GEORGIA INSTITUTE OF TECHNOLOGY
RESEARCH REACTOR
DECOMMISSIONING PROJECT
RADIOLOGICAL CHARACTERIZATION REPORT

NES DOCUMENT NO. 82A9087

May, 1998

Prepared by:
NES, Inc.
44 Shelter Rock Road
Danbury, CT 06810

Book 3 of 3

PART A of a/b

Attachment N

Attachment N consists of the field data that is summarized throughout this Characterization Report.

Alpha/Beta Counting

Each alpha/beta sample was counted for one minute on the gas flow proportional counter, LB5100-W (S/N 13795). Air samples were counted for 20-min. Samples over 1000dpm were also counted on the gamma spectrometer.

RS-35 (8-96)

Survey Data Sheet

Job Description: CS Old HP Lab **Date:** 10/7/97 **Time:** 8:45

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: N/A **Serial #:** N/A **Cal. Due Date:** N/A

Bkg (cpm): N/A

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1	-0.235	4.99	N/A
2	-0.235	0.38	N/A
3	-0.235	4.99	N/A
4	-0.235	2.68	N/A
5	-0.235	9.59	N/A
6	-0.235	2.68	N/A
7	-0.235	2.68	N/A
8	-0.235	11.89	N/A
9	-0.235	2.68	N/A
10	-0.235	-1.92	N/A
11	3.292	4.99	N/A
12	-0.235	-1.92	N/A
13	-0.235	0.38	N/A
14	-0.235	0.38	N/A
15	-0.235	-1.92	N/A
16	-0.235	0.38	N/A
17	-0.235	2.68	N/A
18	3.292	-1.92	N/A

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
19	-0.235	2.68	N/A
20	-0.235	0.38	N/A

Comments: None

Performed By: Michele R. Sutton MRS **Date:** 10/7/97

Reviewed By: Fe Rebuan **Date:** 10/8/97

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/7/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A034.XLD
Batch Ended: 10/7/97 9:22
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS OLD HP LAB 1

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/7/97 8:53
2	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/7/97 8:55
3	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/7/97 8:56
4	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 8:58
5	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/7/97 8:59
6	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 9:01
7	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 9:02
8	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/7/97 9:04
9	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 9:05
10	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/7/97 9:07
11	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/7/97 9:08
12	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/7/97 9:10
13	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/7/97 9:11
14	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/7/97 9:13
15	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/7/97 9:15
16	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/7/97 9:16
17	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 9:18
18	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/7/97 9:19
19	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 9:21
20	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/7/97 9:22

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RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 19:49

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
21	-0.235	11.89	
22	-0.235	4.99	
23	-0.235	7.29	
24	-0.235	7.29	
25	-0.235	-1.92	
26	3.292	-4.22	
27	-0.235	0.38	
28	-0.235	-1.92	
29	-0.235	0.38	
30	6.818	25.7	
31	23.292	4.99	
32	-0.235	-4.22	
33	-0.235	-4.22	
34	3.292	0.38	
35	-0.235	0.38	
36	-0.235	4.99	
37	-0.235	0.38	
38	-0.235	-1.92	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
38	-0.235	-1.92	
39	-0.235	-4.22	
40	-0.235	2.68	
41	3.292	-1.92	
42	-0.235	-1.92	
43	-0.235	-1.92	
44	-0.235	-4.22	
45	-0.235	0.38	
46	-0.235	0.38	
47	-0.235	-1.92	
48	-0.235	7.29	
49	-0.235	-1.92	
50	-0.235	11.89	
51	-0.235	4.99	
52	-0.235	0.38	
53	3.292	0.38	
54	-0.235	2.68	
55	-0.235	4.99	

Comments:

Performed By: Michele R. Sutton MRS 10/11/97 **Date:** 10/9/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 19:49

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm² Alpha	Beta/Gamma	GM Survey (cpm)
56	-0.235	4.99	
57	-0.235	-4.22	
58	-0.235	-1.92	
59	-0.235	7.29	
60	-0.235	11.89	
61	3.292	-1.92	
62	-0.235	14.19	
63	-0.235	-4.22	
64	-0.235	-4.22	
65	-0.235	-4.22	
66	-0.235	-1.92	
67	-0.235	32.6	
68	-0.235	4.99	
69	3.292	4.99	
70	-0.235	7.29	
71	-0.235	2.68	
72	-0.235	-1.92	
73	-0.235	-1.92	

Location	dpm/ 100 cm² Alpha	Beta/Gamma	GM Survey (cpm)
74	-0.235	7.29	
75	-0.235	2.68	
76	-0.235	4.99	
77	-0.235	2.68	
78	-0.235	9.59	
79	-0.235	4.99	
80	-0.235	7.29	
81	-0.235	4.99	
82	-0.235	-1.92	
83	-0.235	0.38	
84	-0.235	7.29	
85	-0.235	11.89	
86	-0.235	-1.92	
87	-0.235	-1.92	
88	-0.235	11.89	
89	-0.235	0.38	
90	-0.235	-1.92	
91	-0.235	-4.22	

Comments:

Performed By: Michele R. Sutton 10/11/97 **Date:** 10/9/97

Reviewed By: **Date:**

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 19:49

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
92	-0.235	-4.22	
93	-0.235	-1.92	
94	-0.235	14.19	
95	-0.235	0.38	
96	3.292	4.99	
97	-0.235	-4.22	
98	-0.235	0.38	
99	-0.235	2.68	
101	-0.235	18.79	
102	-0.235	0.38	
103	-0.235	34.9	
104	-0.235	11.89	
105	3.292	25.7	
106	-0.235	2.68	
107	-0.235	0.38	
108	-0.235	25.7	
109	-0.235	0.38	
110	-0.235	9.59	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton 10/11/97 **Date:** 10/9/97

Reviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A038.XLD
Batch Ended: 10/8/97 19:49
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 21-110

S.ID#

	Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
21	9	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/8/97 17:33
	10	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/8/97 17:35
	11	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/8/97 17:36
	12	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/8/97 17:38
25	13	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 17:40
	14	3.292	3.53	<AL	12.59	-4.22	2.37	<MDA	16.65	1.00	0.933	-1.83	10/8/97 17:41
	15	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 17:43
	16	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 17:44
	17	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 17:46
30	18	6.818	4.99	<AL	12.59	25.70	8.35	<AL	16.65	1.00	1.933	11.17	10/8/97 17:47
	19	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/8/97 17:49
	20	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/8/97 17:50
	21	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/8/97 17:52
	22	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/8/97 17:53
35	23	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 17:55
	24	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/8/97 17:56
	25	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 17:58
	26	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 18:00
	27	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/8/97 18:01
40	28	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/8/97 18:03
	29	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/8/97 18:04
	30	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 18:06
	31	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 18:07
	32	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/8/97 18:09
45	33	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 18:10
	34	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 18:12
	35	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 18:13

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LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A038.XLD
Batch Ended: 10/8/97 19:49
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 21-110

Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
36	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/8/97 18:15
37	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 18:17
38	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/8/97 18:18
38	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/8/97 18:20
40	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 18:21
41	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/8/97 18:23
42	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/8/97 18:24
43	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/8/97 18:26
44	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/8/97 18:27
45	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/8/97 18:29
46	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 18:30
47	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/8/97 18:32
48	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/8/97 18:33
49	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/8/97 18:35
50	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/8/97 18:37
51	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/8/97 18:38
52	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/8/97 18:40
53	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/8/97 18:41
54	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 18:43
55	-0.235	3.53	<MDA	12.59	32.60	9.26	<AL	16.65	1.00	-0.067	14.17	10/8/97 18:44
56	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/8/97 18:46
57	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/8/97 18:47
58	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/8/97 18:49
59	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/8/97 18:50
60	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 18:52
61	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 18:54
62	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/8/97 18:55
63	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/8/97 18:57
64	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/8/97 18:58
65	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 19:00

N-9

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A038.XLD
Batch Ended: 10/8/97 19:49
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 21-110

		Alpha Activity				Beta Activity						
	Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
	66	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/8/97 19:01
	67	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/8/97 19:03
80	68	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/8/97 19:04
	69	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/8/97 19:06
	70	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/8/97 19:07
	71	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 19:09
	72	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 19:10
95	73	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/8/97 19:12
	74	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/8/97 19:14
	75	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 19:15
	76	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 19:17
	77	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/8/97 19:18
90	78	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 19:20
	79	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 19:21
	80	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/8/97 19:23
	81	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/8/97 19:24
	82	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/8/97 19:26
95	83	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 19:27
	84	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/8/97 19:29
	85	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/8/97 19:30
	86	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 19:32
99	87	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/8/97 19:34
101	88	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/8/97 19:35
	89	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 19:37
	90	-0.235	3.53	<MDA	12.59	34.90	9.55	<AL	16.65	1.00	-0.067	15.17	10/8/97 19:38
	91	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/8/97 19:40
10/9/97 105	92	3.292	3.53	<AL	12.59	25.70	8.35	<AL	16.65	1.00	0.933	11.17	10/8/97 19:41
Mas tot	93	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/8/97 19:43
	94	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 19:44
	95	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65	1.00	-0.067	11.17	10/8/97 19:46

N-10

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A036.XLD
Batch Ended: 10/8/97 19:49
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 21-110

		Alpha Activity				Beta Activity							
	Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
	96	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/8/97 19:47
110	97	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/8/97 19:49

N-11

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 9:55

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
100	-0.235	0.38	
111	-0.235	-4.22	
112	-0.235	4.99	
113	-0.47	11.89	
114	-0.235	-1.92	
115	3.292	-1.92	
116	-0.235	2.68	
117	-0.235	2.68	
118	-0.235	-4.22	
119	-0.235	2.68	
120	-0.235	-1.92	
121	3.292	0.38	
122	3.292	0.38	
123	-0.235	0.38	
124	-0.235	-4.22	
125	-0.235	0.38	
126	-0.235	0.38	
127	-0.235	2.68	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
128	3.292	9.59	
129	-0.235	2.68	
130	-0.235	-1.92	
131	-0.235	4.99	
132	3.292	2.68	
133	-0.235	18.79	
134	-0.235	-1.92	
135	-0.235	0.38	
136	-0.235	-4.22	
137	-0.235	2.68	
138	3.292	4.99	
139	-0.235	-1.92	
140	-0.235	4.99	
141	3.292	-1.92	
142	-0.235	-4.22	
143	3.292	635.57	
144	-0.235	-1.92	
145	3.292	7.29	

Comments: Sample #143 > AL by ~500dpm.

Performed By: Michele R. Sutton MRS 10/11/97 **Date:** 10/9/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 19:49

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
146	-0.235	2.68	
147	-0.235	-1.92	
148	-0.235	0.38	
149	3.292	4.99	
150	-0.235	-1.92	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/11/97 **Date:** 10/9/97

Reviewed By: **Date:**

RS-35 (8-96)

Survey Data Sheet

Job Description: CS Old HP Lab **Date:** 10/7/97 **Time:** 8:45

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: N/A **Serial #:** N/A **Cal. Due Date:** N/A

Bkg (cpm): N/A

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1	-0.235	4.99	N/A
2	-0.235	0.38	N/A
3	-0.235	4.99	N/A
4	-0.235	2.68	N/A
5	-0.235	9.59	N/A
6	-0.235	2.68	N/A
7	-0.235	2.68	N/A
8	-0.235	11.89	N/A
9	-0.235	2.68	N/A
10	-0.235	-1.92	N/A
11	3.292	4.99	N/A
12	-0.235	-1.92	N/A
13	-0.235	0.38	N/A
14	-0.235	0.38	N/A
15	-0.235	-1.92	N/A
16	-0.235	0.38	N/A
17	-0.235	2.68	N/A
18	3.292	-1.92	N/A

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
19	-0.235	2.68	N/A
20	-0.235	0.38	N/A

Comments: None

Performed By: Michele R. Sutton MRS **Date:** 10/7/97

Reviewed By: F. Rehmann **Date:** 10/9/97

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/7/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A034.XLD
Batch Ended: 10/7/97 9:22
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS OLD HP LAB 1

	Alpha Activity				Beta Activity						
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/7/97 8:53
2	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/7/97 8:55
3	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/7/97 8:56
4	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 8:58
5	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/7/97 8:59
6	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 9:01
7	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 9:02
8	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/7/97 9:04
9	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 9:05
10	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/7/97 9:07
11	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/7/97 9:08
12	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/7/97 9:10
13	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/7/97 9:11
14	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/7/97 9:13
15	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/7/97 9:15
16	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/7/97 9:16
17	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 9:18
18	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/7/97 9:19
19	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/7/97 9:21
20	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/7/97 9:22

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A039.XLD
Batch Ended: 10/9/97 9:55
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 100, 111-150

S 10#
100 – 10
111 – 11
136 – 36

Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
10	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 8:53
11	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 8:55
12	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 8:56
13	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/9/97 8:58
14	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 9:00
15	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 9:01
16	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/9/97 9:03
17	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 9:04
18	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 9:06
19	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 9:07
20	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 9:09
21	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/9/97 9:10
22	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/9/97 9:12
23	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 9:13
24	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 9:15
25	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 9:17
26	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 9:18
27	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 9:20
28	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/9/97 9:21
29	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 9:23
30	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 9:24
31	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 9:26
32	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/9/97 9:27
33	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/9/97 9:29
34	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 9:30
35	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 9:32
36	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 9:33

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A039.XLD
Batch Ended: 10/9/97 9:55
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 100, 111-150

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
37	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 9:35
38	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/9/97 9:37
39	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 9:38
40	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 9:40
41	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/9/97 9:41
42	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 9:43
43	3.292	3.53	<AL	12.59	635.57	41.84	>AL	16.65	1.00	0.933	276.17	10/9/97 9:44
44	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 9:46
45	3.292	3.53	<AL	12.59	7.29	5.18	<AL	16.65	1.00	0.933	3.17	10/9/97 9:47
46	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 9:49
47	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 9:50
48	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 9:52
49	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/9/97 9:54
50	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 9:55

N-17

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 12:20

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
143	13.872	617.16	
143A	-0.235	757.55	
143B	-0.235	55.62	
143C	-0.235	306.47	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments: Repeat count of #143. Additional smears of area #143.

