2.53E+02	38.94	3.37E+02
7	345-	355	348.84	60.41	6.61E+01	36.30	3.28E+02
8	362-	373	367.85	63.71	2.64E+02	43.04	3.96E+02
9	428-	440	434.33	75.24	1.33E+03	59.15	5.10E+02
10	441-	453	447.58	77.54	1.87E+03	64.18	5.29E+02
11	482-	494	488.25	84.59	3.37E+02	44.46	3.84E+02
12	500-	512	506.00	87.67	6.10E+02	53.55	5.30E+02
13	515-	527	522.08	90.46	4.64E+02	47.50	4.21E+02
14	532-	545	538.73	93.35	6.88E+02	53.34	4.77E+02
15	606-	619	611.99	106.05	1.28E+02	44.09	4.01E+02
16	632-	643	636.57	110.31	1.23E+02	38.11	3.25E+02
17	741-	752	747.70	129.59	9.28E+01	40.54	3.85E+02
18	1068-	1085	1076.99	186.70	3.06E+02	49.68	3.92E+02
19	1207-	1221	1213.02	210.29	1.15E+02	39.09	2.94E+02
20	1375-	1392	1383.02	239.77	1.49E+03	61.55	4.08E+02
21	1392-	1411	1399.95	242.71	2.79E+02	49.88	3.66E+02
22	1556-	1572	1564.57	271.26	8.91E+01	37.31	2.47E+02
23	1604-	1615	1608.66	278.90	8.50E+01	25.39	1.38E+02
24	1703-	1719	1711.05	296.66	3.02E+02	37.63	2.12E+02
25	1810-	1824	1816.86	315.01	3.37E+01	30.33	1.86E+02
26	1950-	1969	1960.19	339.87	2.21E+02	39.65	2.25E+02
27	2032-	2050	2039.81	353.68	4.99E+02	42.66	2.27E+02
28	2510-	2524	2518.00	436.61	3.30E+01	23.06	1.05E+02
29	2536-	2550	2541.47	440.68	5.39E+01	21.67	8.21E+01
30	2947-	2973	2961.09	513.45	3.24E+02	51.24	2.97E+02
31	3369-	3392	3379.65	586.04	2.06E+02	37.23	1.68E+02
32	3523-	3544	3531.38	612.36	2.22E+02	32.87	1.30E+02
33	3829-	3840	3834.39	664.91	2.06E+01	12.01	3.04E+01

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

ors 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-312B-GAM2
Peak Analysis Performed on: 6-25-96 7:43:50 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	13.12	3.14E+02	49.77			3.14E+02	4.98E+01
2	16.39	3.25E+02	53.63			3.25E+02	5.36E+01
3	19.26	1.47E+02	41.64	4.29E+01	2.25E+01	1.04E+02	4.73E+01
4	31.13	3.65E+01	24.36			3.65E+01	2.44E+01
5	40.19	1.45E+02	35.94			1.45E+02	3.59E+01
6	46.86	2.53E+02	38.94			2.53E+02	3.89E+01
7	60.41	6.61E+01	36.30			6.61E+01	3.63E+01
8	63.71	2.64E+02	43.04	6.18E+01	2.67E+01	2.02E+02	5.06E+01
9	75.24	1.33E+03	59.15	1.05E+02	2.88E+01	1.23E+03	6.58E+01
10	77.54	1.87E+03	64.18	5.62E+01	2.81E+01	1.81E+03	7.01E+01
11	84.59	3.37E+02	44.46	5.33E+01	2.88E+01	2.83E+02	5.30E+01
12	87.67	6.10E+02	53.55	9.34E+01	3.38E+01	5.16E+02	6.33E+01
13	90.46	4.64E+02	47.50			4.64E+02	4.75E+01
14	93.35	6.88E+02	53.34	1.47E+02	3.61E+01	5.41E+02	6.44E+01
15	106.05	1.28E+02	44.09			1.28E+02	4.41E+01
16	110.31	1.23E+02	38.11			1.23E+02	3.81E+01
17	129.59	9.28E+01	40.54			9.28E+01	4.05E+01
18	186.70	3.06E+02	49.68	1.27E+02	2.61E+01	1.79E+02	5.61E+01
19	210.29	1.15E+02	39.09			1.15E+02	3.91E+01
20	239.77	1.49E+03	61.55	7.46E+01	3.11E+01	1.42E+03	6.89E+01
21	242.71	2.79E+02	49.88			2.79E+02	4.99E+01
22	271.26	8.91E+01	37.31			8.91E+01	3.73E+01
23	278.90	8.50E+01	25.39			8.50E+01	2.54E+01
24	296.66	3.02E+02	37.63	3.73E+01	2.91E+01	2.65E+02	4.76E+01
25	315.01	3.37E+01	30.33			3.37E+01	3.03E+01
26	339.87	2.21E+02	39.65			2.21E+02	3.97E+01
27	353.68	4.99E+02	42.66	5.65E+01	2.27E+01	4.43E+02	4.83E+01
28	436.61	3.30E+01	23.06			3.30E+01	2.31E+01
29	440.68	5.39E+01	21.67			5.39E+01	2.17E+01
30	513.45	3.24E+02	51.24	2.06E+02	4.26E+01	1.18E+02	6.67E+01
31	586.04	2.06E+02	37.23	2.28E+01	1.56E+01	1.83E+02	4.04E+01
32	612.36	2.22E+02	32.87			2.22E+02	3.29E+01
33	664.91	2.06E+01	12.01			2.06E+01	1.20E+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              :  6-25-96  7:45:41 AM

Sample Title                     : NOPI-313-GAM2
Spectrum Description             : NOPI-313-GAM2
Sample Identification            : NP313
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              :  6-12-96  7:56:24 AM

Live Time                        :    80000.0 seconds
Real Time                        :    80036.4 seconds


          Energy Calibration Used Done On        :  1-16-96
          Efficiency Calibration Used Done On    : ????????
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-0.175 log t + 1.368

-0.699 log t + 1.201

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

Detector Name: DET01
Sample Title: NOPI-313-GAM2
Peak Locate Performed on: 6-25-96 7:45:09 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	31.73	0.4510	5.37	3.57
2	37.60	0.3188	6.46	5.94
3	63.68	0.2150	10.94	14.60
4	76.52	0.1949	13.16	13.48
5	94.73	0.1810	16.43	22.25
6	110.95	0.1790	19.17	19.62
7	118.00	0.6435	20.06	2.41
8	149.63	0.1901	25.86	14.77
9	159.52	0.2078	27.60	12.13
10	213.33	0.3247	36.86	5.84
11	270.68	0.0834	46.85	68.61
12	291.27	0.1853	50.33	14.54
13	309.30	0.1101	53.55	38.09
14	367.63	0.0738	63.67	78.04
15	392.94	0.1511	68.02	20.17
16	422.91	0.3075	73.27	4.86
17	434.39	0.0658	75.24	89.37
18	447.62	0.0569	77.54	118.12
19	460.43	0.1186	79.79	27.65
20	470.65	0.1147	81.55	30.18
21	486.53	0.1021	84.31	34.00
22	506.45	0.0879	87.69	41.83
23	521.36	0.1062	90.42	32.97
24	537.10	0.0711	93.08	57.43
25	549.97	0.1528	95.31	16.86
26	571.10	0.1734	98.70	14.02
27	580.97	0.4768	100.78	2.09
28	613.38	0.3943	106.33	2.43
29	632.79	0.3130	109.61	3.83
30	654.53	0.1518	113.44	16.00
31	701.86	0.3890	121.24	2.95
32	709.49	0.2640	123.07	5.33
33	763.04	0.4995	131.18	2.12
34	834.03	0.1169	144.58	23.40
35	894.14	0.1551	155.03	14.30
36	947.26	0.1766	164.21	10.93
37	1078.51	0.0663	186.94	55.69
38	1151.04	0.3659	199.88	3.39
39	1171.14	0.3233	202.69	2.62
40	1190.22	0.1854	206.45	8.36
41	1221.29	0.4069	212.00	2.00

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1368.13	0.1446	237.18	13.96
43	1383.49	0.1524	239.84	12.16
44	1402.94	0.0611	243.22	74.91
45	1485.45	0.1739	257.53	9.19
46	1500.78	0.1548	260.11	11.67
47	1562.12	0.1439	270.78	13.36
48	1572.44	0.1628	272.64	11.46
49	1593.00	0.2097	276.08	6.06
50	1629.32	0.3101	282.67	2.55
51	1658.84	0.2546	287.66	3.29
52	1711.38	0.0486	296.71	106.06
53	1739.45	0.1883	301.61	6.72
54	1754.25	0.2480	304.05	4.87
55	1912.44	0.2300	331.55	4.65
56	1931.92	0.4101	335.53	2.36
57	1960.50	0.2165	339.87	4.82
58	2040.05	0.0432	353.70	125.21
59	2241.70	0.2210	388.75	5.05
60	2329.38	0.1936	403.90	6.20
61	2348.58	0.2512	407.22	2.82
62	2578.30	0.3444	446.80	2.27
63	2637.01	0.2731	456.93	3.24
64	2677.34	0.3122	463.95	2.01
65	2784.08	0.2018	482.58	5.86
66	2823.90	0.2126	489.44	5.23
67	3094.02	0.2296	536.36	4.10
68	3289.79	0.3279	570.16	2.13
69	3362.65	0.2398	583.03	3.16
70	3380.28	0.2634	586.15	3.33
71	3531.73	0.0468	612.41	82.84
72	3808.90	0.3098	660.55	2.07
73	3856.64	0.1495	668.55	7.92
74	4029.09	0.1495	698.69	9.04

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-313-GAM2
Peak Analysis Performed on: 6-25-96 7:45:19 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
1	28-	34	31.48	5.37	2.64E+02	141.61	7.08E+03
2	34-	40	37.75	6.46	1.26E+03	145.59	7.20E+03
3	60-	66	63.60	10.94	6.63E+03	154.09	6.19E+03
4	73-	79	76.39	13.16	1.89E+04	214.20	9.79E+03
5	92-	98	95.25	16.43	1.41E+04	262.72	1.96E+04
6	108-	114	111.04	19.17	3.17E+03	178.17	1.02E+04
7	114-	121	116.15	20.06	5.28E+02	179.64	9.70E+03
8	145-	153	149.62	25.86	3.11E+03	151.48	6.09E+03
9	155-	163	159.64	27.60	2.45E+03	146.35	5.82E+03
10	208-	217	213.03	36.86	6.57E+02	145.95	5.87E+03
11	265-	275	270.65	46.85	2.95E+04	231.68	6.46E+03
12	286-	296	290.69	50.33	3.31E+03	164.07	6.24E+03
13	305-	314	309.29	53.55	7.37E+03	169.38	6.01E+03
14	362-	373	367.59	63.67	3.12E+04	255.52	8.51E+03
15	387-	398	392.72	68.02	3.43E+03	194.06	8.52E+03 ~~3.55E~~ 3.55E+03 ± 3.18%
16	417-	426	422.95	73.27	3.22E+02	167.87	7.89E+03
17	428-	440	434.33	75.24	4.16E+04	298.51	1.12E+04
18	441-	453	447.59	77.54	7.49E+04	344.36	1.03E+04
19	454-	466	460.57	79.79	3.58E+03	228.18	1.14E+04
20	466-	476	470.71	81.55	5.47E+03	184.06	7.54E+03
21	480-	492	486.62	84.31	1.33E+04	217.35	7.98E+03
22	502-	512	506.14	87.69	2.26E+04	237.24	8.70E+03
23	515-	527	521.84	90.42	9.74E+03	215.09	8.59E+03
24	530-	543	537.21	93.08	3.82E+04	282.87	9.31E+03
25	545-	556	550.07	95.31	3.14E+03	185.30	7.75E+03
26	562-	577	569.63	98.70	3.03E+03	198.90	7.28E+03
27	577-	587	581.60	100.78	3.64E+02	133.34	4.62E+03
28	606-	620	613.60	106.33	7.04E+02	170.68	5.97E+03
29	626-	639	632.53	109.61	7.45E+02	167.65	6.05E+03
30	650-	661	654.62	113.44	1.49E+03	154.79	5.55E+03
31	694-	705	699.56	121.24	2.06E+02	138.64	4.72E+03
32	705-	716	710.10	123.07	3.52E+02	138.31	4.68E+03
33	749-	766	756.87	131.18	7.88E+02	197.31	6.91E+03
34	826-	841	834.17	144.58	4.23E+03	189.46	6.33E+03
35	886-	901	894.39	155.03	1.83E+03	187.58	6.67E+03
36	939-	955	947.36	164.21	1.31E+03	184.81	6.24E+03
37	1070-	1086	1078.39	186.94	2.70E+04	239.49	5.79E+03
38	1148-	1159	1153.03	199.88	1.46E+02	124.45	3.82E+03
39	1159-	1179	1169.23	202.69	2.83E+02	204.51	6.64E+03
40	1185-	1198	1190.92	206.45	1.02E+03	137.13	3.94E+03
41	1218-	1230	1222.89	212.00	1.66E+02	120.78	3.38E+03
42	1358-	1377	1368.07	237.18	1.33E+03	169.85	4.58E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1377-	1390	1383.40	239.84	8.80E+02	124.17	3.22E+03
44	1393-	1412	1402.92	243.22	1.89E+04	207.60	4.04E+03
45	1480-	1490	1485.44	257.53	5.70E+02	94.89	2.24E+03
46	1491-	1510	1500.31	260.11	1.04E+03	155.66	3.86E+03
47	1552-	1567	1561.82	270.78	1.20E+03	132.09	3.25E+03
48	1567-	1579	1572.55	272.64	4.05E+02	116.15	3.07E+03
49	1583-	1602	1592.40	276.08	9.02E+02	149.77	3.58E+03
50	1625-	1635	1630.40	282.67	2.09E+02	86.91	1.95E+03
51	1654-	1665	1659.14	287.66	3.21E+02	98.38	2.33E+03
52	1701-	1721	1711.35	296.71	3.68E+04	247.15	3.89E+03
53	1731-	1747	1739.57	301.61	5.42E+02	120.79	2.67E+03
54	1747-	1759	1753.68	304.05	1.40E+02	96.49	2.15E+03
55	1906-	1922	1912.25	331.55	4.01E+02	123.41	2.80E+03
56	1927-	1942	1935.21	335.53	1.80E+02	117.63	2.72E+03
57	1954-	1967	1960.22	339.87	1.65E+02	108.93	2.58E+03
58	2029-	2050	2039.95	353.70	5.52E+04	281.88	3.74E+03
59	2236-	2249	2242.07	388.75	2.88E+02	100.24	2.15E+03
60	2322-	2336	2329.43	403.90	4.64E+02	107.06	2.31E+03
61	2337-	2360	2348.56	407.22	3.92E+02	161.55	3.67E+03
62	2571-	2583	2576.75	446.80	9.34E+01	81.85	1.55E+03
63	2624-	2646	2635.16	456.93	4.24E+02	129.87	2.43E+03
64	2665-	2684	2675.66	463.95	1.55E+02	117.65	2.28E+03
65	2771-	2796	2783.10	482.58	5.04E+02	141.67	2.60E+03
66	2811-	2830	2822.66	489.44	2.97E+02	111.99	2.04E+03
67	3085-	3100	3093.19	536.36	1.76E+02	86.54	1.46E+03
68	3280-	3296	3288.07	570.16	1.91E+02	85.55	1.35E+03
69	3356-	3373	3362.31	583.03	1.50E+02	95.83	1.63E+03
70	3373-	3386	3380.27	586.15	1.56E+02	74.37	1.19E+03
71	3517-	3545	3531.68	612.41	2.73E+04	213.75	2.23E+03
72	3803-	3815	3809.29	660.55	1.52E+02	59.81	8.04E+02
73	3842-	3870	3855.38	668.55	7.34E+02	132.20	2.02E+03
74	4024-	4035	4029.21	698.69	3.83E+02	39.51	2.58E+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-313-GAM2
Peak Analysis Performed on: 6-25-96 7:45:09 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.37	2.64E+02	141.61			2.64E+02	1.42E+02
2	6.46	1.26E+03	145.59			1.26E+03	1.46E+02
3	10.94	6.63E+03	154.09	1.65E+02	3.84E+01	6.46E+03	1.59E+02
4	13.16	1.89E+04	214.20			1.89E+04	2.14E+02
5	16.43	1.41E+04	262.72			1.41E+04	2.63E+02
6	19.17	3.17E+03	178.17	4.29E+01	2.25E+01	3.13E+03	1.80E+02
7	20.06	5.28E+02	179.64			5.28E+02	1.80E+02
8	25.86	3.11E+03	151.48			3.11E+03	1.51E+02
9	27.60	2.45E+03	146.35			2.45E+03	1.46E+02
10	36.86	6.57E+02	145.95			6.57E+02	1.46E+02
11	46.85	2.95E+04	231.68			2.95E+04	2.32E+02
12	50.33	3.31E+03	164.07			3.31E+03	1.64E+02
13	53.55	7.37E+03	169.38	3.59E+01	1.79E+01	7.33E+03	1.70E+02
14	63.67	3.12E+04	255.52	6.18E+01	2.67E+01	3.11E+04	2.57E+02
15	68.02	3.43E+03	194.06			3.43E+03	1.94E+02
16	73.27	3.22E+02	167.87			3.22E+02	1.68E+02
17	75.24	4.16E+04	298.51	1.05E+02	2.88E+01	4.15E+04	3.00E+02
18	77.54	7.49E+04	344.36	5.62E+01	2.81E+01	7.49E+04	3.46E+02
19	79.79	3.58E+03	228.18	3.91E+01	2.94E+01	3.54E+03	2.30E+02
20	81.55	5.47E+03	184.06			5.47E+03	1.84E+02
21	84.31	1.33E+04	217.35	5.33E+01	2.88E+01	1.32E+04	2.19E+02
22	87.69	2.26E+04	237.24	9.34E+01	3.38E+01	2.25E+04	2.40E+02
23	90.42	9.74E+03	215.09			9.74E+03	2.15E+02
24	93.08	3.82E+04	282.87	1.47E+02	3.61E+01	3.81E+04	2.85E+02
25	95.31	3.14E+03	185.30			3.14E+03	1.85E+02
26	98.70	3.03E+03	198.90			3.03E+03	1.99E+02
27	100.78	3.64E+02	133.34			3.64E+02	1.33E+02
28	106.33	7.04E+02	170.68			7.04E+02	1.71E+02
29	109.61	7.45E+02	167.65			7.45E+02	1.68E+02
30	113.44	1.49E+03	154.79			1.49E+03	1.55E+02
31	121.24	2.06E+02	138.64			2.06E+02	1.39E+02
32	123.07	3.52E+02	138.31			3.52E+02	1.38E+02
33	131.18	7.88E+02	197.31			7.88E+02	1.97E+02
34	144.58	4.23E+03	189.46	3.99E+01	3.90E+01	4.19E+03	1.93E+02
35	155.03	1.83E+03	187.58			1.83E+03	1.88E+02
36	164.21	1.31E+03	184.81			1.31E+03	1.85E+02
37	186.94	2.70E+04	239.49	1.27E+02	2.61E+01	2.69E+04	2.41E+02
38	199.88	1.46E+02	124.45			1.46E+02	1.24E+02
39	202.69	2.83E+02	204.51			2.83E+02	2.05E+02
40	206.45	1.02E+03	137.13			1.02E+03	1.37E+02
41	212.00	1.66E+02	120.78			1.66E+02	1.21E+02
42	237.18	1.33E+03	169.85			1.33E+03	1.70E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	239.84	8.80E+02	124.17	7.46E+01	3.11E+01	8.06E+02	1.28E+02
44	243.22	1.89E+04	207.60			1.89E+04	2.08E+02
45	257.53	5.70E+02	94.89			5.70E+02	9.49E+01
46	260.11	1.04E+03	155.66			1.04E+03	1.56E+02
47	270.78	1.20E+03	132.09			1.20E+03	1.32E+02
48	272.64	4.05E+02	116.15			4.05E+02	1.16E+02
49	276.08	9.02E+02	149.77			9.02E+02	1.50E+02
50	282.67	2.09E+02	86.91			2.09E+02	8.69E+01
51	287.66	3.21E+02	98.38			3.21E+02	9.84E+01
52	296.71	3.68E+04	247.15	3.73E+01	2.91E+01	3.67E+04	2.49E+02
53	301.61	5.42E+02	120.79			5.42E+02	1.21E+02
54	304.05	1.40E+02	96.49			1.40E+02	9.65E+01
55	331.55	4.01E+02	123.41	4.04E+01	1.66E+01	3.60E+02	1.25E+02
56	335.53	1.80E+02	117.63			1.80E+02	1.18E+02
57	339.87	1.65E+02	108.93			1.65E+02	1.09E+02
58	353.70	5.52E+04	281.88	5.65E+01	2.27E+01	5.51E+04	2.83E+02
59	388.75	2.88E+02	100.24			2.88E+02	1.00E+02
60	403.90	4.64E+02	107.06			4.64E+02	1.07E+02
61	407.22	3.92E+02	161.55			3.92E+02	1.62E+02
62	446.80	9.34E+01	81.85			9.34E+01	8.19E+01
63	456.93	4.24E+02	129.87			4.24E+02	1.30E+02
64	463.95	1.55E+02	117.65			1.55E+02	1.18E+02
65	482.58	5.04E+02	141.67			5.04E+02	1.42E+02
66	489.44	2.97E+02	111.99			2.97E+02	1.12E+02
67	536.36	1.76E+02	86.54			1.76E+02	8.65E+01
68	570.16	1.91E+02	85.55			1.91E+02	8.55E+01
69	583.03	1.50E+02	95.83			1.50E+02	9.58E+01
70	586.15	1.56E+02	74.37	2.28E+01	1.56E+01	1.33E+02	7.60E+01
71	612.41	2.73E+04	213.75			2.73E+04	2.14E+02
72	660.55	1.52E+02	59.81			1.52E+02	5.98E+01
73	668.55	7.34E+02	132.20			7.34E+02	1.32E+02
74	698.69	3.83E+02	39.51	1.84E+01	7.82E+00	3.65E+02	4.03E+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                 :  6-25-96  7:47:17 AM

Sample Title                        : NOPI-314-GAM2
Spectrum Description                : NOPI-314-GAM2
Sample Identification               : NP314
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                 :  6-13-96  9:44:13 AM

Live Time                           :    80000.0 seconds
Real Time                           :    80035.1 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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0.000 log + 1.000

0.067 log + 0.853

****
***** 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-314-GAM2
Peak Locate Performed on: 6-25-96 7:46:46 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	32.00	0.4101	5.37	5.95
2	37.63	0.2757	6.46	8.35
3	53.37	0.5498	9.20	2.32
4	63.72	0.2126	10.95	15.85
5	76.47	0.1902	13.23	15.41
6	94.73	0.1777	16.44	23.19
7	110.81	0.1779	19.17	21.80
8	114.91	0.3685	20.03	6.73
9	149.56	0.1868	25.86	16.17
10	159.55	0.1991	27.59	12.51
11	212.96	0.3633	36.79	3.74
12	233.35	0.5150	40.38	2.45
13	270.60	0.0859	46.84	65.60
14	291.10	0.1761	50.29	14.39
15	309.22	0.1121	53.54	35.85
16	367.53	0.0737	63.65	76.15
17	392.94	0.1523	68.04	20.32
18	411.60	0.3257	71.23	3.55
19	422.62	0.3034	73.07	4.55
20	434.28	0.0672	75.23	89.00
21	447.52	0.0579	77.53	110.13
22	460.26	0.1224	79.77	27.25
23	470.58	0.1162	81.56	28.23
24	486.44	0.1024	84.30	34.59
25	506.35	0.0896	87.66	38.76
26	521.31	0.1065	90.41	32.61
27	537.05	0.0717	93.07	56.29
28	549.80	0.1492	95.24	17.35
29	570.91	0.1744	98.70	14.55
30	612.64	0.3570	106.01	2.39
31	633.28	0.2820	109.60	4.64
32	645.06	0.3579	111.46	3.58
33	654.46	0.1509	113.44	15.60
34	664.53	0.3776	115.57	2.75
35	700.91	0.3890	121.45	2.66
36	709.60	0.2901	123.03	4.44
37	755.33	0.3498	130.97	2.66
38	762.44	0.4257	132.11	2.60
39	814.98	0.4087	141.73	2.76
40	834.00	0.1186	144.55	22.40
41	894.03	0.1559	154.93	14.19

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	946.97	0.1727	164.20	10.45
43	1078.28	0.0678	186.89	54.24
44	1099.29	0.3698	190.54	2.82
45	1190.13	0.1704	206.34	10.76
46	1212.72	0.4419	210.65	2.10
47	1367.83	0.1411	237.18	14.74
48	1383.20	0.1430	239.86	13.52
49	1402.71	0.0626	243.16	68.55
50	1485.39	0.1780	257.51	8.88
51	1500.45	0.1567	260.07	10.09
52	1519.63	0.3817	263.49	2.13
53	1561.54	0.1352	270.70	15.04
54	1572.37	0.1486	272.66	12.36
55	1592.81	0.2140	276.17	5.66
56	1658.66	0.2492	287.51	3.72
57	1711.19	0.0511	296.67	95.98
58	1739.14	0.2132	301.55	5.89
59	1754.97	0.3462	304.32	2.53
60	1764.11	0.3155	305.74	2.43
61	1876.37	0.2560	325.48	3.72
62	1912.17	0.2511	331.69	3.89
63	1961.42	0.2614	340.25	3.82
64	2039.77	0.0449	353.65	114.45
65	2241.46	0.3014	388.62	2.35
66	2254.39	0.2168	391.11	5.11
67	2329.09	0.1990	403.78	5.86
68	2347.82	0.2407	407.24	2.79
69	2473.44	0.2908	428.70	3.51
70	2636.46	0.2570	456.74	2.98
71	2677.62	0.2590	464.08	3.40
72	2724.52	0.3367	472.27	2.10
73	2785.96	0.2359	482.87	3.89
74	2822.21	0.2226	489.35	3.89
75	3091.98	0.2482	536.62	4.11
76	3149.10	0.3387	546.32	2.16
77	3211.87	0.3974	556.97	2.13
78	3362.04	0.2516	582.99	2.44
79	3531.35	0.0489	612.33	71.92
80	3784.86	0.2925	656.43	3.09
81	3855.73	0.1588	668.72	7.52
82	3991.79	0.2561	692.27	3.65
83	4028.40	0.1521	698.55	8.01

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-314-GAM2
Peak Analysis Performed on: 6-25-96 7:46:56 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	29-	34	31.44	5.37	7.98E+02	125.81	5.81E+03	
	2	34-	40	37.76	6.46	1.20E+03	147.84	7.44E+03	
	3	50-	56	53.53	9.20	2.57E+02	125.91	5.61E+03	
	4	60-	66	63.62	10.95	6.55E+03	153.88	6.21E+03	
	5	75-	79	76.78	13.23	1.55E+04	190.14	8.90E+03	
	6	92-	98	95.28	16.44	1.53E+04	267.28	2.00E+04	
	7	108-	114	111.02	19.17	3.54E+03	179.03	1.01E+04	
	8	114-	118	116.01	20.03	1.29E+03	129.52	6.34E+03	
	9	145-	153	149.60	25.86	3.02E+03	149.82	5.96E+03	
	10	155-	163	159.58	27.59	2.54E+03	145.24	5.69E+03	
	11	208-	217	212.61	36.79	4.55E+02	144.20	5.77E+03	
	12	228-	238	233.30	40.38	1.94E+02	156.91	6.47E+03	
	13	265-	275	270.55	46.84	2.70E+04	226.66	6.51E+03	
	14	286-	296	290.46	50.29	3.09E+03	161.09	6.00E+03	
	15	304-	314	309.22	53.54	7.62E+03	174.33	6.05E+03	
	16	362-	373	367.51	63.65	3.14E+04	251.48	7.93E+03	
	17	387-	398	392.83	68.04	3.54E+03	185.15	7.66E+03	3.61E+03 ± 3.03%
	18	405-	417	411.19	71.23	2.48E+02	194.13	8.76E+03	
	19	417-	426	421.79	73.07	6.03E+02	161.49	7.20E+03	
	20	428-	440	434.26	75.23	3.98E+04	291.88	1.07E+04	
	21	441-	453	447.51	77.53	7.05E+04	337.55	1.02E+04	
	22	454-	466	460.44	79.77	3.14E+03	224.95	1.12E+04	
	23	466-	476	470.76	81.56	5.62E+03	179.97	7.12E+03	
	24	480-	492	486.54	84.30	1.28E+04	212.88	7.63E+03	
	25	501-	512	505.97	87.66	2.20E+04	238.03	8.45E+03	
	26	515-	527	521.79	90.41	8.83E+03	211.36	8.43E+03	
	27	530-	543	537.15	93.07	3.81E+04	278.58	8.79E+03	
	28	545-	556	549.67	95.24	3.05E+03	181.83	7.45E+03	
	29	564-	577	569.59	98.70	2.90E+03	178.16	6.33E+03	
	30	605-	619	611.78	106.01	5.06E+02	171.08	6.03E+03	
	31	626-	636	632.46	109.60	5.53E+02	133.50	4.59E+03	
	32	638-	648	643.20	111.46	4.61E+02	135.02	4.70E+03	
	33	648-	661	654.57	113.44	1.49E+03	172.45	6.26E+03	
	34	661-	671	666.90	115.57	3.48E+02	127.23	4.21E+03	
	35	698-	704	700.76	121.45	1.82E+02	87.25	2.66E+03	
	36	704-	716	709.90	123.03	1.92E+02	148.48	5.13E+03	
M	37	751-	769	755.65	130.97	2.16E+02	80.54	4.00E+03	
m	38	751-	769	762.26	132.11	1.60E+02	68.32	4.20E+03	
	39	812-	822	817.69	141.73	2.22E+02	126.03	4.16E+03	
	40	826-	841	833.97	144.55	4.08E+03	188.97	6.31E+03	
	41	886-	901	893.82	154.93	1.52E+03	183.43	6.41E+03	
	42	939-	954	947.28	164.20	1.60E+03	168.28	5.34E+03	