Performed By: Michele R. Sutton MRS 10/11/97 **Date:** 10/9/97

Reviewed By: Patricia Jay **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1F001.XLD
Batch Ended: 10/9/97 12:20
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 143(REPEAT), 143A, 143B, 143C

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
11	13.872	7.06	At AL	12.59	617.16	41.14	>AL	16.65	1.00	3.933	268.17	10/9/97 12:16
12	-0.235	3.53	<MDA	12.59	757.55	46.35	>AL	16.65	1.00	-0.067	329.17	10/9/97 12:17
13	-0.235	3.53	<MDA	12.59	55.62	11.84	<AL	16.65	1.00	-0.067	24.17	10/9/97 12:19
17	-0.235	3.53	<MDA	12.59	306.47	27.93	>AL	16.65	1.00	-0.067	133.17	10/9/97 12:20

N-19

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 10:27

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
151	-0.235	0.38	
152	-0.235	-1.92	
153	-0.235	0.422	
154	3.292	4.99	
155	-0.235	2.68	
156	-0.235	-4.22	
157	-0.235	0.38	
158	-0.235	2.68	
159	-0.235	-0.38	
160	-0.235	7.29	
161	-0.235	21.1	
162	-0.235	2.68	
163	-0.235	0.38	
164	-0.235	4.99	
165	-0.235	4.99	
166	-0.235	0.38	
167	-0.235	-4.22	
168	-0.235	11.89	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
169	-0.235	7.29	
170	-0.235	2.68	
171	-0.235	7.29	

Comments:

Performed By: Michele R. Sutton MRS 10/11/97 **Date:** 10/9/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B000.XLD
Batch Ended: 10/9/97 10:27
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 151-171

SIDE 151

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
51	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 9:57
52	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 9:58
53	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 10:00
54	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/9/97 10:01
55	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 10:03
56	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 10:04
57	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 10:06
58	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 10:07
59	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 10:09
60	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 10:11
61	-0.235	3.53	<MDA	12.59	21.10	7.68	<AL	16.65	1.00	-0.067	9.17	10/9/97 10:12
62	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 10:14
63	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 10:15
64	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 10:17
65	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 10:18
66	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 10:20
67	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 10:21
68	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/9/97 10:23
69	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 10:24
70	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 10:26
71	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 10:27

171

N-21

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 11:08

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
172	-0.235	-1.92	
173	3.292	4.99	
174	-0.235	4.99	
175	-0.235	0.38	
176	-0.235	2.68	
177	-0.235	4.99	
178	-0.235	-1.92	
179	-0.235	14.19	
180	-0.235	0.38	
181	-0.235	-4.222	
182	-0.235	92.44	
183	-0.235	23.4	
184	-0.235	18.79	
185	-0.235	14.19	
186	-0.235	7.29	
187	3.292	97.04	
188	-0.235	4.99	
189	-0.235	18.79	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
190	3.292	9.59	
191	3.292	25.7	
192	-0.235	4.99	
193	-0.235	18.79	
194	3.292	11.89	
195	-0.235	4.99	
196	-0.235	2.68	
197	-0.235	11.89	

Comments:

Performed By: Michele R. Sutton MRS 10/11/97 **Date:** 10/9/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1C006.XLD
Batch Ended: 10/9/97 11:08
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 172-197

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
72	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 10:29
73	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/9/97 10:31
74	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 10:32
75	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 10:34
76	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 10:35
77	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 10:37
78	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 10:38
79	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/9/97 10:40
80	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 10:41
81	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 10:43
82	-0.235	3.53	<MDA	12.59	92.44	15.12	At AL	16.65	1.00	-0.067	40.17	10/9/97 10:44
83	-0.235	3.53	<MDA	12.59	23.40	8.02	<AL	16.65	1.00	-0.067	10.17	10/9/97 10:46
84	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/9/97 10:48
85	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/9/97 10:49
86	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 10:51
87	3.292	3.53	<AL	12.59	97.04	15.49	At AL	16.65	1.00	0.933	42.17	10/9/97 10:52
88	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 10:54
89	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/9/97 10:55
90	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/9/97 10:57
91	3.292	3.53	<AL	12.59	25.70	8.35	<AL	16.65	1.00	0.933	11.17	10/9/97 10:58
92	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 11:00
93	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/9/97 11:01
94	3.292	3.53	<AL	12.59	11.89	6.12	<AL	16.65	1.00	0.933	5.17	10/9/97 11:03
95	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 11:05
96	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 11:06
97	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/9/97 11:08

N-23

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/13/97 **Time:** 11:27

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
187-A	10.345	416.94	-
187-B	6.818	451.46	-
187-C	13.872	626.37	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments: Recount

Performed By: Michele R. Sutton 10/23/97 **Date:** 10/13/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/13/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A049.XLD
Batch Ended: 10/13/97 11:27
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 187A-187C (REACTOR PLUG H12)

Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
2	10.345	6.11	At AL	12.59	416.94	33.01	>AL	16.65	1.00	2.933	181.17	10/13/97 11:24
3	6.818	4.99	<AL	12.59	451.46	34.49	>AL	16.65	1.00	1.933	196.17	10/13/97 11:25
4	13.872	7.06	At AL	12.59	626.37	41.49	>AL	16.65	1.00	3.933	272.17	10/13/97 11:27

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 11:12

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
198	3.292	16.49	
199	-0.235	2.68	
200	-0.235	0.38	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/11/97 **Date:** 10/9/97

Reviewed By: Date typ **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1D000.XLD
Batch Ended: 10/9/97 11:12
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 198-200

SID#

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
198 8	3.292	3.53	<AL	12.59	16.49	6.94	<AL	16.65	1.00	0.933	7.17	10/9/97 11:09
9	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 11:11
200 10	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 11:12

N-27

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 12:14

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
201	-0.235	-1.92	
202	-0.235	0.38	
203	-0.235	2.68	
204	-0.235	2.68	
205	-0.235	0.38	
206	-0.235	2.68	
207	-0.235	21.1	
208	-0.235	0.38	
209	-0.235	21.1	
210	3.292	25.7	
211	-0.235	0.38	
212	6.818	21.1	
213	-0.235	25.7	
214	3.292	536.61	
215	-0.235	4.99	
216	-0.235	4.99	
217	3.292	39.52	
218	-0.235	14.19	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
219	-0.235	-4.22	
220	-0.235	7.29	
221	6.818	14.19	
222	-0.235	-1.92	
223	-0.235	-1.92	
224	3.292	9.59	
225	-0.235	14.19	
226	-0.235	0.38	
227	-0.235	4.99	
228	-0.235	-4.22	
229	-0.235	9.59	
230	-0.235	4.99	
231	-0.235	0.38	
232	-0.235	4.99	
233	-0.235	0.38	
234	-0.235	0.38	
235	-0.235	2.68	
236	-0.235	0.38	

Comments:

Performed By: Michele R. Sutton MRS 10/15/97 **Date:** 10/9/97

Reviewed By: Peter Lyn **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 12:14

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
237	-0.235	-1.92	
238	-0.235	-4.22	
239	-0.235	4.99	
240	-0.235	-1.92	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton **Date:** 10/9/97

Reviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1E000.XLD
Batch Ended: 10/9/97 12:14
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 201-240

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 11:14
2	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 11:15
3	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 11:17
4	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 11:18
5	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 11:20
6	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 11:22
7	-0.235	3.53	<MDA	12.59	21.10	7.68	<AL	16.65	1.00	-0.067	9.17	10/9/97 11:23
18	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 11:25
19	-0.235	3.53	<MDA	12.59	21.10	7.68	<AL	16.65	1.00	-0.067	9.17	10/9/97 11:26
20	3.292	3.53	<AL	12.59	25.70	8.35	<AL	16.65	1.00	0.933	11.17	10/9/97 11:28
21	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 11:29
22	6.818	4.99	<AL	12.59	21.10	7.68	<AL	16.65	1.00	1.933	9.17	10/9/97 11:31
23	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65	1.00	-0.067	11.17	10/9/97 11:32
24	3.292	3.53	<AL	12.59	536.61	37.99	>AL	16.65	1.00	0.933	233.17	10/9/97 11:34
25	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 11:35
26	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 11:37
27	3.292	3.53	<AL	12.59	39.51	10.10	<AL	16.65	1.00	0.933	17.17	10/9/97 11:39
28	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/9/97 11:40
29	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 11:42
30	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 11:43
31	6.818	4.99	<AL	12.59	14.19	6.55	<AL	16.65	1.00	1.933	6.17	10/9/97 11:45
32	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 11:46
33	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 11:48
34	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/9/97 11:49
35	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/9/97 11:51
36	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 11:52
37	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 11:54

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1E000.XLD
Batch Ended: 10/9/97 12:14
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 201-240

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
38	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 11:56
38	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 11:57
40	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 11:59
41	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 12:00
42	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 12:02
43	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 12:03
44	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 12:05
45	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 12:06
46	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 12:08
47	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 12:09
48	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 12:11
49	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 12:12
50	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 12:14

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/11/97 **Time:** 17:06

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
214-A	84.408	7130.14	-
214-B	109.096	16888.1	-
224-A	-0.235	7.29	-
224-B	-0.235	25.7	-
224-C	-0.235	30.3	-
224-D	-0.235	143.07	-
224-E	-0.235	557.32	-
224-F	-0.235	9.59	-
224-G	-0.235	2.68	-
224-H	-0.235	4.99	-
224-I	-0.235	28	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments: Recount

Performed By: Michele R. Sutton MRS 10/13/97 **Date:** 10/11/97

Reviewed By: Nate Frey **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/11/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A046.XLD
Batch Ended: 10/11/97 17:06
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS REDO 214 (A,B) AND 224 (A-H)

	Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
		DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
214A	1	84.408	17.34	>AL	12.59	7130.14	226.60	>AL	16.65	1.00	23.933	3098.17	10/11/97 16:51
214B	2	109.098	19.73	>AL	12.59	16888.10	484.57	>AL	16.65	1.00	30.933	7338.17	10/11/97 16:52
224A	3	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/11/97 16:54
B	4	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65	1.00	-0.067	11.17	10/11/97 16:55
C	5	-0.235	3.53	<MDA	12.59	30.30	8.97	<AL	16.65	1.00	-0.067	13.17	10/11/97 16:57
D	6	-0.235	3.53	<MDA	12.59	143.07	18.80	>AL	16.65	1.00	-0.067	62.17	10/11/97 16:58
E	7	-0.235	3.53	<MDA	12.59	557.32	36.81	>AL	16.65	1.00	-0.067	242.17	10/11/97 17:00
F	8	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/11/97 17:01
G	9	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 17:03
H	10	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 17:05
I	11	-0.235	3.53	<MDA	12.59	28.00	8.66	<AL	16.65	1.00	-0.067	12.17	10/11/97 17:06

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 12:51

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
241	-0.235	-4.22	
242	-0.235	0.38	
243	-0.235	0.38	
244	-0.235	4.99	
245	-0.235	4.99	
246	-0.235	2.68	
247	-0.235	4.99	
248	-0.235	2.68	
249	-0.235	0.38	
250	-0.235	9.59	
251	-0.235	2.68	
252	-0.235	2.68	
253	-0.235	7.29	
254	-0.235	7.29	
255	-0.235	4.99	
256	-0.235	0.38	
257	-0.235	9.59	
258	-0.235	7.29	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
259	-0.235	0.38	
260	-0.235	-1.92	

Comments:

Performed By: Michele R. Sutton MRS **Date:** 10/9/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1G001.XLD
Batch Ended: 10/9/97 12:51
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 241-260

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
51	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 12:22
52	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 12:23
53	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 12:25
54	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 12:27
55	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 12:28
56	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 12:30
57	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 12:31
58	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 12:33
59	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 12:34
60	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 12:36
61	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 12:37
62	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 12:39
63	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 12:40
64	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 12:42
65	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 12:43
66	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 12:45
67	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 12:47
68	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 12:48
69	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 12:50
70	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 12:51

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 14:36

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
261	-0.235	2.68	
262	-0.235	0.38	
263	-0.235	-1.92	
264	-0.235	0.38	
265	-0.235	2.68	
266	-0.235	2.68	
267	-0.235	-4.22	
268	-0.235	7.29	
269	-0.235	0.38	
270	-0.235	2.68	
271	-0.235	-1.92	
272	3.292	-1.92	
273	-0.235	0.38	
274	-0.235	-1.92	
275	-0.235	-4.22	
276	-0.235	25.7	
277	-0.235	7.29	
278	-0.235	2.68	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
279	3.292	4.99	
280	-0.235	2.68	
281	-0.235	-1.92	
282	-0.235	4.99	
283	-0.235	0.38	
284	-0.235	2.68	
285	-0.235	4.99	
286	-0.235	-4.22	
287	-0.235	11.89	
288	-0.235	0.38	
289	-0.235	9.59	
290	-0.235	2.68	
291	-0.235	4.99	
292	-0.235	7.29	
293	-0.235	2.68	
294	-0.235	7.29	
295	-0.235	-1.92	
296	-0.235	-1.92	

Comments:

Performed By: Michele R. Sutton **Date:** 10/9/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 14:36

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
297	-0.235	11.89	
298	-0.235	0.38	
299	-0.235	2.68	
300	-0.235	2.68	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton **Date:** 10/9/97

Reviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A040.XLD
Batch Ended: 10/9/97 14:36
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 261-300

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
61	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 13:36
62	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 13:37
63	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 13:39
64	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 13:40
65	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 13:42
66	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 13:43
67	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 13:45
68	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 13:46
69	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 13:48
70	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 13:49
71	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 13:51
72	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/9/97 13:53
73	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 13:54
74	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 13:56
75	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 13:57
76	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65	1.00	-0.067	11.17	10/9/97 13:59
77	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 14:00
78	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 14:02
79	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/9/97 14:03
80	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 14:05
81	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 14:06
82	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 14:08
83	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 14:10
84	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 14:11
85	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 14:13
86	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 14:14
87	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/9/97 14:16

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A040.XLD
Batch Ended: 10/9/97 14:36
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 261-300

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
88	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 14:17
89	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 14:19
90	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 14:20
91	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 14:22
92	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 14:24
93	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 14:25
94	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 14:27
95	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 14:28
96	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 14:30
97	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/9/97 14:31
98	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 14:33
99	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 14:34
100	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 14:36

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 15:53

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
301	3.292	-1.92	
302	-0.235	0.38	
303	-0.235	7.29	
304	-0.235	2.68	
305	-0.235	7.29	
306	-0.235	0.38	
307	-0.235	-4.22	
308	-0.235	4.99	
309	-0.235	-1.92	
310	-0.235	0.38	
311	-0.235	-1.92	
312	-0.235	0.38	
313	-0.235	-1.92	
314	-0.235	-1.92	
315	-0.235	-4.22	
316	3.292	-4.22	
317	-0.235	2.68	
318	-0.235	2.68	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
319	-0.235	-4.22	
320	3.292	-1.92	
321	-0.235	-1.92	
322	-0.235	2.68	
323	-0.235	-1.92	
324	-0.235	-4.22	
325	-0.235	-1.92	
326	-0.235	-4.22	
327	-0.235	4.99	
328	-0.235	7.29	
329	-0.235	-1.92	
330	3.292	2.68	
331	-0.235	2.68	
332	-0.235	4.99	
333	-0.235	-4.22	
334	-0.235	2.68	
335	-0.235	7.29	
336	-0.235	7.29	

Comments:

Performed By: Michele R. Sutton MRS **Date:** 10/9/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 15:53

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
337	-0.235	0.38	
338	-0.235	-4.22	
339	-0.235	2.68	
340	3.292	0.38	
341	-0.235	0.38	
342	3.292	0.38	
343	-0.235	2.68	
344	-0.235	4.99	
345	-0.235	2.68	
346	-0.235	-1.92	
347	-0.235	0.38	
348	-0.235	-1.92	
349	3.292	-1.92	
350	-0.235	-1.92	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton **Date:** 10/9/97

Reviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B001.XLD
Batch Ended: 10/9/97 15:53
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 301-350

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/9/97 14:37
2	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 14:39
3	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 14:41
4	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 14:42
5	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 14:44
6	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 14:45
7	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 14:47
8	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 14:48
9	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 14:50
10	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 14:51
11	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 14:53
12	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 14:54
13	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 14:56
14	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 14:57
15	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 14:59
16	3.292	3.53	<AL	12.59	-4.22	2.37	<MDA	16.65	1.00	0.933	-1.83	10/9/97 15:01
17	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 15:02
18	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 15:04
19	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 15:05
20	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/9/97 15:07
21	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 15:08
22	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 15:10
23	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 15:11
24	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 15:13
25	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 15:14
26	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 15:16
27	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 15:18

LB5100-W Low Background Counting System – Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B001.XLD
Batch Ended: 10/9/97 15:53
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 301-350

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
28	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 15:19
29	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 15:21
30	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/9/97 15:22
31	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 15:24
32	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 15:25
33	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 15:27
34	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 15:28
35	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 15:30
36	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 15:31
37	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 15:33
38	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 15:35
39	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 15:36
40	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/9/97 15:38
41	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 15:39
42	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/9/97 15:41
43	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 15:42
44	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 15:44
45	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 15:45
46	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 15:47
47	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 15:48
48	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 15:50
49	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/9/97 15:51
50	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 15:53

N-43

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 16:32

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
351	-0.235	0.38	
352	-0.235	2.68	
353	-0.235	0.38	
354	3.292	9.59	
355	-0.235	4.99	
356	-0.235	0.38	
357	-0.235	-1.92	
358	-0.235	7.29	
359	-0.235	4.99	
360	-0.235	4.99	
361	-0.235	0.38	
362	-0.235	7.29	
363	-0.235	4.99	
364	-0.235	14.19	
365	-0.235	0.38	
366	-0.235	9.59	
367	-0.235	2.68	
368	-0.235	0.38	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
369	-0.235	2.68	
370	-0.235	0.38	
371	-0.235	-1.92	
372	-0.235	-1.92	
373	-0.235	2.68	
374	-0.235	4.99	
375	-0.235	2.68	

Comments:

Performed By: Michele R. Sutton MRS **Date:** 10/9/97

Reviewed By: Date **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1C007.XLD
Batch Ended: 10/9/97 16:32
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 351-375

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
51	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 15:55
52	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 15:56
53	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 15:58
54	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/9/97 15:59
55	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/9/97 16:01
56	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 16:02
57	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/9/97 16:04
58	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 16:06
59	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 16:07
60	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 16:09
61	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 16:10
62	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 16:12
63	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 16:13
64	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/9/97 16:15
65	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 16:16
66	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 16:18
67	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 16:19
68	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 16:21
69	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 16:23
70	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 16:24
71	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 16:26
72	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 16:27
73	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 16:29
74	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 16:30
75	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 16:32

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 17:11

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
376	3.292	0.38	
377	-0.235	4.99	
378	-0.235	-4.22	
379	-0.235	-1.92	
380	-0.235	9.59	
381	3.292	-4.22	
382	-0.235	9.59	
383	-0.235	-1.92	
384	-0.235	2.68	
385	-0.235	-4.22	
386	-0.235	0.38	
387	-0.235	0.38	
388	-0.235	-4.22	
389	-0.235	-1.92	
390	-0.235	-1.92	
391	3.292	2.68	
392	-0.235	0.38	
393	-0.235	-1.92	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
394	-0.235	-1.92	
395	3.292	2.68	
396	3.292	2.68	
397	-0.235	0.38	
398	3.292	-1.92	
399	-0.235	9.59	
400	3.292	-1.92	

Comments:

Performed By: Michele R. Sutton **Date:** 10/9/97

Reviewed By: **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/9/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1D001.XLD
Batch Ended: 10/9/97 17:11
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 376-400

	Alpha Activity				Beta Activity						
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
76	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/9/97 16:33
77	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 16:35
78	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 16:37
79	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 16:38
80	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 16:40
81	3.292	3.53	<AL	12.59	-4.22	2.37	<MDA	16.65	1.00	0.933	-1.83	10/9/97 16:41
82	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 16:43
83	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 16:44
84	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 16:46
85	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 16:47
86	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 16:49
87	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 16:51
88	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 16:52
89	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 16:54
90	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 16:55
91	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/9/97 16:57
92	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 16:58
93	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 17:00
94	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 17:01
95	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/9/97 17:03
96	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/9/97 17:05
97	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 17:06
98	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/9/97 17:08
99	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 17:09
100	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/9/97 17:11

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 17:49

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
401	-0.235	-1.92	
402	-0.235	14.19	
403	-0.235	0.38	
404	-0.235	2.68	
405	-0.235	-1.92	
406	-0.235	2.68	
407	3.292	0.38	
408	-0.235	9.59	
409	-0.235	9.59	
410	-0.235	-4.22	
411	-0.235	-1.92	
412	-0.235	-1.92	
413	-0.235	2.68	
414	-0.235	14.19	
415	3.292	4.99	
416	-0.235	7.29	
417	-0.235	4.99	
418	-0.235	0.38	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
419	-0.235	0.38	
420	3.292	-1.92	
421	-0.235	0.38	
422	-0.235	0.38	
423	-0.235	2.68	
424	-0.235	-4.22	
425	-0.235	0.38	

Comments:

Performed By: Michele R. Sutton **Date:** 10/9/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/10/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A041.XLD
Batch Ended: 10/9/97 17:49
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 401-525

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 17:12
2	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/9/97 17:14
3	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 17:15
4	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 17:17
5	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 17:18
6	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 17:20
7	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/9/97 17:21
8	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 17:23
9	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 17:25
10	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 17:26
11	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 17:28
12	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 17:29
13	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 17:31
14	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/9/97 17:32
15	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/9/97 17:34
16	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 17:35
17	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 17:37
18	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 17:39
19	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 17:40
20	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/9/97 17:42
21	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 17:43
22	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 17:45
23	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 17:46
24	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 17:48
25	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 17:49

N-49

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 18:28

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
426	-0.235	2.68	
427	-0.235	0.38	
428	-0.235	7.29	
429	-0.235	-1.92	
430	-0.235	-4.22	
431	-0.235	-4.22	
432	6.818	2.68	
433	-0.235	0.38	
434	-0.235	9.59	
435	-0.235	4.99	
436	-0.235	7.29	
437	-0.235	-4.22	
438	-0.235	9.59	
439	-0.235	11.89	
440	-0.235	9.59	
441	-0.235	7.29	
442	-0.235	-1.92	
443	-0.235	0.38	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
444	-0.235	4.99	
445	-0.235	0.38	
446	-0.235	0.38	
447	-0.235	9.59	
448	-0.235	-1.92	
449	-0.235	-1.92	
450	3.292	0.38	

Comments:

Performed By: Michele R. Sutton **Date:** 10/9/97

Reviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/10/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B002.XLD
Batch Ended: 10/9/97 16:28
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 426-460

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
26	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 17:51
27	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 17:53
28	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 17:54
29	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 17:56
30	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 17:57
31	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 17:59
32	6.818	4.99	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	1.933	1.17	10/9/97 18:00
33	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 18:02
34	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 18:04
35	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 18:05
36	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 18:07
37	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/9/97 18:08
38	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 18:10
39	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/9/97 18:11
40	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 18:13
41	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 18:14
42	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 18:16
43	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 18:18
44	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 18:19
45	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 18:21
46	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 18:22
47	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/9/97 18:24
48	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 18:25
49	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 18:27
50	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/9/97 18:28

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 17:47

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
451	3.292	9.59	
452	-0.235	0.38	
453	-0.235	2.68	
454	3.292	21.1	
455	6.818	4.99	
456	-0.235	2.68	
457	-0.235	9.59	
458	-0.235	4.99	
459	-0.235	2.68	
460	-0.235	16.49	
461	-0.235	18.79	
462	-0.235	4.99	
463	-0.235	4.99	
464	-0.235	2.68	
465	-0.235	2.68	
466	-0.235	0.38	
467	-0.235	0.38	
468	-0.235	9.59	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
469	-0.235	-1.92	
470	-0.235	2.68	
471	-0.235	-1.92	
472	-0.235	-4.22	
473	-0.235	0.38	
474	-0.235	7.29	
475	3.292	0.38	

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/23/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/23/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1C026.XLD
Batch Ended: 10/23/97 17:47
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 451-475

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
51	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/23/97 17:11
52	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 17:12
53	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 17:14
54	3.292	3.53	<AL	12.59	21.10	7.68	<AL	16.65	1.00	0.933	9.17	10/23/97 17:15
55	6.818	4.99	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	1.933	2.17	10/23/97 17:17
56	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 17:18
57	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/23/97 17:20
58	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 17:21
59	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 17:23
60	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/23/97 17:24
61	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/23/97 17:26
62	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 17:27
63	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 17:29
64	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 17:30
65	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 17:32
66	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 17:34
67	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 17:35
68	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/23/97 17:37
69	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/23/97 17:38
70	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 17:40
71	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/23/97 17:41
72	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/23/97 17:43
73	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 17:44
74	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 17:46
75	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 17:47

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/9/97 **Time:** 19:34

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
476	-0.235	14.19	
477	-0.235	4.99	
478	-0.235	0.38	
479	-0.235	0.38	
480	-0.235	7.29	
481	-0.235	2.68	
482	-0.235	2.68	
483	-0.235	-1.92	
484	-0.235	2.68	
485	-0.235	0.38	
486	-0.235	-1.92	
487	-0.235	7.29	
488	-0.235	2.68	
489	-0.235	4.99	
490	-0.235	0.38	
491	-0.235	4.99	
492	-0.235	0.38	
493	-0.235	2.68	

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
494	-0.235	0.38	
495	-0.235	-1.92	
496	-0.235	0.38	
497	-0.235	9.59	
498	-0.235	4.99	
499	-0.235	-4.22	
500	3.292	-1.92	

Comments:

Performed By: Michele R. Sutton MRS **Date:** 10/9/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/10/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1D002.XLD
Batch Ended: 10/9/97 19:34
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 476-500

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
76	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/9/97 19:09
77	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 19:10
78	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 19:12
79	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 19:14
80	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 19:15
81	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 19:17
82	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 19:18
83	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 19:20
84	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 19:21
85	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 19:23
86	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/9/97 19:24
87	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/9/97 19:26
88	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/9/97 19:27
89	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 19:29
90	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 19:31
91	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/9/97 19:32
92	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/9/97 19:34

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/10/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1D002.XLD
Batch Ended: 10/10/97 0:39
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 476-500

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
93	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 0:28
94	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 0:30
95	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 0:31
96	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 0:33
97	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/10/97 0:34
98	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 0:36
99	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/10/97 0:37
100	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/10/97 0:39

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/10/97 **Time:** 7:20

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
501	-0.235	7.29	-
502	-0.235	-4.22	-
503	-0.235	9.59	-
504	-0.235	-1.92	-
505	-0.235	4.99	-
506	-0.235	7.29	-
507	-0.235	-1.92	-
508	-0.235	0.38	-
509	3.292	-1.92	-
510	-0.235	0.38	-
511	3.292	4.99	-
512	-0.235	0.38	-
513	-0.235	4.99	-
514	-0.235	4.99	-
515	-0.235	-4.22	-
516	-0.235	2.68	-
517	3.292	-4.22	-
518	-0.235	2.68	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
519	-0.235	-1.92	-
520	-0.235	2.68	-
521	-0.235	0.38	-
522	-0.235	0.38	-
523	-0.235	-1.92	-
524	-0.235	-1.92	-
525	-0.235	2.68	-

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/10/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/10/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A042.XLD
Batch Ended: 10/10/97 7:20
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 501-525

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
1	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/10/97 6:43
2	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/10/97 6:45
3	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/10/97 6:46
4	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 6:48
5	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 6:49
6	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/10/97 6:51
7	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 6:52
8	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 6:54
9	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/10/97 6:56
10	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 6:57
11	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/10/97 6:59
12	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:00
13	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 7:02
14	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 7:03
15	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/10/97 7:05
16	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 7:06
17	3.292	3.53	<AL	12.59	-4.22	2.37	<MDA	16.65	1.00	0.933	-1.83	10/10/97 7:08
18	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 7:09
19	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 7:11
20	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 7:13
21	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:14
22	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:16
23	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 7:17
24	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 7:19
25	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 7:20

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/10/97 **Time:** 8:37

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
526	-0.235	-1.92	
527	-0.235	4.99	
528	-0.235	-1.92	
529	-0.235	0.38	
530	-0.235	4.99	
531	-0.235	7.29	
532	3.292	-4.22	
533	3.292	2.68	
534	-0.235	2.68	
535	-0.235	0.38	
536	-0.235	0.38	
537	-0.235	0.38	
538	-0.235	4.99	
539	-0.235	0.38	
540	-0.235	4.99	
541	-0.235	9.59	
542	-0.235	4.99	
543	-0.235	-4.22	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
544	-0.235	7.29	
545	-0.235	0.38	
546	-0.235	0.38	
547	-0.235	0.38	
548	-0.235	0.38	
549	-0.235	0.38	
550	-0.235	-1.92	
551	-0.235	-1.92	
552	-0.235	4.99	
553	-0.235	2.68	
554	-0.235	23.4	
555	-0.235	0.38	
556	-0.235	0.38	
557	-0.235	-1.92	
558	-0.235	7.29	
559	-0.235	-4.22	
560	-0.235	0.38	
561	-0.235	7.29	

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/10/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/10/97 **Time:** 8:37

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
562	-0.235	-1.92	
563	-0.235	9.59	
564	-0.235	7.29	
565	-0.235	-1.92	
566	-0.235	2.68	
567	-0.235	2.68	
568	-0.235	-1.92	
569	-0.235	2.68	
570	-0.235	2.68	
571	-0.235	-1.92	
572	-0.235	-1.92	
573	-0.235	0.38	
574	-0.235	-4.22	
575	3.292	4.99	

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton **Date:** 10/10/97

Reviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/10/97
Counting Unit id: 1
Data file name: C:\LBXLWUNIT1\SME1C009.XLD
Batch Ended: 10/10/97 8:37
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 526-575

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
26	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 7:22
27	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 7:24
28	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 7:25
29	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:27
30	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 7:28
31	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/10/97 7:30
32	3.292	3.53	<AL	12.59	-4.22	2.37	<MDA	16.65	1.00	0.933	-1.83	10/10/97 7:31
33	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/10/97 7:33
34	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 7:34
35	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:36
36	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:38
37	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:39
38	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 7:41
39	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:42
40	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 7:44
41	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/10/97 7:45
42	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 7:47
43	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/10/97 7:48
44	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/10/97 7:50
45	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:52
46	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:53
47	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:55
48	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:56
49	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 7:58
50	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 7:59
51	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 8:01
52	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 8:02

N-61

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/10/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1C009.XLD
Batch Ended: 10/10/97 8:37
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 526-575

	Alpha Activity				Beta Activity						
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
53	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 8:04
54	-0.235	3.53	<MDA	12.59	23.40	8.02	<AL	16.65	1.00	-0.067	10.17	10/10/97 8:06
55	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 8:07
56	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 8:09
57	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 8:10
58	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/10/97 8:12
59	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/10/97 8:13
60	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 8:15
61	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/10/97 8:16
62	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 8:18
63	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/10/97 8:20
64	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/10/97 8:21
65	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 8:23
66	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 8:24
67	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 8:26
68	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 8:27
69	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 8:29
70	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 8:30
71	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 8:32
72	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 8:34
73	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 8:35
74	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/10/97 8:37