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1069-	1086	1078.10	186.89	2.63E+04	241.61	5.83E+03
	44	1096-	1103	1099.17	190.54	1.31E+02	86.98	2.45E+03
	45	1181-	1198	1190.24	206.34	8.72E+02	167.84	4.96E+03
	46	1206-	1229	1215.10	210.65	2.47E+02	205.52	5.98E+03
	47	1362-	1376	1368.06	237.18	1.54E+03	129.01	3.16E+03
	48	1376-	1392	1383.55	239.86	1.29E+03	140.98	3.53E+03
	49	1393-	1411	1402.58	243.16	1.78E+04	198.21	3.73E+03
	50	1480-	1490	1485.33	257.51	5.79E+02	95.46	2.26E+03
	51	1492-	1509	1500.08	260.07	1.13E+03	138.41	3.27E+03
	52	1516-	1523	1519.78	263.49	1.05E+02	64.11	1.32E+03
	53	1555-	1567	1561.34	270.70	1.12E+03	112.36	2.68E+03
	54	1567-	1579	1572.66	272.66	8.41E+02	111.77	2.74E+03
	55	1589-	1599	1592.89	276.17	4.21E+02	91.48	2.10E+03
	56	1652-	1664	1658.31	287.51	3.24E+02	102.19	2.37E+03
	57	1701-	1721	1711.12	296.67	3.44E+04	238.24	3.57E+03
	58	1729-	1746	1739.23	301.55	4.05E+02	128.13	2.91E+03
M	59	1746-	1770	1755.23	304.32	1.71E+02	57.82	2.38E+03
m	60	1746-	1770	1763.44	305.74	1.64E+02	56.85	2.38E+03
	61	1870-	1886	1877.26	325.48	3.97E+02	120.95	2.70E+03
	62	1906-	1922	1913.05	331.69	2.72E+02	123.38	2.84E+03
	63	1950-	1972	1962.39	340.25	3.05E+02	163.66	3.92E+03
	64	2028-	2050	2039.67	353.65	5.10E+04	282.08	4.23E+03
	65	2237-	2247	2241.31	388.62	1.43E+02	81.33	1.71E+03
	66	2247-	2265	2255.67	391.11	3.37E+02	132.04	2.97E+03
	67	2317-	2338	2328.71	403.78	4.04E+02	146.42	3.23E+03
	68	2338-	2359	2348.65	407.24	4.18E+02	146.80	3.24E+03
	69	2469-	2478	2472.41	428.70	9.53E+01	74.13	1.52E+03
	70	2624-	2644	2634.09	456.74	2.85E+02	120.64	2.28E+03
	71	2665-	2689	2676.41	464.08	3.06E+02	137.57	2.56E+03
	72	2720-	2732	2723.66	472.27	8.84E+01	77.93	1.39E+03
	73	2773-	2795	2784.76	482.87	2.25E+02	127.47	2.37E+03
	74	2814-	2831	2822.15	489.35	4.49E+02	98.24	1.67E+03
	75	3084-	3104	3094.66	536.62	1.53E+02	107.81	1.84E+03
	76	3143-	3160	3150.63	546.32	1.83E+02	90.51	1.45E+03
	77	3198-	3228	3212.01	556.97	2.06E+02	148.54	2.49E+03
	78	3352-	3371	3362.05	582.99	1.75E+02	105.63	1.83E+03
	79	3517-	3545	3531.22	612.33	2.54E+04	217.08	2.64E+03
	80	3779-	3790	3785.53	656.43	6.85E+01	58.70	8.43E+02
	81	3841-	3870	3856.38	668.72	6.33E+02	135.94	2.10E+03
	82	3986-	3999	3992.15	692.27	1.29E+02	64.71	8.97E+02
	83	4021-	4035	4028.39	698.55	4.24E+02	50.36	4.05E+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-314-GAM2
Peak Analysis Performed on: 6-25-96 7:46:46 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.37	7.98E+02	125.81			7.98E+02	1.26E+02
2	6.46	1.20E+03	147.84			1.20E+03	1.48E+02
3	9.20	2.57E+02	125.91			2.57E+02	1.26E+02
4	10.95	6.55E+03	153.88	1.65E+02	3.84E+01	6.38E+03	1.59E+02
5	13.23	1.55E+04	190.14			1.55E+04	1.90E+02
6	16.44	1.53E+04	267.28			1.53E+04	2.67E+02
7	19.17	3.54E+03	179.03	4.29E+01	2.25E+01	3.49E+03	1.80E+02
8	20.03	1.29E+03	129.52			1.29E+03	1.30E+02
9	25.86	3.02E+03	149.82			3.02E+03	1.50E+02
10	27.59	2.54E+03	145.24			2.54E+03	1.45E+02
11	36.79	4.55E+02	144.20			4.55E+02	1.44E+02
12	40.38	1.94E+02	156.91			1.94E+02	1.57E+02
13	46.84	2.70E+04	226.66			2.70E+04	2.27E+02
14	50.29	3.09E+03	161.09			3.09E+03	1.61E+02
15	53.54	7.62E+03	174.33	3.59E+01	1.79E+01	7.58E+03	1.75E+02
16	63.65	3.14E+04	251.48	6.18E+01	2.67E+01	3.14E+04	2.53E+02
17	68.04	3.54E+03	185.15			3.54E+03	1.85E+02
18	71.23	2.48E+02	194.13			2.48E+02	1.94E+02
19	73.07	6.03E+02	161.49			6.03E+02	1.61E+02
20	75.23	3.98E+04	291.88	1.05E+02	2.88E+01	3.97E+04	2.93E+02
21	77.53	7.05E+04	337.55	5.62E+01	2.81E+01	7.04E+04	3.39E+02
22	79.77	3.14E+03	224.95	3.91E+01	2.94E+01	3.10E+03	2.27E+02
23	81.56	5.62E+03	179.97			5.62E+03	1.80E+02
24	84.30	1.28E+04	212.88	5.33E+01	2.88E+01	1.28E+04	2.15E+02
25	87.66	2.20E+04	238.03	9.34E+01	3.38E+01	2.19E+04	2.40E+02
26	90.41	8.83E+03	211.36			8.83E+03	2.11E+02
27	93.07	3.81E+04	278.58	1.47E+02	3.61E+01	3.80E+04	2.81E+02
28	95.24	3.05E+03	181.83			3.05E+03	1.82E+02
29	98.70	2.90E+03	178.16			2.90E+03	1.78E+02
30	106.01	5.06E+02	171.08			5.06E+02	1.71E+02
31	109.60	5.53E+02	133.50			5.53E+02	1.33E+02
32	111.46	4.61E+02	135.02			4.61E+02	1.35E+02
33	113.44	1.49E+03	172.45			1.49E+03	1.72E+02
34	115.57	3.48E+02	127.23			3.48E+02	1.27E+02
35	121.45	1.82E+02	87.25			1.82E+02	8.73E+01
36	123.03	1.92E+02	148.48			1.92E+02	1.48E+02
M 37	130.97	2.16E+02	80.54			2.16E+02	8.05E+01
m 38	132.11	1.60E+02	68.32			1.60E+02	6.83E+01
39	141.73	2.22E+02	126.03			2.22E+02	1.26E+02
40	144.55	4.08E+03	188.97	3.99E+01	3.90E+01	4.04E+03	1.93E+02
41	154.93	1.52E+03	183.43			1.52E+03	1.83E+02
42	164.20	1.60E+03	168.28			1.60E+03	1.68E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	186.89	2.63E+04	241.61	1.27E+02	2.61E+01	2.62E+04	2.43E+02
44	190.54	1.31E+02	86.98			1.31E+02	8.70E+01
45	206.34	8.72E+02	167.84			8.72E+02	1.68E+02
46	210.65	2.47E+02	205.52			2.47E+02	2.06E+02
47	237.18	1.54E+03	129.01			1.54E+03	1.29E+02
48	239.86	1.29E+03	140.98	7.46E+01	3.11E+01	1.21E+03	1.44E+02
49	243.16	1.78E+04	198.21			1.78E+04	1.98E+02
50	257.51	5.79E+02	95.46			5.79E+02	9.55E+01
51	260.07	1.13E+03	138.41			1.13E+03	1.38E+02
52	263.49	1.05E+02	64.11			1.05E+02	6.41E+01
53	270.70	1.12E+03	112.36			1.12E+03	1.12E+02
54	272.66	8.41E+02	111.77			8.41E+02	1.12E+02
55	276.17	4.21E+02	91.48			4.21E+02	9.15E+01
56	287.51	3.24E+02	102.19			3.24E+02	1.02E+02
57	296.67	3.44E+04	238.24	3.73E+01	2.91E+01	3.44E+04	2.40E+02
58	301.55	4.05E+02	128.13			4.05E+02	1.28E+02
M 59	304.32	1.71E+02	57.82			1.71E+02	5.78E+01
m 60	305.74	1.64E+02	56.85			1.64E+02	5.69E+01
61	325.48	3.97E+02	120.95			3.97E+02	1.21E+02
62	331.69	2.72E+02	123.38	4.04E+01	1.66E+01	2.32E+02	1.24E+02
63	340.25	3.05E+02	163.66			3.05E+02	1.64E+02
64	353.65	5.10E+04	282.08	5.65E+01	2.27E+01	5.09E+04	2.83E+02
65	388.62	1.43E+02	81.33			1.43E+02	8.13E+01
66	391.11	3.37E+02	132.04	3.43E+01	2.83E+01	3.03E+02	1.35E+02
67	403.78	4.04E+02	146.42			4.04E+02	1.46E+02
68	407.24	4.18E+02	146.80			4.18E+02	1.47E+02
69	428.70	9.53E+01	74.13			9.53E+01	7.41E+01
70	456.74	2.85E+02	120.64			2.85E+02	1.21E+02
71	464.08	3.06E+02	137.57			3.06E+02	1.38E+02
72	472.27	8.84E+01	77.93			8.84E+01	7.79E+01
73	482.87	2.25E+02	127.47			2.25E+02	1.27E+02
74	489.35	4.49E+02	98.24			4.49E+02	9.82E+01
75	536.62	1.53E+02	107.81			1.53E+02	1.08E+02
76	546.32	1.83E+02	90.51			1.83E+02	9.05E+01
77	556.97	2.06E+02	148.54			2.06E+02	1.49E+02
78	582.99	1.75E+02	105.63			1.75E+02	1.06E+02
79	612.33	2.54E+04	217.08			2.54E+04	2.17E+02
80	656.43	6.85E+01	58.70			6.85E+01	5.87E+01
81	668.72	6.33E+02	135.94			6.33E+02	1.36E+02
82	692.27	1.29E+02	64.71			1.29E+02	6.47E+01
83	698.55	4.24E+02	50.36	1.84E+01	7.82E+00	4.06E+02	5.10E+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                 :  5-06-96  7:47:25 AM

Sample Title                        : NOPI-315-GAM2
Spectrum Description                : NOPI-315-GAM2
Sample Identification               : NP315
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                 :  5-02-96  7:38:29 AM

Live Time                           :    80000.0 seconds
Real Time                           :    80025.6 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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~~0.149 log x + 1.321~~

~~0.080 log x + 1.166~~

-0.175 log x + 1.368

-0.104 log x + 1.211

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

Detector Name: DET01
Sample Title: NOPI-315-GAM2
Peak Locate Performed on: 5-06-96 7:46:37 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	31.52	0.4330	5.40	2.80
2	37.50	0.3578	6.48	3.94
3	63.62	0.2168	10.92	13.12
4	76.25	0.2068	13.09	13.84
5	98.00	0.5438	16.46	3.38
6	110.56	0.1909	19.18	15.40
7	114.55	0.3867	20.01	3.66
8	149.27	0.2034	25.80	13.08
9	159.25	0.2186	27.54	11.80
10	212.67	0.3754	36.92	3.50
11	230.89	0.4772	39.80	2.04
12	270.10	0.0871	46.76	63.53
13	290.86	0.1976	50.24	12.97
14	308.86	0.1198	53.47	32.12
15	366.97	0.0799	63.55	71.04
16	392.15	0.1662	67.90	16.54
17	422.38	0.4045	73.14	2.06
18	433.63	0.0724	75.10	75.18
19	446.86	0.0634	77.41	103.70
20	459.62	0.1308	79.66	22.67
21	469.93	0.1286	81.41	26.46
22	485.69	0.1129	84.16	29.32
23	505.57	0.0975	87.56	35.04
24	520.58	0.1134	90.24	28.02
25	536.21	0.0796	92.94	45.76
26	548.77	0.1757	95.10	12.15
27	570.18	0.1949	98.62	11.45
28	612.42	0.4062	105.94	2.39
29	631.95	0.3920	109.41	2.26
30	653.47	0.1774	113.26	11.60
31	700.54	0.3752	121.16	3.06
32	708.71	0.3058	122.95	4.69
33	793.95	0.4184	137.78	2.69
34	812.65	0.3759	140.87	2.69
35	832.82	0.1294	144.35	18.32
36	892.66	0.1748	154.71	11.49
37	945.73	0.1916	163.88	9.26
38	1036.91	0.3813	179.92	2.86
39	1076.82	0.0751	186.65	44.30
40	1188.59	0.2071	206.15	6.55
41	1269.97	0.4146	219.94	2.55

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1324.20	0.3901	229.89	2.13
43	1366.18	0.1561	236.81	11.36
44	1381.30	0.1390	239.50	14.45
45	1400.91	0.0680	242.86	60.92
46	1483.58	0.1992	257.19	6.30
47	1498.31	0.1688	259.76	8.96
48	1559.89	0.1541	270.37	12.38
49	1570.26	0.1715	272.31	9.17
50	1590.77	0.2399	275.48	5.85
51	1606.55	0.3785	278.24	2.41
52	1655.96	0.2532	286.99	3.93
53	1675.36	0.3477	290.45	2.93
54	1683.00	0.4146	291.78	2.62
55	1708.86	0.0549	296.29	84.84
56	1736.60	0.1988	301.10	6.25
57	1875.14	0.2664	324.70	3.18
58	1910.01	0.2403	331.25	4.66
59	1935.48	0.3183	335.70	2.72
60	1957.69	0.2216	339.53	4.43
61	2037.06	0.0486	353.19	98.49
62	2250.42	0.2582	390.21	3.62
63	2326.32	0.2086	403.44	5.05
64	2344.85	0.2488	406.66	2.51
65	2781.99	0.2730	482.11	2.49
66	2819.05	0.2078	489.02	4.87
67	3089.11	0.2341	535.66	3.99
68	3182.60	0.3133	551.70	2.39
69	3317.43	0.3330	575.07	2.21
70	3329.47	0.3443	578.52	2.34
71	3357.90	0.2347	582.23	4.22
72	3374.51	0.2523	585.17	3.45
73	3526.63	0.0520	611.56	66.31
74	3564.26	0.2896	618.26	2.20
75	3588.39	0.3539	622.93	2.10
76	3810.51	0.2789	660.73	2.96
77	3850.58	0.1658	667.58	7.19
78	4003.18	0.3350	694.17	2.35
79	4017.57	0.3069	696.54	2.39
80	4029.56	0.1663	698.23	8.30

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-315-GAM2
Peak Analysis Performed on: 5-06-96 7:46:55 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	31.61	5.40	2.81E+02	122.57	5.26E+03
2	34-	40	37.87	6.48	1.03E+03	124.58	5.22E+03
3	60-	66	63.48	10.92	5.05E+03	133.87	4.65E+03
4	72-	79	75.99	13.09	1.54E+04	190.97	7.03E+03
5	92-	101	95.42	16.46	1.16E+04	265.83	1.59E+04
6	107-	114	111.10	19.18	2.41E+03	163.84	8.10E+03
7	114-	118	115.86	20.01	9.72E+02	106.23	4.20E+03
8	145-	153	149.24	25.80	2.29E+03	124.82	4.07E+03
9	155-	163	159.28	27.54	1.83E+03	122.50	4.03E+03
10	210-	217	213.36	36.92	2.97E+02	101.88	3.32E+03
11	226-	235	229.99	39.80	3.18E+02	123.42	4.22E+03
12	265-	275	270.12	46.76	2.05E+04	193.27	4.50E+03
13	285-	295	290.19	50.24	2.00E+03	137.23	4.47E+03
14	303-	314	308.78	53.47	5.12E+03	157.02	4.87E+03
15	361-	372	366.93	63.55	2.10E+04	208.74	5.65E+03
16	386-	397	391.98	67.90	2.32E+03	156.98	5.56E+03
17	416-	425	422.21	73.14	3.25E+02	133.21	4.96E+03
18	427-	439	433.54	75.10	2.80E+04	245.17	7.56E+03
19	440-	452	446.82	77.41	5.08E+04	284.79	7.10E+03
20	453-	465	459.82	79.66	1.98E+03	191.82	8.18E+03
21	465-	475	469.93	81.41	3.78E+03	150.46	5.02E+03
22	479-	491	485.76	84.16	9.11E+03	178.66	5.37E+03
23	501-	511	505.35	87.56	1.60E+04	192.27	5.45E+03
24	514-	526	520.82	90.24	6.51E+03	177.91	5.92E+03
25	529-	542	536.38	92.94	2.53E+04	232.31	6.38E+03
26	544-	555	548.82	95.10	1.98E+03	151.93	5.24E+03
27	563-	576	569.15	98.62	1.73E+03	149.99	4.59E+03
28	605-	619	611.34	105.94	3.30E+02	144.28	4.29E+03
29	625-	638	631.36	109.41	4.31E+02	137.64	4.09E+03
30	648-	660	653.56	113.26	8.97E+02	138.06	4.26E+03
31	693-	703	699.13	121.16	1.75E+02	108.27	3.07E+03
32	706-	715	709.42	122.95	2.73E+02	97.56	2.62E+03
33	786-	801	794.92	137.78	1.94E+02	145.45	4.19E+03
34	805-	820	812.74	140.87	1.70E+02	150.19	4.46E+03
35	825-	840	832.81	144.35	2.63E+03	158.69	4.50E+03
36	885-	900	892.55	154.71	1.30E+03	153.94	4.46E+03
37	937-	953	945.46	163.88	8.24E+02	153.76	4.34E+03
38	1033-	1045	1037.91	179.92	2.64E+02	114.01	2.98E+03
39	1068-	1085	1076.73	186.65	1.75E+04	205.86	4.52E+03
40	1184-	1197	1189.17	206.15	4.46E+02	116.80	2.91E+03
41	1265-	1275	1268.66	219.94	9.75E+01	81.75	1.74E+03
42	1319-	1333	1326.07	229.89	1.17E+02	105.65	2.32E+03

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1357-	1375	1365.94	236.81	8.52E+02	136.38	3.08E+03
	44	1375-	1390	1381.47	239.50	1.37E+03	114.62	2.33E+03
	45	1391-	1410	1400.85	242.86	1.27E+04	172.35	2.84E+03
	46	1474-	1490	1483.49	257.19	5.08E+02	112.14	2.30E+03
	47	1490-	1507	1498.26	259.76	7.08E+02	119.99	2.48E+03
	48	1550-	1564	1559.46	270.37	8.25E+02	104.69	2.14E+03
	49	1564-	1577	1570.66	272.31	2.07E+02	106.14	2.44E+03
	50	1581-	1600	1588.95	275.48	4.59E+02	128.11	2.64E+03
	51	1600-	1610	1604.85	278.24	1.46E+02	71.38	1.31E+03
	52	1651-	1662	1655.30	286.99	2.16E+02	80.17	1.53E+03
M	53	1672-	1686	1675.26	290.45	1.14E+02	44.26	9.24E+02
m	54	1672-	1686	1682.91	291.78	8.23E+01	38.16	1.12E+03
	55	1698-	1718	1708.89	296.29	2.42E+04	204.24	2.81E+03
	56	1730-	1743	1736.64	301.10	3.27E+02	86.59	1.59E+03
	57	1864-	1882	1872.76	324.70	2.75E+02	110.62	2.07E+03
	58	1905-	1917	1910.51	331.25	2.15E+02	82.31	1.54E+03
	59	1931-	1940	1936.16	335.70	1.11E+02	64.86	1.17E+03
	60	1952-	1964	1958.26	339.53	3.77E+02	82.62	1.51E+03
	61	2026-	2047	2037.00	353.19	3.62E+04	230.92	2.64E+03
	62	2244-	2261	2250.49	390.21	2.44E+02	105.09	1.95E+03
	63	2321-	2334	2326.75	403.44	2.80E+02	84.31	1.51E+03
	64	2334-	2352	2345.30	406.66	1.26E+02	113.48	2.22E+03
	65	2774-	2788	2780.36	482.11	2.09E+02	72.81	1.06E+03
	66	2810-	2831	2820.21	489.02	4.46E+02	96.24	1.35E+03
	67	3083-	3095	3089.12	535.66	7.46E+01	61.06	8.54E+02
	68	3176-	3188	3181.66	551.70	1.37E+02	55.79	6.95E+02
M	69	3304-	3342	3316.39	575.07	1.33E+02	70.65	1.91E+03
m	70	3304-	3342	3336.26	578.52	2.15E+02	83.62	2.11E+03
	71	3352-	3365	3357.65	582.23	1.04E+02	64.91	9.07E+02
	72	3365-	3383	3374.62	585.17	2.17E+02	81.98	1.13E+03
	73	3512-	3540	3526.77	611.56	1.85E+04	183.36	1.83E+03
	74	3557-	3576	3565.40	618.26	8.93E+01	79.56	1.04E+03
	75	3579-	3602	3592.34	622.93	1.47E+02	89.34	1.12E+03
	76	3804-	3816	3810.30	660.73	9.55E+01	50.42	5.73E+02
	77	3836-	3864	3849.79	667.58	4.88E+02	110.07	1.41E+03
M	78	3988-	4035	4003.15	694.17	2.83E+02	29.23	8.34E+02
m	79	3988-	4035	4016.81	696.54	3.58E+02	34.29	7.55E+02
m	80	3988-	4035	4026.53	698.23	4.27E+02	30.82	4.54E+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-315-GAM2
Peak Analysis Performed on: 5-06-96 7:46:37 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.40	2.81E+02	122.57			2.81E+02	1.23E+02
2	6.48	1.03E+03	124.58			1.03E+03	1.25E+02
3	10.92	5.05E+03	133.87			5.05E+03	1.34E+02
4	13.09	1.54E+04	190.97			1.54E+04	1.91E+02
5	16.46	1.16E+04	265.83			1.16E+04	2.66E+02
6	19.18	2.41E+03	163.84			2.41E+03	1.64E+02
7	20.01	9.72E+02	106.23			9.72E+02	1.06E+02
8	25.80	2.29E+03	124.82			2.29E+03	1.25E+02
9	27.54	1.83E+03	122.50	3.59E+01	2.20E+01	1.80E+03	1.24E+02
10	36.92	2.97E+02	101.88			2.97E+02	1.02E+02
11	39.80	3.18E+02	123.42			3.18E+02	1.23E+02
12	46.76	2.05E+04	193.27			2.05E+04	1.93E+02
13	50.24	2.00E+03	137.23			2.00E+03	1.37E+02
14	53.47	5.12E+03	157.02			5.12E+03	1.57E+02
15	63.55	2.10E+04	208.74	8.22E+01	2.83E+01	2.09E+04	2.11E+02
16	67.90	2.32E+03	156.98			2.32E+03	1.57E+02 2.19E+
17	73.14	3.25E+02	133.21			3.25E+02	1.33E+02 ±3.98
18	75.10	2.80E+04	245.17	4.59E+01	3.14E+01	2.79E+04	2.47E+02
19	77.41	5.08E+04	284.79	5.88E+01	2.63E+01	5.08E+04	2.86E+02
20	79.66	1.98E+03	191.82			1.98E+03	1.92E+02
21	81.41	3.78E+03	150.46			3.78E+03	1.50E+02
22	84.16	9.11E+03	178.66			9.11E+03	1.79E+02
23	87.56	1.60E+04	192.27			1.60E+04	1.92E+02
24	90.24	6.51E+03	177.91			6.51E+03	1.78E+02
25	92.94	2.53E+04	232.31	2.14E+02	3.47E+01	2.51E+04	2.35E+02
26	95.10	1.98E+03	151.93			1.98E+03	1.52E+02
27	98.62	1.73E+03	149.99			1.73E+03	1.50E+02
28	105.94	3.30E+02	144.28			3.30E+02	1.44E+02
29	109.41	4.31E+02	137.64	6.16E+01	3.08E+01	3.69E+02	1.41E+02
30	113.26	8.97E+02	138.06			8.97E+02	1.38E+02
31	121.16	1.75E+02	108.27			1.75E+02	1.08E+02
32	122.95	2.73E+02	97.56			2.73E+02	9.76E+01
33	137.78	1.94E+02	145.45			1.94E+02	1.45E+02
34	140.87	1.70E+02	150.19			1.70E+02	1.50E+02
35	144.35	2.63E+03	158.69			2.63E+03	1.59E+02
36	154.71	1.30E+03	153.94			1.30E+03	1.54E+02
37	163.88	8.24E+02	153.76			8.24E+02	1.54E+02
38	179.92	2.64E+02	114.01			2.64E+02	1.14E+02
39	186.65	1.75E+04	205.86	7.15E+01	3.60E+01	1.74E+04	2.09E+02
40	206.15	4.46E+02	116.80			4.46E+02	1.17E+02
41	219.94	9.75E+01	81.75			9.75E+01	8.17E+01
42	229.89	1.17E+02	105.65			1.17E+02	1.06E+02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	236.81	8.52E+02	136.38			8.52E+02	1.36E+02
44	239.50	1.37E+03	114.62	7.99E+01	3.31E+01	1.29E+03	1.19E+02
45	242.86	1.27E+04	172.35			1.27E+04	1.72E+02
46	257.19	5.08E+02	112.14			5.08E+02	1.12E+02
47	259.76	7.08E+02	119.99			7.08E+02	1.20E+02
48	270.37	8.25E+02	104.69			8.25E+02	1.05E+02
49	272.31	2.07E+02	106.14			2.07E+02	1.06E+02
50	275.48	4.59E+02	128.11			4.59E+02	1.28E+02
51	278.24	1.46E+02	71.38			1.46E+02	7.14E+01
52	286.99	2.16E+02	80.17			2.16E+02	8.02E+01
M 53	290.45	1.14E+02	44.26			1.14E+02	4.43E+01
m 54	291.78	8.23E+01	38.16			8.23E+01	3.82E+01
55	296.29	2.42E+04	204.24			2.42E+04	2.04E+02
56	301.10	3.27E+02	86.59			3.27E+02	8.66E+01
57	324.70	2.75E+02	110.62			2.75E+02	1.11E+02
58	331.25	2.15E+02	82.31			2.15E+02	8.23E+01
59	335.70	1.11E+02	64.86			1.11E+02	6.49E+01
60	339.53	3.77E+02	82.62			3.77E+02	8.26E+01
61	353.19	3.62E+04	230.92			3.62E+04	2.31E+02
62	390.21	2.44E+02	105.09			2.44E+02	1.05E+02
63	403.44	2.80E+02	84.31	2.87E+01	1.13E+01	2.51E+02	8.51E+01
64	406.66	1.26E+02	113.48			1.26E+02	1.13E+02
65	482.11	2.09E+02	72.81			2.09E+02	7.28E+01
66	489.02	4.46E+02	96.24			4.46E+02	9.62E+01
67	535.66	7.46E+01	61.06			7.46E+01	6.11E+01
68	551.70	1.37E+02	55.79			1.37E+02	5.58E+01
M 69	575.07	1.33E+02	70.65			1.33E+02	7.06E+01
m 70	578.52	2.15E+02	83.62			2.15E+02	8.36E+01
71	582.23	1.04E+02	64.91			1.04E+02	6.49E+01
72	585.17	2.17E+02	81.98	2.17E+01	1.33E+01	1.96E+02	8.31E+01
73	611.56	1.85E+04	183.36			1.85E+04	1.83E+02
74	618.26	8.93E+01	79.56			8.93E+01	7.96E+01
75	622.93	1.47E+02	89.34			1.47E+02	8.93E+01
76	660.73	9.55E+01	50.42			9.55E+01	5.04E+01
77	667.58	4.88E+02	110.07			4.88E+02	1.10E+02
M 78	694.17	2.83E+02	29.23			2.83E+02	2.92E+01
m 79	696.54	3.58E+02	34.29			3.58E+02	3.43E+01
m 80	698.23	4.27E+02	30.82			4.27E+02	3.08E+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	:	6-25-96 7:51:54 AM
Sample Title	:	NOPI-316-GAM2
Spectrum Description	:	NOPI-316-GAM2
Sample Identification	:	NP316
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	:	6-14-96 7:37:50 AM
Live Time	:	80000.0 seconds
Real Time	:	80030.8 seconds

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

$-0.015108 + 1.043$

$0.052108 + 0.893$

****
***** 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-316-GAM2
Peak Locate Performed on: 6-25-96 7:51:27 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	31.89	0.5267	5.36	2.98
2	37.53	0.3175	6.47	5.25
3	63.72	0.2118	10.95	14.40
4	76.47	0.1921	13.16	14.24
5	98.22	0.5702	16.49	2.40
6	110.83	0.1734	19.18	20.85
7	114.98	0.3417	20.03	8.36
8	149.55	0.1818	25.83	16.79
9	159.60	0.2122	27.63	11.14
10	213.37	0.4013	36.84	2.01
11	270.60	0.0889	46.84	60.14
12	291.20	0.2035	50.29	11.44
13	309.23	0.1166	53.54	34.32
14	367.53	0.0739	63.65	75.92
15	392.95	0.1651	68.05	16.70
16	434.27	0.0712	75.22	79.10
17	447.52	0.0612	77.52	98.29
18	460.22	0.1310	79.76	24.03
19	470.58	0.1257	81.55	23.70
20	486.51	0.1113	84.30	28.03
21	506.32	0.0952	87.69	33.56
22	521.31	0.1110	90.40	30.63
23	537.07	0.0719	93.07	55.72
24	549.73	0.1619	95.26	14.42
25	571.06	0.1691	98.74	14.99
26	612.36	0.3289	105.78	3.24
27	633.15	0.2896	109.61	4.90
28	645.19	0.3589	111.76	2.88
29	654.27	0.1548	113.41	15.84
30	709.76	0.2819	123.03	4.49
31	742.87	0.4250	128.99	2.73
32	833.88	0.1211	144.57	20.98
33	894.06	0.1752	154.97	11.29
34	920.41	0.3319	159.62	3.18
35	947.08	0.1661	164.18	12.74
36	1078.04	0.0708	186.87	50.10
37	1171.37	0.3488	203.06	3.00
38	1190.31	0.1845	206.31	7.94
39	1316.97	0.4125	228.13	2.54
40	1367.89	0.1616	237.14	11.35
41	1383.26	0.1444	239.82	13.56