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/10/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1C009.XLD
Batch Ended: 10/10/97 9:11
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 526-575

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
75	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/10/97 9:11

N-63

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/10/97 **Time:** 9:49

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
576	-0.235	4.99	-
577	-0.235	-1.92	-
578	-0.235	37.21	-
579	-0.235	2.68	-
580	-0.235	-1.92	-
581	-0.235	7.29	-
582	-0.235	2.68	-
583	-0.235	7.29	-
584	-0.235	0.38	-
585	-0.235	-1.92	-
586	-0.235	-1.92	-
587	-0.235	4.99	-
588	-0.235	-1.92	-
589	-0.235	0.38	-
590	-0.235	44.11	-
591	-0.235	-1.92	-
592	3.292	-4.22	-
593	-0.235	4.99	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
594	-0.235	4.99	-
595	-0.235	2.68	-
596	-0.235	0.38	-
597	-0.235	0.38	-
598	-0.235	0.38	-
599	-0.235	0.38	-
600	-0.235	2.68	-

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/10/97

Reviewed By: Nate Jpp **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/11/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1F003.XLD
Batch Ended: 10/10/97 9:49
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 576-600

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
76	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 9:12
77	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 9:14
78	-0.235	3.53	<MDA	12.59	37.21	9.83	<AL	16.65	1.00	-0.067	16.17	10/10/97 9:15
79	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 9:17
80	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 9:19
81	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/10/97 9:20
82	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 9:22
83	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/10/97 9:23
84	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 9:25
85	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 9:26
86	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 9:28
87	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 9:29
88	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 9:31
89	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 9:32
90	3.292	3.53	<AL	12.59	44.11	10.63	<AL	16.65	1.00	0.933	19.17	10/10/97 9:34
91	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 9:35
92	3.292	3.53	<AL	12.59	-4.22	2.37	<MDA	16.65	1.00	0.933	-1.83	10/10/97 9:37
93	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 9:38
94	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 9:40
95	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 9:41
96	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 9:43
97	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 9:44
98	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 9:46
99	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 9:47
100	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 9:49

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/10/97 **Time:** 10:26

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
601	-0.235	-1.92	-
602	-0.235	-1.92	-
603	-0.235	0.38	-
604	-0.235	2.68	-
605	-0.235	0.38	-
606	-0.235	4.99	-
607	-0.235	-4.22	-
608	-0.235	4.99	-
609	-0.235	-1.92	-
610	-0.235	0.38	-
611	-0.235	7.29	-
612	-0.235	11.89	-
613	-0.235	4.99	-
614	-0.235	2.68	-
615	-0.235	-1.92	-
616	-0.235	-1.92	-
617	3.292	2.68	-
618	-0.235	2.68	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
619	-0.235	4.99	-
620	-0.235	-1.92	-
621	-0.235	-1.92	-
622	-0.235	0.38	-
623	-0.235	0.38	-
624	-0.235	-1.92	-
625	-0.235	2.68	-

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/10/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/11/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A043.XLD
Batch Ended: 10/10/97 10:26
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 601-625

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 9:50
2	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 9:52
3	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 9:53
4	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 9:55
5	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 9:56
6	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 9:58
7	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/10/97 9:59
8	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 10:01
9	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 10:02
10	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 10:04
11	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/10/97 10:05
12	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/10/97 10:07
13	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 10:08
14	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 10:10
15	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 10:11
16	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 10:13
17	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/10/97 10:14
18	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/10/97 10:16
19	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/10/97 10:17
20	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 10:19
21	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 10:20
22	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/10/97 10:22
23	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/10/97 10:23
24	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/10/97 10:25
25	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/10/97 10:26

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RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/11/97 **Time:** 12:31

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
626	-0.235	-4.22	-
627	-0.235	0.38	-
628	-0.235	0.38	-
629	-0.235	11.89	-
630	-0.235	7.29	-
631	-0.235	2.68	-
632	-0.235	4.99	-
633	-0.235	-4.22	-
634	-0.235	0.38	-
635	-0.235	0.38	-
636	-0.235	0.38	-
637	-0.235	-1.92	-
638	-0.235	0.38	-
639	-0.235	0.38	-
640	-0.235	0.38	-
641	-0.235	0.38	-
642	-0.235	0.38	-
643	-0.235	-1.92	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
644	-0.235	-4.22	-
645	-0.235	2.68	-
646	-0.235	-1.92	-
647	-0.235	11.89	-
648	-0.235	0.38	-
649	-0.235	9.56	-
650	-0.235	2.68	-

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/11/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/11/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B004.XLD
Batch Ended: 10/11/97 12:31
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 626-650

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
26	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 11:54
27	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 11:56
28	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 11:57
29	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/11/97 11:59
30	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/11/97 12:01
31	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 12:02
32	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 12:04
33	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 12:05
34	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 12:07
35	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 12:08
36	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 12:10
37	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 12:11
38	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 12:13
39	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 12:14
40	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 12:16
41	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 12:17
42	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 12:19
43	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 12:20
44	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 12:22
45	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 12:23
46	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 12:25
47	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/11/97 12:26
48	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 12:28
49	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/11/97 12:29
50	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 12:31

N-69

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/11/97 **Time:** 11:15

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
651	-0.235	-4.22	-
652	-0.235	0.38	-
653	-0.235	-4.22	-
654	-0.235	4.99	-
655	3.292	0.38	-
656	-0.235	0.38	-
657	-0.235	2.68	-
658	-0.235	-1.92	-
659	-0.235	4.99	-
660	-0.235	2.68	-
661	-0.235	2.68	-
662	-0.235	4.99	-
663	-0.235	-1.92	-
664	-0.235	-4.22	-
665	-0.235	2.68	-
666	-0.235	2.68	-
667	-0.235	2.68	-
668	-0.235	7.29	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
669	-0.235	2.68	-
670	-0.235	-4.22	-
671	-0.235	4.99	-
672	-0.235	7.29	-
673	-0.235	0.38	-
674	-0.235	7.29	-
675	-0.235	2.68	-

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/11/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/11/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1D003.XLD
Batch Ended: 10/11/97 11:15
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 651-675

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
51	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 10:39
52	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 10:40
53	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 10:42
54	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 10:43
55	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/11/97 10:45
56	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 10:46
57	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 10:48
58	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 10:49
59	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 10:51
60	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 10:52
61	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 10:54
62	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 10:55
63	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 10:57
64	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 10:58
65	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 11:00
66	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 11:01
67	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 11:03
68	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/11/97 11:05
69	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 11:06
70	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 11:08
71	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 11:09
72	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/11/97 11:11
73	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 11:12
74	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/11/97 11:14
75	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 11:15

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/11/97 **Time:** 11:53

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
676	-0.235	-1.92	-
677	-0.235	4.99	-
678	-0.235	-4.22	-
679	-0.235	11.89	-
680	-0.235	-1.92	-
681	3.292	0.38	-
682	3.292	4.99	-
683	-0.235	0.38	-
684	-0.235	4.99	-
685	-0.235	2.68	-
686	-0.235	0.38	-
687	3.292	2.68	-
688	-0.235	0.38	-
689	-0.235	7.29	-
690	-0.235	-4.22	-
691	-0.235	0.38	-
692	-0.235	2.68	-
693	-0.235	2.68	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
694	-0.235	2.68	-
695	-0.235	2.68	-
696	-0.235	-1.92	-
697	-0.235	0.38	-
698	-0.235	-1.92	-
699	-0.235	-1.92	-
700	-0.235	4.99	-

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/11/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/11/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1E001.XLD
Batch Ended: 10/11/97 11:53
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 676-700

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
76	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 11:17
77	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 11:18
78	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 11:20
79	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/11/97 11:21
80	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 11:23
81	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/11/97 11:24
82	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/11/97 11:26
83	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 11:27
84	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 11:29
85	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 11:30
86	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 11:32
87	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/11/97 11:33
89	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 11:35
88	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/11/97 11:36
90	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 11:38
91	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 11:39
92	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 11:41
93	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 11:42
94	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 11:44
95	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 11:45
96	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 11:47
97	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 11:48
98	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 11:50
99	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 11:51
100	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 11:53

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/11/97 **Time:** 13:47

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
701	-0.235	-1.92	-
702	-0.235	4.99	-
703	-0.235	2.68	-
704	-0.235	-1.92	-
705	-0.235	0.38	-
706	-0.235	-4.22	-
707	3.292	9.59	-
708	-0.235	4.99	-
709	-0.235	-1.92	-
710	-0.235	9.59	-
711	-0.235	-1.92	-
712	-0.235	-4.22	-
713	-0.235	2.68	-
714	-0.235	4.99	-
715	-0.235	-4.22	-
716	-0.235	4.99	-
717	-0.235	2.68	-
718	-0.235	0.38	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
719	-0.235	-1.92	-
720	-0.235	2.68	-
721	3.292	2.68	-
722	-0.235	-1.92	-
723	-0.235	4.99	-
724	-0.235	2.68	-
725	-0.235	4.99	-

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/11/97

Reviewed By: Date Typ **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/11/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A044.XLD
Batch Ended: 10/11/97 13:47
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 701-725

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
1	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 13:10
2	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 13:12
3	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 13:13
4	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 13:15
5	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 13:16
6	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 13:18
7	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/11/97 13:20
8	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 13:21
9	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 13:23
10	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/11/97 13:24
11	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 13:26
12	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 13:27
13	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 13:29
14	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 13:30
15	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 13:32
16	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 13:33
17	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 13:35
18	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 13:36
19	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 13:38
20	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 13:39
21	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/11/97 13:41
22	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 13:42
23	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 13:44
24	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 13:45
25	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 13:47

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/11/97 **Time:** 14:25

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
726	-0.235	2.68	-
727	-0.235	2.68	-
728	-0.235	0.38	-
729	-0.235	-1.92	-
730	-0.235	0.38	-
731	-0.235	-4.22	-
732	-0.235	2.68	-
733	-0.235	4.99	-
734	-0.235	2.68	-
735	-0.235	0.38	-
736	-0.235	-1.92	-
737	-0.235	-4.22	-
738	-0.235	-1.92	-
739	-0.235	0.38	-
740	-0.235	4.99	-
741	-0.235	2.68	-
742	-0.235	2.68	-
743	-0.235	-1.92	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
744	-0.235	0.38	-
745	-0.235	0.38	-
746	-0.235	0.38	-
747	-0.235	-1.92	-
748	-0.235	2.68	-
749	-0.235	4.99	-
750	-0.235	0.38	-

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/11/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/11/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B005.XLD
Batch Ended: 10/11/97 14:25
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 726-750

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
26	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 13:48
27	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 13:50
28	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 13:51
29	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 13:53
30	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 13:54
31	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 13:56
32	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 13:57
33	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/11/97 13:59
34	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 14:00
35	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:02
36	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 14:03
37	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 14:05
38	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 14:07
39	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/11/97 14:08
40	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 14:10
41	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 14:11
42	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 14:13
43	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 14:14
44	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:16
45	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:17
46	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:19
47	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 14:20
48	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 14:22
49	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 14:23
50	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:25

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RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/11/97 **Time:** 15:03

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
751	-0.235	-1.92	-
752	-0.235	0.38	-
753	-0.235	-4.22	-
754	-0.235	2.68	-
755	-0.235	0.38	-
756	-0.235	0.38	-
757	-0.235	0.38	-
758	-0.235	-1.92	-
759	-0.235	9.59	-
760	-0.235	2.68	-
761	-0.235	2.68	-
762	-0.235	-4.22	-
763	-0.235	0.38	-
764	-0.235	0.38	-
765	-0.235	14.19	-
766	-0.235	4.99	-
767	3.292	-4.22	-
768	-0.235	0.38	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
769	-0.235	4.99	-
770	-0.235	2.68	-
771	-0.235	-4.22	-
772	-0.235	0.67	-
773	-0.235	2.68	-
774	-0.235	-4.22	-
775	-0.235	7.29	-

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/11/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/11/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1C010.XLD
Batch Ended: 10/11/97 15:03
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 751-775

Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
51	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 14:26
52	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:28
53	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 14:29
54	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 14:31
55	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:32
56	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:34
57	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:35
58	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/11/97 14:37
59	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/11/97 14:38
60	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 14:40
61	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 14:41
62	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 14:43
63	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:44
64	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:46
65	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/11/97 14:47
66	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/11/97 14:49
67	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 14:50
68	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:52
69	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/11/97 14:53
70	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 14:55
71	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 14:56
72	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/11/97 14:58
73	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/11/97 15:00
74	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/11/97 15:01
75	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/11/97 15:03

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RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/11/97 **Time:** 15:46

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
776	-0.235	9.59	-
777	-0.235	-4.22	-
778	-0.235	-1.92	-
779	-0.235	-1.92	-
780	-0.235	11.89	-
781	-0.235	7.29	-
782	-0.235	0.38	-
783	-0.235	4.99	-
784	3.292	4.99	-
785	-0.235	0.38	-
786	-0.235	0.38	-
787	-0.235	2.68	-
788	-0.235	2.68	-
789	-0.235	2.68	-
790	-0.235	2.68	-
791	-0.235	4.99	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/11/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/14/97 **Time:** 11:06

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
791A	-0.235	-1.92	-
792	-0.235	55.62	-
793	-0.235	16.49	-
794	-0.235	2.68	-
795	-0.235	18.79	-
796	-0.235	21.1	-
797	3.292	140.77	-
798	-0.235	4.99	-
799	-0.235	2.68	-
800	3.292	2.68	-
801	-0.235	2.68	-
802	-0.235	7.29	-
803	-0.235	11.89	-
804	-0.235	32.6	-
805	3.292	44.11	-
806	-0.235	30.3	-
807	3.292	62.52	-
808	-0.235	9.59	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
809	-0.235	-1.92	-
810	3.292	11.89	-

Comments: #797 > AL

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/14/97

Reviewed By: Nate Frey **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/14/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A050.XLD
Batch Ended: 10/14/97 11:06
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 791A-810

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
1	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/14/97 10:38
2	-0.235	3.53	<MDA	12.59	55.62	11.84	<AL	16.65	1.00	-0.067	24.17	10/14/97 10:39
3	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/14/97 10:41
4	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/14/97 10:42
5	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/14/97 10:44
6	-0.235	3.53	<MDA	12.59	21.10	7.68	<AL	16.65	1.00	-0.067	9.17	10/14/97 10:45
7	3.292	3.53	<AL	12.59	140.77	18.65	>AL	16.65	1.00	0.933	61.17	10/14/97 10:47
8	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/14/97 10:48
9	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/14/97 10:50
10	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/14/97 10:51
11	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/14/97 10:53
12	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/14/97 10:54
13	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/14/97 10:56
14	-0.235	3.53	<MDA	12.59	32.60	9.26	<AL	16.65	1.00	-0.067	14.17	10/14/97 10:57
15	3.292	3.53	<AL	12.59	44.11	10.63	<AL	16.65	1.00	0.933	19.17	10/14/97 10:59
16	-0.235	3.53	<MDA	12.59	30.30	8.97	<AL	16.65	1.00	-0.067	13.17	10/14/97 11:00
17	3.292	3.53	<AL	12.59	62.52	12.52	<AL	16.65	1.00	0.933	27.17	10/14/97 11:02
18	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/14/97 11:03
19	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/14/97 11:05
20	3.292	3.53	<AL	12.59	11.89	6.12	<AL	16.65	1.00	0.933	5.17	10/14/97 11:06