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1402.71	0.0666	243.16	59.79
43	1447.83	0.3896	250.98	2.59
44	1455.76	0.3293	252.37	2.67
45	1485.65	0.2156	257.32	5.80
46	1500.50	0.1730	260.16	9.28
47	1561.68	0.1510	270.64	12.60
48	1572.18	0.1737	272.63	10.13
49	1593.20	0.2225	275.92	5.76
50	1658.76	0.2995	287.51	2.89
51	1711.18	0.0540	296.67	85.06
52	1739.00	0.2209	301.36	4.83
53	1877.23	0.2519	325.65	3.68
54	1912.92	0.2625	331.21	3.76
55	1960.41	0.2323	339.81	4.30
56	2039.73	0.0480	353.64	98.92
57	2242.26	0.2600	388.73	3.83
58	2254.44	0.2260	390.97	4.74
59	2328.78	0.2118	404.00	5.06
60	2681.12	0.3208	464.59	2.28
61	2783.34	0.2551	482.65	2.83
62	2959.77	0.2469	513.18	2.63
63	3093.44	0.2461	536.21	2.18
64	3362.24	0.2475	583.18	2.44
65	3531.37	0.0522	612.32	62.08
66	3857.52	0.1626	668.60	5.85
67	4017.04	0.3150	696.96	2.13
68	4029.06	0.1719	698.46	6.92

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-316-GAM2
Peak Analysis Performed on: 6-25-96 7:51:35 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	29-	34	31.42	5.36	5.53E+02	121.83	5.54E+03
2	34-	40	37.80	6.47	1.51E+03	141.24	6.65E+03
3	60-	66	63.64	10.95	6.14E+03	148.63	5.77E+03
4	73-	79	76.36	13.16	1.99E+04	213.87	9.40E+03
5	92-	101	95.57	16.49	2.05E+04	312.24	2.11E+04
6	108-	114	111.07	19.18	3.73E+03	176.03	9.66E+03
7	114-	118	116.00	20.03	1.31E+03	129.35	6.15E+03
8	145-	153	149.42	25.83	3.57E+03	141.38	5.03E+03
9	155-	163	159.83	27.63	1.99E+03	132.50	4.78E+03
10	208-	217	212.90	36.84	1.79E+02	138.15	5.36E+03
11	265-	275	270.55	46.84	2.36E+04	210.55	5.52E+03
12	286-	296	290.49	50.29	2.62E+03	147.54	5.05E+03
13	304-	314	309.21	53.54	6.15E+03	161.35	5.28E+03
14	362-	373	367.52	63.65	3.07E+04	241.71	6.93E+03
15	387-	398	392.89	68.05	2.32E+03	173.65	6.94E+03
16	428-	440	434.22	75.22	3.20E+04	266.61	9.15E+03
17	441-	453	447.50	77.52	5.72E+04	305.70	8.55E+03
18	454-	466	460.39	79.76	2.29E+03	207.00	9.53E+03
19	466-	476	470.72	81.55	4.12E+03	166.29	6.25E+03
20	480-	492	486.56	84.30	1.10E+04	196.54	6.50E+03
21	502-	512	506.10	87.69	1.74E+04	210.81	6.99E+03
22	515-	527	521.76	90.40	7.57E+03	193.75	7.05E+03
23	530-	543	537.16	93.07	3.73E+04	267.21	7.58E+03
24	545-	556	549.74	95.26	2.35E+03	169.88	6.58E+03
25	564-	577	569.81	98.74	2.64E+03	163.29	5.27E+03
26	605-	619	610.45	105.78	5.53E+02	158.76	5.15E+03
27	626-	639	632.50	109.61	3.70E+02	156.11	5.30E+03
28	639-	649	644.93	111.76	2.87E+02	127.74	4.26E+03
29	649-	661	654.42	113.41	1.44E+03	152.10	5.08E+03
30	706-	716	709.89	123.03	1.44E+02	117.35	3.61E+03
31	735-	750	744.26	128.99	3.49E+02	159.69	5.02E+03
32	826-	841	834.07	144.57	3.55E+03	176.03	5.48E+03
33	886-	901	894.06	154.97	1.31E+03	166.33	5.26E+03
34	917-	925	920.86	159.62	2.39E+02	97.43	2.82E+03
35	939-	954	947.18	164.18	9.44E+02	160.95	4.98E+03
36	1069-	1086	1078.02	186.87	2.32E+04	224.09	4.92E+03
37	1164-	1179	1171.33	203.06	4.26E+02	141.60	3.91E+03
38	1181-	1198	1190.11	206.31	1.07E+03	154.17	4.12E+03
39	1307-	1321	1315.90	228.13	1.63E+02	115.35	2.77E+03
40	1358-	1377	1367.87	237.14	9.76E+02	153.75	3.77E+03
41	1377-	1392	1383.32	239.82	1.12E+03	126.50	2.95E+03
42	1393-	1411	1402.57	243.16	1.43E+04	181.96	3.28E+03

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	43	1444-	1460	1447.65	250.98	1.63E+02	52.76	1.59E+03
m	44	1444-	1460	1455.65	252.37	1.84E+02	56.99	1.89E+03
	45	1476-	1491	1484.21	257.32	6.27E+02	118.92	2.70E+03
	46	1491-	1510	1500.58	260.16	6.70E+02	145.62	3.42E+03
	47	1552-	1566	1561.02	270.64	9.08E+02	114.19	2.56E+03
	48	1566-	1581	1572.49	272.63	2.10E+02	127.34	3.19E+03
	49	1583-	1602	1591.48	275.92	6.86E+02	135.62	2.94E+03
	50	1649-	1666	1658.28	287.51	2.17E+02	125.47	2.82E+03
	51	1701-	1721	1711.09	296.67	2.75E+04	218.48	3.24E+03
	52	1728-	1746	1738.14	301.36	4.58E+02	124.91	2.63E+03
	53	1867-	1887	1878.20	325.65	4.04E+02	133.81	2.80E+03
	54	1902-	1918	1910.25	331.21	3.87E+02	109.96	2.23E+03
	55	1949-	1968	1959.88	339.81	2.92E+02	133.63	2.93E+03
	56	2028-	2050	2039.59	353.64	4.17E+04	252.31	3.25E+03
	57	2236-	2247	2241.91	388.73	1.90E+02	79.64	1.53E+03
	58	2247-	2259	2254.85	390.97	2.16E+02	86.86	1.72E+03
	59	2324-	2340	2329.99	404.00	4.12E+02	109.98	2.21E+03
	60	2668-	2687	2679.35	464.59	1.07E+02	106.33	1.87E+03
	61	2776-	2792	2783.50	482.65	1.76E+02	92.19	1.58E+03
	62	2947-	2972	2959.52	513.18	4.99E+02	129.06	2.15E+03
	63	3082-	3101	3092.32	536.21	2.81E+02	92.18	1.37E+03
	64	3354-	3371	3363.18	583.18	2.04E+02	86.47	1.32E+03
	65	3517-	3545	3531.20	612.32	2.07E+04	195.42	2.12E+03
	66	3843-	3867	3855.68	668.60	4.49E+02	109.44	1.59E+03
	67	4011-	4035	4019.23	696.96	2.65E+02	35.01	5.99E+02
m	68	4011-	4035	4027.86	698.46	4.14E+02	34.93	6.06E+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-316-GAM2
Peak Analysis Performed on: 6-25-96 7:51:27 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	5.36	5.53E+02	121.83			5.53E+02	1.22E+02	
2	6.47	1.51E+03	141.24			1.51E+03	1.41E+02	
3	10.95	6.14E+03	148.63	1.65E+02	3.84E+01	5.97E+03	1.54E+02	
4	13.16	1.99E+04	213.87			1.99E+04	2.14E+02	
5	16.49	2.05E+04	312.24			2.05E+04	3.12E+02	
6	19.18	3.73E+03	176.03	4.29E+01	2.25E+01	3.69E+03	1.77E+02	
7	20.03	1.31E+03	129.35			1.31E+03	1.29E+02	
8	25.83	3.57E+03	141.38			3.57E+03	1.41E+02	
9	27.63	1.99E+03	132.50			1.99E+03	1.32E+02	
10	36.84	1.79E+02	138.15			1.79E+02	1.38E+02	
11	46.84	2.36E+04	210.55			2.36E+04	2.11E+02	
12	50.29	2.62E+03	147.54			2.62E+03	1.48E+02	
13	53.54	6.15E+03	161.35	3.59E+01	1.79E+01	6.11E+03	1.62E+02	
14	63.65	3.07E+04	241.71	6.18E+01	2.67E+01	3.06E+04	2.43E+02	
15	68.05	2.32E+03	173.65			2.32E+03	1.74E+02	2.59E+03 53.68%
16	75.22	3.20E+04	266.61	1.05E+02	2.88E+01	3.19E+04	2.68E+02	
17	77.52	5.72E+04	305.70	5.62E+01	2.81E+01	5.71E+04	3.07E+02	
18	79.76	2.29E+03	207.00	3.91E+01	2.94E+01	2.25E+03	2.09E+02	
19	81.55	4.12E+03	166.29			4.12E+03	1.66E+02	
20	84.30	1.10E+04	196.54	5.33E+01	2.88E+01	1.09E+04	1.99E+02	
21	87.69	1.74E+04	210.81	9.34E+01	3.38E+01	1.73E+04	2.14E+02	
22	90.40	7.57E+03	193.75			7.57E+03	1.94E+02	
23	93.07	3.73E+04	267.21	1.47E+02	3.61E+01	3.72E+04	2.70E+02	
24	95.26	2.35E+03	169.88			2.35E+03	1.70E+02	
25	98.74	2.64E+03	163.29			2.64E+03	1.63E+02	
26	105.78	5.53E+02	158.76			5.53E+02	1.59E+02	
27	109.61	3.70E+02	156.11			3.70E+02	1.56E+02	
28	111.76	2.87E+02	127.74			2.87E+02	1.28E+02	
29	113.41	1.44E+03	152.10			1.44E+03	1.52E+02	
30	123.03	1.44E+02	117.35			1.44E+02	1.17E+02	
31	128.99	3.49E+02	159.69			3.49E+02	1.60E+02	
32	144.57	3.55E+03	176.03	3.99E+01	3.90E+01	3.51E+03	1.80E+02	
33	154.97	1.31E+03	166.33			1.31E+03	1.66E+02	
34	159.62	2.39E+02	97.43			2.39E+02	9.74E+01	
35	164.18	9.44E+02	160.95			9.44E+02	1.61E+02	
36	186.87	2.32E+04	224.09	1.27E+02	2.61E+01	2.30E+04	2.26E+02	
37	203.06	4.26E+02	141.60			4.26E+02	1.42E+02	
38	206.31	1.07E+03	154.17			1.07E+03	1.54E+02	
39	228.13	1.63E+02	115.35			1.63E+02	1.15E+02	
40	237.14	9.76E+02	153.75			9.76E+02	1.54E+02	
41	239.82	1.12E+03	126.50	7.46E+01	3.11E+01	1.05E+03	1.30E+02	
42	243.16	1.43E+04	181.96			1.43E+04	1.82E+02	

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M 43	250.98	1.63E+02	52.76			1.63E+02	5.28E+01
m 44	252.37	1.84E+02	56.99			1.84E+02	5.70E+01
45	257.32	6.27E+02	118.92			6.27E+02	1.19E+02
46	260.16	6.70E+02	145.62			6.70E+02	1.46E+02
47	270.64	9.08E+02	114.19			9.08E+02	1.14E+02
48	272.63	2.10E+02	127.34			2.10E+02	1.27E+02
49	275.92	6.86E+02	135.62			6.86E+02	1.36E+02
50	287.51	2.17E+02	125.47			2.17E+02	1.25E+02
51	296.67	2.75E+04	218.48	3.73E+01	2.91E+01	2.75E+04	2.20E+02
52	301.36	4.58E+02	124.91	4.02E+01	2.33E+01	4.18E+02	1.27E+02
53	325.65	4.04E+02	133.81			4.04E+02	1.34E+02
54	331.21	3.87E+02	109.96	4.04E+01	1.66E+01	3.47E+02	1.11E+02
55	339.81	2.92E+02	133.63			2.92E+02	1.34E+02
56	353.64	4.17E+04	252.31	5.65E+01	2.27E+01	4.16E+04	2.53E+02
57	388.73	1.90E+02	79.64			1.90E+02	7.96E+01
58	390.97	2.16E+02	86.86	3.43E+01	2.83E+01	1.82E+02	9.14E+01
59	404.00	4.12E+02	109.98			4.12E+02	1.10E+02
60	464.59	1.07E+02	106.33			1.07E+02	1.06E+02
61	482.65	1.76E+02	92.19			1.76E+02	9.22E+01
62	513.18	4.99E+02	129.06	2.06E+02	4.26E+01	2.93E+02	1.36E+02
63	536.21	2.81E+02	92.18			2.81E+02	9.22E+01
64	583.18	2.04E+02	86.47			2.04E+02	8.65E+01
65	612.32	2.07E+04	195.42			2.07E+04	1.95E+02
66	668.60	4.49E+02	109.44			4.49E+02	1.09E+02
67	696.96	2.65E+02	35.01	1.44E+01	8.03E+00	2.50E+02	3.59E+01
m 68	698.46	4.14E+02	34.93	1.84E+01	7.82E+00	3.95E+02	3.58E+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	:	6-25-96 7:53:24 AM
Sample Title	:	NOPI-317-GAM2
Spectrum Description	:	NOPI-317-GAM2
Sample Identification	:	NP317
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	:	6-17-96 10:20:03 AM
Live Time	:	80000.0 seconds
Real Time	:	80029.9 seconds

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

-0.187 log t + 1.398
-0.110 log t + 1.229

****
***** 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-317-GAM2
Peak Locate Performed on: 6-25-96 7:52:54 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	37.59	0.3377	6.46	5.22
2	63.77	0.2224	10.94	13.78
3	76.49	0.2044	13.16	12.96
4	98.00	0.6593	16.48	2.30
5	110.83	0.2024	19.18	15.91
6	118.00	0.6964	19.91	2.06
7	149.54	0.2092	25.86	11.50
8	159.62	0.2182	27.59	10.99
9	213.22	0.3829	36.97	3.61
10	270.58	0.0878	46.83	61.24
11	291.20	0.1937	50.33	13.64
12	309.24	0.1178	53.55	31.85
13	367.53	0.0800	63.65	64.44
14	392.98	0.1638	68.01	16.71
15	410.26	0.4381	71.23	2.41
16	434.27	0.0699	75.22	81.37
17	447.53	0.0602	77.53	101.85
18	460.33	0.1262	79.77	24.39
19	470.58	0.1217	81.54	25.91
20	486.38	0.1097	84.29	30.33
21	506.36	0.0937	87.66	36.03
22	521.28	0.1128	90.41	28.77
23	536.97	0.0781	93.06	46.59
24	549.81	0.1684	95.28	13.57
25	571.05	0.1814	98.66	13.17
26	579.84	0.3781	100.63	2.16
27	613.97	0.3821	106.13	3.11
28	654.59	0.1737	113.44	12.07
29	700.91	0.3684	121.46	3.28
30	709.07	0.3101	123.14	3.59
31	760.91	0.4105	131.61	2.61
32	834.05	0.1330	144.60	17.42
33	894.23	0.1681	154.97	11.77
34	920.10	0.3238	159.66	2.79
35	946.81	0.1777	164.05	11.09
36	1078.37	0.0723	186.91	45.99
37	1171.32	0.3402	203.41	2.81
38	1190.44	0.2027	206.29	7.20
39	1221.46	0.3891	212.07	2.34
40	1368.07	0.1577	237.11	11.55
41	1383.27	0.1504	239.80	11.56

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1402.70	0.0654	243.17	61.93
43	1485.30	0.1992	257.28	7.24
44	1500.34	0.1527	260.10	11.94
45	1561.64	0.1613	270.65	10.61
46	1572.09	0.1861	272.57	8.55
47	1592.58	0.2513	276.08	4.06
48	1658.09	0.2319	287.39	5.40
49	1711.18	0.0532	296.67	86.99
50	1739.29	0.2461	301.49	4.89
51	1754.27	0.2777	304.18	3.76
52	1763.39	0.3456	305.71	2.89
53	1783.22	0.4297	309.81	2.09
54	1822.78	0.3327	315.91	2.52
55	1877.94	0.2642	325.49	4.35
56	1912.31	0.2682	331.46	4.07
57	1934.37	0.3290	335.11	2.73
58	1960.56	0.2212	340.06	5.16
59	2021.92	0.3752	350.55	2.64
60	2039.77	0.0473	353.64	99.99
61	2182.26	0.3836	378.50	2.17
62	2200.30	0.3385	381.53	2.58
63	2240.42	0.2844	388.58	2.67
64	2329.10	0.2208	403.87	3.82
65	2347.50	0.2726	407.09	2.23
66	2783.96	0.2200	482.75	4.21
67	2820.57	0.2327	489.46	4.39
68	3013.23	0.3388	522.47	2.14
69	3025.75	0.3274	524.69	2.15
70	3092.80	0.2537	536.13	2.65
71	3361.71	0.2668	582.96	2.88
72	3531.36	0.0519	612.32	60.72
73	3786.06	0.3765	657.28	2.08
74	3856.50	0.1613	668.62	6.27
75	4027.81	0.1598	698.47	6.14

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-317-GAM2
Peak Analysis Performed on: 6-25-96 7:53:03 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	37.76	6.46	8.93E+02	133.15	6.07E+03
2	60-	66	63.56	10.94	5.92E+03	143.12	5.27E+03
3	73-	79	76.37	13.16	1.57E+04	195.86	8.24E+03
4	92-	101	95.54	16.48	1.20E+04	280.55	1.81E+04
5	108-	114	111.07	19.18	2.97E+03	156.29	7.64E+03
6	114-	121	115.27	19.91	2.26E+02	158.04	7.60E+03
7	145-	153	149.57	25.86	2.32E+03	135.91	4.95E+03
8	155-	163	159.57	27.59	1.98E+03	131.12	4.67E+03
9	208-	217	213.64	36.97	4.06E+02	132.69	4.89E+03
10	265-	275	270.54	46.83	2.47E+04	213.44	5.56E+03
11	286-	296	290.69	50.33	2.39E+03	146.55	5.05E+03
12	304-	314	309.25	53.55	6.05E+03	159.34	5.14E+03
13	362-	373	367.51	63.65	2.31E+04	225.08	6.87E+03
14	387-	398	392.66	68.01	3.02E+03	171.13	6.54E+03
15	404-	415	411.19	71.23	2.59E+02	165.58	6.77E+03
16	428-	440	434.24	75.22	3.42E+04	268.65	8.92E+03
17	441-	453	447.51	77.53	6.19E+04	311.39	8.25E+03
18	454-	466	460.44	79.77	2.63E+03	206.15	9.38E+03
19	466-	476	470.68	81.54	4.58E+03	162.79	5.82E+03
20	480-	492	486.51	84.29	1.03E+04	194.35	6.45E+03
21	501-	512	505.93	87.66	1.90E+04	219.28	7.06E+03
22	515-	527	521.82	90.41	7.82E+03	193.07	6.93E+03
23	530-	543	537.11	93.06	2.87E+04	245.80	7.06E+03
24	545-	556	549.89	95.28	2.82E+03	161.30	5.77E+03
25	561-	577	569.34	98.66	2.04E+03	188.48	6.35E+03
26	577-	586	580.75	100.63	3.68E+02	108.80	3.25E+03
27	607-	620	612.47	106.13	5.90E+02	144.82	4.50E+03
28	649-	661	654.59	113.44	1.24E+03	145.26	4.65E+03
29	698-	703	700.83	121.46	1.21E+02	70.58	1.91E+03
30	703-	716	710.53	123.14	1.63E+02	144.84	4.62E+03
31	752-	768	759.35	131.61	4.39E+02	170.72	5.46E+03
32	826-	841	834.26	144.60	3.34E+03	170.35	5.14E+03
33	886-	901	894.06	154.97	1.15E+03	170.95	5.61E+03
34	916-	927	921.12	159.66	2.84E+02	123.67	3.73E+03
35	938-	954	946.44	164.05	1.31E+03	161.00	4.68E+03
36	1070-	1086	1078.20	186.91	2.11E+04	215.08	4.78E+03
37	1166-	1182	1173.38	203.41	2.87E+02	147.50	4.08E+03
38	1182-	1199	1189.99	206.29	6.87E+02	154.74	4.21E+03
39	1218-	1230	1223.29	212.07	2.44E+02	105.50	2.55E+03
40	1360-	1374	1367.71	237.11	9.83E+02	120.04	2.82E+03
41	1374-	1392	1383.17	239.80	1.09E+03	146.03	3.51E+03
42	1393-	1411	1402.61	243.17	1.55E+04	182.66	3.11E+03

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1475-	1494	1483.98	257.28	4.17E+02	143.36	3.33E+03
	44	1494-	1509	1500.25	260.10	8.47E+02	118.03	2.60E+03
	45	1552-	1567	1561.09	270.65	7.91E+02	121.96	2.82E+03
	46	1567-	1581	1572.13	272.57	3.96E+02	116.23	2.75E+03
	47	1582-	1602	1592.37	276.08	6.57E+02	143.07	3.17E+03
	48	1652-	1664	1657.62	287.39	3.49E+02	94.11	1.99E+03
	49	1701-	1721	1711.12	296.67	3.02E+04	218.51	2.82E+03
	50	1729-	1749	1738.88	301.49	3.26E+02	134.88	2.85E+03
M	51	1749-	1768	1754.43	304.18	1.51E+02	54.74	1.53E+03
m	52	1749-	1768	1763.22	305.71	1.01E+02	43.82	1.63E+03
	53	1779-	1793	1786.86	309.81	1.70E+02	93.49	1.80E+03
	54	1818-	1828	1822.05	315.91	2.24E+02	73.27	1.36E+03
	55	1867-	1885	1877.28	325.49	3.54E+02	120.86	2.48E+03
	56	1901-	1922	1911.73	331.46	3.37E+02	137.08	2.83E+03
	57	1923-	1939	1932.75	335.11	1.74E+02	110.61	2.29E+03
	58	1954-	1971	1961.29	340.06	2.52E+02	120.53	2.59E+03
	59	2017-	2026	2021.76	350.55	1.14E+02	74.39	1.54E+03
	60	2028-	2050	2039.60	353.64	4.50E+04	257.74	3.17E+03
	61	2178-	2187	2182.98	378.50	8.44E+01	63.58	1.12E+03
	62	2196-	2205	2200.43	381.53	2.15E+02	61.68	1.02E+03
	63	2235-	2248	2241.05	388.58	2.85E+02	91.75	1.79E+03
	64	2323-	2335	2329.24	403.87	2.37E+02	85.35	1.65E+03
	65	2341-	2358	2347.78	407.09	1.72E+02	113.57	2.31E+03
	66	2778-	2792	2784.08	482.75	2.88E+02	78.05	1.21E+03
	67	2814-	2833	2822.78	489.46	2.77E+02	100.34	1.63E+03
M	68	3005-	3031	3013.11	522.47	9.27E+01	40.63	1.17E+03
m	69	3005-	3031	3025.90	524.69	1.04E+02	43.41	1.20E+03
	70	3079-	3105	3091.85	536.13	2.32E+02	121.11	1.86E+03
	71	3351-	3373	3361.88	582.96	1.98E+02	107.04	1.67E+03
	72	3517-	3545	3531.17	612.32	2.22E+04	194.26	1.88E+03
	73	3780-	3800	3790.41	657.28	8.49E+01	85.99	1.17E+03
	74	3842-	3866	3855.83	668.62	3.82E+02	106.67	1.52E+03
	75	4020-	4035	4027.91	698.47	3.75E+02	47.48	3.50E+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-317-GAM2
Peak Analysis Performed on: 6-25-96 7:52:54 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	6.46	8.93E+02	133.15			8.93E+02	1.33E+02	
2	10.94	5.92E+03	143.12	1.65E+02	3.84E+01	5.75E+03	1.48E+02	
3	13.16	1.57E+04	195.86			1.57E+04	1.96E+02	
4	16.48	1.20E+04	280.55			1.20E+04	2.81E+02	
5	19.18	2.97E+03	156.29	4.29E+01	2.25E+01	2.93E+03	1.58E+02	
6	19.91	2.26E+02	158.04			2.26E+02	1.58E+02	
7	25.86	2.32E+03	135.91			2.32E+03	1.36E+02	
8	27.59	1.98E+03	131.12			1.98E+03	1.31E+02	
9	36.97	4.06E+02	132.69			4.06E+02	1.33E+02	
10	46.83	2.47E+04	213.44			2.47E+04	2.13E+02	
11	50.33	2.39E+03	146.55			2.39E+03	1.47E+02	
12	53.55	6.05E+03	159.34	3.59E+01	1.79E+01	6.01E+03	1.60E+02	
13	63.65	2.31E+04	225.08	6.18E+01	2.67E+01	2.30E+04	2.27E+02	
14	68.01	3.02E+03	171.13			3.02E+03	1.71E+02	2.91E+03 ± 3.31%
15	71.23	2.59E+02	165.58			2.59E+02	1.66E+02	
16	75.22	3.42E+04	268.65	1.05E+02	2.88E+01	3.40E+04	2.70E+02	
17	77.53	6.19E+04	311.39	5.62E+01	2.81E+01	6.19E+04	3.13E+02	
18	79.77	2.63E+03	206.15	3.91E+01	2.94E+01	2.59E+03	2.08E+02	
19	81.54	4.58E+03	162.79			4.58E+03	1.63E+02	
20	84.29	1.03E+04	194.35	5.33E+01	2.88E+01	1.03E+04	1.96E+02	
21	87.66	1.90E+04	219.28	9.34E+01	3.38E+01	1.89E+04	2.22E+02	
22	90.41	7.82E+03	193.07			7.82E+03	1.93E+02	
23	93.06	2.87E+04	245.80	1.47E+02	3.61E+01	2.85E+04	2.48E+02	
24	95.28	2.82E+03	161.30			2.82E+03	1.61E+02	
25	98.66	2.04E+03	188.48			2.04E+03	1.88E+02	
26	100.63	3.68E+02	108.80			3.68E+02	1.09E+02	
27	106.13	5.90E+02	144.82			5.90E+02	1.45E+02	
28	113.44	1.24E+03	145.26			1.24E+03	1.45E+02	
29	121.46	1.21E+02	70.58			1.21E+02	7.06E+01	
30	123.14	1.63E+02	144.84			1.63E+02	1.45E+02	
31	131.61	4.39E+02	170.72			4.39E+02	1.71E+02	
32	144.60	3.34E+03	170.35	3.99E+01	3.90E+01	3.30E+03	1.75E+02	
33	154.97	1.15E+03	170.95			1.15E+03	1.71E+02	
34	159.66	2.84E+02	123.67			2.84E+02	1.24E+02	
35	164.05	1.31E+03	161.00			1.31E+03	1.61E+02	
36	186.91	2.11E+04	215.08	1.27E+02	2.61E+01	2.10E+04	2.17E+02	
37	203.41	2.87E+02	147.50			2.87E+02	1.48E+02	
38	206.29	6.87E+02	154.74			6.87E+02	1.55E+02	
39	212.07	2.44E+02	105.50			2.44E+02	1.05E+02	
40	237.11	9.83E+02	120.04			9.83E+02	1.20E+02	
41	239.80	1.09E+03	146.03	7.46E+01	3.11E+01	1.01E+03	1.49E+02	
42	243.17	1.55E+04	182.66			1.55E+04	1.83E+02	

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	257.28	4.17E+02	143.36			4.17E+02	1.43E+02
44	260.10	8.47E+02	118.03			8.47E+02	1.18E+02
45	270.65	7.91E+02	121.96			7.91E+02	1.22E+02
46	272.57	3.96E+02	116.23			3.96E+02	1.16E+02
47	276.08	6.57E+02	143.07			6.57E+02	1.43E+02
48	287.39	3.49E+02	94.11			3.49E+02	9.41E+01
49	296.67	3.02E+04	218.51	3.73E+01	2.91E+01	3.01E+04	2.20E+02
50	301.49	3.26E+02	134.88			3.26E+02	1.35E+02
M 51	304.18	1.51E+02	54.74			1.51E+02	5.47E+01
m 52	305.71	1.01E+02	43.82			1.01E+02	4.38E+01
53	309.81	1.70E+02	93.49			1.70E+02	9.35E+01
54	315.91	2.24E+02	73.27			2.24E+02	7.33E+01
55	325.49	3.54E+02	120.86			3.54E+02	1.21E+02
56	331.46	3.37E+02	137.08	4.04E+01	1.66E+01	2.97E+02	1.38E+02
57	335.11	1.74E+02	110.61			1.74E+02	1.11E+02
58	340.06	2.52E+02	120.53			2.52E+02	1.21E+02
59	350.55	1.14E+02	74.39			1.14E+02	7.44E+01
60	353.64	4.50E+04	257.74	5.65E+01	2.27E+01	4.49E+04	2.59E+02
61	378.50	8.44E+01	63.58			8.44E+01	6.36E+01
62	381.53	2.15E+02	61.68			2.15E+02	6.17E+01
63	388.58	2.85E+02	91.75			2.85E+02	9.18E+01
64	403.87	2.37E+02	85.35			2.37E+02	8.54E+01
65	407.09	1.72E+02	113.57			1.72E+02	1.14E+02
66	482.75	2.88E+02	78.05			2.88E+02	7.81E+01
67	489.46	2.77E+02	100.34			2.77E+02	1.00E+02
M 68	522.47	9.27E+01	40.63			9.27E+01	4.06E+01
m 69	524.69	1.04E+02	43.41			1.04E+02	4.34E+01
70	536.13	2.32E+02	121.11			2.32E+02	1.21E+02
71	582.96	1.98E+02	107.04			1.98E+02	1.07E+02
72	612.32	2.22E+04	194.26			2.22E+04	1.94E+02
73	657.28	8.49E+01	85.99			8.49E+01	8.60E+01
74	668.62	3.82E+02	106.67			3.82E+02	1.07E+02
75	698.47	3.75E+02	47.48	1.84E+01	7.82E+00	3.56E+02	4.81E+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	:	6-25-96 7:54:52 AM
Sample Title	:	NOPI-318-GAM2
Spectrum Description	:	NOPI-318-GAM2
Sample Identification	:	NP318
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	:	6-19-96 10:34:31 AM
Live Time	:	80000.0 seconds
Real Time	:	80031.1 seconds