N-82

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/14/97 **Time:** 14:16

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
811	-0.235	-4.22	-
812	-0.235	2.68	-
813	3.292	122.36	-
814	-0.235	2.68	-
815	-0.235	-1.92	-

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)

Comments: #813 @ AL

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/14/97

Reviewed By: Nate Frey **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/15/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A052.XLD
Batch Ended: 10/14/97 14:16
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 811-815

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
11	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/14/97 14:10
12	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/14/97 14:11
13	3.292	3.53	<AL	12.59	122.36	17.38	At AL	16.65	1.00	0.933	53.17	10/14/97 14:13
14	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/14/97 14:14
15	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/14/97 14:16

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/15/97 **Time:** 9:49

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
816	-0.235	0.38	-
817	-0.235	4.99	-
818	3.292	18.79	-
819	3.292	9.59	-
820	-0.235	4.99	-
821	3.292	2.68	-
822	-0.235	9.59	-
823	-0.235	0.38	-
824	3.292	117.76	-
825	-0.235	2.68	-
826	-0.235	32.6	-
827	3.292	11.89	-
828	3.292	-1.92	-
829	3.292	0.38	-
830	-0.235	2.68	-
831	-0.235	-1.92	-
832	-0.235	-1.92	-
833	-0.235	-1.92	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
834	-0.235	2.68	-
835	-0.235	2.68	-
836	-0.235	0.38	-
837	-0.235	0.38	-
838	-0.235	2.68	-
839	-0.235	7.29	-
840	-0.235	2.68	-
841	-0.235	0.38	-

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/15/97

Reviewed By: Data **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/15/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A053.XLD
Batch Ended: 10/15/97 9:49
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 816-841

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
16	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/15/97 9:11
17	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/15/97 9:13
18	3.292	3.53	<AL	12.59	18.79	7.32	<AL	16.65	1.00	0.933	8.17	10/15/97 9:14
19	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/15/97 9:16
20	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/15/97 9:17
21	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/15/97 9:19
22	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/15/97 9:20
23	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/15/97 9:22
24	3.292	3.53	<AL	12.59	117.76	17.05	At AL	16.65	1.00	0.933	51.17	10/15/97 9:23
25	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/15/97 9:25
26	-0.235	3.53	<MDA	12.59	32.60	9.26	<AL	16.65	1.00	-0.067	14.17	10/15/97 9:26
27	3.292	3.53	<AL	12.59	11.89	6.12	<AL	16.65	1.00	0.933	5.17	10/15/97 9:28
28	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/15/97 9:29
29	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/15/97 9:31
30	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/15/97 9:33
31	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/15/97 9:34
32	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/15/97 9:36
33	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/15/97 9:37
34	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/15/97 9:39
35	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/15/97 9:40
36	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/15/97 9:42
37	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/15/97 9:43
38	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/15/97 9:45
38	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/15/97 9:46
40	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/15/97 9:48
41	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/15/97 9:49

N-86

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/16/97 **Time:** 16:49

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
842	-0.235	0.38	-
843	-0.235	2.68	-
844	-0.235	9.59	-
845	-0.235	7.29	-
846	-0.235	0.38	-
847	-0.235	2.68	-
848	3.292	-1.92	-
849	6.818	2.68	-
850	-0.235	0.38	-
851	-0.235	0.38	-
852	6.818	2.68	-
853	-0.235	2.68	-
854	-0.235	7.29	-
855	-0.235	4.99	-
856	-0.235	16.49	-
857	-0.235	0.38	-
858	-0.235	-1.92	-
859	3.292	4.99	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
860	3.292	21.1	-
861	-0.235	-1.92	-
862	-0.235	-4.22	-
863	-0.235	7.29	-
864	3.292	4.99	-
865	3.292	-1.92	-
866	-0.235	7.29	-
867	-0.235	0.38	-
868	-0.235	-1.92	-
869	-0.235	9.59	-
870	-0.235	-1.92	-
871	-0.235	0.38	-
872	3.292	2.68	-
873	-0.235	4.99	-
874	-0.235	-1.92	-
875	-0.235	0.38	-
876	6.818	0.38	-
877	-0.235	-4.22	-

Comments:

Performed By: Michele R. Sutton 10/21/97 **Date:** 10/16/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/16/97 **Time:** 16:49

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
878	-0.235	0.38	-
879	-0.235	7.29	-
880	-0.235	-1.92	-
881	-0.235	4.99	-
882	-0.235	2.68	-
883	-0.235	9.59	-
884	-0.235	0.38	-
885	-0.235	4.99	-
886	-0.235	-1.92	-
887	-0.235	9.59	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton **Date:** 10/16/97

Reviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/16/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A058.XLD
Batch Ended: 10/16/97 16:49
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 842-887

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
42	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 15:41
43	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/16/97 15:42
44	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/16/97 15:44
45	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/16/97 15:45
46	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 15:47
47	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/16/97 15:48
48	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/16/97 15:50
49	6.818	4.99	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	1.933	1.17	10/16/97 15:51
50	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 15:53
51	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 15:54
52	6.818	4.99	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	1.933	1.17	10/16/97 15:56
53	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/16/97 15:58
54	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/16/97 15:59
55	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/16/97 16:01
56	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/16/97 16:02
57	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 16:04
58	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 16:05
59	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/16/97 16:07
60	3.292	3.53	<AL	12.59	21.10	7.68	<AL	16.65	1.00	0.933	9.17	10/16/97 16:08
61	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 16:10
62	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/16/97 16:11
63	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/16/97 16:13
64	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/16/97 16:14
65	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/16/97 16:16
66	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/16/97 16:17
67	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 16:19
68	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 16:20

N-89

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/16/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A058.XLD
Batch Ended: 10/16/97 16:49
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 842-887

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
69	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/16/97 16:22
70	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 16:23
71	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 16:25
72	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/16/97 16:26
73	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/16/97 16:28
74	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 16:30
75	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 16:31
76	6.818	4.99	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	1.933	0.17	10/16/97 16:33
77	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/16/97 16:34
78	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 16:36
79	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/16/97 16:37
80	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 16:39
81	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/16/97 16:40
82	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/16/97 16:42
83	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/16/97 16:43
84	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 16:45
85	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/16/97 16:46
86	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 16:48
87	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/16/97 16:49

N-90

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/20/97 **Time:** 11:51

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
887	-0.235	9.59	-
888	3.292	2.68	-
889	-0.235	4.99	-
890	3.292	4.99	-
891	-0.235	-1.92	-
892	-0.235	-1.92	-
893	-0.235	0.38	-
894	-0.235	2.68	-
895	-0.235	0.38	-
896	-0.235	0.38	-
897	-0.235	2.68	-
898	-0.235	9.59	-
899	-0.235	-1.92	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/20/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Lo... ckground Counting System -- Sinear Analysis

Dat : :0/07
Counting Unit i
Data file nam : BXL\UNI 1\SMIE1A065.XLD
Batch Ende :0/07 11:51
Crosstalk Correctio lo Applied

Alpha activity action level (DPM : 2).0)
Beta activity action level (DPM : 1 0).0
Certainty level for MDA and flags : 9 5.0 %
High Voltage Setin : 1 8C

Application Revisior : 3
Application Version : S an lar l

Batch II :S 887-899

Carrier	Alpha Activity DPM	Alpha Activity	Alpha Activity flags	Alpha Activity MDA	Beta Activity DPM	Beta Activity	Beta Activity flags	Beta Activity MDA
87	-0.235	3.53	<MDA	12.59	9.89	5.67	<AL	16.65
88	3.292	3.53	>AL	12.59	2.08	4.03	<MDA	16.65
89	-0.235	3.53	<MDA	12.59	4.89	4.64	<MDA	16.65
90	3.292	3.53	>AL	12.59	4.89	4.64	<MDA	16.65
91	-0.235	3.53	<MDA	12.59	-1.32	2.37	<MDA	16.65
92	-0.235	3.53	<MDA	12.59	-1.32	2.37	<MDA	16.65
93	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65
94	-0.235	3.53	<MDA	12.59	2.08	4.03	<MDA	16.65
95	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65
96	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65
97	-0.235	3.53	<MDA	12.59	2.08	4.03	<MDA	16.65
98	-0.235	3.53	<MDA	12.59	9.89	5.67	<AL	16.65
99	-0.235	3.53	<MDA	12.59	-1.32	2.37	<MDA	16.65

Alpha efficiency (High file: .1 .3(\E
Alpha Efficiency: .8 .5%
Alpha to Beta Crosstalk: .8 .5%
Alpha Background (CPM): .0 .6 .6 .7
Alpha Correction Factor: .0 0

Beta efficiency (High file: .5 .0 .8
Beta Efficiency: .3 .5%
Beta into Alpha Crosstalk: .6 %
Beta Background (CPM): .5 .3 .3 .3
Beta Correction Factor: .0 0

Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1.00	-0.067	4.17	10 20 97 11 :3
1.00	0.933	1.17	10 20 97 11 :4
1.00	-0.067	2.17	10 20 97 11 :6
1.00	0.933	2.17	10 20 97 11 :7
1.00	-0.067	0.13	10 20 97 11 :9
1.00	-0.067	0.13	10 20 97 11 :0
1.00	-0.067	0.17	10 20 97 11 :2
1.00	-0.067	1.17	10 20 97 11 :3
1.00	-0.067	0.17	10 20 97 11 :5
1.00	-0.067	0.17	10 20 97 11 :6
1.00	-0.067	1.17	10 20 97 11 :8
1.00	-0.067	4.17	10 20 97 11 :9
1.00	-0.067	0.13	10 20 97 11 :1

N-92

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/16/97 **Time:** 19:50

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
901	-0.235	41.81	-
902	-0.235	0.38	-
903	-0.235	2.68	-
904	-0.235	0.38	-
905	-0.235	71.73	-
906	3.292	28	-
907	17.399	389.32	-
908	412.401	10840	-
909	10.345	389.32	-
910	42.087	653.98	-
911	112.623	2133.79	-
912	1706.739	87610.28	-
913	3.292	186.8	-
914	3.292	103.95	-
915	13.872	62.52	-
916	3.292	41.81	-
917	6.818	145.37	-
918	6.818	44.11	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
919	17.399	90.14	-
920	-0.235	67.12	-
921	264.275	8690.49	-
922	10.345	350.2	-
923	102.042	3279.89	-
924	20.926	555.02	-
925	3.292	281.16	-
926	-0.235	85.54	-
927	-0.235	94.74	-
928	38.56	244.33	-
929	3.292	115.45	-
930	-0.235	44.11	-
931	6.818	57.92	-
932	6.818	138.47	-
933	-0.235	18.79	-
934	17.399	136.17	-
935	3.292	154.58	-
936	3.292	53.32	-

Comments: Many contaminated areas.

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/16/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/16/97 **Time:** 19:50

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
937	6.818	90.14	-
938	3.292	16.49	-
939	3.292	129.26	-
940	6.818	28	-
941	-0.235	18.79	-
942	-0.235	25.7	-
943	3.292	11.89	-
944	-0.235	30.3	-
945	-0.235	0.38	-
946	-0.235	18.79	-
947	3.292	11.89	-
948	-0.235	16.49	-
949	-0.235	44.11	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton **Date:** 10/16/97

eviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/17/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A059.XLD
Batch Ended: 10/16/97 19:50
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 901-949

Carrier	Alpha Activity				Beta Activity			
	DPM	σ	flags	MDA	DPM	σ	flags	MDA
1	-0.235	3.53	<MDA	12.59	41.81	10.37	<AL	16.65
2	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65
3	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65
4	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65
5	-0.235	3.53	<MDA	12.59	71.73	13.37	<AL	16.65
6	3.292	3.53	<AL	12.59	28.00	8.66	<AL	16.65
7	17.399	7.89	At AL	12.59	389.32	31.79	>AL	16.65
8	412.401	38.83	>AL	12.59	10840.00	325.09	>AL	16.65
9	10.345	6.11	At AL	12.59	389.32	31.79	>AL	16.65
10	42.087	12.24	>AL	12.59	653.98	42.54	>AL	16.65
11	112.623	20.05	>AL	12.59	2133.79	89.72	>AL	16.65
12	1706.739	83.17	>AL	12.59	87610.28	2339.71	>AL	16.65
13	3.292	3.53	<AL	12.59	186.80	21.54	>AL	16.65
14	3.292	3.53	<AL	12.59	103.95	16.02	At AL	16.65
15	13.872	7.06	At AL	12.59	62.52	12.52	<AL	16.65
16	3.292	3.53	<AL	12.59	41.81	10.37	<AL	16.65
17	6.818	4.99	<AL	12.59	145.37	18.95	>AL	16.65
18	6.818	4.99	<AL	12.59	44.11	10.63	<AL	16.65
19	17.399	7.89	At AL	12.59	90.14	14.94	At AL	16.65
20	-0.235	3.53	<MDA	12.59	67.12	12.95	<AL	16.65
21	264.275	30.89	>AL	12.59	8690.49	268.14	>AL	16.65
22	10.345	6.11	At AL	12.59	350.20	30.01	>AL	16.65
23	102.042	19.08	>AL	12.59	3279.89	122.27	>AL	16.65
24	20.926	8.65	At AL	12.59	555.02	38.72	>AL	16.65
25	3.292	3.53	<AL	12.59	281.16	26.68	>AL	16.65
26	-0.235	3.53	<MDA	12.59	85.54	14.56	At AL	16.65
27	-0.235	3.53	<MDA	12.59	94.74	15.31	At AL	16.65

Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1.00	-0.067	18.17	10/16/97 18:37
1.00	-0.067	0.17	10/16/97 18:39
1.00	-0.067	1.17	10/16/97 18:40
1.00	-0.067	0.17	10/16/97 18:42
1.00	-0.067	31.17	10/16/97 18:43
1.00	0.933	12.17	10/16/97 18:45
1.00	4.933	169.17	10/16/97 18:46
1.00	116.933	4710.17	10/16/97 18:48
1.00	2.933	169.17	10/16/97 18:49
1.00	11.933	284.17	10/16/97 18:51
1.00	31.933	927.17	10/16/97 18:53
1.00	483.933	36068.17	10/16/97 18:54
1.00	0.933	81.17	10/16/97 18:56
1.00	0.933	45.17	10/16/97 18:57
1.00	3.933	27.17	10/16/97 18:59
1.00	0.933	18.17	10/16/97 19:00
1.00	1.933	63.17	10/16/97 19:02
1.00	1.933	19.17	10/16/97 19:03
1.00	4.933	39.17	10/16/97 19:05
1.00	-0.067	29.17	10/16/97 19:06
1.00	74.933	3776.17	10/16/97 19:08
1.00	2.933	152.17	10/16/97 19:09
1.00	28.933	1425.17	10/16/97 19:11
1.00	5.933	241.17	10/16/97 19:12
1.00	0.933	122.17	10/16/97 19:14
1.00	-0.067	37.17	10/16/97 19:15
1.00	-0.067	41.17	10/16/97 19:17

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/17/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A059.XLD
Batch Ended: 10/16/97 19:50
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 901-949