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

-0.222 log t + 1.460

-0.144 log t + 1.289

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

Detector Name: DET01
Sample Title: NOPI-318-GAM2
Peak Locate Performed on: 6-25-96 7:54:25 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	37.59	0.3031	6.46	6.43
2	63.63	0.2330	10.97	11.58
3	76.54	0.2056	13.16	12.72
4	94.68	0.1956	16.44	17.51
5	110.88	0.1943	19.21	18.58
6	114.78	0.4442	20.04	3.94
7	149.59	0.1997	25.86	13.76
8	159.54	0.2138	27.60	11.80
9	213.04	0.4118	36.93	2.18
10	270.71	0.0886	46.86	61.38
11	291.24	0.1948	50.31	12.40
12	309.39	0.1166	53.59	31.81
13	367.71	0.0776	63.67	71.66
14	392.97	0.1642	68.03	15.97
15	423.37	0.3742	73.12	2.19
16	434.46	0.0698	75.25	75.77
17	447.68	0.0607	77.55	104.67
18	460.46	0.1297	79.81	22.13
19	470.77	0.1221	81.57	26.55
20	486.62	0.1086	84.34	30.66
21	506.50	0.0941	87.68	36.09
22	521.47	0.1108	90.43	28.30
23	537.21	0.0750	93.10	52.09
24	550.05	0.1679	95.27	12.56
25	557.21	0.5846	96.54	2.20
26	571.29	0.1708	98.77	13.71
27	632.20	0.3204	109.59	2.99
28	654.53	0.1585	113.44	14.15
29	669.86	0.4690	115.80	2.35
30	700.69	0.3905	121.45	2.42
31	709.86	0.3459	123.04	3.53
32	834.42	0.1257	144.65	20.19
33	894.31	0.1689	155.02	10.46
34	947.48	0.1847	164.16	9.36
35	1078.58	0.0710	186.96	47.05
36	1165.05	0.4220	202.00	2.46
37	1172.71	0.3220	203.28	3.20
38	1190.65	0.1977	206.34	7.83
39	1222.68	0.3294	212.33	3.55
40	1368.37	0.1581	237.18	10.76
41	1383.66	0.1351	239.90	15.34

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1403.14	0.0668	243.24	60.31
43	1485.89	0.1847	257.47	7.91
44	1500.79	0.1677	260.20	9.34
45	1562.35	0.1555	270.79	11.95
46	1573.04	0.1754	272.76	9.43
47	1593.44	0.2174	276.10	4.96
48	1643.50	0.3052	284.98	3.39
49	1657.76	0.2316	287.47	4.71
50	1711.62	0.0536	296.75	83.84
51	1739.54	0.1983	301.66	6.20
52	1754.71	0.3320	303.97	2.23
53	1878.67	0.2484	325.80	4.49
54	1912.73	0.2763	331.58	3.30
55	1961.12	0.2363	340.16	3.95
56	2040.38	0.0480	353.75	95.31
57	2222.32	0.3045	385.45	2.33
58	2329.52	0.2347	404.07	4.52
59	2346.25	0.2832	406.73	3.30
60	2637.11	0.2278	457.46	4.44
61	2655.24	0.3980	460.85	2.03
62	2682.15	0.3072	464.77	2.47
63	2785.52	0.2821	483.29	2.20
64	2824.77	0.2249	489.59	2.67
65	2963.93	0.3640	513.85	2.33
66	3363.09	0.2470	583.12	3.35
67	3379.89	0.2044	586.13	3.69
68	3532.54	0.0528	612.51	60.12
69	3636.96	0.2841	630.53	3.14
70	3857.34	0.1724	668.80	5.59
71	4027.94	0.1606	698.49	6.34

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-318-GAM2
Peak Analysis Performed on: 6-25-96 7:54:34 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	34-	40	37.73	6.46	1.15E+03	135.56	6.22E+03
	2	60-	66	63.74	10.97	5.11E+03	139.77	5.23E+03
	3	73-	79	76.40	13.16	1.47E+04	191.26	7.94E+03
	4	92-	98	95.29	16.44	1.17E+04	234.72	1.55E+04
	5	108-	114	111.26	19.21	2.75E+03	159.64	8.12E+03
	6	114-	118	116.07	20.04	9.23E+02	117.19	5.22E+03
	7	145-	153	149.58	25.86	2.69E+03	138.49	5.06E+03
	8	155-	163	159.63	27.60	2.16E+03	134.72	4.91E+03
	9	208-	217	213.41	36.93	4.29E+02	135.16	5.07E+03
	10	265-	275	270.66	46.86	2.34E+04	209.79	5.49E+03
	11	286-	296	290.59	50.31	2.72E+03	152.92	5.45E+03
	12	304-	314	309.49	53.59	6.18E+03	163.30	5.46E+03
	13	362-	373	367.63	63.67	2.69E+04	233.74	6.90E+03
	14	387-	398	392.78	68.03	2.85E+03	175.10	6.92E+03
	15	417-	426	422.10	73.12	5.62E+02	149.76	6.20E+03
	16	428-	440	434.38	75.25	3.49E+04	270.71	9.01E+03
	17	441-	453	447.67	77.55	6.17E+04	313.01	8.52E+03
	18	454-	466	460.70	79.81	2.93E+03	207.57	9.45E+03
	19	466-	476	470.84	81.57	4.31E+03	171.23	6.65E+03
	20	480-	492	486.80	84.34	1.15E+04	199.98	6.71E+03
	21	500-	512	506.08	87.68	1.91E+04	228.96	7.76E+03
	22	515-	527	521.90	90.43	7.76E+03	199.54	7.54E+03
	23	530-	543	537.31	93.10	3.31E+04	262.68	8.01E+03
	24	545-	556	549.83	95.27	2.53E+03	171.41	6.67E+03
	25	556-	560	557.14	96.54	1.32E+02	68.39	1.95E+03
	26	560-	577	570.00	98.77	2.14E+03	205.15	7.26E+03
	27	625-	638	632.39	109.59	1.88E+02	156.25	5.37E+03
	28	649-	661	654.58	113.44	1.35E+03	154.18	5.25E+03
	29	662-	676	668.22	115.80	1.90E+02	157.75	5.18E+03
	30	697-	703	700.81	121.45	1.81E+02	79.98	2.24E+03
	31	705-	716	709.94	123.04	3.24E+02	127.30	3.95E+03
	32	826-	841	834.54	144.65	3.59E+03	175.23	5.42E+03
	33	886-	902	894.32	155.02	1.38E+03	180.86	5.95E+03
	34	939-	955	947.07	164.16	8.52E+02	172.65	5.50E+03
	35	1070-	1086	1078.49	186.96	2.32E+04	221.00	4.89E+03
M	36	1162-	1181	1165.26	202.00	1.34E+02	57.73	2.44E+03
m	37	1162-	1181	1172.62	203.28	2.03E+02	70.81	2.94E+03
	38	1181-	1199	1190.26	206.34	9.67E+02	162.94	4.45E+03
	39	1219-	1231	1224.82	212.33	1.42E+02	109.31	2.77E+03
	40	1359-	1374	1368.09	237.18	1.14E+03	130.77	3.19E+03
	41	1374-	1392	1383.78	239.90	1.22E+03	155.55	4.00E+03
	42	1393-	1412	1403.05	243.24	1.53E+04	192.15	3.60E+03

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	1478-	1491	1485.08	257.47	5.48E+02	107.42	2.44E+03
	44	1491-	1510	1500.83	260.20	7.35E+02	146.96	3.48E+03
	45	1552-	1568	1561.91	270.79	8.56E+02	131.24	3.12E+03
	46	1568-	1578	1573.26	272.76	6.25E+02	90.54	2.01E+03
	47	1583-	1603	1592.53	276.10	4.30E+02	148.39	3.45E+03
	48	1639-	1648	1643.72	284.98	9.78E+01	74.82	1.56E+03
	49	1648-	1667	1658.09	287.47	3.34E+02	140.11	3.21E+03
	50	1701-	1721	1711.57	296.75	2.98E+04	225.16	3.35E+03
	51	1734-	1747	1739.91	301.66	3.39E+02	96.58	1.98E+03
	52	1747-	1759	1753.18	303.97	1.79E+02	86.82	1.72E+03
	53	1874-	1889	1879.08	325.80	2.64E+02	107.08	2.22E+03
	54	1902-	1921	1912.42	331.58	3.60E+02	130.01	2.76E+03
	55	1956-	1971	1961.88	340.16	3.23E+02	110.22	2.35E+03
	56	2029-	2051	2040.22	353.75	4.48E+04	259.38	3.34E+03
	57	2216-	2229	2223.04	385.45	1.12E+02	87.36	1.67E+03
	58	2318-	2340	2330.38	404.07	2.82E+02	142.94	2.98E+03
	59	2340-	2351	2345.71	406.73	1.33E+02	82.13	1.64E+03
	60	2630-	2649	2638.23	457.46	2.25E+02	107.45	1.89E+03
	61	2649-	2667	2657.76	460.85	1.02E+02	100.50	1.74E+03
	62	2669-	2691	2680.37	464.77	1.31E+02	122.71	2.21E+03
	63	2777-	2797	2787.18	483.29	2.62E+02	107.14	1.79E+03
	64	2812-	2834	2823.53	489.59	3.28E+02	117.20	1.98E+03
m	65	2940-	2974	2963.40	513.85	2.57E+02	63.53	2.33E+03
	66	3355-	3370	3362.78	583.12	1.92E+02	76.63	1.13E+03
	67	3370-	3390	3380.13	586.13	3.09E+02	100.07	1.55E+03
	68	3518-	3546	3532.26	612.51	2.24E+04	199.30	2.10E+03
	69	3630-	3643	3636.17	630.53	1.07E+02	60.40	7.83E+02
	70	3843-	3871	3856.85	668.80	4.71E+02	125.16	1.84E+03
	71	4021-	4035	4028.04	698.49	4.01E+02	45.49	3.26E+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-318-GAM2
Peak Analysis Performed on: 6-25-96 7:54:25 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	6.46	1.15E+03	135.56			1.15E+03	1.36E+02	
2	10.97	5.11E+03	139.77	1.65E+02	3.84E+01	4.95E+03	1.45E+02	
3	13.16	1.47E+04	191.26			1.47E+04	1.91E+02	
4	16.44	1.17E+04	234.72			1.17E+04	2.35E+02	
5	19.21	2.75E+03	159.64	4.29E+01	2.25E+01	2.71E+03	1.61E+02	
6	20.04	9.23E+02	117.19			9.23E+02	1.17E+02	
7	25.86	2.69E+03	138.49			2.69E+03	1.38E+02	
8	27.60	2.16E+03	134.72			2.16E+03	1.35E+02	
9	36.93	4.29E+02	135.16			4.29E+02	1.35E+02	
10	46.86	2.34E+04	209.79			2.34E+04	2.10E+02	
11	50.31	2.72E+03	152.92			2.72E+03	1.53E+02	
12	53.59	6.18E+03	163.30	3.59E+01	1.79E+01	6.14E+03	1.64E+02	
13	63.67	2.69E+04	233.74	6.18E+01	2.67E+01	2.69E+04	2.35E+02	
14	68.03	2.85E+03	175.10			2.85E+03	1.75E+02	2.76 E+03 ± 3.7%
15	73.12	5.62E+02	149.76			5.62E+02	1.50E+02	
16	75.25	3.49E+04	270.71	1.05E+02	2.88E+01	3.48E+04	2.72E+02	
17	77.55	6.17E+04	313.01	5.62E+01	2.81E+01	6.17E+04	3.14E+02	
18	79.81	2.93E+03	207.57	3.91E+01	2.94E+01	2.89E+03	2.10E+02	
19	81.57	4.31E+03	171.23			4.31E+03	1.71E+02	
20	84.34	1.15E+04	199.98	5.33E+01	2.88E+01	1.14E+04	2.02E+02	
21	87.68	1.91E+04	228.96	9.34E+01	3.38E+01	1.90E+04	2.31E+02	
22	90.43	7.76E+03	199.54			7.76E+03	2.00E+02	
23	93.10	3.31E+04	262.68	1.47E+02	3.61E+01	3.29E+04	2.65E+02	
24	95.27	2.53E+03	171.41			2.53E+03	1.71E+02	
25	96.54	1.32E+02	68.39			1.32E+02	6.84E+01	
26	98.77	2.14E+03	205.15			2.14E+03	2.05E+02	
27	109.59	1.88E+02	156.25			1.88E+02	1.56E+02	
28	113.44	1.35E+03	154.18			1.35E+03	1.54E+02	
29	115.80	1.90E+02	157.75			1.90E+02	1.58E+02	
30	121.45	1.81E+02	79.98			1.81E+02	8.00E+01	
31	123.04	3.24E+02	127.30			3.24E+02	1.27E+02	
32	144.65	3.59E+03	175.23	3.99E+01	3.90E+01	3.55E+03	1.80E+02	
33	155.02	1.38E+03	180.86			1.38E+03	1.81E+02	
34	164.16	8.52E+02	172.65			8.52E+02	1.73E+02	
35	186.96	2.32E+04	221.00	1.27E+02	2.61E+01	2.30E+04	2.23E+02	
M 36	202.00	1.34E+02	57.73			1.34E+02	5.77E+01	
m 37	203.28	2.03E+02	70.81			2.03E+02	7.08E+01	
38	206.34	9.67E+02	162.94			9.67E+02	1.63E+02	
39	212.33	1.42E+02	109.31			1.42E+02	1.09E+02	
40	237.18	1.14E+03	130.77			1.14E+03	1.31E+02	
41	239.90	1.22E+03	155.55	7.46E+01	3.11E+01	1.14E+03	1.59E+02	
42	243.24	1.53E+04	192.15			1.53E+04	1.92E+02	

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	257.47	5.48E+02	107.42			5.48E+02	1.07E+02
44	260.20	7.35E+02	146.96			7.35E+02	1.47E+02
45	270.79	8.56E+02	131.24			8.56E+02	1.31E+02
46	272.76	6.25E+02	90.54			6.25E+02	9.05E+01
47	276.10	4.30E+02	148.39			4.30E+02	1.48E+02
48	284.98	9.78E+01	74.82			9.78E+01	7.48E+01
49	287.47	3.34E+02	140.11			3.34E+02	1.40E+02
50	296.75	2.98E+04	225.16	3.73E+01	2.91E+01	2.97E+04	2.27E+02
51	301.66	3.39E+02	96.58			3.39E+02	9.66E+01
52	303.97	1.79E+02	86.82			1.79E+02	8.68E+01
53	325.80	2.64E+02	107.08			2.64E+02	1.07E+02
54	331.58	3.60E+02	130.01	4.04E+01	1.66E+01	3.20E+02	1.31E+02
55	340.16	3.23E+02	110.22			3.23E+02	1.10E+02
56	353.75	4.48E+04	259.38	5.65E+01	2.27E+01	4.47E+04	2.60E+02
57	385.45	1.12E+02	87.36			1.12E+02	8.74E+01
58	404.07	2.82E+02	142.94			2.82E+02	1.43E+02
59	406.73	1.33E+02	82.13			1.33E+02	8.21E+01
60	457.46	2.25E+02	107.45			2.25E+02	1.07E+02
61	460.85	1.02E+02	100.50			1.02E+02	1.00E+02
62	464.77	1.31E+02	122.71			1.31E+02	1.23E+02
63	483.29	2.62E+02	107.14			2.62E+02	1.07E+02
64	489.59	3.28E+02	117.20			3.28E+02	1.17E+02
m 65	513.85	2.57E+02	63.53			2.57E+02	6.35E+01
66	583.12	1.92E+02	76.63			1.92E+02	7.66E+01
67	586.13	3.09E+02	100.07	2.28E+01	1.56E+01	2.86E+02	1.01E+02
68	612.51	2.24E+04	199.30			2.24E+04	1.99E+02
69	630.53	1.07E+02	60.40			1.07E+02	6.04E+01
70	668.80	4.71E+02	125.16			4.71E+02	1.25E+02
71	698.49	4.01E+02	45.49	1.84E+01	7.82E+00	3.83E+02	4.62E+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                 :  5-13-96  7:38:25 AM

Sample Title                        : NOPI-319-GAM2
Spectrum Description                : NOPI-319-GAM2
Sample Identification               : NP319
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                 :  5-10-96  8:16:29 AM

Live Time                           :    80000.0 seconds
Real Time                           :    80014.0 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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-0.019 log x + 1.053

0.046 log x + 0.907

****
***** 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-319-GAM2
Peak Locate Performed on: 5-13-96 7:37:38 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	37.56	0.3706	6.43	4.04
2	63.55	0.2583	10.94	8.30
3	76.34	0.2226	13.11	9.36
4	98.00	0.4885	16.47	4.19
5	110.59	0.2055	19.16	13.93
6	114.73	0.3514	20.00	5.88
7	149.46	0.2297	25.83	9.61
8	159.27	0.2700	27.55	7.89
9	270.20	0.1091	46.78	41.24
10	290.86	0.2539	50.20	8.26
11	309.01	0.1473	53.51	21.27
12	367.08	0.0909	63.58	54.34
13	392.11	0.2266	67.92	8.97
14	433.88	0.0912	75.14	50.58
15	447.02	0.0788	77.44	68.53
16	459.86	0.1719	79.71	14.14
17	470.00	0.1576	81.45	17.65
18	486.22	0.1437	84.24	17.83
19	505.91	0.1232	87.59	22.55
20	520.87	0.1403	90.30	18.51
21	536.47	0.0907	92.98	34.50
22	549.22	0.1930	95.21	10.36
23	570.62	0.2124	98.64	8.94
24	579.83	0.4249	100.51	2.61
25	597.26	0.4722	103.45	2.14
26	611.66	0.3880	105.71	2.66
27	644.30	0.4738	111.72	2.11
28	653.46	0.1909	113.29	10.03
29	760.67	0.3534	131.55	2.85
30	832.96	0.1474	144.37	14.76
31	893.34	0.2097	154.82	8.01
32	918.50	0.3733	159.15	2.81
33	946.41	0.2092	164.05	6.20
34	1076.82	0.0884	186.69	31.05
35	1189.73	0.2057	206.30	7.71
36	1210.97	0.3622	210.08	2.47
37	1342.69	0.3539	232.78	2.57
38	1366.52	0.1965	236.88	7.31
39	1382.00	0.1244	239.57	18.96
40	1401.49	0.0860	242.93	36.74
41	1484.03	0.2440	257.34	5.24

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1499.02	0.2214	260.09	5.71
43	1560.81	0.2089	270.42	6.42
44	1571.46	0.2463	272.65	4.45
45	1591.00	0.2797	275.54	3.37
46	1709.56	0.0680	296.40	53.06
47	1737.48	0.2426	300.98	4.42
48	1874.90	0.3340	325.24	2.28
49	1959.20	0.2075	339.57	5.68
50	2037.94	0.0603	353.33	63.86
51	2198.39	0.3493	381.06	2.03
52	2326.20	0.2791	403.14	2.14
53	2510.13	0.3923	435.99	2.51
54	2700.05	0.3644	468.85	2.22
55	2804.23	0.3235	486.20	2.62
56	3089.73	0.3185	535.83	2.41
57	3358.45	0.2626	582.32	3.67
58	3377.17	0.1892	585.34	5.21
59	3528.16	0.0651	611.79	42.76
60	3619.19	0.3897	627.79	2.06
61	3853.07	0.2161	668.47	2.59
62	4027.46	0.1852	698.41	4.63

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-319-GAM2
Peak Analysis Performed on: 5-13-96 7:37:53 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	34-	40	37.58	6.43	9.40E+02	98.58	3.16E+03
2	60-	66	63.58	10.94	2.72E+03	99.73	2.62E+03
3	72-	79	76.09	13.11	9.96E+03	147.71	3.95E+03
4	92-	101	95.47	16.47	1.06E+04	204.69	8.64E+03
5	108-	114	110.97	19.16	1.89E+03	116.73	4.14E+03
6	114-	118	115.82	20.00	7.66E+02	84.24	2.52E+03
7	145-	153	149.43	25.83	1.33E+03	93.13	2.25E+03
8	155-	163	159.34	27.55	7.55E+02	85.96	2.03E+03
9	265-	275	270.24	46.78	8.78E+03	131.04	2.24E+03
10	285-	295	289.96	50.20	1.12E+03	93.81	2.03E+03
11	303-	314	309.01	53.51	2.32E+03	106.59	2.26E+03
12	361-	372	367.12	63.58	1.31E+04	152.46	2.54E+03
13	386-	397	392.11	67.92	7.94E+02	109.07	2.77E+03
14	428-	439	433.77	75.14	1.22E+04	158.93	3.25E+03
15	441-	452	447.02	77.44	2.17E+04	185.73	3.19E+03
16	453-	465	460.11	79.71	7.32E+02	132.83	3.97E+03
17	465-	476	470.12	81.45	1.52E+03	114.82	2.91E+03
18	480-	492	486.20	84.24	4.34E+03	125.03	2.65E+03
19	501-	512	505.51	87.59	6.67E+03	138.68	3.04E+03
20	514-	527	521.16	90.30	3.11E+03	130.61	3.10E+03
21	530-	542	536.62	92.98	1.58E+04	168.96	3.00E+03
22	545-	555	549.48	95.21	8.89E+02	99.40	2.38E+03
23	564-	577	569.24	98.64	9.52E+02	107.63	2.32E+03
24	577-	583	580.02	100.51	1.63E+02	55.10	1.03E+03
25	595-	600	597.01	103.45	6.97E+01	45.97	8.00E+02
26	600-	618	610.01	105.71	1.56E+02	126.24	2.74E+03
27	641-	647	644.70	111.72	7.95E+01	55.69	1.09E+03
28	647-	660	653.72	113.29	6.09E+02	101.51	2.15E+03
29	753-	767	759.00	131.55	1.98E+02	96.02	1.89E+03
30	825-	840	832.92	144.37	1.64E+03	110.44	2.11E+03
31	885-	901	893.19	154.82	4.24E+02	113.89	2.38E+03
32	915-	922	918.17	159.15	7.41E+01	55.96	1.00E+03
33	938-	954	946.42	164.05	5.08E+02	107.97	2.12E+03
34	1068-	1085	1076.93	186.69	9.25E+03	140.84	1.93E+03
35	1184-	1198	1190.06	206.30	4.31E+02	82.66	1.34E+03
36	1205-	1219	1211.83	210.08	1.34E+02	81.94	1.38E+03
37	1339-	1347	1342.70	232.78	1.56E+02	45.04	5.69E+02
38	1359-	1372	1366.38	236.88	4.56E+02	70.91	1.02E+03
39	1375-	1391	1381.87	239.57	1.39E+03	93.32	1.37E+03
40	1392-	1410	1401.22	242.93	5.22E+03	114.46	1.37E+03
41	1479-	1489	1484.35	257.34	7.65E+01	57.18	8.50E+02
42	1493-	1508	1500.18	260.09	3.48E+02	74.24	1.03E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1551-	1565	1559.75	270.42	3.63E+02	72.94	1.04E+03
44	1565-	1581	1572.60	272.65	1.52E+02	85.77	1.37E+03
45	1581-	1596	1589.29	275.54	1.10E+02	74.91	1.09E+03
46	1699-	1719	1709.57	296.40	1.00E+04	132.98	1.22E+03
47	1727-	1747	1735.97	300.98	1.95E+02	88.83	1.22E+03
48	1866-	1882	1875.86	325.24	1.69E+02	68.07	8.50E+02
49	1948-	1966	1958.48	339.57	3.62E+02	81.53	1.09E+03
50	2027-	2048	2037.83	353.33	1.51E+04	152.92	1.28E+03
51	2191-	2204	2197.72	381.06	9.26E+01	56.12	6.77E+02
52	2316-	2334	2325.05	403.14	2.24E+02	73.36	8.94E+02
53	2506-	2521	2514.45	435.99	9.38E+01	58.44	6.64E+02
54	2696-	2712	2703.92	468.85	9.11E+01	55.42	5.66E+02
55	2800-	2809	2803.98	486.20	5.65E+01	35.27	3.34E+02
56	3082-	3099	3090.13	535.83	6.65E+01	57.44	5.86E+02
57	3353-	3364	3358.18	582.32	5.31E+01	39.97	3.83E+02
58	3364-	3385	3375.58	585.34	3.02E+02	66.04	6.25E+02
59	3514-	3541	3528.13	611.79	7.56E+03	117.60	7.84E+02
60	3607-	3633	3620.39	627.79	1.58E+02	70.10	6.13E+02
61	3842-	3867	3854.95	668.47	2.11E+02	71.82	6.60E+02
62	4018-	4035	4027.56	698.41	1.70E+02	36.98	2.05E+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-319-GAM2
Peak Analysis Performed on: 5-13-96 7:37:38 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	6.43	9.40E+02	98.58			9.40E+02	9.86E+01
2	10.94	2.72E+03	99.73			2.72E+03	9.97E+01
3	13.11	9.96E+03	147.71			9.96E+03	1.48E+02
4	16.47	1.06E+04	204.69			1.06E+04	2.05E+02
5	19.16	1.89E+03	116.73			1.89E+03	1.17E+02
6	20.00	7.66E+02	84.24			7.66E+02	8.42E+01
7	25.83	1.33E+03	93.13			1.33E+03	9.31E+01
8	27.55	7.55E+02	85.96	3.59E+01	2.20E+01	7.19E+02	8.87E+01
9	46.78	8.78E+03	131.04			8.78E+03	1.31E+02
10	50.20	1.12E+03	93.81			1.12E+03	9.38E+01
11	53.51	2.32E+03	106.59			2.32E+03	1.07E+02
12	63.58	1.31E+04	152.46	8.22E+01	2.83E+01	1.30E+04	1.55E+02
13	67.92	7.94E+02	109.07			7.94E+02	1.09E+02 7.70 E+0
14	75.14	1.22E+04	158.93	4.59E+01	3.14E+01	1.22E+04	1.62E+02
15	77.44	2.17E+04	185.73	5.88E+01	2.63E+01	2.17E+04	1.88E+02 ±7.65
16	79.71	7.32E+02	132.83			7.32E+02	1.33E+02
17	81.45	1.52E+03	114.82			1.52E+03	1.15E+02
18	84.24	4.34E+03	125.03			4.34E+03	1.25E+02
19	87.59	6.67E+03	138.68			6.67E+03	1.39E+02
20	90.30	3.11E+03	130.61			3.11E+03	1.31E+02
21	92.98	1.58E+04	168.96	2.14E+02	3.47E+01	1.56E+04	1.72E+02
22	95.21	8.89E+02	99.40			8.89E+02	9.94E+01
23	98.64	9.52E+02	107.63			9.52E+02	1.08E+02
24	100.51	1.63E+02	55.10			1.63E+02	5.51E+01
25	103.45	6.97E+01	45.97			6.97E+01	4.60E+01
26	105.71	1.56E+02	126.24			1.56E+02	1.26E+02
27	111.72	7.95E+01	55.69			7.95E+01	5.57E+01
28	113.29	6.09E+02	101.51			6.09E+02	1.02E+02
29	131.55	1.98E+02	96.02			1.98E+02	9.60E+01
30	144.37	1.64E+03	110.44			1.64E+03	1.10E+02
31	154.82	4.24E+02	113.89			4.24E+02	1.14E+02
32	159.15	7.41E+01	55.96			7.41E+01	5.60E+01
33	164.05	5.08E+02	107.97			5.08E+02	1.08E+02
34	186.69	9.25E+03	140.84	7.15E+01	3.60E+01	9.18E+03	1.45E+02
35	206.30	4.31E+02	82.66			4.31E+02	8.27E+01
36	210.08	1.34E+02	81.94			1.34E+02	8.19E+01
37	232.78	1.56E+02	45.04			1.56E+02	4.50E+01
38	236.88	4.56E+02	70.91			4.56E+02	7.09E+01
39	239.57	1.39E+03	93.32	7.99E+01	3.31E+01	1.31E+03	9.90E+01
40	242.93	5.22E+03	114.46			5.22E+03	1.14E+02
41	257.34	7.65E+01	57.18			7.65E+01	5.72E+01
42	260.09	3.48E+02	74.24			3.48E+02	7.42E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	270.42	3.63E+02	72.94			3.63E+02	7.29E+01
44	272.65	1.52E+02	85.77			1.52E+02	8.58E+01
45	275.54	1.10E+02	74.91			1.10E+02	7.49E+01
46	296.40	1.00E+04	132.98			1.00E+04	1.33E+02
47	300.98	1.95E+02	88.83			1.95E+02	8.88E+01
48	325.24	1.69E+02	68.07			1.69E+02	6.81E+01
49	339.57	3.62E+02	81.53			3.62E+02	8.15E+01
50	353.33	1.51E+04	152.92			1.51E+04	1.53E+02
51	381.06	9.26E+01	56.12			9.26E+01	5.61E+01
52	403.14	2.24E+02	73.36	2.87E+01	1.13E+01	1.95E+02	7.42E+01
53	435.99	9.38E+01	58.44			9.38E+01	5.84E+01
54	468.85	9.11E+01	55.42			9.11E+01	5.54E+01
55	486.20	5.65E+01	35.27			5.65E+01	3.53E+01
56	535.83	6.65E+01	57.44			6.65E+01	5.74E+01
57	582.32	5.31E+01	39.97			5.31E+01	4.00E+01
58	585.34	3.02E+02	66.04	2.17E+01	1.33E+01	2.80E+02	6.74E+01
59	611.79	7.56E+03	117.60			7.56E+03	1.18E+02
60	627.79	1.58E+02	70.10			1.58E+02	7.01E+01
61	668.47	2.11E+02	71.82			2.11E+02	7.18E+01
62	698.41	1.70E+02	36.98			1.70E+02	3.70E+01

M = First peak in a multiplet region
* = Other peak in a multiplet region
= 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              :  6-25-96  7:56:16 AM

Sample Title                     : NOPI-320-GAM2
Spectrum Description             : NOPI-320-GAM2
Sample Identification            : NP320
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              :  6-20-96  9:08:29 AM

Live Time                        :    80000.0 seconds
Real Time                        :    80011.5 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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0.005 log + 1.003
0.571 log + 0.857

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

Detector Name: DET01
Sample Title: NOPI-320-GAM2
Peak Locate Performed on: 6-25-96 7:55:47 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	18.42	0.2959	3.09	3.23
2	31.98	0.6330	5.31	2.44
3	37.36	0.3792	6.45	4.48
4	63.70	0.2987	10.94	7.88
5	76.40	0.2410	13.16	8.60
6	94.64	0.2186	16.42	13.40
7	110.75	0.2167	19.19	12.81
8	114.88	0.4925	20.04	3.65
9	149.48	0.2320	25.85	9.74
10	159.60	0.2897	27.59	6.84
11	199.33	0.5744	34.31	2.05
12	270.59	0.1258	46.84	29.95
13	291.08	0.2783	50.31	6.71
14	309.24	0.1646	53.54	17.01
15	367.48	0.0955	63.63	43.75
16	392.93	0.2251	68.06	9.57
17	422.69	0.3796	73.17	2.13
18	434.22	0.1019	75.20	38.91
19	447.46	0.0862	77.51	49.34
20	460.42	0.1888	79.82	10.67
21	470.64	0.1636	81.57	15.06
22	486.67	0.1462	84.32	14.65
23	506.20	0.1342	87.64	16.12
24	521.36	0.1485	90.42	16.26
25	536.98	0.0923	93.06	34.61
26	549.66	0.2063	95.32	8.29
27	571.09	0.2264	98.69	8.67
28	578.44	0.4511	100.53	2.76
29	633.31	0.3308	109.70	3.59
30	654.29	0.2039	113.40	8.99
31	833.74	0.1542	144.52	13.65
32	894.29	0.2189	154.88	7.55
33	946.80	0.2043	164.14	7.86
34	1039.90	0.4058	180.31	2.81
35	1077.58	0.0946	186.83	27.05
36	1189.47	0.2337	206.08	4.29
37	1213.49	0.3214	210.33	2.35
38	1367.96	0.2060	237.04	5.80
39	1383.08	0.1452	239.80	13.01
40	1402.76	0.0982	243.16	27.68
41	1485.31	0.2563	257.47	4.43

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1498.86	0.2854	259.87	2.71
43	1561.74	0.2104	270.63	6.12
44	1572.00	0.2430	272.56	4.45
45	1658.43	0.2919	287.45	2.90
46	1711.11	0.0777	296.66	41.02
47	1738.72	0.2314	301.42	4.82
48	1876.97	0.2744	325.54	3.21
49	1961.81	0.2662	339.67	4.05
50	2039.77	0.0693	353.63	45.99
51	2331.12	0.3318	403.57	2.61
52	2442.46	0.3684	423.34	2.33
53	2471.12	0.3443	428.43	2.30
54	2822.79	0.3347	489.32	2.56
55	3040.11	0.3490	527.79	2.35
56	3531.43	0.0769	612.33	27.18
57	3629.85	0.2877	629.53	2.33
58	3699.45	0.3143	641.68	2.61
59	4029.60	0.2066	698.82	5.72

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-320-GAM2
Peak Analysis Performed on: 6-25-96 7:55:56 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	15-	20	18.33	3.09	1.25E+03	65.46	1.15E+03
2	29-	34	31.13	5.31	2.08E+02	81.15	2.47E+03
3	34-	40	37.70	6.45	6.30E+02	91.89	2.81E+03
4	60-	66	63.57	10.94	1.66E+03	88.18	2.21E+03
5	73-	79	76.35	13.16	7.41E+03	130.08	3.46E+03
6	92-	98	95.15	16.42	7.84E+03	164.04	6.87E+03
7	108-	114	111.15	19.19	1.66E+03	107.69	3.53E+03
8	114-	118	116.07	20.04	4.15E+02	79.91	2.35E+03
9	145-	153	149.54	25.85	1.37E+03	83.08	1.70E+03
10	155-	163	159.57	27.59	6.47E+02	77.15	1.63E+03
11	194-	203	198.33	34.31	1.21E+02	75.00	1.56E+03
12	265-	275	270.57	46.84	6.22E+03	111.23	1.64E+03
13	285-	296	290.58	50.31	8.54E+02	89.08	1.77E+03
14	304-	314	309.23	53.54	1.89E+03	87.49	1.53E+03
15	361-	372	367.41	63.63	1.12E+04	140.30	2.13E+03
16	387-	398	392.92	68.06	6.93E+02	96.46	2.15E+03
17	416-	426	422.39	73.17	1.72E+02	88.55	2.03E+03
18	428-	440	434.12	75.20	8.27E+03	140.29	2.66E+03
19	441-	453	447.42	77.51	1.52E+04	160.39	2.48E+03
20	454-	466	460.75	79.82	8.40E+02	110.60	2.68E+03
21	466-	476	470.81	81.57	1.32E+03	94.93	2.04E+03
22	480-	492	486.71	84.32	3.56E+03	112.68	2.15E+03
23	500-	512	505.80	87.64	4.85E+03	122.25	2.33E+03
24	515-	527	521.88	90.42	2.37E+03	109.18	2.25E+03
25	530-	543	537.08	93.06	1.43E+04	158.74	2.42E+03
26	545-	556	550.10	95.32	7.84E+02	96.79	2.13E+03
27	564-	577	569.52	98.69	7.20E+02	99.00	1.97E+03
28	577-	584	580.16	100.53	7.69E+01	54.43	9.52E+02
29	626-	640	633.04	109.70	2.27E+02	95.29	1.86E+03
30	649-	661	654.36	113.40	5.09E+02	89.30	1.75E+03
31	826-	841	833.82	144.52	1.56E+03	95.33	1.50E+03
32	886-	901	893.52	154.88	3.90E+02	93.30	1.65E+03
33	941-	954	946.92	164.14	6.06E+02	77.65	1.20E+03
34	1036-	1044	1040.18	180.31	7.66E+01	51.15	7.77E+02
35	1069-	1085	1077.77	186.83	7.18E+03	124.31	1.57E+03
36	1180-	1195	1188.75	206.08	3.44E+02	81.05	1.24E+03
37	1209-	1218	1213.29	210.33	1.13E+02	49.01	6.46E+02
38	1358-	1372	1367.27	237.04	4.06E+02	68.60	9.04E+02
39	1373-	1392	1383.21	239.80	7.81E+02	95.65	1.39E+03
40	1393-	1412	1402.56	243.16	3.57E+03	100.15	1.08E+03
41	1478-	1492	1485.09	257.47	1.50E+02	65.67	8.74E+02
42	1492-	1505	1498.94	259.87	1.91E+02	60.46	7.68E+02

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1552-	1567	1560.96	270.63	2.89E+02	69.62	9.13E+02
44	1567-	1578	1572.11	272.56	1.64E+02	55.20	7.15E+02
45	1650-	1666	1657.96	287.45	1.72E+02	65.52	7.82E+02
46	1701-	1721	1711.04	296.66	6.81E+03	117.66	1.13E+03
47	1731-	1745	1738.48	301.42	1.49E+02	59.98	7.25E+02
48	1871-	1884	1877.56	325.54	8.76E+01	54.44	6.36E+02
49	1951-	1968	1959.03	339.67	1.36E+02	70.08	8.57E+02
50	2028-	2050	2039.55	353.63	1.06E+04	133.15	1.06E+03
51	2319-	2336	2327.50	403.57	1.91E+02	61.51	6.52E+02
52	2438-	2447	2441.48	423.34	5.81E+01	37.86	3.87E+02
53	2463-	2476	2470.85	428.43	9.14E+01	47.46	4.80E+02
54	2818-	2827	2821.93	489.32	4.94E+01	32.59	2.84E+02
55	3035-	3052	3043.79	527.79	8.84E+01	44.37	3.42E+02
56	3517-	3545	3531.23	612.33	5.01E+03	107.67	8.01E+02
57	3623-	3639	3630.39	629.53	4.76E+01	41.35	3.16E+02
58	3692-	3707	3700.46	641.68	8.39E+01	38.54	2.80E+02
59	4024-	4035	4029.96	698.82	8.02E+01	23.35	9.57E+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-320-GAM2
Peak Analysis Performed on: 6-25-96 7:55:47 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	3.09	1.25E+03	65.46	3.90E+02	4.12E+01	8.63E+02	7.74E+01
2	5.31	2.08E+02	81.15			2.08E+02	8.11E+01
3	6.45	6.30E+02	91.89			6.30E+02	9.19E+01
4	10.94	1.66E+03	88.18	1.65E+02	3.84E+01	1.49E+03	9.62E+01
5	13.16	7.41E+03	130.08			7.41E+03	1.30E+02
6	16.42	7.84E+03	164.04			7.84E+03	1.64E+02
7	19.19	1.66E+03	107.69	4.29E+01	2.25E+01	1.61E+03	1.10E+02
8	20.04	4.15E+02	79.91			4.15E+02	7.99E+01
9	25.85	1.37E+03	83.08			1.37E+03	8.31E+01
10	27.59	6.47E+02	77.15			6.47E+02	7.72E+01
11	34.31	1.21E+02	75.00			1.21E+02	7.50E+01
12	46.84	6.22E+03	111.23			6.22E+03	1.11E+02
13	50.31	8.54E+02	89.08			8.54E+02	8.91E+01
14	53.54	1.89E+03	87.49	3.59E+01	1.79E+01	1.86E+03	8.93E+01
15	63.63	1.12E+04	140.30	6.18E+01	2.67E+01	1.11E+04	1.43E+02
16	68.06	6.93E+02	96.46			6.93E+02	9.65E+01
17	73.17	1.72E+02	88.55			1.72E+02	8.85E+01
18	75.20	8.27E+03	140.29	1.05E+02	2.88E+01	8.17E+03	1.43E+02
19	77.51	1.52E+04	160.39	5.62E+01	2.81E+01	1.52E+04	1.63E+02
20	79.82	8.40E+02	110.60	3.91E+01	2.94E+01	8.01E+02	1.14E+02
21	81.57	1.32E+03	94.93			1.32E+03	9.49E+01
22	84.32	3.56E+03	112.68	5.33E+01	2.88E+01	3.51E+03	1.16E+02
23	87.64	4.85E+03	122.25	9.34E+01	3.38E+01	4.76E+03	1.27E+02
24	90.42	2.37E+03	109.18			2.37E+03	1.09E+02
25	93.06	1.43E+04	158.74	1.47E+02	3.61E+01	1.42E+04	1.63E+02
26	95.32	7.84E+02	96.79			7.84E+02	9.68E+01
27	98.69	7.20E+02	99.00			7.20E+02	9.90E+01
28	100.53	7.69E+01	54.43			7.69E+01	5.44E+01
29	109.70	2.27E+02	95.29			2.27E+02	9.53E+01
30	113.40	5.09E+02	89.30			5.09E+02	8.93E+01
31	144.52	1.56E+03	95.33	3.99E+01	3.90E+01	1.52E+03	1.03E+02
32	154.88	3.90E+02	93.30			3.90E+02	9.33E+01
33	164.14	6.06E+02	77.65			6.06E+02	7.76E+01
34	180.31	7.66E+01	51.15			7.66E+01	5.12E+01
35	186.83	7.18E+03	124.31	1.27E+02	2.61E+01	7.06E+03	1.27E+02
36	206.08	3.44E+02	81.05			3.44E+02	8.10E+01
37	210.33	1.13E+02	49.01			1.13E+02	4.90E+01
38	237.04	4.06E+02	68.60			4.06E+02	6.86E+01
39	239.80	7.81E+02	95.65	7.46E+01	3.11E+01	7.07E+02	1.01E+02
40	243.16	3.57E+03	100.15			3.57E+03	1.00E+02
41	257.47	1.50E+02	65.67			1.50E+02	6.57E+01
42	259.87	1.91E+02	60.46			1.91E+02	6.05E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	270.63	2.89E+02	69.62			2.89E+02	6.96E+01
44	272.56	1.64E+02	55.20			1.64E+02	5.52E+01
45	287.45	1.72E+02	65.52			1.72E+02	6.55E+01
46	296.66	6.81E+03	117.66	3.73E+01	2.91E+01	6.77E+03	1.21E+02
47	301.42	1.49E+02	59.98			1.49E+02	6.00E+01
48	325.54	8.76E+01	54.44			8.76E+01	5.44E+01
49	339.67	1.36E+02	70.08			1.36E+02	7.01E+01
50	353.63	1.06E+04	133.15	5.65E+01	2.27E+01	1.05E+04	1.35E+02
51	403.57	1.91E+02	61.51			1.91E+02	6.15E+01
52	423.34	5.81E+01	37.86			5.81E+01	3.79E+01
53	428.43	9.14E+01	47.46			9.14E+01	4.75E+01
54	489.32	4.94E+01	32.59			4.94E+01	3.26E+01
55	527.79	8.84E+01	44.37			8.84E+01	4.44E+01
56	612.33	5.01E+03	107.67			5.01E+03	1.08E+02
57	629.53	4.76E+01	41.35			4.76E+01	4.14E+01
58	641.68	8.39E+01	38.54			8.39E+01	3.85E+01
59	698.82	8.02E+01	23.35	1.84E+01	7.82E+00	6.18E+01	2.46E+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                 :  6-25-96  7:57:40 AM

Sample Title                        : NOPI-321-GAM2
Spectrum Description                : NOPI-321-GAM2
Sample Identification               : NP321
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                 :  6-21-96  7:26:24 AM

Live Time                           :    80000.0 seconds
Real Time                           :    80009.1 seconds


              Energy Calibration Used Done On       :  1-16-96
              Efficiency Calibration Used Done On   : ????????
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-0.020 log x + 1.062
0.049 log x + 0.910

****
***** 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-321-GAM2
Peak Locate Performed on: 6-25-96 7:57:14 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	18.36	0.3101	3.09	3.40
2	37.63	0.4595	6.50	2.99
3	63.69	0.3196	10.93	6.40
4	76.52	0.2925	13.16	6.28
5	94.69	0.2527	16.42	10.83
6	110.90	0.2719	19.20	8.12
7	114.96	0.6779	20.13	2.08
8	149.83	0.2933	25.88	7.47
9	160.07	0.3224	27.54	5.24
10	270.59	0.1387	46.83	24.84
11	291.24	0.2939	50.36	5.48
12	309.25	0.1760	53.57	13.43
13	367.54	0.1179	63.65	29.68
14	393.01	0.2729	68.03	6.02
15	434.27	0.1033	75.21	36.93
16	447.50	0.0892	77.51	46.34
17	460.36	0.1944	79.78	10.18
18	470.48	0.1829	81.53	11.17
19	486.57	0.1623	84.31	13.58
20	506.35	0.1389	87.66	16.68
21	521.41	0.1582	90.43	14.15
22	536.99	0.1155	93.09	22.39
23	549.69	0.2503	95.32	5.99
24	570.41	0.2864	98.79	4.36
25	576.83	0.5357	100.02	2.52
26	612.97	0.3772	106.02	2.40
27	654.12	0.2710	113.43	4.27
28	748.33	0.3290	129.66	3.99
29	833.70	0.1882	144.49	9.14
30	893.52	0.2524	154.95	4.50
31	947.64	0.2677	164.18	4.92
32	1078.41	0.1048	186.92	22.82
33	1190.06	0.2918	206.39	4.21
34	1213.17	0.2887	210.44	2.64
35	1342.87	0.3676	232.75	2.45
36	1368.06	0.2324	237.15	5.94
37	1383.30	0.1151	239.80	20.44
38	1402.79	0.1041	243.14	25.16
39	1419.06	0.4267	245.56	2.23
40	1500.42	0.2566	260.11	3.55
41	1562.02	0.2125	270.77	6.19

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1593.23	0.3147	276.15	2.36
43	1642.39	0.3726	284.77	2.38
44	1658.49	0.2962	287.40	3.81
45	1711.34	0.0811	296.68	37.24
46	1738.96	0.2588	301.55	4.38
47	1757.64	0.3868	304.50	2.31
48	1960.95	0.2114	339.92	5.47
49	2039.95	0.0731	353.66	41.20
50	2253.62	0.3490	391.37	2.41
51	2349.00	0.2951	407.18	2.69
52	2443.17	0.3171	423.67	2.74
53	2788.23	0.3086	483.34	2.09
54	2960.30	0.2137	513.42	2.79
55	3185.79	0.3400	552.16	2.07
56	3360.52	0.3452	582.76	2.41
57	3379.71	0.1701	586.01	6.62
58	3531.66	0.0806	612.33	26.00
59	3632.68	0.3252	629.83	2.18
60	3856.60	0.2547	668.74	3.22
61	4028.53	0.2080	698.34	4.26

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-321-GAM2
Peak Analysis Performed on: 6-25-96 7:57:22 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	15-	20	18.32	3.09	9.27E+02	56.45	8.57E+02
	2	34-	40	37.99	6.50	3.54E+02	75.72	1.92E+03
	3	60-	66	63.49	10.93	1.46E+03	75.23	1.52E+03
	4	73-	79	76.36	13.16	3.89E+03	101.76	2.35E+03
	5	92-	98	95.16	16.42	3.60E+03	123.14	4.13E+03
	6	108-	114	111.19	19.20	8.85E+02	81.66	2.06E+03
	7	114-	118	116.54	20.13	2.06E+02	61.05	1.41E+03
	8	145-	153	149.72	25.88	5.47E+02	68.25	1.26E+03
	9	155-	164	159.31	27.54	4.08E+02	71.18	1.31E+03
	10	265-	275	270.54	46.83	4.24E+03	92.91	1.17E+03
	11	286-	296	290.86	50.36	4.18E+02	71.41	1.23E+03
	12	304-	314	309.38	53.57	1.27E+03	73.84	1.12E+03
	13	362-	373	367.49	63.65	5.21E+03	106.16	1.51E+03
	14	387-	398	392.73	68.03	4.34E+02	83.83	1.64E+03
	15	428-	440	434.14	75.21	7.33E+03	126.73	2.04E+03
	16	441-	453	447.45	77.51	1.27E+04	145.20	1.97E+03
	17	454-	466	460.51	79.78	5.53E+02	97.89	2.12E+03
	18	466-	476	470.60	81.53	8.56E+02	79.04	1.43E+03
	19	480-	492	486.63	84.31	2.31E+03	92.87	1.49E+03
	20	500-	512	505.96	87.66	4.05E+03	108.38	1.79E+03
	21	515-	527	521.90	90.43	1.84E+03	93.69	1.63E+03
	22	530-	543	537.27	93.09	6.78E+03	119.78	1.69E+03
	23	546-	556	550.08	95.32	5.46E+02	73.11	1.27E+03
M	24	563-	583	570.14	98.79	5.24E+02	70.31	1.37E+03
m	25	563-	583	577.19	100.02	1.51E+02	43.02	1.25E+03
	26	606-	619	611.80	106.02	2.47E+02	73.86	1.15E+03
	27	648-	660	654.54	113.43	2.62E+02	72.26	1.17E+03
	28	741-	753	748.14	129.66	7.94E+01	70.83	1.16E+03
	29	826-	841	833.65	144.49	6.11E+02	84.56	1.30E+03
	30	888-	901	893.93	154.95	2.87E+02	73.43	1.13E+03
	31	939-	953	947.16	164.18	2.57E+02	70.01	9.77E+02
	32	1070-	1086	1078.31	186.92	4.94E+03	104.19	1.13E+03
	33	1181-	1198	1190.54	206.39	2.07E+02	77.02	1.04E+03
	34	1204-	1221	1213.90	210.44	1.23E+02	76.18	1.03E+03
	35	1339-	1347	1342.54	232.75	5.63E+01	37.53	4.09E+02
	36	1363-	1374	1367.93	237.15	1.18E+02	50.56	6.05E+02
	37	1374-	1392	1383.17	239.80	1.84E+03	84.40	9.18E+02
	38	1393-	1412	1402.46	243.14	2.79E+03	93.94	1.01E+03
	39	1412-	1423	1416.38	245.56	1.10E+02	42.65	4.20E+02
	40	1492-	1509	1500.32	260.11	2.52E+02	62.59	6.65E+02
	41	1553-	1567	1561.76	270.77	2.76E+02	55.66	5.95E+02
	42	1586-	1602	1592.78	276.15	8.68E+01	58.28	6.26E+02

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1639-	1646	1642.50	284.77	9.08E+01	29.42	2.55E+02
44	1652-	1662	1657.64	287.40	5.47E+01	40.74	4.23E+02
45	1701-	1721	1711.14	296.68	5.39E+03	101.57	7.88E+02
46	1732-	1749	1739.23	301.55	7.67E+01	61.12	6.64E+02
47	1749-	1762	1756.28	304.50	5.43E+01	46.73	4.72E+02
48	1954-	1971	1960.52	339.92	2.56E+02	62.37	6.52E+02
49	2029-	2050	2039.74	353.66	8.04E+03	113.97	7.63E+02
50	2249-	2264	2257.17	391.37	8.93E+01	49.17	4.66E+02
51	2341-	2354	2348.32	407.18	6.16E+01	44.96	4.34E+02
52	2438-	2448	2443.40	423.67	5.04E+01	34.74	3.08E+02
53	2779-	2795	2787.44	483.34	5.52E+01	42.88	3.40E+02
54	2947-	2973	2960.94	513.42	4.45E+02	69.55	5.67E+02
55	3178-	3192	3184.29	552.16	4.91E+01	34.29	2.36E+02
56	3355-	3366	3360.70	582.76	3.44E+01	29.72	2.12E+02
57	3366-	3393	3379.44	586.01	3.36E+02	62.29	4.42E+02
58	3517-	3545	3531.22	612.33	4.04E+03	93.71	5.74E+02
59	3622-	3640	3632.14	629.83	7.73E+01	37.62	2.33E+02
60	3844-	3870	3856.52	668.74	6.93E+01	60.60	4.65E+02
61	4017-	4035	4027.16	698.34	1.42E+02	28.28	1.13E+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-321-GAM2
Peak Analysis Performed on: 6-25-96 7:57:14 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	3.09	9.27E+02	56.45	3.90E+02	4.12E+01	5.37E+02	6.99E+01	
2	6.50	3.54E+02	75.72			3.54E+02	7.57E+01	
3	10.93	1.46E+03	75.23	1.65E+02	3.84E+01	1.30E+03	8.45E+01	
4	13.16	3.89E+03	101.76			3.89E+03	1.02E+02	
5	16.42	3.60E+03	123.14			3.60E+03	1.23E+02	
6	19.20	8.85E+02	81.66	4.29E+01	2.25E+01	8.42E+02	8.47E+01	
7	20.13	2.06E+02	61.05			2.06E+02	6.11E+01	
8	25.88	5.47E+02	68.25			5.47E+02	6.83E+01	
9	27.54	4.08E+02	71.18			4.08E+02	7.12E+01	
10	46.83	4.24E+03	92.91			4.24E+03	9.29E+01	
11	50.36	4.18E+02	71.41			4.18E+02	7.14E+01	
12	53.57	1.27E+03	73.84	3.59E+01	1.79E+01	1.23E+03	7.60E+01	
13	63.65	5.21E+03	106.16	6.18E+01	2.67E+01	5.15E+03	1.09E+02	
14	68.03	4.34E+02	83.83			4.34E+02	8.38E+01	4.53E+02 ± 9.89%
15	75.21	7.33E+03	126.73	1.05E+02	2.88E+01	7.23E+03	1.30E+02	
16	77.51	1.27E+04	145.20	5.62E+01	2.81E+01	1.26E+04	1.48E+02	
17	79.78	5.53E+02	97.89	3.91E+01	2.94E+01	5.14E+02	1.02E+02	
18	81.53	8.56E+02	79.04			8.56E+02	7.90E+01	
19	84.31	2.31E+03	92.87	5.33E+01	2.88E+01	2.26E+03	9.72E+01	
20	87.66	4.05E+03	108.38	9.34E+01	3.38E+01	3.96E+03	1.14E+02	
21	90.43	1.84E+03	93.69			1.84E+03	9.37E+01	
22	93.09	6.78E+03	119.78	1.47E+02	3.61E+01	6.64E+03	1.25E+02	
23	95.32	5.46E+02	73.11			5.46E+02	7.31E+01	
M 24	98.79	5.24E+02	70.31			5.24E+02	7.03E+01	
m 25	100.02	1.51E+02	43.02			1.51E+02	4.30E+01	
26	106.02	2.47E+02	73.86			2.47E+02	7.39E+01	
27	113.43	2.62E+02	72.26			2.62E+02	7.23E+01	
28	129.66	7.94E+01	70.83			7.94E+01	7.08E+01	
29	144.49	6.11E+02	84.56	3.99E+01	3.90E+01	5.71E+02	9.31E+01	
30	154.95	2.87E+02	73.43			2.87E+02	7.34E+01	
31	164.18	2.57E+02	70.01			2.57E+02	7.00E+01	
32	186.92	4.94E+03	104.19	1.27E+02	2.61E+01	4.81E+03	1.07E+02	
33	206.39	2.07E+02	77.02			2.07E+02	7.70E+01	
34	210.44	1.23E+02	76.18			1.23E+02	7.62E+01	
35	232.75	5.63E+01	37.53			5.63E+01	3.75E+01	
36	237.15	1.18E+02	50.56			1.18E+02	5.06E+01	
37	239.80	1.84E+03	84.40	7.46E+01	3.11E+01	1.76E+03	8.99E+01	
38	243.14	2.79E+03	93.94			2.79E+03	9.39E+01	
39	245.56	1.10E+02	42.65			1.10E+02	4.26E+01	
40	260.11	2.52E+02	62.59			2.52E+02	6.26E+01	
41	270.77	2.76E+02	55.66			2.76E+02	5.57E+01	
42	276.15	8.68E+01	58.28			8.68E+01	5.83E+01	

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	284.77	9.08E+01	29.42			9.08E+01	2.94E+01
44	287.40	5.47E+01	40.74			5.47E+01	4.07E+01
45	296.68	5.39E+03	101.57	3.73E+01	2.91E+01	5.35E+03	1.06E+02
46	301.55	7.67E+01	61.12			7.67E+01	6.11E+01
47	304.50	5.43E+01	46.73			5.43E+01	4.67E+01
48	339.92	2.56E+02	62.37			2.56E+02	6.24E+01
49	353.66	8.04E+03	113.97	5.65E+01	2.27E+01	7.98E+03	1.16E+02
50	391.37	8.93E+01	49.17			8.93E+01	4.92E+01
51	407.18	6.16E+01	44.96			6.16E+01	4.50E+01
52	423.67	5.04E+01	34.74			5.04E+01	3.47E+01
53	483.34	5.52E+01	42.88			5.52E+01	4.29E+01
54	513.42	4.45E+02	69.55	2.06E+02	4.26E+01	2.39E+02	8.16E+01
55	552.16	4.91E+01	34.29			4.91E+01	3.43E+01
56	582.76	3.44E+01	29.72			3.44E+01	2.97E+01
57	586.01	3.36E+02	62.29	2.28E+01	1.56E+01	3.13E+02	6.42E+01
58	612.33	4.04E+03	93.71			4.04E+03	9.37E+01
59	629.83	7.73E+01	37.62			7.73E+01	3.76E+01
60	668.74	6.93E+01	60.60			6.93E+01	6.06E+01
61	698.34	1.42E+02	28.28	1.84E+01	7.82E+00	1.23E+02	2.93E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
[illegible] = 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              :  6-25-96  7:41:10 AM

Sample Title                     : NOPI-322-GAM2
Spectrum Description             : NOPI-322-GAM2
Sample Identification            : NP322
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              :  6-24-96  1:32:11 PM

Live Time                        :    80000.0 seconds
Real Time                        :    80006.1 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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0.019 log x + 1.069
0.050 log x + 0.915

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

Detector Name: DET01
Sample Title: NOPI-322-GAM2
Peak Locate Performed on: 6-25-96 7:40:27 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	37.11	0.5270	6.44	3.21
2	63.78	0.4627	10.88	3.63
3	76.39	0.3454	13.16	4.79
4	98.00	0.6225	16.48	2.58
5	110.60	0.3098	19.18	6.30
6	149.46	0.3264	25.82	5.11
7	159.69	0.4123	27.56	3.10
8	270.36	0.1960	46.81	11.47
9	291.06	0.4570	50.23	2.62
10	308.85	0.2584	53.47	6.60
11	367.32	0.1402	63.62	20.73
12	392.39	0.3394	68.08	3.55
13	434.12	0.1434	75.21	21.00
14	447.33	0.1247	77.48	24.79
15	470.61	0.2532	81.52	4.90
16	486.49	0.2192	84.26	7.46
17	506.21	0.1945	87.63	8.43
18	521.37	0.2149	90.33	7.99
19	536.77	0.1391	93.07	14.75
20	548.93	0.3129	95.20	3.58
21	570.69	0.3352	98.82	3.34
22	636.90	0.4169	110.24	2.56
23	654.79	0.3207	113.42	3.28
24	833.67	0.2327	144.50	5.37
25	893.34	0.3763	154.91	2.74
26	1077.43	0.1380	186.81	12.42
27	1150.14	0.3692	199.34	3.04
28	1189.32	0.3242	206.24	2.27
29	1370.25	0.4110	236.95	2.38
30	1382.99	0.1566	239.74	11.07
31	1402.40	0.1489	243.10	11.32
32	1571.96	0.3703	272.39	2.66
33	1710.67	0.1166	296.57	16.69
34	1960.20	0.2683	339.86	2.50
35	1988.33	0.3166	344.89	2.64
36	2039.34	0.1034	353.60	19.54
37	2329.68	0.2881	404.03	2.60
38	2351.01	0.3340	407.88	2.27
39	2446.16	0.3963	424.00	2.11
40	2781.13	0.3658	482.38	2.15
41	3531.18	0.1156	612.27	11.59

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	4027.43	0.2689	698.34	2.10

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-322-GAM2
Peak Analysis Performed on: 6-25-96 7:40:46 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-	39	37.64	6.44	1.41E+02	54.63	1.12E+03
2	60-	66	63.22	10.88	4.54E+02	53.13	8.54E+02
3	73-	79	76.39	13.16	1.63E+03	69.85	1.18E+03
4	92-	101	95.50	16.48	2.16E+03	97.29	2.02E+03
5	106-	114	111.09	19.18	2.55E+02	68.02	1.34E+03
6	145-	153	149.37	25.82	3.39E+02	44.90	5.15E+02
7	155-	163	159.43	27.56	1.93E+02	42.90	5.05E+02
8	265-	275	270.39	46.81	1.07E+03	55.27	5.28E+02
9	285-	296	290.10	50.23	1.86E+02	48.56	5.38E+02
10	303-	314	308.79	53.47	4.17E+02	50.11	5.21E+02
11	361-	372	367.33	63.62	2.59E+03	69.38	5.56E+02
12	390-	398	393.04	68.08	1.71E+02	40.45	4.44E+02
13	428-	439	434.14	75.21	2.05E+03	70.24	7.20E+02
14	441-	453	447.26	77.48	3.70E+03	83.24	7.61E+02
15	466-	476	470.56	81.52	3.46E+02	50.75	5.90E+02
16	480-	492	486.36	84.26	8.22E+02	60.93	6.76E+02
17	500-	512	505.75	87.63	1.17E+03	64.32	6.89E+02
18	515-	527	521.31	90.33	6.19E+02	59.00	6.74E+02
19	530-	543	537.11	93.07	3.32E+03	80.02	6.86E+02
20	545-	555	549.42	95.20	1.63E+02	49.48	6.06E+02
21	564-	577	570.27	98.82	2.62E+02	54.70	6.03E+02
22	630-	643	636.16	110.24	1.16E+02	54.24	6.24E+02
23	651-	661	654.50	113.42	7.15E+01	46.06	5.26E+02
24	826-	841	833.70	144.50	3.37E+02	58.57	6.17E+02
25	885-	901	893.72	154.91	1.36E+02	57.91	6.12E+02
26	1069-	1085	1077.64	186.81	1.76E+03	68.30	5.52E+02
m 27	1134-	1154	1149.91	199.34	3.72E+01	15.53	1.69E+02
28	1183-	1197	1189.66	206.24	6.01E+01	44.69	4.06E+02
29	1361-	1375	1366.78	236.95	9.37E+01	41.04	3.27E+02
30	1375-	1392	1382.86	239.74	6.13E+02	53.91	4.14E+02
31	1393-	1411	1402.21	243.10	8.12E+02	57.11	4.26E+02
32	1565-	1576	1571.12	272.39	6.18E+01	33.45	2.62E+02
33	1700-	1720	1710.51	296.57	1.46E+03	62.54	3.93E+02
34	1949-	1968	1960.16	339.86	1.42E+02	43.09	2.85E+02
35	1984-	1993	1989.16	344.89	6.31E+01	20.17	9.79E+01
36	2032-	2050	2039.37	353.60	2.23E+03	64.61	3.42E+02
37	2325-	2336	2330.13	404.03	6.30E+01	22.81	1.14E+02
38	2347-	2362	2352.36	407.88	5.95E+01	28.70	1.47E+02
39	2442-	2451	2445.31	424.00	3.10E+01	21.81	1.21E+02
40	2777-	2788	2781.94	482.38	3.47E+01	23.25	1.24E+02
41	3517-	3544	3530.91	612.27	1.12E+03	55.71	2.49E+02
42	4022-	4035	4027.18	698.34	6.97E+01	13.47	2.53E+01