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
28	38.560	11.72	At AL	12.59	244.33	24.77	>AL	16.65	1.00	10.933	106.17	10/16/97 19:18
29	3.292	3.53	<AL	12.59	115.45	16.88	At AL	16.65	1.00	0.933	50.17	10/16/97 19:20
30	-0.235	3.53	<MDA	12.59	44.11	10.63	<AL	16.65	1.00	-0.067	19.17	10/16/97 19:21
31	6.818	4.99	<AL	12.59	57.92	12.07	<AL	16.65	1.00	1.933	25.17	10/16/97 19:23
32	6.818	4.99	<AL	12.59	136.47	18.49	>AL	16.65	1.00	1.933	60.17	10/16/97 19:24
33	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/16/97 19:26
34	17.399	7.89	At AL	12.59	136.17	18.34	>AL	16.65	1.00	4.933	59.17	10/16/97 19:27
35	3.292	3.53	<AL	12.59	154.58	19.55	>AL	16.65	1.00	0.933	67.17	10/16/97 19:29
36	3.292	3.53	<AL	12.59	53.32	11.61	<AL	16.65	1.00	0.933	23.17	10/16/97 19:31
37	6.818	4.99	<AL	12.59	90.14	14.94	At AL	16.65	1.00	1.933	39.17	10/16/97 19:32
38	3.292	3.53	<AL	12.59	16.49	6.94	<AL	16.65	1.00	0.933	7.17	10/16/97 19:34
39	3.292	3.53	<AL	12.59	129.26	17.86	At AL	16.65	1.00	0.933	56.17	10/16/97 19:35
40	6.818	4.99	<AL	12.59	28.00	8.66	<AL	16.65	1.00	1.933	12.17	10/16/97 19:37
41	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/16/97 19:38
42	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65	1.00	-0.067	11.17	10/16/97 19:40
43	3.292	3.53	<AL	12.59	11.89	6.12	<AL	16.65	1.00	0.933	5.17	10/16/97 19:41
44	-0.235	3.53	<MDA	12.59	30.30	8.97	<AL	16.65	1.00	-0.067	13.17	10/16/97 19:43
45	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 19:44
46	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/16/97 19:46
47	3.292	3.53	<AL	12.59	11.89	6.12	<AL	16.65	1.00	0.933	5.17	10/16/97 19:47
48	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/16/97 19:49
49	-0.235	3.53	<MDA	12.59	44.11	10.63	<AL	16.65	1.00	-0.067	19.17	10/16/97 19:50

N-96

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/17/97 **Time:** 12:25

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
987	-0.235	39.51	-
988	80.881	1678.11	-
989	-	-	-
990	-	-	-
991	-	-	-
992	-	-	-
993	-0.235	34.9	-
994	3.292	14.19	-
995	-0.235	14.19	-
996	3.292	57.92	-
997	-	-	-
998	-	-	-
999	-	-	-
1000	-	-	-
1001	-	-	-
1002	-	-	-
1003	-	-	-
1004	-	-	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1005	-	-	-
1006	-	-	-
1007	3.292	32.6	-
1008	-0.235	18.79	-
1009	3.292	39.51	-
1010	-0.235	41.81	-
1011	-	-	-
1012	130.257	2513.52	-
1013	-	-	-
1014	-	-	-
1015	-	-	-
1016	6.818	156.88	-
1017	6.818	147.67	-
1018	-0.235	90.14	-
1019	6.818	30.3	-
1020	-	-	-
1021	-	-	-
1022	-	-	-

Comments: Many contaminated areas.

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/17/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/17/97 **Time:** 12:25

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm²		GM Survey
	Alpha	Beta/Gamma	(cpm)
1023	-	-	-
1024	-	-	-
1025	-	-	-
1026	-	-	-
1027	-	-	-
1028	-	-	-
1029	-	-	-
1030	3.292	74.03	-
1031	-0.235	48.71	-
1032	3.292	37.21	-
1033	6.818	34.9	-
1034	10.345	51.01	-
1035	-0.235	28	-
1036	-0.235	21.1	-
1037	-0.235	9.59	-
1038	10.345	103.95	-
1039	-0.235	71.73	-
1040	-0.235	62.52	-

Location	dpm/ 100 cm²		GM Survey
	Alpha	Beta/Gamma	(cpm)
1041	-0.235	-1.92	-
1042	-0.235	21.1	-
1043	-0.235	41.81	-
1044	-0.235	9.59	-
1045	-0.235	9.59	-
1046	6.818	37.21	-
1047	-0.235	44.11	-
1048	-0.235	41.81	-
1049	6.818	94.74	-
1050	10.345	28	-
1051	-0.235	51.01	-
1052	-0.235	23.4	-
1053	-0.235	4.99	-
1054	-0.235	14.19	-

Comments:

Performed By: Michele R. Sutton **Date:** 10/17/97

Reviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/17/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A060.XLD
Batch Ended: 10/17/97 12:25
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Batch ID: CS 987-1054

Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA
87	-0.235	3.53	<MDA	12.59	39.51	10.10	<AL	16.65
88	60.881	16.97	>AL	12.59	1678.11	76.21	>AL	16.65
93	-0.235	3.53	<MDA	12.59	34.90	9.55	<AL	16.65
94	3.292	3.53	<AL	12.59	14.19	6.55	<AL	16.65
95	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65
96	3.292	3.53	<AL	12.59	57.92	12.07	<AL	16.65
7	3.292	3.53	<AL	12.59	32.60	9.26	<AL	16.65
8	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65
9	3.292	3.53	<AL	12.59	39.51	10.10	<AL	16.65
10	-0.235	3.53	<MDA	12.59	41.81	10.37	<AL	16.65
12	130.257	21.57	>AL	12.59	2513.52	100.68	>AL	16.65
16	6.818	4.99	<AL	12.59	156.88	19.70	>AL	16.65
17	6.818	4.99	<AL	12.59	147.67	19.10	>AL	16.65
18	-0.235	3.53	<MDA	12.59	90.14	14.94	At AL	16.65
19	6.818	4.99	<AL	12.59	30.30	8.97	<AL	16.65
30	3.292	3.53	<AL	12.59	74.03	13.57	<AL	16.65
31	-0.235	3.53	<MDA	12.59	48.71	11.13	<AL	16.65
32	3.292	3.53	<AL	12.59	37.21	9.83	<AL	16.65
33	6.818	4.99	<AL	12.59	34.90	9.55	<AL	16.65
34	10.345	6.11	At AL	12.59	51.01	11.37	<AL	16.65
35	-0.235	3.53	<MDA	12.59	28.00	8.66	<AL	16.65
36	-0.235	3.53	<MDA	12.59	21.10	7.68	<AL	16.65
37	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65
38	10.345	6.11	At AL	12.59	103.95	16.02	At AL	16.65
38	-0.235	3.53	<MDA	12.59	71.73	13.37	<AL	16.65
40	-0.235	3.53	<MDA	12.59	62.52	12.52	<AL	16.65
41	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65

Alpha efficiency log file: TH[illegible]AB
Alpha Efficiency: 29.33%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.0[illegible]
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.8[illegible]
Beta Correction Factor: 1.000

Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1.00	-0.067	17.17	10/17/97 11:26
1.00	22.9[illegible]	729.17	10/17/97 11:28
1.00	-0.067	15.17	10/17/97 11:29
1.00	0.9[illegible]	6.17	10/17/97 11:31
1.00	-0.067	6.17	10/17/97 11:32
1.00	0.9[illegible]	25.17	10/17/97 11:34
1.00	0.9[illegible]	14.17	10/17/97 11:35
1.00	-0.067	8.17	10/17/97 11:37
1.00	0.9[illegible]	17.17	10/17/97 11:38
1.00	-0.067	18.17	10/17/97 11:40
1.00	36.9[illegible]	1092.17	10/17/97 11:41
1.00	1.9[illegible]	68.17	10/17/97 11:43
1.00	1.9[illegible]	64.17	10/17/97 11:44
1.00	-0.067	39.17	10/17/97 11:46
1.00	1.9[illegible]	13.17	10/17/97 11:47
1.00	0.9[illegible]	32.17	10/17/97 11:49
1.00	-0.067	21.17	10/17/97 11:50
1.00	0.9[illegible]	16.17	10/17/97 11:52
1.00	1.9[illegible]	15.17	10/17/97 11:53
1.00	2.9[illegible]	22.17	10/17/97 11:55
1.00	-0.067	12.17	10/17/97 11:56
1.00	-0.067	9.1[illegible]	10/17/97 11:58
1.00	-0.067	4.1[illegible]	10/17/97 12:00
1.00	2.9[illegible]	45.17	10/17/97 12:01
1.00	-0.067	31.17	10/17/97 12:03
1.00	-0.067	27.17	10/17/97 12:04
1.00	-0.067	-0.8[illegible]	10/17/97 12:06

66-N

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/17/97
Counting Unit Id: 1
Data file name: C:\LBXL\UNIT1\SME1A060.XLD
Batch Ended: 10/17/97 12:25
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH2[illegible]
Alpha Efficiency: 28.3[illegible]
Alpha to Beta Crosstalk: 28.6[illegible]
Alpha Background (CPM): 0.0[illegible]367
Alpha Correction Factor: 1.000

Beta efficiency log file: SR[illegible]
Beta Efficiency: 43.45[illegible]
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.8333[illegible]
Beta Correction Factor: 1.000

Batch ID: CS 987-1054

Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date	Time
42	-0.235	3.53	<MDA	12.59	21.10	7.68	<AL	16.65	1.00	-0.067	9.17	10/17/[illegible]	12:07
43	-0.235	3.53	<MDA	12.59	41.81	10.37	<AL	16.65	1.00	-0.067	18.17	10/17/[illegible]	12:09
44	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/17/[illegible]	12:10
45	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/17/[illegible]	12:12
46	6.818	4.99	<AL	12.59	37.21	9.83	<AL	16.65	1.00	1.933	16.17	10/17/[illegible]	12:13
47	-0.235	3.53	<MDA	12.59	44.11	10.63	<AL	16.65	1.00	-0.067	19.17	10/17/[illegible]	12:15
48	-0.235	3.53	<MDA	12.59	41.81	10.37	<AL	16.65	1.00	-0.067	18.17	10/17/[illegible]	12:16
49	6.818	4.99	<AL	12.59	94.74	15.31	At AL	16.65	1.00	1.933	41.17	10/17/[illegible]	12:18
50	10.345	6.11	At AL	12.59	28.00	8.66	<AL	16.65	1.00	2.933	12.17	10/17/[illegible]	12:19
51	-0.235	3.53	<MDA	12.59	51.01	11.37	<AL	16.65	1.00	-0.067	22.17	10/17/[illegible]	12:21
52	-0.235	3.53	<MDA	12.59	23.40	8.02	<AL	16.65	1.00	-0.067	10.17	10/17/[illegible]	12:22
53	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/17/[illegible]	12:24
54	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/17/[illegible]	12:25

N-100

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey Date: 10/16/97 Time: 13:42

Counter Used: LB 5100 W (S/N 13795) Alpha Eff: 28.35% Alpha Bkg (cpm): 0.07

Calibration Due Date: Aug-98 Beta Eff: 43.45% Beta Bkg (cpm): 1.83

Survey Instr. Model: - Serial #: - Cal. Due Date: -

Bkg (cpm): -

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
1055	-0.235	0.38	-
1056	-0.235	0.38	-
1057	-0.235	-4.22	-
1058	-0.235	2.68	-
1059	-0.235	7.29	-
1060	-0.235	2.68	-
1061	-0.235	0.38	-
1062	-0.235	-1.92	-
1063	-0.235	4.99	-
1064	-0.235	-1.92	-
1065	-0.235	0.38	-
1066	-0.235	0.38	-
1067	3.292	2.68	-
1068	-0.235	-1.92	-
1069	-0.235	-4.22	-
1070	-0.235	0.38	-
1071	6.818	7.29	-
1072	-0.235	4.99	-

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
1073	-0.235	2.68	-
1074	-0.235	4.99	-
1075	-0.235	-1.92	-
1076	3.292	0.38	-
1077	-0.235	4.99	-
1078	-0.235	0.38	-
1079	-0.235	0.38	-

Comments:

Performed By: Michele R. Sutton Date: 10/16/97

Reviewed By: Date: 1/7/98

LB5100-W Low Background Counting System – Smear Analysis

Date: 10/16/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A057.XLD
Batch Ended: 10/16/97 13:42
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1480

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1065-1079 (Han Lift)

Carrier	Alpha Activity				Beta Activity				Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
	DPM	σ	flags	MDA	DPM	σ	flags	MDA				
55	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 13:05
56	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 13:07
57	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/16/97 13:08
58	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/16/97 13:10
59	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/16/97 13:11
60	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/16/97 13:13
61	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 13:14
62	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 13:16
63	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/16/97 13:17
64	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 13:19
65	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 13:20
66	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 13:22
67	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/16/97 13:23
68	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 13:25
69	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/16/97 13:27
70	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 13:28
71	6.816	4.99	<AL	12.59	7.29	5.18	<AL	16.65	1.00	1.983	3.17	10/16/97 13:30
72	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/16/97 13:31
73	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/16/97 13:33
74	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/16/97 13:34
75	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 13:36
76	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/16/97 13:37
77	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/16/97 13:39
78	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 13:40
79	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 13:42

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/17/97 **Time:** 15:04

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1080	3.292	2.68	-
1081	-0.235	-1.92	-
1082	3.292	2.68	-
1083	3.292	2.68	-
1084	-0.235	4.99	-
1085	-0.235	0.38	-
1086	3.292	7.29	-
1087	-0.235	4.99	-
1088	-0.235	-1.92	-
1089	-0.235	0.38	-
1090	-0.235	9.59	-
1091	3.292	0.38	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/17/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/17/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A062.XLD
Batch Ended: 10/17/97 15:04
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH[illegible]
Alpha Efficiency: 28.[illegible]%
Alpha to Beta Crosstalk: 28.6[illegible]%
Alpha Background (CPM): 0.06[illegible]37
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90A[illegible]
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.8333[illegible]33
Beta Correction Factor: 1.000

Batch ID: CS 1080 - 1091

Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date/Time
80	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/17/[illegible] 4:48
81	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/17/[illegible] 4:49
82	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/17/[illegible] 4:51
83	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/17/[illegible] 4:52
84	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/17/[illegible] 4:54
85	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/17/[illegible] 4:55
86	3.292	3.53	<AL	12.59	7.29	5.18	<AL	16.65	1.00	0.933	3.17	10/17/[illegible] 4:57
87	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/17/[illegible] 4:58
88	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/17/[illegible] 5:00
89	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/17/[illegible] 5:01
90	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/17/[illegible] 5:03
91	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/17/[illegible] 5:04

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RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 16:08

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1092	73.828	987.69	-
1093	-0.235	9.59	-
1094	-0.235	4.99	-
1095	-0.235	7.29	-
1096	-0.235	4.99	-
1097	3.292	4.99	-
1098	-0.235	4.99	-
1099	-0.235	4.99	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/22/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/22/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1G003.XLD
Batch Ended: 10/21/97 16:08
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1092-1099