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-322-GAM2
Peak Analysis Performed on: 6-25-96 7:40:27 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	6.44	1.41E+02	54.63			1.41E+02	5.46E+01	
2	10.88	4.54E+02	53.13	1.65E+02	3.84E+01	2.89E+02	6.56E+01	
3	13.16	1.63E+03	69.85			1.63E+03	6.99E+01	
4	16.48	2.16E+03	97.29			2.16E+03	9.73E+01	
5	19.18	2.55E+02	68.02	4.29E+01	2.25E+01	2.12E+02	7.16E+01	
6	25.82	3.39E+02	44.90			3.39E+02	4.49E+01	
7	27.56	1.93E+02	42.90			1.93E+02	4.29E+01	
8	46.81	1.07E+03	55.27			1.07E+03	5.53E+01	
9	50.23	1.86E+02	48.56			1.86E+02	4.86E+01	
10	53.47	4.17E+02	50.11	3.59E+01	1.79E+01	3.81E+02	5.32E+01	
11	63.62	2.59E+03	69.38	6.18E+01	2.67E+01	2.53E+03	7.43E+01	
12	68.08	1.71E+02	40.45			1.71E+02	4.04E+01	1.46E+02 ±16.75%
13	75.21	2.05E+03	70.24	1.05E+02	2.88E+01	1.95E+03	7.59E+01	
14	77.48	3.70E+03	83.24	5.62E+01	2.81E+01	3.64E+03	8.79E+01	
15	81.52	3.46E+02	50.75			3.46E+02	5.08E+01	
16	84.26	8.22E+02	60.93	5.33E+01	2.88E+01	7.69E+02	6.74E+01	
17	87.63	1.17E+03	64.32	9.34E+01	3.38E+01	1.08E+03	7.27E+01	
18	90.33	6.19E+02	59.00			6.19E+02	5.90E+01	
19	93.07	3.32E+03	80.02	1.47E+02	3.61E+01	3.17E+03	8.78E+01	
20	95.20	1.63E+02	49.48			1.63E+02	4.95E+01	
21	98.82	2.62E+02	54.70			2.62E+02	5.47E+01	
22	110.24	1.16E+02	54.24			1.16E+02	5.42E+01	
23	113.42	7.15E+01	46.06			7.15E+01	4.61E+01	
24	144.50	3.37E+02	58.57	3.99E+01	3.90E+01	2.97E+02	7.04E+01	
25	154.91	1.36E+02	57.91			1.36E+02	5.79E+01	
26	186.81	1.76E+03	68.30	1.27E+02	2.61E+01	1.64E+03	7.31E+01	
m 27	199.34	3.72E+01	15.53			3.72E+01	1.55E+01	
28	206.24	6.01E+01	44.69			6.01E+01	4.47E+01	
29	236.95	9.37E+01	41.04			9.37E+01	4.10E+01	
30	239.74	6.13E+02	53.91	7.46E+01	3.11E+01	5.38E+02	6.22E+01	
31	243.10	8.12E+02	57.11			8.12E+02	5.71E+01	
32	272.39	6.18E+01	33.45			6.18E+01	3.34E+01	
33	296.57	1.46E+03	62.54	3.73E+01	2.91E+01	1.42E+03	6.90E+01	
34	339.86	1.42E+02	43.09			1.42E+02	4.31E+01	
35	344.89	6.31E+01	20.17	2.43E+01	1.36E+01	3.88E+01	2.43E+01	
36	353.60	2.23E+03	64.61	5.65E+01	2.27E+01	2.18E+03	6.85E+01	
37	404.03	6.30E+01	22.81			6.30E+01	2.28E+01	
38	407.88	5.95E+01	28.70			5.95E+01	2.87E+01	
39	424.00	3.10E+01	21.81			3.10E+01	2.18E+01	
40	482.38	3.47E+01	23.25			3.47E+01	2.33E+01	
41	612.27	1.12E+03	55.71			1.12E+03	5.57E+01	
42	698.34	6.97E+01	13.47	1.84E+01	7.82E+00	5.13E+01	1.56E+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                 :  5-08-96  7:47:00 AM

Sample Title                        : NOPI-323-GAM2
Spectrum Description                : NOPI-323-GAM2
Sample Identification               : NP323
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                 :  5-07-96  7:38:43 AM

Live Time                           :    80000.0 seconds
Real Time                           :    80016.9 seconds


          Energy Calibration Used Done On        :  1-16-96
          Efficiency Calibration Used Done On    : ????????
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$-0.011 \log x + 1.032$

$0.052 \log x + 0.891$

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

Detector Name: DET01
Sample Title: NOPI-323-GAM2
Peak Locate Performed on: 5-08-96 7:46:04 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	31.87	0.5703	5.34	2.67
2	37.39	0.3531	6.47	4.92
3	63.59	0.2453	10.94	9.82
4	76.29	0.2162	13.11	13.09
5	94.57	0.1842	16.41	16.74
6	110.68	0.1858	19.17	19.55
7	118.00	0.6416	19.94	2.43
8	149.49	0.1958	25.83	13.20
9	159.41	0.2310	27.55	9.48
10	212.47	0.4888	37.00	2.20
11	246.91	0.4885	42.66	2.11
12	270.20	0.1058	46.78	43.30
13	290.90	0.2110	50.27	12.29
14	308.99	0.1343	53.48	25.80
15	367.09	0.0850	63.59	62.55
16	392.32	0.2007	67.88	11.59
17	411.55	0.4566	71.16	2.63
18	433.92	0.0870	75.15	56.68
19	447.04	0.0764	77.44	72.56
20	459.95	0.1572	79.70	17.58
21	470.03	0.1395	81.46	22.35
22	486.19	0.1262	84.22	23.52
23	505.86	0.1185	87.58	23.05
24	520.84	0.1347	90.33	19.98
25	536.54	0.0842	92.98	41.69
26	549.43	0.1824	95.22	10.99
27	556.56	0.4462	96.52	2.80
28	570.31	0.1965	98.59	10.25
29	592.17	0.3895	102.70	2.92
30	611.99	0.3655	106.01	2.54
31	632.53	0.3507	109.58	3.37
32	644.91	0.3722	111.70	3.09
33	653.65	0.1812	113.32	11.50
34	700.75	0.3951	121.16	3.02
35	833.18	0.1358	144.47	17.34
36	893.20	0.1888	154.79	9.50
37	946.26	0.1857	163.92	9.84
38	1076.71	0.0824	186.68	38.04
39	1098.81	0.3795	190.52	2.85
40	1189.16	0.1966	206.15	8.08
41	1366.66	0.1782	237.03	9.92

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1381.63	0.1633	239.58	11.34
43	1401.45	0.0802	242.96	42.54
44	1484.15	0.2413	257.19	5.42
45	1499.89	0.2266	259.86	5.95
46	1560.33	0.1626	270.50	10.71
47	1570.85	0.1791	272.35	9.31
48	1590.91	0.2926	275.84	3.36
49	1626.64	0.3295	282.09	2.48
50	1643.50	0.2940	285.04	2.26
51	1668.84	0.4255	289.38	2.04
52	1709.60	0.0641	296.40	60.04
53	1737.48	0.2354	301.35	5.72
54	1752.07	0.2674	303.44	4.15
55	1821.18	0.3018	315.84	2.53
56	1875.29	0.2548	325.41	3.95
57	1958.88	0.2333	339.75	5.14
58	2037.88	0.0574	353.32	71.38
59	2067.20	0.4069	358.43	2.05
60	2240.73	0.3216	387.88	3.17
61	2252.61	0.2454	390.61	4.14
62	2393.93	0.4254	414.20	2.16
63	2494.54	0.3278	432.54	2.62
64	2679.78	0.3321	464.32	2.03
65	2720.62	0.3309	471.59	2.67
66	2781.74	0.2636	482.45	3.04
67	2818.68	0.2391	489.07	4.09
68	3376.25	0.2652	585.47	2.40
69	3528.13	0.0611	611.79	48.26
70	3854.05	0.1841	668.67	5.27
71	3976.45	0.2471	689.52	3.59
72	4028.72	0.1812	698.58	6.29

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-323-GAM2
Peak Analysis Performed on: 5-08-96 7:46:22 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	29-	34	31.31	5.34	1.89E+02	96.85	3.53E+03
2	34-	40	37.80	6.47	1.16E+03	110.93	4.02E+03
3	60-	66	63.56	10.94	3.30E+03	109.34	3.13E+03
4	72-	79	76.10	13.11	1.32E+04	168.19	5.03E+03
5	92-	98	95.10	16.41	1.19E+04	206.51	1.10E+04
6	108-	114	111.00	19.17	2.93E+03	134.93	5.39E+03
7	114-	121	115.48	19.94	4.39E+02	134.12	5.11E+03
8	145-	153	149.41	25.83	2.03E+03	104.74	2.74E+03
9	155-	163	159.37	27.55	1.37E+03	98.98	2.58E+03
10	207-	217	213.84	37.00	1.37E+02	103.56	2.82E+03
11	242-	251	246.47	42.66	1.91E+02	95.15	2.51E+03
12	265-	275	270.23	46.78	1.01E+04	143.06	2.75E+03
13	285-	295	290.36	50.27	1.59E+03	106.41	2.59E+03
14	303-	314	308.85	53.48	3.20E+03	121.96	2.91E+03
15	361-	372	367.16	63.59	1.72E+04	175.61	3.41E+03
16	386-	397	391.91	67.88	1.22E+03	120.37	3.30E+03
17	405-	417	410.81	71.16	2.16E+02	126.31	3.68E+03
18	428-	439	433.81	75.15	1.46E+04	174.11	3.92E+03
19	441-	452	447.03	77.44	2.58E+04	203.35	3.89E+03
20	456-	465	460.07	79.70	2.15E+03	113.55	3.01E+03
21	465-	476	470.18	81.46	2.21E+03	133.00	3.86E+03
22	480-	492	486.13	84.22	6.12E+03	145.45	3.53E+03
23	499-	512	505.46	87.58	8.25E+03	163.08	4.04E+03
24	514-	527	521.34	90.33	3.72E+03	144.21	3.80E+03
25	530-	542	536.60	92.98	2.12E+04	191.75	3.68E+03
26	543-	555	549.51	95.22	2.28E+02	148.49	5.06E+03
27	555-	560	557.00	96.52	9.90E+01	57.36	1.23E+03
28	560-	576	568.97	98.59	1.36E+03	139.36	3.44E+03
29	588-	598	592.64	102.70	1.27E+02	86.66	1.95E+03
30	605-	618	611.77	106.01	3.22E+02	106.49	2.44E+03
31	625-	639	632.35	109.58	2.92E+02	118.83	2.90E+03
32	639-	647	644.57	111.70	1.39E+02	78.47	1.85E+03
33	647-	660	653.87	113.32	6.53E+02	118.58	2.98E+03
34	693-	705	699.11	121.16	1.25E+02	98.38	2.24E+03
35	825-	840	833.53	144.47	2.07E+03	126.06	2.76E+03
36	885-	900	893.01	154.79	8.84E+02	116.78	2.55E+03
37	938-	954	945.68	163.92	8.88E+02	114.55	2.32E+03
38	1068-	1085	1076.89	186.68	1.17E+04	160.26	2.55E+03
39	1094-	1103	1099.04	190.52	1.32E+02	67.88	1.27E+03
40	1184-	1197	1189.15	206.15	4.45E+02	90.92	1.72E+03
41	1358-	1375	1367.20	237.03	7.21E+02	100.02	1.69E+03
42	1375-	1390	1381.91	239.58	4.91E+02	92.81	1.62E+03

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1392-	1410	1401.39	242.96	6.51E+03	126.43	1.65E+03
44	1477-	1490	1483.47	257.19	2.62E+02	76.71	1.24E+03
45	1490-	1509	1498.89	259.86	3.79E+02	102.06	1.67E+03
46	1554-	1566	1560.20	270.50	5.35E+02	77.40	1.27E+03
47	1566-	1577	1570.90	272.35	4.00E+02	69.57	1.10E+03
48	1584-	1600	1591.01	275.84	1.53E+02	87.86	1.43E+03
49	1620-	1633	1627.06	282.09	9.21E+01	68.08	1.01E+03
50	1638-	1649	1644.04	285.04	1.55E+02	59.64	8.49E+02
51	1666-	1672	1669.09	289.38	9.11E+01	38.34	4.96E+02
52	1699-	1719	1709.58	296.40	1.26E+04	149.98	1.59E+03
53	1733-	1742	1738.11	301.35	1.77E+02	51.09	6.94E+02
54	1745-	1757	1750.15	303.44	1.43E+02	63.69	9.06E+02
55	1815-	1827	1821.65	315.84	7.73E+01	60.22	8.34E+02
56	1870-	1885	1876.83	325.41	2.87E+02	72.78	9.98E+02
57	1951-	1967	1959.52	339.75	2.16E+02	84.11	1.31E+03
58	2027-	2048	2037.79	353.32	1.88E+04	170.53	1.59E+03
59	2063-	2072	2067.25	358.43	9.73E+01	45.01	5.47E+02
60	2229-	2245	2237.04	387.88	1.28E+02	75.73	1.06E+03
61	2245-	2260	2252.77	390.61	1.57E+02	71.77	9.98E+02
62	2382-	2398	2388.80	414.20	1.88E+02	72.58	9.63E+02
63	2490-	2499	2494.54	432.54	7.20E+01	44.59	5.44E+02
64	2667-	2686	2677.80	464.32	1.22E+02	76.64	9.58E+02
65	2716-	2725	2719.72	471.59	6.18E+01	40.79	4.48E+02
66	2774-	2789	2782.34	482.45	8.09E+01	61.10	7.30E+02
67	2814-	2828	2820.52	489.07	1.43E+02	54.97	6.05E+02
68	3368-	3385	3376.34	585.47	1.91E+02	61.94	6.61E+02
69	3514-	3541	3528.12	611.79	9.33E+03	136.25	1.15E+03
70	3843-	3868	3856.07	668.67	3.57E+02	78.81	7.82E+02
71	3969-	3983	3976.31	689.52	8.65E+01	47.80	4.61E+02
72	4022-	4035	4028.54	698.58	2.00E+02	31.39	1.59E+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-323-GAM2
Peak Analysis Performed on: 5-08-96 7:46:04 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	5.34	1.89E+02	96.85			1.89E+02	9.69E+01
2	6.47	1.16E+03	110.93			1.16E+03	1.11E+02
3	10.94	3.30E+03	109.34			3.30E+03	1.09E+02
4	13.11	1.32E+04	168.19			1.32E+04	1.68E+02
5	16.41	1.19E+04	206.51			1.19E+04	2.07E+02
6	19.17	2.93E+03	134.93			2.93E+03	1.35E+02
7	19.94	4.39E+02	134.12			4.39E+02	1.34E+02
8	25.83	2.03E+03	104.74			2.03E+03	1.05E+02
9	27.55	1.37E+03	98.98	3.59E+01	2.20E+01	1.33E+03	1.01E+02
10	37.00	1.37E+02	103.56			1.37E+02	1.04E+02
11	42.66	1.91E+02	95.15			1.91E+02	9.51E+01
12	46.78	1.01E+04	143.06			1.01E+04	1.43E+02
13	50.27	1.59E+03	106.41			1.59E+03	1.06E+02
14	53.48	3.20E+03	121.96			3.20E+03	1.22E+02
15	63.59	1.72E+04	175.61	8.22E+01	2.83E+01	1.71E+04	1.78E+02
16	67.88	1.22E+03	120.37			1.22E+03	1.20E+02 1.14 E+03
17	71.16	2.16E+02	126.31			2.16E+02	1.26E+02 ±5.8%
18	75.15	1.46E+04	174.11	4.59E+01	3.14E+01	1.45E+04	1.77E+02
19	77.44	2.58E+04	203.35	5.88E+01	2.63E+01	2.57E+04	2.05E+02
20	79.70	2.15E+03	113.55			2.15E+03	1.14E+02
21	81.46	2.21E+03	133.00			2.21E+03	1.33E+02
22	84.22	6.12E+03	145.45			6.12E+03	1.45E+02
23	87.58	8.25E+03	163.08			8.25E+03	1.63E+02
24	90.33	3.72E+03	144.21			3.72E+03	1.44E+02
25	92.98	2.12E+04	191.75	2.14E+02	3.47E+01	2.09E+04	1.95E+02
26	95.22	2.28E+02	148.49			2.28E+02	1.48E+02
27	96.52	9.90E+01	57.36			9.90E+01	5.74E+01
28	98.59	1.36E+03	139.36			1.36E+03	1.39E+02
29	102.70	1.27E+02	86.66			1.27E+02	8.67E+01
30	106.01	3.22E+02	106.49			3.22E+02	1.06E+02
31	109.58	2.92E+02	118.83	6.16E+01	3.08E+01	2.30E+02	1.23E+02
32	111.70	1.39E+02	78.47			1.39E+02	7.85E+01
33	113.32	6.53E+02	118.58			6.53E+02	1.19E+02
34	121.16	1.25E+02	98.38			1.25E+02	9.84E+01
35	144.47	2.07E+03	126.06			2.07E+03	1.26E+02
36	154.79	8.84E+02	116.78			8.84E+02	1.17E+02
37	163.92	8.88E+02	114.55			8.88E+02	1.15E+02
38	186.68	1.17E+04	160.26	7.15E+01	3.60E+01	1.16E+04	1.64E+02
39	190.52	1.32E+02	67.88			1.32E+02	6.79E+01
40	206.15	4.45E+02	90.92			4.45E+02	9.09E+01
41	237.03	7.21E+02	100.02			7.21E+02	1.00E+02
42	239.58	4.91E+02	92.81	7.99E+01	3.31E+01	4.11E+02	9.85E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	242.96	6.51E+03	126.43			6.51E+03	1.26E+02
44	257.19	2.62E+02	76.71			2.62E+02	7.67E+01
45	259.86	3.79E+02	102.06			3.79E+02	1.02E+02
46	270.50	5.35E+02	77.40			5.35E+02	7.74E+01
47	272.35	4.00E+02	69.57			4.00E+02	6.96E+01
48	275.84	1.53E+02	87.86			1.53E+02	8.79E+01
49	282.09	9.21E+01	68.08			9.21E+01	6.81E+01
50	285.04	1.55E+02	59.64			1.55E+02	5.96E+01
51	289.38	9.11E+01	38.34			9.11E+01	3.83E+01
52	296.40	1.26E+04	149.98			1.26E+04	1.50E+02
53	301.35	1.77E+02	51.09			1.77E+02	5.11E+01
54	303.44	1.43E+02	63.69	2.63E+01	2.09E+01	1.17E+02	6.70E+01
55	315.84	7.73E+01	60.22			7.73E+01	6.02E+01
56	325.41	2.87E+02	72.78			2.87E+02	7.28E+01
57	339.75	2.16E+02	84.11			2.16E+02	8.41E+01
58	353.32	1.88E+04	170.53			1.88E+04	1.71E+02
59	358.43	9.73E+01	45.01			9.73E+01	4.50E+01
60	387.88	1.28E+02	75.73			1.28E+02	7.57E+01
61	390.61	1.57E+02	71.77			1.57E+02	7.18E+01
62	414.20	1.88E+02	72.58			1.88E+02	7.26E+01
63	432.54	7.20E+01	44.59			7.20E+01	4.46E+01
64	464.32	1.22E+02	76.64			1.22E+02	7.66E+01
65	471.59	6.18E+01	40.79			6.18E+01	4.08E+01
66	482.45	8.09E+01	61.10			8.09E+01	6.11E+01
67	489.07	1.43E+02	54.97			1.43E+02	5.50E+01
68	585.47	1.91E+02	61.94	2.17E+01	1.33E+01	1.69E+02	6.34E+01
69	611.79	9.33E+03	136.25			9.33E+03	1.36E+02
70	668.67	3.57E+02	78.81			3.57E+02	7.88E+01
71	689.52	8.65E+01	47.80			8.65E+01	4.78E+01
72	698.58	2.00E+02	31.39			2.00E+02	3.14E+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	:	6-26-96 7:35:00 AM
Sample Title	:	NOPI-324-GAM2
Spectrum Description	:	NOPI-324-GAM2
Sample Identification	:	NP324
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	:	6-25-96 7:39:23 AM
Live Time	:	80000.0 seconds
Real Time	:	80012.9 seconds

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

$-0.063\log x + 1.139$

$0.007\log x + 0.984$

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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-324-GAM2
Peak Locate Performed on: 6-26-96 7:34:19 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	18.22	0.2804	3.09	3.97
2	37.53	0.4285	6.46	2.87
3	63.62	0.2874	10.94	7.52
4	76.47	0.2522	13.16	7.03
5	94.70	0.2417	16.42	11.92
6	110.75	0.2398	19.18	12.99
7	114.85	0.4965	20.03	3.47
8	149.39	0.2393	25.84	9.86
9	159.46	0.2850	27.59	5.81
10	213.69	0.4360	37.23	3.61
11	270.52	0.1173	46.83	34.04
12	291.19	0.2547	50.31	6.73
13	309.27	0.1523	53.55	20.39
14	367.52	0.1014	63.64	41.00
15	392.98	0.2166	68.04	9.71
16	434.23	0.0915	75.22	49.29
17	447.48	0.0786	77.52	59.45
18	460.37	0.1641	79.77	14.79
19	470.56	0.1589	81.54	14.53
20	486.35	0.1445	84.29	17.19
21	506.36	0.1209	87.65	21.43
22	521.28	0.1453	90.42	18.13
23	537.10	0.0983	93.08	29.23
24	549.68	0.1970	95.29	9.31
25	570.88	0.2445	98.78	6.62
26	612.61	0.3783	106.51	3.07
27	653.96	0.2439	113.49	7.19
28	833.87	0.1682	144.55	11.46
29	893.96	0.2233	154.86	7.23
30	947.02	0.2368	163.99	5.95
31	1012.93	0.4668	175.07	2.05
32	1078.34	0.0926	186.91	27.98
33	1190.24	0.2553	206.37	4.30
34	1367.89	0.2005	237.16	7.35
35	1383.03	0.1560	239.79	11.85
36	1402.88	0.0867	243.19	36.55
37	1439.65	0.4082	249.45	2.04
38	1485.80	0.2514	257.66	4.71
39	1500.68	0.2164	260.14	5.78
40	1561.88	0.1970	270.62	7.53
41	1594.18	0.2841	276.41	3.06

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1658.29	0.2903	287.38	3.06
43	1711.33	0.0693	296.68	51.55
44	1738.44	0.2676	301.73	2.05
45	1877.75	0.2633	325.59	2.57
46	1962.54	0.2467	339.83	4.28
47	2039.99	0.0619	353.68	59.24
48	2073.17	0.3463	359.48	2.41
49	2193.73	0.3698	380.50	2.02
50	2255.59	0.3199	391.32	2.18
51	2458.90	0.3239	426.37	2.14
52	2785.14	0.2755	483.29	2.75
53	3531.91	0.0665	612.38	40.97
54	3683.61	0.2745	638.96	2.02
55	4027.91	0.2008	698.49	3.82

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-324-GAM2
Peak Analysis Performed on: 6-26-96 7:34:35 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-	20	18.33	3.09	1.46E+03	65.06	1.07E+03
2	34-	40	37.74	6.46	3.87E+02	89.85	2.76E+03
3	60-	66	63.59	10.94	2.04E+03	90.28	2.21E+03
4	73-	79	76.36	13.16	6.05E+03	123.08	3.31E+03
5	92-	98	95.19	16.42	4.79E+03	150.69	6.37E+03
6	108-	114	111.11	19.18	1.15E+03	100.70	3.22E+03
7	114-	118	116.01	20.03	3.88E+02	72.23	1.96E+03
8	145-	153	149.47	25.84	9.83E+02	84.45	1.89E+03
9	155-	163	159.55	27.59	7.06E+02	80.76	1.78E+03
10	209-	218	215.18	37.23	1.01E+02	80.24	1.80E+03
11	265-	275	270.51	46.83	8.14E+03	124.85	1.99E+03
12	286-	296	290.58	50.31	9.00E+02	91.66	1.98E+03
13	304-	314	309.28	53.55	2.15E+03	96.81	1.92E+03
14	362-	373	367.42	63.64	8.96E+03	137.58	2.47E+03
15	387-	398	392.83	68.04	1.12E+03	102.86	2.36E+03
16	428-	440	434.20	75.22	1.19E+04	159.10	3.15E+03
17	441-	453	447.48	77.52	2.07E+04	183.73	3.09E+03
18	454-	466	460.46	79.77	8.14E+02	125.28	3.50E+03
19	466-	476	470.68	81.54	1.75E+03	98.75	2.13E+03
20	480-	492	486.51	84.29	3.93E+03	119.09	2.41E+03
21	500-	512	505.90	87.65	6.47E+03	137.67	2.90E+03
22	515-	527	521.86	90.42	2.66E+03	119.33	2.72E+03
23	530-	543	537.18	93.08	1.12E+04	155.09	2.86E+03
24	546-	556	549.94	95.29	9.32E+02	94.29	2.10E+03
25	565-	577	570.05	98.78	8.02E+02	95.34	1.93E+03
26	610-	619	614.62	106.51	2.28E+02	68.57	1.27E+03
27	649-	660	654.89	113.49	5.83E+02	83.83	1.61E+03
28	826-	841	833.97	144.55	1.12E+03	108.28	2.12E+03
29	886-	901	893.42	154.86	3.86E+02	106.25	2.17E+03
30	939-	954	946.08	163.99	3.56E+02	98.29	1.85E+03
31	1006-	1016	1009.95	175.07	1.27E+02	63.77	1.04E+03
32	1070-	1086	1078.25	186.91	7.67E+03	132.63	1.89E+03
33	1181-	1198	1190.44	206.37	2.74E+02	93.73	1.55E+03
34	1362-	1377	1367.95	237.16	2.43E+02	83.68	1.33E+03
35	1377-	1392	1383.17	239.79	7.21E+02	83.92	1.25E+03
36	1393-	1412	1402.72	243.19	5.23E+03	112.97	1.26E+03
37	1434-	1446	1438.85	249.45	9.57E+01	55.79	7.03E+02
38	1482-	1491	1486.20	257.66	1.50E+02	48.06	6.12E+02
39	1491-	1506	1500.45	260.14	3.02E+02	72.52	9.89E+02
40	1552-	1566	1560.92	270.62	3.51E+02	71.26	9.96E+02
41	1588-	1600	1594.28	276.41	1.38E+02	60.02	8.13E+02
42	1651-	1665	1657.53	287.38	1.21E+02	64.47	8.47E+02

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1701-	1721	1711.19	296.68	1.00E+04	129.80	1.09E+03
44	1731-	1748	1740.28	301.73	2.00E+02	73.08	9.35E+02
45	1869-	1883	1877.87	325.59	1.10E+02	62.58	8.01E+02
46	1951-	1968	1959.97	339.83	2.87E+02	72.41	9.00E+02
47	2029-	2050	2039.83	353.68	1.45E+04	151.37	1.30E+03
48	2069-	2078	2073.30	359.48	1.06E+02	37.51	3.68E+02
49	2188-	2200	2194.49	380.50	1.12E+02	48.68	5.30E+02
50	2250-	2263	2256.84	391.32	9.26E+01	55.47	6.62E+02
51	2452-	2465	2458.98	426.37	1.34E+02	52.04	5.70E+02
52	2779-	2795	2787.15	483.29	1.21E+02	53.79	5.28E+02
53	3518-	3545	3531.55	612.38	7.45E+03	112.52	6.54E+02
54	3676-	3693	3684.79	638.96	6.89E+01	46.05	3.73E+02
55	4020-	4035	4028.05	698.49	1.53E+02	29.49	1.35E+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-324-GAM2
Peak Analysis Performed on: 6-26-96 7:34:19 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	3.09	1.46E+03	65.06	3.90E+02	4.12E+01	1.07E+03	7.70E+01
2	6.46	3.87E+02	89.85			3.87E+02	8.99E+01
3	10.94	2.04E+03	90.28	1.65E+02	3.84E+01	1.87E+03	9.81E+01
4	13.16	6.05E+03	123.08			6.05E+03	1.23E+02
5	16.42	4.79E+03	150.69			4.79E+03	1.51E+02
6	19.18	1.15E+03	100.70	4.29E+01	2.25E+01	1.10E+03	1.03E+02
7	20.03	3.88E+02	72.23			3.88E+02	7.22E+01
8	25.84	9.83E+02	84.45			9.83E+02	8.45E+01
9	27.59	7.06E+02	80.76			7.06E+02	8.08E+01
10	37.23	1.01E+02	80.24			1.01E+02	8.02E+01
11	46.83	8.14E+03	124.85			8.14E+03	1.25E+02
12	50.31	9.00E+02	91.66			9.00E+02	9.17E+01
13	53.55	2.15E+03	96.81	3.59E+01	1.79E+01	2.11E+03	9.84E+01
14	63.64	8.96E+03	137.58	6.18E+01	2.67E+01	8.90E+03	1.40E+02
15	68.04	1.12E+03	102.86			1.12E+03	1.03E+02
16	75.22	1.19E+04	159.10	1.05E+02	2.88E+01	1.18E+04	1.62E+02
17	77.52	2.07E+04	183.73	5.62E+01	2.81E+01	2.06E+04	1.86E+02
18	79.77	8.14E+02	125.28	3.91E+01	2.94E+01	7.75E+02	1.29E+02
19	81.54	1.75E+03	98.75			1.75E+03	9.87E+01
20	84.29	3.93E+03	119.09	5.33E+01	2.88E+01	3.87E+03	1.23E+02
21	87.65	6.47E+03	137.67	9.34E+01	3.38E+01	6.38E+03	1.42E+02
22	90.42	2.66E+03	119.33			2.66E+03	1.19E+02
23	93.08	1.12E+04	155.09	1.47E+02	3.61E+01	1.10E+04	1.59E+02
24	95.29	9.32E+02	94.29			9.32E+02	9.43E+01
25	98.78	8.02E+02	95.34			8.02E+02	9.53E+01
26	106.51	2.28E+02	68.57			2.28E+02	6.86E+01
27	113.49	5.83E+02	83.83			5.83E+02	8.38E+01
28	144.55	1.12E+03	108.28	3.99E+01	3.90E+01	1.08E+03	1.15E+02
29	154.86	3.86E+02	106.25			3.86E+02	1.06E+02
30	163.99	3.56E+02	98.29			3.56E+02	9.83E+01
31	175.07	1.27E+02	63.77			1.27E+02	6.38E+01
32	186.91	7.67E+03	132.63	1.27E+02	2.61E+01	7.55E+03	1.35E+02
33	206.37	2.74E+02	93.73			2.74E+02	9.37E+01
34	237.16	2.43E+02	83.68			2.43E+02	8.37E+01
35	239.79	7.21E+02	83.92	7.46E+01	3.11E+01	6.47E+02	8.95E+01
36	243.19	5.23E+03	112.97			5.23E+03	1.13E+02
37	249.45	9.57E+01	55.79			9.57E+01	5.58E+01
38	257.66	1.50E+02	48.06			1.50E+02	4.81E+01
39	260.14	3.02E+02	72.52			3.02E+02	7.25E+01
40	270.62	3.51E+02	71.26			3.51E+02	7.13E+01
41	276.41	1.38E+02	60.02			1.38E+02	6.00E+01
42	287.38	1.21E+02	64.47			1.21E+02	6.45E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	296.68	1.00E+04	129.80	3.73E+01	2.91E+01	9.99E+03	1.33E+02
44	301.73	2.00E+02	73.08			2.00E+02	7.31E+01
45	325.59	1.10E+02	62.58			1.10E+02	6.26E+01
46	339.83	2.87E+02	72.41			2.87E+02	7.24E+01
47	353.68	1.45E+04	151.37	5.65E+01	2.27E+01	1.44E+04	1.53E+02
48	359.48	1.06E+02	37.51			1.06E+02	3.75E+01
49	380.50	1.12E+02	48.68			1.12E+02	4.87E+01
50	391.32	9.26E+01	55.47			9.26E+01	5.55E+01
51	426.37	1.34E+02	52.04			1.34E+02	5.20E+01
52	483.29	1.21E+02	53.79			1.21E+02	5.38E+01
53	612.38	7.45E+03	112.52			7.45E+03	1.13E+02
54	638.96	6.89E+01	46.05			6.89E+01	4.61E+01
55	698.49	1.53E+02	29.49	1.84E+01	7.82E+00	1.34E+02	3.05E+01

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

Errors quoted at 1.000 sigma

```
*****************************************************************************
*****        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	:	6-27-96 7:33:24 AM
Sample Title	:	NOPI-325-GAM2
Spectrum Description	:	NOPI-325-GAM2
Sample Identification	:	NP325
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	:	6-26-96 7:33:18 AM
Live Time	:	80000.0 seconds
Real Time	:	80006.1 seconds

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

$-0.211\log x + 1.435$

$-0.133\log x + 1.265$

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

Detector Name: DET01
Sample Title: NOPI-325-GAM2
Peak Locate Performed on: 6-27-96 7:32:45 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	18.48	0.3303	3.08	3.22
2	63.32	0.4922	10.87	2.18
3	76.51	0.3620	13.15	4.06
4	94.62	0.3357	16.43	5.50
5	110.93	0.3578	19.21	6.04
6	114.84	0.6038	20.04	2.30
7	149.56	0.3478	25.86	4.16
8	159.68	0.4313	27.62	3.66
9	270.52	0.1672	46.82	16.69
10	291.01	0.4246	50.35	2.76
11	309.20	0.2101	53.58	10.45
12	367.51	0.1351	63.66	22.63
13	392.87	0.3911	68.08	2.38
14	434.23	0.1270	75.23	25.62
15	447.54	0.1096	77.52	30.54
16	460.11	0.2479	79.77	7.69
17	470.45	0.2281	81.56	7.49
18	486.63	0.2063	84.35	7.99
19	506.34	0.1742	87.66	9.70
20	521.21	0.1982	90.42	10.17
21	537.08	0.1288	93.10	16.91
22	549.82	0.2883	95.25	4.59
23	582.42	0.4873	99.39	2.43
24	654.68	0.2930	113.49	4.13
25	768.60	0.4459	133.17	2.04
26	834.13	0.2054	144.63	7.55
27	895.13	0.3495	155.01	2.22
28	947.09	0.2981	164.12	3.39
29	1078.28	0.1247	186.91	15.28
30	1190.07	0.2996	206.40	2.82
31	1368.26	0.2960	236.94	3.30
32	1383.53	0.1703	239.84	10.53
33	1402.96	0.1241	243.17	18.26
34	1486.88	0.3167	257.82	2.36
35	1499.14	0.3045	259.97	2.42
36	1561.84	0.2709	270.77	4.18
37	1571.85	0.3328	272.44	3.05
38	1711.42	0.0955	296.72	27.37
39	1961.05	0.2601	340.01	3.92
40	2040.09	0.0843	353.69	32.52
41	2240.05	0.3960	388.65	2.13

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2330.12	0.3267	403.92	2.42
43	2347.97	0.3304	407.10	2.33
44	2636.89	0.2957	457.13	3.27
45	3097.52	0.3441	537.22	2.21
46	3114.13	0.3041	540.39	3.08
47	3323.22	0.3182	576.08	2.20
48	3391.15	0.3586	587.86	2.17
49	3487.46	0.3532	604.55	2.19
50	3532.16	0.0911	612.47	21.63
51	3857.06	0.2436	668.38	3.89
52	4029.57	0.2729	698.02	3.09

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-325-GAM2
Peak Analysis Performed on: 6-27-96 7:33:01 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	16-	20	18.27	3.08	6.56E+02	47.86	6.20E+02
2	60-	66	63.17	10.87	5.61E+02	54.48	8.68E+02
3	73-	79	76.32	13.15	1.49E+03	65.18	1.00E+03
4	92-	98	95.25	16.43	1.41E+03	78.35	1.70E+03
5	107-	114	111.26	19.21	2.68E+02	62.09	1.19E+03
6	114-	118	116.02	20.04	1.25E+02	40.90	6.25E+02
7	145-	153	149.61	25.86	3.24E+02	49.88	6.65E+02
8	155-	163	159.73	27.62	1.99E+02	45.77	5.82E+02
9	265-	275	270.47	46.82	1.82E+03	66.96	7.11E+02
10	285-	296	290.81	50.35	2.74E+02	54.31	6.66E+02
11	304-	314	309.43	53.58	5.17E+02	54.66	6.59E+02
12	361-	373	367.56	63.66	3.00E+03	81.93	8.74E+02
13	387-	398	393.07	68.08	2.21E+02	56.69	7.46E+02
14	428-	440	434.25	75.23	3.12E+03	87.79	1.08E+03
15	441-	453	447.48	77.52	5.63E+03	97.84	9.27E+02
16	454-	466	460.45	79.77	1.63E+02	69.36	1.09E+03
17	466-	476	470.75	81.56	3.16E+02	57.94	8.09E+02
18	480-	492	486.87	84.35	1.00E+03	68.08	8.55E+02
19	500-	512	505.93	87.66	1.69E+03	75.33	9.31E+02
20	514-	527	521.84	90.42	7.85E+02	70.31	9.23E+02
21	530-	543	537.29	93.10	3.81E+03	90.30	9.68E+02
22	546-	556	549.72	95.25	2.11E+02	54.82	7.35E+02
23	565-	588	573.60	99.39	4.61E+02	89.49	1.07E+03
24	649-	661	654.89	113.49	1.60E+02	54.63	6.63E+02
25	761-	775	768.38	133.17	7.77E+01	55.38	6.28E+02
26	828-	841	834.44	144.63	3.86E+02	55.76	6.05E+02
27	887-	902	894.32	155.01	1.43E+02	63.28	7.69E+02
28	941-	952	946.81	164.12	8.52E+01	47.11	5.30E+02
29	1069-	1086	1078.22	186.91	2.24E+03	79.36	7.38E+02
30	1183-	1198	1190.63	206.40	1.26E+02	50.57	4.86E+02
31	1359-	1373	1366.68	236.94	1.11E+02	45.94	4.18E+02
32	1374-	1392	1383.41	239.84	5.23E+02	53.00	3.98E+02
33	1393-	1412	1402.60	243.17	1.33E+03	63.37	4.46E+02
34	1482-	1494	1487.09	257.82	8.93E+01	34.99	2.64E+02
35	1494-	1506	1499.52	259.97	7.01E+01	36.75	2.98E+02
36	1552-	1567	1561.75	270.77	4.55E+01	43.05	3.61E+02
37	1567-	1576	1571.40	272.44	7.37E+01	28.95	2.17E+02
38	1701-	1721	1711.38	296.72	2.50E+03	75.11	5.04E+02
39	1955-	1967	1961.00	340.01	9.45E+01	34.32	2.54E+02
40	2029-	2050	2039.92	353.69	3.89E+03	81.74	4.29E+02
41	2236-	2247	2241.48	388.65	4.50E+01	28.06	1.84E+02
42	2324-	2337	2329.52	403.92	5.23E+01	30.22	1.88E+02

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	2343-	2353	2347.87	407.10	3.06E+01	25.52	1.64E+02
	44	2632-	2641	2636.36	457.13	3.23E+01	20.73	1.10E+02
	45	3088-	3110	3098.12	537.22	4.82E+01	35.39	1.78E+02
	46	3110-	3127	3116.41	540.39	3.33E+01	28.63	1.41E+02
	47	3315-	3332	3322.23	576.08	3.07E+01	29.30	1.49E+02
m	48	3372-	3397	3390.16	587.86	3.38E+01	14.90	1.73E+02
	49	3482-	3493	3486.39	604.55	2.45E+01	20.85	9.85E+01
	50	3518-	3545	3532.06	612.47	2.01E+03	62.49	2.37E+02
	51	3843-	3863	3854.39	668.38	6.24E+01	31.89	1.54E+02
	52	4014-	4035	4025.33	698.02	8.64E+01	24.23	7.76E+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-325-GAM2
Peak Analysis Performed on: 6-27-96 7:32:45 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	3.08	6.56E+02	47.86	3.90E+02	4.12E+01	2.66E+02	6.32E+01	
2	10.87	5.61E+02	54.48	1.65E+02	3.84E+01	3.96E+02	6.67E+01	
3	13.15	1.49E+03	65.18			1.49E+03	6.52E+01	
4	16.43	1.41E+03	78.35			1.41E+03	7.83E+01	
5	19.21	2.68E+02	62.09	4.29E+01	2.25E+01	2.25E+02	6.60E+01	
6	20.04	1.25E+02	40.90			1.25E+02	4.09E+01	
7	25.86	3.24E+02	49.88			3.24E+02	4.99E+01	
8	27.62	1.99E+02	45.77			1.99E+02	4.58E+01	
9	46.82	1.82E+03	66.96			1.82E+03	6.70E+01	
10	50.35	2.74E+02	54.31			2.74E+02	5.43E+01	
11	53.58	5.17E+02	54.66	3.59E+01	1.79E+01	4.81E+02	5.75E+01	
12	63.66	3.00E+03	81.93	6.18E+01	2.67E+01	2.94E+03	8.62E+01	
13	68.08	2.21E+02	56.69			2.21E+02	5.67E+01	1.45E+02 ± 18.57%
14	75.23	3.12E+03	87.79	1.05E+02	2.88E+01	3.01E+03	9.24E+01	
15	77.52	5.63E+03	97.84	5.62E+01	2.81E+01	5.58E+03	1.02E+02	
16	79.77	1.63E+02	69.36	3.91E+01	2.94E+01	1.24E+02	7.53E+01	
17	81.56	3.16E+02	57.94			3.16E+02	5.79E+01	
18	84.35	1.00E+03	68.08	5.33E+01	2.88E+01	9.49E+02	7.39E+01	
19	87.66	1.69E+03	75.33	9.34E+01	3.38E+01	1.59E+03	8.26E+01	
20	90.42	7.85E+02	70.31			7.85E+02	7.03E+01	
21	93.10	3.81E+03	90.30	1.47E+02	3.61E+01	3.66E+03	9.73E+01	
22	95.25	2.11E+02	54.82			2.11E+02	5.48E+01	
23	99.39	4.61E+02	89.49			4.61E+02	8.95E+01	
24	113.49	1.60E+02	54.63			1.60E+02	5.46E+01	
25	133.17	7.77E+01	55.38			7.77E+01	5.54E+01	
26	144.63	3.86E+02	55.76	3.99E+01	3.90E+01	3.46E+02	6.80E+01	
27	155.01	1.43E+02	63.28			1.43E+02	6.33E+01	
28	164.12	8.52E+01	47.11			8.52E+01	4.71E+01	
29	186.91	2.24E+03	79.36	1.27E+02	2.61E+01	2.11E+03	8.36E+01	
30	206.40	1.26E+02	50.57			1.26E+02	5.06E+01	
31	236.94	1.11E+02	45.94			1.11E+02	4.59E+01	
32	239.84	5.23E+02	53.00	7.46E+01	3.11E+01	4.49E+02	6.14E+01	
33	243.17	1.33E+03	63.37			1.33E+03	6.34E+01	
34	257.82	8.93E+01	34.99			8.93E+01	3.50E+01	
35	259.97	7.01E+01	36.75			7.01E+01	3.67E+01	
36	270.77	4.55E+01	43.05			4.55E+01	4.31E+01	
37	272.44	7.37E+01	28.95			7.37E+01	2.90E+01	
38	296.72	2.50E+03	75.11	3.73E+01	2.91E+01	2.46E+03	8.06E+01	
39	340.01	9.45E+01	34.32			9.45E+01	3.43E+01	
40	353.69	3.89E+03	81.74	5.65E+01	2.27E+01	3.84E+03	8.48E+01	
41	388.65	4.50E+01	28.06			4.50E+01	2.81E+01	
42	403.92	5.23E+01	30.22			5.23E+01	3.02E+01	

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	407.10	3.06E+01	25.52			3.06E+01	2.55E+01
44	457.13	3.23E+01	20.73			3.23E+01	2.07E+01
45	537.22	4.82E+01	35.39			4.82E+01	3.54E+01
46	540.39	3.33E+01	28.63			3.33E+01	2.86E+01
47	576.08	3.07E+01	29.30			3.07E+01	2.93E+01
m 48	587.86	3.38E+01	14.90			3.38E+01	1.49E+01
49	604.55	2.45E+01	20.85			2.45E+01	2.09E+01
50	612.47	2.01E+03	62.49			2.01E+03	6.25E+01
51	668.38	6.24E+01	31.89			6.24E+01	3.19E+01
52	698.02	8.64E+01	24.23	1.84E+01	7.82E+00	6.80E+01	2.55E+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                 :  5-10-96  8:18:55 AM

Sample Title                        : NOPI-326-GAM2
Spectrum Description                : NOPI-326-GAM2
Sample Identification               : NP326
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                 :  5-09-96  7:36:44 AM

Live Time                           :    80000.0 seconds
Real Time                           :    80006.2 seconds


          Energy Calibration Used Done On        :  1-16-96
          Efficiency Calibration Used Done On    : ????????
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-0.175 log t + 1.352

-0.10 x log t + 1.198

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

Detector Name: DET01
Sample Title: NOPI-326-GAM2
Peak Locate Performed on: 5-10-96 8:17:41 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	39.00	0.6860	6.52	2.13
2	54.00	0.6610	9.33	2.29
3	63.76	0.4612	10.90	3.55
4	76.34	0.3606	13.12	4.76
5	94.63	0.3063	16.38	6.67
6	110.52	0.3087	19.18	5.47
7	149.45	0.3661	25.83	4.08
8	249.62	0.5433	43.47	2.12
9	257.26	0.5054	44.71	2.91
10	270.21	0.1506	46.77	21.39
11	290.80	0.3597	50.22	4.56
12	309.04	0.2011	53.53	11.02
13	367.08	0.1308	63.59	26.20
14	392.72	0.3103	67.91	5.46
15	433.95	0.1212	75.15	29.24
16	447.11	0.1054	77.46	36.72
17	459.63	0.2085	79.68	9.17
18	470.13	0.2244	81.56	8.90
19	486.28	0.1989	84.26	9.28
20	505.91	0.1647	87.56	12.80
21	520.59	0.1903	90.29	10.00
22	536.59	0.1297	92.99	17.77
23	549.51	0.2488	95.19	6.16
24	570.04	0.3440	98.68	3.68
25	593.13	0.4694	102.87	2.18
26	645.51	0.3964	111.88	2.43
27	833.29	0.2016	144.45	8.55
28	894.74	0.3487	155.20	2.35
29	946.16	0.2768	163.98	3.32
30	1077.22	0.1201	186.74	16.31
31	1217.96	0.4243	211.09	2.03
32	1366.79	0.2804	237.01	2.46
33	1382.21	0.1839	239.50	8.70
34	1401.60	0.1138	242.95	20.82
35	1499.62	0.2809	259.99	3.39
36	1560.48	0.3211	270.47	2.97
37	1709.74	0.0899	296.45	31.78
38	1902.57	0.3476	330.00	2.51
39	1959.02	0.2847	339.97	2.29
40	1993.89	0.3823	345.68	2.08
41	2038.16	0.0808	353.37	35.23

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2446.37	0.3786	424.02	2.27
43	2480.32	0.3545	430.07	2.58
44	2509.88	0.3581	435.05	2.01
45	2820.13	0.3044	488.96	2.34
46	3038.40	0.4110	526.18	2.04
47	3074.83	0.3503	532.95	2.05
48	3528.50	0.0866	611.82	23.58
49	3850.25	0.2639	667.69	2.02
50	4028.38	0.2443	698.43	2.87

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-326-GAM2
Peak Analysis Performed on: 5-10-96 8:17:58 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-	41	38.06	6.52	1.51E+02	68.09	1.48E+03
2	50-	57	54.27	9.33	1.80E+02	58.04	1.06E+03
3	60-	66	63.33	10.90	7.05E+02	56.17	8.84E+02
4	72-	79	76.16	13.12	1.77E+03	72.93	1.18E+03
5	92-	98	94.91	16.38	1.48E+03	79.02	1.71E+03
6	107-	114	111.05	19.18	3.68E+02	63.03	1.19E+03
7	145-	153	149.41	25.83	3.38E+02	51.77	7.18E+02
8	246-	254	251.13	43.47	8.51E+01	44.61	5.84E+02
9	254-	262	258.30	44.71	8.79E+01	46.03	6.22E+02
10	265-	275	270.17	46.77	2.46E+03	71.05	6.89E+02
11	285-	295	290.04	50.22	3.16E+02	52.22	6.40E+02
12	303-	314	309.17	53.53	6.78E+02	62.16	7.97E+02
13	361-	372	367.16	63.59	3.30E+03	81.90	8.52E+02
14	387-	398	392.07	67.91	1.65E+02	65.31	1.02E+03
15	428-	439	433.81	75.15	3.94E+03	90.45	1.06E+03
16	441-	453	447.15	77.46	6.88E+03	109.39	1.20E+03
17	456-	465	459.90	79.68	5.20E+02	58.59	8.21E+02
18	465-	476	470.76	81.56	5.00E+02	63.50	8.82E+02
19	480-	492	486.34	84.26	1.06E+03	72.69	9.90E+02
20	499-	512	505.35	87.56	2.20E+03	85.73	1.13E+03
21	514-	526	521.13	90.29	8.95E+02	72.26	1.02E+03
22	530-	542	536.65	92.99	4.08E+03	88.05	8.65E+02
23	546-	555	549.35	95.19	2.12E+02	52.66	7.18E+02
24	563-	576	569.47	98.68	3.45E+02	60.00	7.19E+02
25	591-	597	593.63	102.87	4.54E+01	31.89	3.47E+02
26	642-	648	645.59	111.88	6.81E+01	32.44	3.55E+02
27	825-	840	833.40	144.45	4.38E+02	65.58	7.72E+02
28	890-	902	895.39	155.20	1.21E+02	54.55	6.67E+02
29	941-	952	946.00	163.98	1.62E+02	47.13	5.06E+02
30	1068-	1085	1077.28	186.74	2.73E+03	83.28	7.65E+02
31	1214-	1222	1217.68	211.09	4.34E+01	31.03	2.80E+02
32	1360-	1372	1367.12	237.01	1.10E+02	42.84	4.06E+02
33	1373-	1388	1381.49	239.50	2.75E+02	53.85	5.24E+02
34	1392-	1410	1401.36	242.95	1.74E+03	68.89	5.22E+02
35	1494-	1505	1499.61	259.99	5.50E+01	38.73	3.60E+02
36	1553-	1567	1560.04	270.47	1.19E+02	42.41	3.51E+02
37	1702-	1719	1709.85	296.45	3.25E+03	75.18	4.35E+02
38	1898-	1908	1903.27	330.00	5.94E+01	29.37	2.14E+02
39	1953-	1967	1960.76	339.97	9.74E+01	40.38	3.23E+02
40	1988-	1998	1993.71	345.68	4.66E+01	29.80	2.23E+02
41	2027-	2048	2038.06	353.37	4.81E+03	86.94	4.23E+02
42	2440-	2451	2445.45	424.02	4.53E+01	27.19	1.73E+02

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	2476-	2485	2480.28	430.07	3.78E+01	25.14	1.68E+02
44	2503-	2516	2509.04	435.05	3.54E+01	30.44	1.97E+02
45	2814-	2828	2819.85	488.96	5.27E+01	28.86	1.62E+02
46	3029-	3044	3034.50	526.18	4.61E+01	28.17	1.46E+02
47	3064-	3081	3073.50	532.95	5.61E+01	31.11	1.66E+02
48	3514-	3542	3528.30	611.82	2.49E+03	71.20	3.12E+02
49	3840-	3861	3850.47	667.69	1.44E+02	30.61	1.21E+02
50	4020-	4035	4027.69	698.43	7.33E+01	17.94	4.87E+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-326-GAM2
Peak Analysis Performed on: 5-10-96 8:17:41 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	6.52	1.51E+02	68.09			1.51E+02	6.81E+01
2	9.33	1.80E+02	58.04			1.80E+02	5.80E+01
3	10.90	7.05E+02	56.17			7.05E+02	5.62E+01
4	13.12	1.77E+03	72.93			1.77E+03	7.29E+01
5	16.38	1.48E+03	79.02			1.48E+03	7.90E+01
6	19.18	3.68E+02	63.03			3.68E+02	6.30E+01
7	25.83	3.38E+02	51.77			3.38E+02	5.18E+01
8	43.47	8.51E+01	44.61			8.51E+01	4.46E+01
9	44.71	8.79E+01	46.03			8.79E+01	4.60E+01
10	46.77	2.46E+03	71.05			2.46E+03	7.11E+01
11	50.22	3.16E+02	52.22			3.16E+02	5.22E+01
12	53.53	6.78E+02	62.16			6.78E+02	6.22E+01
13	63.59	3.30E+03	81.90	8.22E+01	2.83E+01	3.22E+03	8.66E+01
14	67.91	1.65E+02	65.31			1.65E+02	6.53E+01 1.39E+
15	75.15	3.94E+03	90.45	4.59E+01	3.14E+01	3.90E+03	9.57E+01
16	77.46	6.88E+03	109.39	5.88E+01	2.63E+01	6.82E+03	1.12E+02 21.96
17	79.68	5.20E+02	58.59			5.20E+02	5.86E+01
18	81.56	5.00E+02	63.50			5.00E+02	6.35E+01
19	84.26	1.06E+03	72.69			1.06E+03	7.27E+01
20	87.56	2.20E+03	85.73			2.20E+03	8.57E+01
21	90.29	8.95E+02	72.26			8.95E+02	7.23E+01
22	92.99	4.08E+03	88.05	2.14E+02	3.47E+01	3.86E+03	9.47E+01
23	95.19	2.12E+02	52.66			2.12E+02	5.27E+01
24	98.68	3.45E+02	60.00			3.45E+02	6.00E+01
25	102.87	4.54E+01	31.89			4.54E+01	3.19E+01
26	111.88	6.81E+01	32.44			6.81E+01	3.24E+01
27	144.45	4.38E+02	65.58			4.38E+02	6.56E+01
28	155.20	1.21E+02	54.55			1.21E+02	5.45E+01
29	163.98	1.62E+02	47.13			1.62E+02	4.71E+01
30	186.74	2.73E+03	83.28	7.15E+01	3.60E+01	2.65E+03	9.07E+01
31	211.09	4.34E+01	31.03			4.34E+01	3.10E+01
32	237.01	1.10E+02	42.84			1.10E+02	4.28E+01
33	239.50	2.75E+02	53.85	7.99E+01	3.31E+01	1.95E+02	6.32E+01
34	242.95	1.74E+03	68.89			1.74E+03	6.89E+01
35	259.99	5.50E+01	38.73			5.50E+01	3.87E+01
36	270.47	1.19E+02	42.41			1.19E+02	4.24E+01
37	296.45	3.25E+03	75.18			3.25E+03	7.52E+01
38	330.00	5.94E+01	29.37			5.94E+01	2.94E+01
39	339.97	9.74E+01	40.38			9.74E+01	4.04E+01
40	345.68	4.66E+01	29.80			4.66E+01	2.98E+01
41	353.37	4.81E+03	86.94			4.81E+03	8.69E+01
42	424.02	4.53E+01	27.19			4.53E+01	2.72E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	430.07	3.78E+01	25.14			3.78E+01	2.51E+01
44	435.05	3.54E+01	30.44			3.54E+01	3.04E+01
45	488.96	5.27E+01	28.86			5.27E+01	2.89E+01
46	526.18	4.61E+01	28.17			4.61E+01	2.82E+01
47	532.95	5.61E+01	31.11			5.61E+01	3.11E+01
48	611.82	2.49E+03	71.20			2.49E+03	7.12E+01
49	667.69	1.44E+02	30.61			1.44E+02	3.06E+01
50	698.43	7.33E+01	17.94			7.33E+01	1.79E+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              :  7-01-96  7:39:47 AM

Sample Title                     : NOPI-327-GAM2
Spectrum Description             : NOPI-327-GAM2
Sample Identification            : NP327
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              :  6-27-96  7:35:13 AM

Live Time                        :    80000.0 seconds
Real Time                        :    80006.7 seconds


          Energy Calibration Used Done On       :  1-16-96
          Efficiency Calibration Used Done On   : ????????
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$-0.008\log x + 1.027$

$0.060\log x + 0.877$

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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-327-GAM2
Peak Locate Performed on: 7-01-96 7:38:59 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	18.26	0.3102	3.09	4.50
2	63.90	0.3901	10.94	2.88
3	76.43	0.3122	13.15	6.48
4	94.60	0.2968	16.42	6.79
5	114.46	0.4680	19.46	2.47
6	149.42	0.2869	25.83	5.78
7	159.53	0.3632	27.62	4.03
8	270.32	0.1573	46.81	18.63
9	291.25	0.2835	50.23	6.49
10	309.12	0.1998	53.53	11.67
11	331.26	0.6079	57.14	2.02
12	367.31	0.1270	63.64	26.81
13	392.64	0.3045	67.95	3.29
14	434.09	0.1227	75.21	27.83
15	447.41	0.1054	77.49	33.10
16	460.04	0.2277	79.74	8.14
17	470.35	0.2104	81.53	8.99
18	486.19	0.1883	84.28	11.64
19	506.15	0.1635	87.62	11.22
20	521.32	0.2014	90.40	9.20
21	536.85	0.1240	93.05	20.19
22	549.59	0.2996	95.26	3.23
23	570.78	0.2815	98.80	5.23
24	610.67	0.4950	105.74	2.41
25	653.89	0.2601	113.46	6.49
26	833.95	0.2085	144.57	7.28
27	893.52	0.2678	154.86	4.85
28	946.69	0.2809	163.82	3.51
29	971.08	0.4583	168.21	2.05
30	1077.74	0.1208	186.85	16.94
31	1190.49	0.2904	206.43	4.02
32	1367.96	0.2592	237.00	3.82
33	1383.09	0.1637	239.73	9.63
34	1402.49	0.1191	243.11	18.37
35	1484.62	0.2684	257.38	3.55
36	1499.67	0.3184	259.78	3.19
37	1562.08	0.2493	270.70	4.76
38	1710.94	0.0950	296.64	26.49
39	2039.58	0.0853	353.59	30.36
40	2177.88	0.3289	377.69	2.53
41	2328.93	0.2742	403.92	3.52

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	2448.09	0.3203	424.25	2.20
43	2470.60	0.3487	428.48	2.75
44	2479.46	0.3089	429.91	3.32
45	2732.55	0.3560	473.39	2.10
46	2786.16	0.3515	483.67	2.33
47	2824.80	0.3003	489.83	3.02
48	3295.54	0.3087	571.19	2.65
49	3378.47	0.2652	586.20	2.12
50	3531.33	0.0944	612.29	17.57

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-327-GAM2
Peak Analysis Performed on: 7-01-96 7:39:19 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
1	15-	20	18.33	3.09	7.95E+02	50.95	6.87E+02
2	60-	67	63.55	10.94	9.41E+02	65.46	1.11E+03
3	73-	79	76.34	13.15	2.52E+03	82.23	1.54E+03
4	92-	98	95.18	16.42	2.33E+03	97.49	2.57E+03
5	107-	118	112.69	19.46	1.10E+03	89.98	1.75E+03
6	145-	153	149.41	25.83	4.00E+02	55.19	8.11E+02
7	158-	163	159.74	27.62	2.43E+02	39.57	5.11E+02
8	265-	275	270.42	46.81	2.41E+03	73.17	7.85E+02
9	286-	296	290.13	50.23	4.12E+02	56.10	7.16E+02
10	303-	314	309.17	53.53	6.88E+02	62.87	8.16E+02
11	325-	336	329.94	57.14	1.10E+02	56.64	7.65E+02
12	361-	372	367.44	63.64	3.72E+03	85.99	9.14E+02
13	386-	398	392.30	67.95	2.66E+02	70.97	1.12E+03
14	428-	439	434.16	75.21	3.86E+03	91.50	1.13E+03
15	441-	453	447.32	77.49	7.03E+03	108.83	1.13E+03
16	454-	466	460.29	79.74	2.56E+02	77.87	1.37E+03
17	466-	476	470.62	81.53	5.41E+02	64.30	9.53E+02
18	480-	492	486.43	84.28	1.52E+03	75.41	9.79E+02
19	499-	512	505.73	87.62	2.08E+03	87.71	1.24E+03
20	515-	527	521.72	90.40	7.94E+02	76.43	1.19E+03
21	530-	543	537.04	93.05	4.49E+03	100.57	1.25E+03
22	546-	555	549.76	95.26	2.88E+02	56.04	8.06E+02
23	564-	577	570.21	98.80	2.46E+02	64.42	8.62E+02
24	604-	617	610.20	105.74	1.38E+02	59.83	7.59E+02
25	650-	660	654.73	113.46	2.19E+02	50.67	6.24E+02
26	826-	841	834.09	144.57	4.95E+02	69.15	8.57E+02
27	887-	897	893.41	154.86	1.71E+02	49.41	6.05E+02
28	938-	952	945.08	163.82	2.48E+02	58.09	6.55E+02
29	963-	975	970.38	168.21	6.02E+01	49.85	5.70E+02
30	1069-	1086	1077.89	186.85	2.89E+03	85.70	8.12E+02
31	1183-	1196	1190.78	206.43	1.64E+02	48.50	4.85E+02