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
92	73.828	16.21	>AL	12.59	987.69	54.35	>AL	16.65	1.00	20.933	429.17	10/21/97 15:58
93	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/21/97 15:59
94	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/21/97 16:01
95	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/21/97 16:02
96	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/21/97 16:04
97	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/21/97 16:05
98	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/21/97 16:07
99	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/21/97 16:08

N-106

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/15/97 **Time:** 17:15

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1100	-0.235	25.7	-
1101	-0.235	16.49	-
1102	3.292	16.49	-
1103	3.292	18.79	-
1104	3.292	0.38	-
1105	-0.235	7.29	-
1106	-0.235	2.68	-
1107	-0.235	7.29	-
1108	-0.235	2.68	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/15/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/15/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A055.XLD
Batch Ended: 10/15/97 17:15
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1100 - 1108

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
100	-0.235	3.53	<MDA	12.59	25.70	8.36	<AL	16.65	1.00	-0.067	11.17	10/15/97 17:03
1	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/15/97 17:04
2	3.292	3.53	<AL	12.59	16.49	6.94	<AL	16.65	1.00	0.933	7.17	10/15/97 17:06
3	3.292	3.53	<AL	12.59	18.79	7.32	<AL	16.65	1.00	0.933	8.17	10/15/97 17:07
4	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/15/97 17:09
5	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/15/97 17:10
6	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/15/97 17:12
7	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/15/97 17:13
8	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/15/97 17:15

N-108

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/16/97 **Time:** 10:49

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
1109	-0.235	30.3	-
1110	13.872	152.28	-
1111	-0.235	30.3	-
1112	-0.235	46.41	-
1113	-0.235	23.4	-
1114	6.818	149.97	-
1115	27.979	467.57	-
1116	-0.235	69.43	-
1117	27.979	502.09	-
1118	31.506	331.79	-
1119	3.292	67.12	-
1120	-0.235	172.99	-
1121	10.345	191.4	-
1122	-0.235	99.34	-
1123	-0.235	-1.92	-
1124	3.292	4.99	-
1125	-0.235	0.38	-
1126	-0.235	-1.92	-

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
1127	3.292	0.38	-
1128	-0.235	-1.92	-
1129	-0.235	4.99	-
1130	-0.235	2.68	-
1131	-0.235	11.89	-
1132	-0.235	4.99	-
1133	6.818	16.49	-
1134	6.818	7.29	-

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/16/97

Reviewed By: Date **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/16/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A056.XLD
Batch Ended: 10/16/97 10:49
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1109-1134

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
9	-0.235	3.53	<MDA	12.59	30.30	8.97	<AL	16.65	1.00	-0.067	13.17	10/16/97 10:11
10	13.872	7.06	At AL	12.59	152.28	19.40	>AL	16.65	1.00	3.933	66.17	10/16/97 10:13
11	-0.235	3.53	<MDA	12.59	30.30	8.97	<AL	16.65	1.00	-0.067	13.17	10/16/97 10:14
12	-0.235	3.53	<MDA	12.59	46.41	10.88	<AL	16.65	1.00	-0.067	20.17	10/16/97 10:16
13	-0.235	3.53	<MDA	12.59	23.40	8.02	<AL	16.65	1.00	-0.067	10.17	10/16/97 10:17
14	6.818	4.99	<AL	12.59	149.97	19.26	>AL	16.65	1.00	1.933	65.17	10/16/97 10:19
15	27.979	9.99	At AL	12.59	467.57	35.17	>AL	16.65	1.00	7.933	203.17	10/16/97 10:20
16	-0.235	3.53	<MDA	12.59	69.43	13.16	<AL	16.65	1.00	-0.067	30.17	10/16/97 10:22
17	27.979	9.99	At AL	12.59	502.09	36.59	>AL	16.65	1.00	7.933	218.17	10/16/97 10:23
18	31.506	10.60	At AL	12.59	331.79	29.15	>AL	16.65	1.00	8.933	144.17	10/16/97 10:25
19	3.292	3.53	<AL	12.59	67.12	12.95	<AL	16.65	1.00	0.933	29.17	10/16/97 10:26
20	-0.235	3.53	<MDA	12.59	172.99	20.71	>AL	16.65	1.00	-0.067	75.17	10/16/97 10:28
21	10.345	6.11	At AL	12.59	191.40	21.81	>AL	16.65	1.00	2.933	83.17	10/16/97 10:30
22	-0.235	3.53	<MDA	12.59	99.34	15.67	At AL	16.65	1.00	-0.067	43.17	10/16/97 10:31
23	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 10:33
24	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/16/97 10:34
25	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 10:36
26	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 10:37
27	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/16/97 10:39
28	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 10:40
29	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/16/97 10:42
30	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/16/97 10:43
31	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/16/97 10:45
32	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/16/97 10:46
33	6.818	4.99	<AL	12.59	16.49	6.94	<AL	16.65	1.00	1.933	7.17	10/16/97 10:48
34	6.818	4.99	<AL	12.59	7.29	5.18	<AL	16.65	1.00	1.933	3.17	10/16/97 10:49

N-110

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/16/97 **Time:** 13:04

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1135	-0.235	-1.92	-
1136	-0.235	0.38	-
1137	6.818	2.68	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/16/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/16/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1C018.XLD
Batch Ended: 10/16/97 13:04
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1135-1137

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
35	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/16/97 13:01
36	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/16/97 13:02
37	6.818	4.99	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	1.933	1.17	10/16/97 13:04

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 15:35

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1138	-0.235	7.29	-
1139	-0.235	-4.22	-
40	6.818	16.49	-
1141	-0.235	21.1	-
1142	6.212	172.99	-
1143	17.399	175.29	-
1144	-0.235	-1.92	-
1145	-0.235	7.29	-
1146	3.292	0.38	-
1147	-0.235	11.89	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/22/97

Reviewed By: Pat Hyp **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/22/97
Counting Unit Id: 1
Data file name: C:\LBXL\UNIT1\SME1C023.XLD
Batch Ended: 10/22/97 15:35
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1138-1147

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
38	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/22/97 15:22
38	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/22/97 15:23
40	6.818	4.99	<AL	12.59	16.49	6.94	<AL	16.65	1.00	1.933	7.17	10/22/97 15:25
41	-0.235	3.53	<MDA	12.59	21.10	7.68	<AL	16.65	1.00	-0.067	9.17	10/22/97 15:26
42	6.818	4.99	<AL	12.59	172.99	20.71	>AL	16.65	1.00	1.933	75.17	10/22/97 15:28
43	17.399	7.89	At AL	12.59	175.29	20.85	>AL	16.65	1.00	4.933	76.17	10/22/97 15:29
44	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/22/97 15:31
45	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/22/97 15:32
46	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/22/97 15:34
47	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/22/97 15:36

N-114

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 12:19

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1148	3.292	0.38	-
1149	3.292	9.59	-
1150	-0.235	9.59	-
1151	-0.235	0.38	-
1152	-0.235	2.68	-
1153	3.292	110.85	-
1154	-0.235	18.79	-
1155	3.292	4.99	-
1156	3.292	2.68	-
1157	3.292	7.29	-
1158	-0.235	18.79	-
1159	-0.235	-1.92	-
1160	-0.235	7.29	-
1161	-0.235	9.59	-
1162	-0.235	2.68	-
1163	-0.235	9.59	-
1164	-0.235	0.38	-
1165	-0.235	4.99	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1166	-0.235	2.68	-
1167	-0.235	2.68	-
1168	-0.235	0.38	-
1169	-0.235	-1.92	-
1170	-0.235	-1.92	-
1171	-0.235	2.68	-
1172	3.292	2.68	-
1173	-0.235	-4.22	-
1174	-0.235	4.99	-
1175	-0.235	4.99	-
1176	-0.235	-4.22	-
1177	3.292	-1.92	-
1178	-0.235	0.38	-
1179	-0.235	2.68	-
1180	-0.235	2.68	-
1181	-0.235	-1.92	-
1182	3.292	14.19	-
1183	-0.235	0.38	-

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/23/97

Reviewed By: Pat Frye **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 12:19

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm²		GM Survey
	Alpha	Beta/Gamma	(cpm)
1184	-0.235	7.29	-
1185	-0.235	7.29	-
1186	3.292	7.29	-
1187	-0.235	7.29	-
1188	-0.235	4.99	-
1189	-0.235	2.68	-
1190	-0.235	7.29	-
1191	3.292	2.68	-
1192	10.345	69.43	-
1193	-0.235	7.29	-
1194	-0.235	30.3	-
1195	3.292	11.89	-
1196	-0.235	7.29	-
1197	-0.235	9.59	-
1198	-0.235	14.19	-
1199	-0.235	7.29	-

Location	dpm/ 100 cm²		GM Survey
	Alpha	Beta/Gamma	(cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/23/97

eviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/23/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1G004.XLD
Batch Ended: 10/23/97 12:19
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS -1148-1197

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
48	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/23/97 11:02
49	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/23/97 11:03
50	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/23/97 11:05
51	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 11:06
52	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 11:08
53	3.292	3.53	<AL	12.59	110.85	16.54	At AL	16.65	1.00	0.933	48.17	10/23/97 11:09
54	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/23/97 11:11
55	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/23/97 11:12
56	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/23/97 11:14
57	3.292	3.53	<AL	12.59	7.29	5.18	<AL	16.65	1.00	0.933	3.17	10/23/97 11:15
58	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/23/97 11:17
59	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/23/97 11:18
60	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 11:20
61	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/23/97 11:21
62	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 11:23
63	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/23/97 11:25
64	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 11:26
65	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 11:28
66	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 11:29
67	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 11:31
68	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 11:32
69	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/23/97 11:34
70	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/23/97 11:35
71	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 11:37
72	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/23/97 11:38
73	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/23/97 11:40
74	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 11:41

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LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/23/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1G004.XLD
Batch Ended: 10/23/97 12:19
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS -1148-1197

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
75	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 11:43
76	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/23/97 11:44
77	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/23/97 11:46
78	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 11:47
79	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 11:49
80	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 11:50
81	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/23/97 11:52
82	3.292	3.53	<AL	12.59	14.19	6.55	<AL	16.65	1.00	0.933	6.17	10/23/97 11:53
83	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 11:55
84	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 11:56
85	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 11:58
86	3.292	3.53	<AL	12.59	7.29	5.18	<AL	16.65	1.00	0.933	3.17	10/23/97 11:59
87	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 12:01
88	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 12:02
89	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 12:04
90	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 12:05
91	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/23/97 12:07
92	10.345	6.11	At AL	12.59	69.43	13.16	<AL	16.65	1.00	2.933	30.17	10/23/97 12:08
93	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 12:10
94	-0.235	3.53	<MDA	12.59	30.30	8.97	<AL	16.65	1.00	-0.067	13.17	10/23/97 12:11
95	3.292	3.53	<AL	12.59	11.89	6.12	<AL	16.65	1.00	0.933	5.17	10/23/97 12:13
96	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 12:14
97	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/23/97 12:16
98	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/23/97 12:18
99	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 12:19

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RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/17/97 **Time:** 15:59

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1200	-0.235	2.68	-
1201	3.292	2.68	-
1202	-0.235	-1.92	-
1203	-0.235	2.68	-
1204	-0.235	2.68	-
1205	-0.235	25.7	-
1206	-0.235	0.38	-
1207	-0.235	7.29	-
1208	-0.235	25.7	-
1209	-0.235	4.99	-
1210	3.292	9.59	-
1211	3.292	62.52	-
1212	-0.235	9.59	-
1213	3.292	7.29	-
1214	-0.235	39.51	-
1215	-0.235	2.68	-
1216	-0.235	0.38	-
1217	3.292	9.59	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1218	3.292	0.38	-
1219	-0.235	2.68	-
1220	-0.235	-1.92	-
1221	3.292	7.29	-
1222	-0.235	0.38	-
1223	-0.235	11.59	-
1224	3.292	2.68	-
1225	-0.235	-1.92	-
1226	-0.235	0.38	-
1227	-0.235	-4.22	-
1228	-0.235	9.59	-
1229	6.818	-1.92	-
1230	-0.235	0.38	-
1231	-0.235	-1.92	-
1232	-0.235	-1.92	-
1233	3.292	-1.92	-
1234	-0.235	7.29	-
1235	3.292	2.68	-

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/17/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-IV Low Background Counting System Smear Analysis

Date: 10/17/97
Counting Unit Id: 1
Data file name: C:\LBXL\UI...\SME1B 7.XLD
Batch Ended: 10/17/97 1...9
Crosstalk Correction: Not Applied

Alpha activity action level (DPM) : 20.00
Beta activity action level (DPM) : 100.00
Certainty level for MDA and flags : 95.00%
High Voltage Setting : 1490

Application Revision : 3
Application Version : Standard

Batch ID: CS 1200-1...5

Carrier	Alpha activity DPM	σ	flags	MDA	Beta activity DPM	σ	flags	MDA
100	-0.235	3.53	<MDA	12.59	2.68	4.03	<MD	16.65
1	3.292	3.53	<AL	12.59	2.68	4.03	<MD	16.65
2	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MD	16.65
3	-0.235	3.53	<MDA	12.59	2.68	4.03	<MD	16.65
4	-0.235	3.53	<MDA	12.59	2.68	4.03	<MD	16.65
5	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65
6	-0.235	3.53	<MDA	12.59	0.38	3.30	<MD	16.65
7	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65
8	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65
9	-0.235	3.53	<MDA	12.59	4.99	4.64	<MD	16.65
10	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65
11	3.292	3.53	<AL	12.59	62.52	12.52	<AL	16.65
12	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65
13	3.292	3.53	<AL	12.59	7.29	5.18	<AL	16.65
14	-0.235	3.53	<MDA	12.59	39.51	10.10	<AL	16.65
15	-0.235	3.53	<MDA	12.59	2.68	4.03	<MD	16.65
16	-0.235	3.53	<MDA	12.59	0.38	3.30	<MD	16.65
17	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65
18	3.292	3.53	<AL	12.59	0.38	3.30	<MD	16.65
19	-0.235	3.53	<MDA	12.59	2.68	4.03	<MD	16.65
20	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MD	16.65
21	3.292	3.53	<AL	12.59	7.29	5.18	<AL	16.65
22	-0.235	3.53	<MDA	12.59	0.38	3.30	<MD	16.65
23	-0.235	3.53	<MDA	12.59	11.39	6.11	<AL	16.65
24	3.292	3.53	<AL	12.59	2.68	4.03	<MD	16.65
25	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MD	16.65
26	-0.235	3.53	<MDA	12.59	0.38	3.30	<MD	16.65

Alpha Efficiency, Table: 21.48
Alpha Efficiency: 21.48
Alpha Beta Crosstalk: 21.48
Alpha Background (CPM): 0.33
Alpha Correction Factor: 1.00

Beta Efficiency, Table: 50.48
Beta Efficiency: 43.48
Beta Alpha Crosstalk: 0.08
Beta Background (CPM): 1.83333
Beta Correction Factor: 1.00