32	1362-	1374	1367.06	237.00	1.72E+02	43.79	4.04E+02
33	1374-	1389	1382.81	239.73	5.55E+02	56.98	5.39E+02
34	1393-	1411	1402.27	243.11	1.65E+03	69.06	5.43E+02
35	1480-	1490	1484.55	257.38	7.96E+01	35.18	3.06E+02
36	1490-	1505	1498.39	259.78	6.80E+01	46.79	4.24E+02
37	1555-	1567	1561.38	270.70	1.03E+02	44.42	4.35E+02
38	1700-	1720	1710.96	296.64	3.06E+03	80.59	5.48E+02
39	2028-	2050	2039.34	353.59	4.61E+03	94.01	6.27E+02
40	2173-	2182	2178.26	377.69	3.22E+01	23.60	1.50E+02
41	2320-	2338	2329.55	403.92	1.17E+02	43.17	3.04E+02
42	2440-	2459	2446.77	424.25	4.45E+01	47.62	3.64E+02

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	43	2466-	2484	2471.12	428.48	3.55E+01	15.92	1.88E+02
m	44	2466-	2484	2479.39	429.91	5.17E+01	19.04	1.52E+02
	45	2724-	2739	2730.12	473.39	3.73E+01	33.45	2.14E+02
	46	2781-	2795	2789.39	483.67	6.27E+01	29.71	1.72E+02
	47	2820-	2830	2824.87	489.83	3.33E+01	23.50	1.38E+02
	48	3288-	3301	3293.99	571.19	3.42E+01	26.78	1.49E+02
	49	3370-	3391	3380.57	586.20	1.23E+02	39.91	2.26E+02
	50	3517-	3545	3530.99	612.29	2.27E+03	70.43	3.26E+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-327-GAM2
Peak Analysis Performed on: 7-01-96 7:38:59 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	3.09	7.95E+02	50.95	3.90E+02	4.12E+01	4.05E+02	6.55E+01	
2	10.94	9.41E+02	65.46	1.65E+02	3.84E+01	7.76E+02	7.59E+01	
3	13.15	2.52E+03	82.23			2.52E+03	8.22E+01	
4	16.42	2.33E+03	97.49			2.33E+03	9.75E+01	
5	19.46	1.10E+03	89.98	4.29E+01	2.25E+01	1.06E+03	9.28E+01	
6	25.83	4.00E+02	55.19			4.00E+02	5.52E+01	
7	27.62	2.43E+02	39.57			2.43E+02	3.96E+01	
8	46.81	2.41E+03	73.17			2.41E+03	7.32E+01	
9	50.23	4.12E+02	56.10			4.12E+02	5.61E+01	
10	53.53	6.88E+02	62.87	3.59E+01	1.79E+01	6.52E+02	6.54E+01	
11	57.14	1.10E+02	56.64			1.10E+02	5.66E+01	
12	63.64	3.72E+03	85.99	6.18E+01	2.67E+01	3.66E+03	9.00E+01	
13	67.95	2.66E+02	70.97			2.66E+02	7.10E+01	288 ± 12.3%
14	75.21	3.86E+03	91.50	1.05E+02	2.88E+01	3.76E+03	9.59E+01	
15	77.49	7.03E+03	108.83	5.62E+01	2.81E+01	6.97E+03	1.12E+02	
16	79.74	2.56E+02	77.87	3.91E+01	2.94E+01	2.17E+02	8.32E+01	
17	81.53	5.41E+02	64.30			5.41E+02	6.43E+01	
18	84.28	1.52E+03	75.41	5.33E+01	2.88E+01	1.47E+03	8.07E+01	
19	87.62	2.08E+03	87.71	9.34E+01	3.38E+01	1.98E+03	9.40E+01	
20	90.40	7.94E+02	76.43			7.94E+02	7.64E+01	
21	93.05	4.49E+03	100.57	1.47E+02	3.61E+01	4.35E+03	1.07E+02	
22	95.26	2.88E+02	56.04			2.88E+02	5.60E+01	
23	98.80	2.46E+02	64.42			2.46E+02	6.44E+01	
24	105.74	1.38E+02	59.83			1.38E+02	5.98E+01	
25	113.46	2.19E+02	50.67			2.19E+02	5.07E+01	
26	144.57	4.95E+02	69.15	3.99E+01	3.90E+01	4.55E+02	7.94E+01	
27	154.86	1.71E+02	49.41			1.71E+02	4.94E+01	
28	163.82	2.48E+02	58.09			2.48E+02	5.81E+01	
29	168.21	6.02E+01	49.85			6.02E+01	4.99E+01	
30	186.85	2.89E+03	85.70	1.27E+02	2.61E+01	2.76E+03	8.96E+01	
31	206.43	1.64E+02	48.50			1.64E+02	4.85E+01	
32	237.00	1.72E+02	43.79			1.72E+02	4.38E+01	
33	239.73	5.55E+02	56.98	7.46E+01	3.11E+01	4.81E+02	6.49E+01	
34	243.11	1.65E+03	69.06			1.65E+03	6.91E+01	
35	257.38	7.96E+01	35.18			7.96E+01	3.52E+01	
36	259.78	6.80E+01	46.79			6.80E+01	4.68E+01	
37	270.70	1.03E+02	44.42			1.03E+02	4.44E+01	
38	296.64	3.06E+03	80.59	3.73E+01	2.91E+01	3.03E+03	8.57E+01	
39	353.59	4.61E+03	94.01	5.65E+01	2.27E+01	4.55E+03	9.67E+01	
40	377.69	3.22E+01	23.60			3.22E+01	2.36E+01	
41	403.92	1.17E+02	43.17			1.17E+02	4.32E+01	
42	424.25	4.45E+01	47.62			4.45E+01	4.76E+01	

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M 43	428.48	3.55E+01	15.92			3.55E+01	1.59E+01
m 44	429.91	5.17E+01	19.04			5.17E+01	1.90E+01
45	473.39	3.73E+01	33.45			3.73E+01	3.35E+01
46	483.67	6.27E+01	29.71			6.27E+01	2.97E+01
47	489.83	3.33E+01	23.50			3.33E+01	2.35E+01
48	571.19	3.42E+01	26.78			3.42E+01	2.68E+01
49	586.20	1.23E+02	39.91	2.28E+01	1.56E+01	1.01E+02	4.28E+01
50	612.29	2.27E+03	70.43			2.27E+03	7.04E+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        *****
*************************************************************************

Report Generated On                 :  5-02-96  7:40:17 AM

Sample Title                        : NOPI-328-GAM2
Spectrum Description                : NOPI-328-GAM2
Sample Identification               : NP328
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                 :  5-01-96  7:41:26 AM

Live Time                           :    80000.0 seconds
Real Time                           :    80010.9 seconds


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

-0.093 log t + 1.201

-0.024 log t + 1.048

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

Detector Name: DET01
Sample Title: NOPI-328-GAM2
Peak Locate Performed on: 5-02-96 7:39:24 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	21.00	0.6854	3.28	2.13
2	37.56	0.4513	6.43	2.73
3	63.49	0.2918	10.91	5.97
4	76.38	0.2615	13.15	9.52
5	98.00	0.5496	16.47	3.31
6	110.61	0.2332	19.18	11.26
7	114.52	0.3965	19.99	3.28
8	149.48	0.2371	25.82	9.18
9	159.44	0.2638	27.57	8.10
10	270.19	0.1219	46.78	32.37
11	291.01	0.2402	50.25	8.47
12	308.93	0.1570	53.50	18.80
13	327.60	0.5181	57.01	2.23
14	367.02	0.0982	63.57	47.04
15	392.31	0.2274	67.96	7.80
16	433.73	0.0984	75.12	41.23
17	446.96	0.0877	77.42	55.40
18	459.60	0.1790	79.69	11.31
19	470.05	0.1574	81.45	17.17
20	485.98	0.1408	84.20	17.09
21	505.76	0.1323	87.53	19.54
22	520.62	0.1532	90.31	15.47
23	536.36	0.0982	92.95	29.72
24	549.11	0.2114	95.16	7.06
25	570.17	0.2245	98.60	8.73
26	644.21	0.4188	111.75	2.90
27	653.54	0.2067	113.33	8.24
28	663.19	0.4836	115.25	2.07
29	708.94	0.3577	122.88	2.82
30	832.99	0.1707	144.38	9.98
31	892.85	0.2196	154.69	7.33
32	945.91	0.2337	163.90	5.53
33	1076.69	0.0970	186.63	25.83
34	1188.65	0.2655	206.09	3.95
35	1366.21	0.1934	236.73	7.94
36	1381.25	0.1819	239.41	8.81
37	1401.01	0.0937	242.90	31.41
38	1483.50	0.2639	257.01	4.63
39	1498.86	0.2320	259.79	5.37
40	1560.01	0.1889	270.41	8.29
41	1570.69	0.2227	272.35	5.98

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	1591.47	0.3008	275.86	3.67
43	1657.14	0.3215	286.93	3.05
44	1709.20	0.0750	296.33	45.13
45	1737.35	0.2871	301.22	3.26
46	1909.91	0.3204	330.96	2.31
47	1943.34	0.4186	336.12	2.03
48	2007.98	0.3452	348.08	2.67
49	2037.39	0.0663	353.24	52.14
50	2779.33	0.2774	481.95	3.19
51	2897.98	0.3664	502.76	2.08
52	3255.63	0.3515	564.83	2.03
53	3527.21	0.0711	611.62	34.75
54	3854.05	0.2276	667.95	3.50
55	4029.48	0.2247	698.07	4.73

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-328-GAM2
Peak Analysis Performed on: 5-02-96 7:39:41 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	18-	23	19.41	3.28	1.26E+03	76.65	1.65E+03
2	34-	40	37.58	6.43	5.84E+02	84.19	2.34E+03
3	60-	66	63.40	10.91	1.54E+03	82.68	1.91E+03
4	73-	79	76.30	13.15	4.98E+03	113.68	2.88E+03
5	92-	101	95.44	16.47	5.78E+03	165.47	5.90E+03
6	108-	114	111.06	19.18	1.25E+03	95.12	2.77E+03
7	114-	118	115.78	19.99	5.37E+02	68.12	1.64E+03
8	145-	153	149.39	25.82	9.65E+02	78.24	1.58E+03
9	155-	163	159.47	27.57	7.19E+02	75.92	1.55E+03
10	265-	275	270.23	46.78	5.84E+03	109.74	1.66E+03
11	285-	296	290.22	50.25	8.32E+02	91.73	1.87E+03
12	303-	314	308.99	53.50	1.75E+03	92.96	1.72E+03
13	325-	332	329.24	57.01	8.22E+01	58.57	1.11E+03
14	361-	372	367.02	63.57	9.13E+03	132.87	2.13E+03
15	386-	397	392.38	67.96	5.81E+02	96.30	2.17E+03
16	428-	439	433.67	75.12	8.38E+03	137.31	2.60E+03
17	441-	452	446.90	77.42	1.52E+04	156.15	2.31E+03
18	453-	465	459.98	79.69	7.06E+02	112.75	2.82E+03
19	465-	476	470.12	81.45	1.43E+03	100.44	2.16E+03
20	479-	492	485.98	84.20	3.63E+03	117.29	2.25E+03
21	499-	511	505.19	87.53	4.63E+03	124.84	2.55E+03
22	514-	526	521.22	90.31	1.89E+03	111.43	2.46E+03
23	530-	542	536.44	92.95	1.12E+04	143.75	2.22E+03
24	544-	555	549.18	95.16	7.88E+02	93.69	1.99E+03
25	563-	576	569.00	98.60	7.85E+02	93.05	1.73E+03
26	642-	648	644.86	111.75	9.60E+01	49.62	8.51E+02
27	648-	660	653.97	113.33	4.79E+02	84.80	1.58E+03
28	660-	670	665.00	115.25	2.06E+02	65.76	1.09E+03
29	703-	715	709.00	122.88	1.21E+02	75.85	1.32E+03
30	825-	840	833.00	144.38	1.13E+03	95.46	1.59E+03
31	885-	900	892.46	154.69	5.31E+02	92.10	1.58E+03
32	938-	953	945.54	163.90	4.26E+02	86.86	1.42E+03
33	1068-	1084	1076.60	186.63	6.60E+03	119.36	1.46E+03
34	1180-	1197	1188.80	206.09	2.73E+02	85.92	1.29E+03
35	1358-	1375	1365.47	236.73	2.76E+02	83.04	1.19E+03
36	1375-	1390	1380.96	239.41	4.46E+02	73.38	9.71E+02
37	1391-	1410	1401.04	242.90	3.83E+03	99.74	1.02E+03
38	1474-	1490	1482.44	257.01	1.71E+02	70.79	9.19E+02
39	1490-	1505	1498.47	259.79	2.63E+02	65.91	8.16E+02
40	1552-	1565	1559.71	270.41	3.14E+02	60.71	7.48E+02
41	1565-	1580	1570.91	272.35	1.40E+02	70.16	9.53E+02
42	1586-	1597	1591.14	275.86	7.66E+01	50.05	6.03E+02

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	1647-	1664	1654.93	286.93	2.22E+02	66.41	7.58E+02
44	1699-	1719	1709.15	296.33	7.12E+03	116.81	1.04E+03
45	1727-	1743	1737.32	301.22	9.93E+01	64.67	7.78E+02
46	1903-	1916	1908.85	330.96	6.55E+01	54.82	6.47E+02
47	1932-	1948	1938.58	336.12	1.33E+02	61.26	6.82E+02
48	2000-	2012	2007.56	348.08	7.72E+01	49.22	5.52E+02
49	2026-	2048	2037.31	353.24	1.09E+04	134.55	1.06E+03
50	2773-	2785	2779.45	481.95	9.15E+01	38.16	3.19E+02
51	2892-	2907	2899.42	502.76	7.11E+01	44.19	3.76E+02
52	3248-	3265	3257.36	564.83	6.48E+01	46.08	3.74E+02
53	3513-	3540	3527.11	611.62	5.55E+03	104.24	6.65E+02
54	3841-	3863	3851.92	667.95	1.60E+02	56.32	4.44E+02
55	4014-	4035	4025.62	698.07	2.04E+02	37.33	1.84E+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-328-GAM2
Peak Analysis Performed on: 5-02-96 7:39:24 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	3.28	1.26E+03	76.65			1.26E+03	7.67E+01
2	6.43	5.84E+02	84.19			5.84E+02	8.42E+01
3	10.91	1.54E+03	82.68			1.54E+03	8.27E+01
4	13.15	4.98E+03	113.68			4.98E+03	1.14E+02
5	16.47	5.78E+03	165.47			5.78E+03	1.65E+02
6	19.18	1.25E+03	95.12			1.25E+03	9.51E+01
7	19.99	5.37E+02	68.12			5.37E+02	6.81E+01
8	25.82	9.65E+02	78.24			9.65E+02	7.82E+01
9	27.57	7.19E+02	75.92	3.59E+01	2.20E+01	6.83E+02	7.91E+01
10	46.78	5.84E+03	109.74			5.84E+03	1.10E+02
11	50.25	8.32E+02	91.73			8.32E+02	9.17E+01
12	53.50	1.75E+03	92.96			1.75E+03	9.30E+01
13	57.01	8.22E+01	58.57			8.22E+01	5.86E+01
14	63.57	9.13E+03	132.87	8.22E+01	2.83E+01	9.05E+03	1.36E+02
15	67.96	5.81E+02	96.30			5.81E+02	9.63E+01
16	75.12	8.38E+03	137.31	4.59E+01	3.14E+01	8.34E+03	1.41E+02
17	77.42	1.52E+04	156.15	5.88E+01	2.63E+01	1.51E+04	1.58E+02
18	79.69	7.06E+02	112.75			7.06E+02	1.13E+02
19	81.45	1.43E+03	100.44			1.43E+03	1.00E+02
20	84.20	3.63E+03	117.29			3.63E+03	1.17E+02
21	87.53	4.63E+03	124.84			4.63E+03	1.25E+02
22	90.31	1.89E+03	111.43			1.89E+03	1.11E+02
23	92.95	1.12E+04	143.75	2.14E+02	3.47E+01	1.10E+04	1.48E+02
24	95.16	7.88E+02	93.69			7.88E+02	9.37E+01
25	98.60	7.85E+02	93.05			7.85E+02	9.31E+01
26	111.75	9.60E+01	49.62			9.60E+01	4.96E+01
27	113.33	4.79E+02	84.80			4.79E+02	8.48E+01
28	115.25	2.06E+02	65.76			2.06E+02	6.58E+01
29	122.88	1.21E+02	75.85			1.21E+02	7.59E+01
30	144.38	1.13E+03	95.46			1.13E+03	9.55E+01
31	154.69	5.31E+02	92.10			5.31E+02	9.21E+01
32	163.90	4.26E+02	86.86			4.26E+02	8.69E+01
33	186.63	6.60E+03	119.36	7.15E+01	3.60E+01	6.52E+03	1.25E+02
34	206.09	2.73E+02	85.92			2.73E+02	8.59E+01
35	236.73	2.76E+02	83.04			2.76E+02	8.30E+01
36	239.41	4.46E+02	73.38	7.99E+01	3.31E+01	3.66E+02	8.05E+01
37	242.90	3.83E+03	99.74			3.83E+03	9.97E+01
38	257.01	1.71E+02	70.79			1.71E+02	7.08E+01
39	259.79	2.63E+02	65.91			2.63E+02	6.59E+01
40	270.41	3.14E+02	60.71			3.14E+02	6.07E+01
41	272.35	1.40E+02	70.16			1.40E+02	7.02E+01
42	275.86	7.66E+01	50.05			7.66E+01	5.01E+01

6.96 E+02 ±6.70

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	286.93	2.22E+02	66.41			2.22E+02	6.64E+01
44	296.33	7.12E+03	116.81			7.12E+03	1.17E+02
45	301.22	9.93E+01	64.67			9.93E+01	6.47E+01
46	330.96	6.55E+01	54.82			6.55E+01	5.48E+01
47	336.12	1.33E+02	61.26			1.33E+02	6.13E+01
48	348.08	7.72E+01	49.22			7.72E+01	4.92E+01
49	353.24	1.09E+04	134.55			1.09E+04	1.35E+02
50	481.95	9.15E+01	38.16			9.15E+01	3.82E+01
51	502.76	7.11E+01	44.19			7.11E+01	4.42E+01
52	564.83	6.48E+01	46.08			6.48E+01	4.61E+01
53	611.62	5.55E+03	104.24			5.55E+03	1.04E+02
54	667.95	1.60E+02	56.32			1.60E+02	5.63E+01
55	698.07	2.04E+02	37.33			2.04E+02	3.73E+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	:	7-02-96 7:42:13 AM
Sample Title	:	NOPI-329-GAM2
Spectrum Description	:	NOPI-329-GAM2
Sample Identification	:	NP329
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	:	7-01-96 7:40:28 AM
Live Time	:	80000.0 seconds
Real Time	:	80006.9 seconds

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

$-0.099 \log x + 1.211$

$-0.627 \log x + 1.052$

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

Detector Name: DET01
Sample Title: NOPI-329-GAM2
Peak Locate Performed on: 7-02-96 7:41:32 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	18.18	0.3265	3.08	3.54
2	37.57	0.4899	6.47	2.39
3	63.61	0.3851	10.92	4.11
4	76.45	0.3234	13.15	5.30
5	94.66	0.3265	16.41	5.95
6	110.64	0.3288	19.16	5.81
7	115.09	0.6216	20.10	2.35
8	149.41	0.3405	25.85	4.74
9	159.54	0.3714	27.50	3.93
10	270.65	0.1513	46.85	20.96
11	290.94	0.3361	50.30	3.95
12	309.29	0.2000	53.56	10.65
13	367.57	0.1340	63.67	22.06
14	393.07	0.3272	68.06	4.58
15	434.40	0.1169	75.24	28.04
16	447.58	0.1019	77.54	36.19
17	460.18	0.2333	79.79	7.84
18	470.64	0.2123	81.62	8.56
19	486.62	0.1828	84.28	10.90
20	506.52	0.1633	87.69	11.86
21	521.47	0.1770	90.40	11.71
22	537.02	0.1271	93.08	18.78
23	550.06	0.2780	95.34	5.71
24	571.90	0.3863	98.81	2.98
25	610.50	0.4015	106.02	2.01
26	654.53	0.2982	113.30	3.95
27	795.88	0.4725	137.95	2.03
28	833.80	0.2123	144.51	7.30
29	1078.69	0.1214	186.95	15.44
30	1190.06	0.3775	206.26	2.08
31	1369.06	0.2732	237.19	3.36
32	1383.28	0.1811	239.90	8.36
33	1403.08	0.1173	243.20	19.67
34	1500.49	0.2788	260.10	3.20
35	1561.30	0.2857	270.61	3.53
36	1711.60	0.0900	296.74	30.53
37	1877.63	0.3450	325.88	2.34
38	1961.90	0.2776	340.11	3.00
39	2003.09	0.3636	347.71	2.04
40	2040.34	0.0807	353.70	34.54
41	2244.14	0.3367	389.05	2.41

Peak No.	Centroid Channel	Centroid Uncertainty	Energy (keV)	Peak Significance
42	3003.14	0.3208	520.95	2.42
43	3169.44	0.3258	549.87	2.32
44	3381.47	0.2514	586.39	2.65
45	3532.23	0.0889	612.46	22.02
46	3640.46	0.3352	631.14	2.02
47	3858.89	0.2410	668.45	3.42
48	4029.48	0.2314	698.72	3.99

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-329-GAM2
Peak Analysis Performed on: 7-02-96 7:41:49 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	15-	20	18.26	3.08	7.24E+02	51.28	7.16E+02
2	34-	40	37.78	6.47	2.49E+02	65.28	1.44E+03
3	60-	66	63.47	10.92	8.11E+02	61.71	1.09E+03
4	73-	79	76.31	13.15	2.31E+03	77.54	1.35E+03
5	92-	98	95.13	16.41	1.81E+03	90.51	2.28E+03
6	106-	114	110.95	19.16	1.99E+02	78.40	1.82E+03
7	114-	118	116.39	20.10	1.42E+02	46.66	8.47E+02
8	145-	153	149.52	25.85	4.11E+02	54.27	7.78E+02
9	155-	163	159.07	27.50	2.39E+02	55.18	8.50E+02
10	265-	275	270.63	46.85	2.79E+03	77.24	8.48E+02
11	285-	296	290.50	50.30	4.91E+02	59.61	7.63E+02
12	304-	314	309.30	53.56	7.29E+02	62.62	8.48E+02
13	362-	373	367.61	63.67	3.18E+03	84.59	9.91E+02
14	390-	398	392.91	68.06	1.22E+02	54.73	8.63E+02
15	428-	440	434.33	75.24	4.47E+03	101.31	1.36E+03
16	441-	453	447.57	77.54	7.68E+03	116.48	1.39E+03
17	454-	466	460.59	79.79	3.63E+02	79.37	1.40E+03
18	466-	476	471.11	81.62	6.40E+02	63.50	9.03E+02
19	480-	492	486.46	84.28	1.40E+03	77.28	1.07E+03
20	500-	512	506.10	87.69	2.41E+03	86.08	1.17E+03
21	515-	527	521.74	90.40	1.10E+03	75.33	1.08E+03
22	530-	543	537.20	93.08	4.03E+03	96.68	1.18E+03
23	546-	556	550.20	95.34	3.23E+02	60.61	8.85E+02
24	565-	578	570.22	98.81	3.03E+02	66.33	9.00E+02
25	606-	617	611.78	106.02	1.39E+02	52.02	6.39E+02
26	647-	661	653.79	113.30	1.57E+02	69.36	9.76E+02
27	788-	803	795.92	137.95	1.00E+02	65.06	8.24E+02
28	826-	841	833.72	144.51	3.63E+02	73.40	1.00E+03
29	1070-	1087	1078.47	186.95	2.84E+03	91.02	9.88E+02
30	1184-	1195	1189.82	206.26	5.51E+01	47.25	5.38E+02
31	1359-	1374	1368.16	237.19	1.34E+02	52.11	5.16E+02
32	1374-	1392	1383.75	239.90	4.47E+02	63.35	6.20E+02
33	1393-	1412	1402.79	243.20	1.78E+03	75.01	6.40E+02
34	1494-	1508	1500.23	260.10	1.46E+02	47.03	4.33E+02
35	1551-	1568	1560.84	270.61	1.36E+02	56.18	5.49E+02
36	1701-	1721	1711.51	296.74	3.54E+03	86.69	6.35E+02
37	1873-	1888	1879.56	325.88	1.14E+02	42.09	3.30E+02
38	1955-	1970	1961.61	340.11	6.43E+01	46.76	4.17E+02
39	1997-	2010	2005.44	347.71	7.19E+01	38.61	3.15E+02
40	2029-	2051	2039.97	353.70	5.40E+03	95.96	5.61E+02
41	2236-	2249	2243.80	389.05	8.64E+01	34.65	2.48E+02
42	2997-	3010	3004.33	520.95	4.07E+01	26.44	1.46E+02

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	3164-	3178	3171.06	549.87	3.92E+01	29.58	1.76E+02
44	3374-	3390	3381.66	586.39	1.22E+02	32.03	1.72E+02
45	3518-	3545	3531.97	612.46	2.62E+03	70.42	2.93E+02
46	3633-	3647	3639.70	631.14	4.42E+01	22.47	9.68E+01
47	3844-	3866	3854.85	668.45	1.18E+02	37.55	1.90E+02
48	4024-	4035	4029.36	698.72	6.53E+01	16.52	4.57E+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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***** 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-329-GAM2
Peak Analysis Performed on: 7-02-96 7:41:32 AM

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	3.08	7.24E+02	51.28	3.90E+02	4.12E+01	3.34E+02	6.58E+01
2	6.47	2.49E+02	65.28			2.49E+02	6.53E+01
3	10.92	8.11E+02	61.71	1.65E+02	3.84E+01	6.47E+02	7.27E+01
4	13.15	2.31E+03	77.54			2.31E+03	7.75E+01
5	16.41	1.81E+03	90.51			1.81E+03	9.05E+01
6	19.16	1.99E+02	78.40	4.29E+01	2.25E+01	1.56E+02	8.16E+01
7	20.10	1.42E+02	46.66			1.42E+02	4.67E+01
8	25.85	4.11E+02	54.27			4.11E+02	5.43E+01
9	27.50	2.39E+02	55.18			2.39E+02	5.52E+01
10	46.85	2.79E+03	77.24			2.79E+03	7.72E+01
11	50.30	4.91E+02	59.61			4.91E+02	5.96E+01
12	53.56	7.29E+02	62.62	3.59E+01	1.79E+01	6.93E+02	6.51E+01
13	63.67	3.18E+03	84.59	6.18E+01	2.67E+01	3.12E+03	8.87E+01
14	68.06	1.22E+02	54.73			1.22E+02	5.47E+01
15	75.24	4.47E+03	101.31	1.05E+02	2.88E+01	4.37E+03	1.05E+02
16	77.54	7.68E+03	116.48	5.62E+01	2.81E+01	7.62E+03	1.20E+02
17	79.79	3.63E+02	79.37	3.91E+01	2.94E+01	3.24E+02	8.47E+01
18	81.62	6.40E+02	63.50			6.40E+02	6.35E+01
19	84.28	1.40E+03	77.28	5.33E+01	2.88E+01	1.35E+03	8.25E+01
20	87.69	2.41E+03	86.08	9.34E+01	3.38E+01	2.32E+03	9.25E+01
21	90.40	1.10E+03	75.33			1.10E+03	7.53E+01
22	93.08	4.03E+03	96.68	1.47E+02	3.61E+01	3.88E+03	1.03E+02
23	95.34	3.23E+02	60.61			3.23E+02	6.06E+01
24	98.81	3.03E+02	66.33			3.03E+02	6.63E+01
25	106.02	1.39E+02	52.02			1.39E+02	5.20E+01
26	113.30	1.57E+02	69.36			1.57E+02	6.94E+01
27	137.95	1.00E+02	65.06			1.00E+02	6.51E+01
28	144.51	3.63E+02	73.40	3.99E+01	3.90E+01	3.24E+02	8.31E+01
29	186.95	2.84E+03	91.02	1.27E+02	2.61E+01	2.71E+03	9.47E+01
30	206.26	5.51E+01	47.25			5.51E+01	4.72E+01
31	237.19	1.34E+02	52.11			1.34E+02	5.21E+01
32	239.90	4.47E+02	63.35	7.46E+01	3.11E+01	3.72E+02	7.06E+01
33	243.20	1.78E+03	75.01			1.78E+03	7.50E+01
34	260.10	1.46E+02	47.03			1.46E+02	4.70E+01
35	270.61	1.36E+02	56.18			1.36E+02	5.62E+01
36	296.74	3.54E+03	86.69	3.73E+01	2.91E+01	3.51E+03	9.14E+01
37	325.88	1.14E+02	42.09			1.14E+02	4.21E+01
38	340.11	6.43E+01	46.76			6.43E+01	4.68E+01
39	347.71	7.19E+01	38.61			7.19E+01	3.86E+01
40	353.70	5.40E+03	95.96	5.65E+01	2.27E+01	5.34E+03	9.86E+01
41	389.05	8.64E+01	34.65			8.64E+01	3.47E+01
42	520.95	4.07E+01	26.44			4.07E+01	2.64E+01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
43	549.87	3.92E+01	29.58			3.92E+01	2.96E+01
44	586.39	1.22E+02	32.03	2.28E+01	1.56E+01	9.90E+01	3.56E+01
45	612.46	2.62E+03	70.42			2.62E+03	7.04E+01
46	631.14	4.42E+01	22.47			4.42E+01	2.25E+01
47	668.45	1.18E+02	37.55			1.18E+02	3.76E+01
48	698.72	6.53E+01	16.52	1.84E+01	7.82E+00	4.69E+01	1.83E+01

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

Errors quoted at 1.000 sigma