Count time (min)	Alpha CPM	Beta CPM	Sample Date - Time
1.00	-0.07	1.1	10/17/97 15
1.00	0.93	1.1	10/17/97 15
1.00	-0.07	0.9	10/17/97 15
1.00	-0.07	1.1	10/17/97 15
1.00	-0.07	1.1	10/17/97 15
1.00	-0.07	11.17	10/17/97 15
1.00	-0.07	0.1	10/17/97 15
1.00	-0.07	3.1	10/17/97 15
1.00	-0.07	11.17	10/17/97 15
1.00	-0.07	2.1	10/17/97 15
1.00	0.93	4.1	10/17/97 15
1.00	0.93	27.17	10/17/97 15
1.00	-0.07	4.1	10/17/97 15
1.00	0.93	3.1	10/17/97 15
1.00	-0.07	17.17	10/17/97 15
1.00	-0.07	1.1	10/17/97 15
1.00	-0.07	0.1	10/17/97 15
1.00	0.93	4.1	10/17/97 15
1.00	0.93	0.1	10/17/97 15
1.00	-0.07	1.1	10/17/97 15
1.00	-0.07	0.9	10/17/97 15
1.00	0.93	3.1	10/17/97 15
1.00	-0.07	0.1	10/17/97 15
1.00	-0.07	5.1	10/17/97 15
1.00	0.93	1.1	10/17/97 15
1.00	-0.07	0.9	10/17/97 15
1.00	-0.07	0.1	10/17/97 15

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/17/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B007.XLD
Batch Ended: 10/17/97 15:59
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Batch ID: CS 1200-1235

	Alpha Activity				Beta Activity			
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA
27	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65
28	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65
29	6.818	4.99	<AL	12.59	-1.92	2.37	<MDA	16.65
30	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65
31	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65
32	-0.236	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65
33	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65
34	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65
35	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65

Alpha efficiency log file: THC:0[illegible]3
Alpha Efficiency: 28.65%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.0[illegible]7
Alpha Correction Factor: 1.000

Beta efficiency log file: SRS0A[illegible]
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.61%
Beta Background (CPM): 1.8333[illegible]
Beta Correction Factor: 1.000

Count time (min)	Alpha CPM	Beta CPM	Correlation Date - Time
1.00	-0.067	-1.83	10/17/97 15:47
1.00	-0.067	4.17	10/17/97 15:48
1.00	1.933	-0.83	10/17/97 15:50
1.00	-0.067	0.17	10/17/97 15:51
1.00	-0.067	-0.83	10/17/97 15:53
1.00	-0.067	-0.83	10/17/97 15:54
1.00	0.933	-0.83	10/17/97 15:56
1.00	-0.067	3.17	10/17/97 15:57
1.00	0.933	1.17	10/17/97 15:59

N-121

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/21/97 **Time:** 10:11

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
1236	-0.235	-4.22	-
1237	-0.235	2.68	-
1238	-0.235	0.38	-
1239	-0.235	-4.22	-
1240	17.399	94.74	-
1241	3.292	55.62	-
1242	10.345	90.14	-
1243	-0.235	108.55	-
1244	49.14	502.09	-
1245	66.774	872.62	-
1246	3.292	44.11	-
1247	13.872	368.61	-
1248	52.667	467.57	-
1249	10.345	99.34	-
1250	-0.235	55.62	-
1251	24.453	255.84	-

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/21/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/21/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A070.XLD
Batch Ended: 10/21/97 10:11
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1236-1251

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
36	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/21/97 9:48
37	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/21/97 9:49
38	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/21/97 9:51
38	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/21/97 9:53
40	17.399	7.89	At AL	12.59	94.74	15.31	At AL	16.65	1.00	4.933	41.17	10/21/97 9:54
41	3.292	3.53	<AL	12.59	55.62	11.84	<AL	16.65	1.00	0.933	24.17	10/21/97 9:56
42	10.345	6.11	At AL	12.59	90.14	14.94	At AL	16.65	1.00	2.933	39.17	10/21/97 9:57
43	-0.235	3.53	<MDA	12.59	108.55	16.37	At AL	16.65	1.00	-0.067	47.17	10/21/97 9:59
44	49.140	13.23	>AL	12.59	502.09	36.59	>AL	16.65	1.00	13.933	218.17	10/21/97 10:00
45	66.774	15.42	>AL	12.59	872.62	50.42	>AL	16.65	1.00	18.933	379.17	10/21/97 10:02
46	3.292	3.53	<AL	12.59	44.11	10.63	<AL	16.65	1.00	0.933	19.17	10/21/97 10:03
47	13.872	7.06	At AL	12.59	368.61	30.85	>AL	16.65	1.00	3.933	160.17	10/21/97 10:05
48	52.667	13.69	>AL	12.59	467.57	35.17	>AL	16.65	1.00	14.933	203.17	10/21/97 10:06
49	10.345	6.11	At AL	12.59	99.34	15.67	At AL	16.65	1.00	2.933	43.17	10/21/97 10:08
50	-0.235	3.53	<MDA	12.59	55.62	11.84	<AL	16.65	1.00	-0.067	24.17	10/21/97 10:09
51	24.453	9.34	At AL	12.59	255.84	25.38	>AL	16.65	1.00	6.933	111.17	10/21/97 10:11

N-123

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 15:20

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1252	17.399	237.43	-
1253	20.926	115.45	-
1254	-0.235	44.11	-
1255	3.292	99.34	-
1256	6.818	64.82	-
1257	49.14	555.02	-
1258	6.818	21.1	-
1259	10.345	191.4	-
1260	24.453	428.44	-
1261	-0.235	18.79	-
1262	348.919	4630.81	-
1263	3.292	90.14	-
1264	-0.235	14.19	-
1265	-0.235	18.79	-
1266	10.345	46.41	-
1267	-0.235	32.6	-
1268	17.399	382.42	-
1269	3.292	16.49	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1270	17.399	143.07	-
1271	31.506	207.51	-
1272	24.453	228.22	-
1273	-0.235	4.99	-
1274	-0.235	14.19	-
1275	-0.235	25.7	-
1276	-0.235	7.29	-
1277	3.292	4.99	-
1278	-0.235	4.99	-
1279	-0.235	4.99	-
1280	-0.235	0.38	-
1281	3.292	4.99	-
1282	3.292	4.99	-
1283	-0.235	14.19	-
1284	-0.235	7.29	-
1285	-0.235	-1.92	-
1286	3.292	23.4	-
1287	-0.235	2.68	-

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/22/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 15:20

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1288	3.292	0.38	-
1289	-0.235	30.3	-
1290	-0.235	14.19	-
1291	-0.235	21.1	-
1292	-0.235	39.51	-
1293	3.292	18.79	-
1294	3.292	14.19	-
1295	70.301	460.66	-
1296	-0.235	2.68	-
1297	-0.235	11.89	-
1298	3.292	11.89	-
1299	6.818	55.62	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/22/97

eviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/22/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B009.XLD
Batch Ended: 10/22/97 15:20
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1252-1299

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
52	17.399	7.89	At AL	12.59	237.43	24.40	>AL	16.65	1.00	4.933	103.17	10/22/97 14:09
53	20.926	8.65	At AL	12.59	115.45	16.88	At AL	16.65	1.00	5.933	50.17	10/22/97 14:10
54	-0.235	3.53	<MDA	12.59	44.11	10.63	<AL	16.65	1.00	-0.067	19.17	10/22/97 14:12
55	3.292	3.53	<AL	12.59	99.34	15.67	At AL	16.65	1.00	0.933	43.17	10/22/97 14:13
56	6.818	4.99	<AL	12.59	64.82	12.73	<AL	16.65	1.00	1.933	28.17	10/22/97 14:15
57	49.140	13.23	>AL	12.59	555.02	38.72	>AL	16.65	1.00	13.933	241.17	10/22/97 14:17
58	6.818	4.99	<AL	12.59	21.10	7.68	<AL	16.65	1.00	1.933	9.17	10/22/97 14:18
59	10.345	6.11	At AL	12.59	191.40	21.81	>AL	16.65	1.00	2.933	83.17	10/22/97 14:20
60	24.453	9.34	At AL	12.59	428.44	33.50	>AL	16.65	1.00	6.933	186.17	10/22/97 14:21
61	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/22/97 14:23
62	348.919	35.62	>AL	12.59	4630.81	159.38	>AL	16.65	1.00	98.933	2012.17	10/22/97 14:24
63	3.292	3.53	<AL	12.59	90.14	14.94	At AL	16.65	1.00	0.933	39.17	10/22/97 14:26
64	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/22/97 14:27
65	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/22/97 14:29
66	10.345	6.11	At AL	12.59	46.41	10.88	<AL	16.65	1.00	2.933	20.17	10/22/97 14:30
67	-0.235	3.53	<MDA	12.59	32.60	9.26	<AL	16.65	1.00	-0.067	14.17	10/22/97 14:32
68	17.399	7.89	At AL	12.59	382.42	31.48	>AL	16.65	1.00	4.933	166.17	10/22/97 14:33
69	3.292	3.53	<AL	12.59	16.49	6.94	<AL	16.65	1.00	0.933	7.17	10/22/97 14:35
70	17.399	7.89	At AL	12.59	143.07	18.80	>AL	16.65	1.00	4.933	62.17	10/22/97 14:36
71	31.506	10.60	At AL	12.59	207.51	22.75	>AL	16.65	1.00	8.933	90.17	10/22/97 14:38
72	24.453	9.34	At AL	12.59	228.22	23.90	>AL	16.65	1.00	6.933	99.17	10/22/97 14:39
73	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/22/97 14:41
74	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/22/97 14:42
75	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65	1.00	-0.067	11.17	10/22/97 14:44
76	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/22/97 14:45
77	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/22/97 14:47
78	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/22/97 14:48

N-126

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/22/97
Counting Unit Id: 1
Data file name: C:\LBXL\UNIT1\SME1B009.XLD
Batch Ended: 10/22/97 15:20
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1252-1299

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
79	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/22/97 14:50
80	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/22/97 14:51
81	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/22/97 14:53
82	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/22/97 14:54
83	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/22/97 14:56
84	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/22/97 14:57
85	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/22/97 14:59
86	3.292	3.53	<AL	12.59	23.40	8.02	<AL	16.65	1.00	0.933	10.17	10/22/97 15:01
87	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/22/97 15:02
88	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/22/97 15:04
89	-0.235	3.53	<MDA	12.59	30.30	8.97	<AL	16.65	1.00	-0.067	13.17	10/22/97 15:05
90	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/22/97 15:07
91	-0.235	3.53	<MDA	12.59	21.10	7.68	<AL	16.65	1.00	-0.067	9.17	10/22/97 15:08
92	-0.235	3.53	<MDA	12.59	39.51	10.10	<AL	16.65	1.00	-0.067	17.17	10/22/97 15:10
93	3.292	3.53	<AL	12.59	18.79	7.32	<AL	16.65	1.00	0.933	8.17	10/22/97 15:11
94	3.292	3.53	<AL	12.59	14.19	6.55	<AL	16.65	1.00	0.933	6.17	10/22/97 15:13
95	70.301	15.82	>AL	12.59	460.66	34.88	>AL	16.65	1.00	19.933	200.17	10/22/97 15:14
96	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/22/97 15:16
97	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/22/97 15:17
98	3.292	3.53	<AL	12.59	11.89	6.12	<AL	16.65	1.00	0.933	5.17	10/22/97 15:19
99	6.818	4.99	<AL	12.59	55.62	11.84	<AL	16.65	1.00	1.933	24.17	10/22/97 15:20

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/20/97 **Time:** 15:16

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
1300	84.4	2630.89	-
1301	42.087	534.31	-
1302	359.499	9776.75	-
1303	31.506	428.44	-
1304	24.453	704.61	-
1305	38.56	1664.3	-
1306	-0.235	0.38	-
1307	-0.235	2.68	-
1308	31.506	598.75	-
1309	87.935	1926.66	-
1310	20.926	485.98	-
1311	3.292	53.32	-
1312	6.818	108.55	-
1313	6.818	106.25	-
1314	42.087	456.06	-
1315	10.345	304.17	-
1316	-0.235	37.21	-
1317	-0.235	4.99	-

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
1318	13.872	149.97	-
1319	-0.235	11.89	-
1320	-0.235	7.29	-
1321	-0.235	11.89	-
1322	3.292	14.19	-
1323	3.292	110.85	-
1324	-0.235	7.29	-
1325	-0.235	0.38	-
1326	-0.235	34.9	-
1327	-0.235	16.49	-
1328	-0.235	9.59	-
1329	-0.235	-1.92	-
1330	-0.235	30.3	-
1331	-0.235	0.38	-
1332	-0.235	2.68	-
1333	-0.235	7.29	-
1334	-0.235	14.19	-
1335	-0.235	23.4	-

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/20/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/20/97 **Time:** 15:16

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm²		GM Survey
	Alpha	Beta/Gamma	(cpm)
1336	-0.235	14.19	-
1337	-0.235	21.1	-
1338	3.292	308.77	-
1339	-0.235	32.6	-
1340	-0.235	-4.22	-
1341	-0.235	11.89	-
1342	-0.235	4.99	-
1343	-0.235	4.99	-
1344	-0.235	2.68	-
1345	-0.235	-1.92	-
1346	-0.235	-1.92	-
1347	3.292	7.29	-
1348	6.818	90.14	-
1349	3.292	170.69	-
1350	13.872	126.96	-
1351	6.818	37.21	-
1352	10.345	108.55	-
1353	-0.235	0.38	-

Location	dpm/ 100 cm²		GM Survey
	Alpha	Beta/Gamma	(cpm)
1354	-0.235	14.19	-
1355	3.292	9.59	-
1356	13.872	184.5	-
1357	3.292	103.95	-
1358	-0.235	16.49	-
1359	-0.292	41.81	-

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/20/97

eviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/20/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A066.XLD
Batch Ended: 10/20/97 15:16
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1300-1359

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
100	84.408	17.34	>AL	12.59	2630.89	104.03	>AL	16.65	1.00	23.933	1143.17	10/20/97 13:47
1	42.087	12.24	>AL	12.59	534.31	37.90	>AL	16.65	1.00	11.933	232.17	10/20/97 13:48
2	359.499	36.17	>AL	12.59	9776.75	296.95	>AL	16.65	1.00	101.933	4248.17	10/20/97 13:50
3	31.506	10.60	At AL	12.59	428.44	33.50	>AL	16.65	1.00	8.933	186.17	10/20/97 13:51
4	24.453	9.34	At AL	12.59	704.61	44.42	>AL	16.65	1.00	6.933	306.17	10/20/97 13:53
5	38.560	11.72	At AL	12.59	1664.30	75.79	>AL	16.65	1.00	10.933	723.17	10/20/97 13:54
6	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/20/97 13:56
7	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/20/97 13:57
8	31.506	10.60	At AL	12.59	598.75	40.43	>AL	16.65	1.00	8.933	260.17	10/20/97 13:59
9	87.935	17.70	>AL	12.59	1926.66	83.64	>AL	16.65	1.00	24.933	837.17	10/20/97 14:00
10	20.926	8.65	At AL	12.59	485.98	35.93	>AL	16.65	1.00	5.933	211.17	10/20/97 14:02
11	3.292	3.53	<AL	12.59	53.32	11.61	<AL	16.65	1.00	0.933	23.17	10/20/97 14:03
12	6.818	4.99	<AL	12.59	108.55	16.37	At AL	16.65	1.00	1.933	47.17	10/20/97 14:05
13	6.818	4.99	<AL	12.59	106.25	16.20	At AL	16.65	1.00	1.933	46.17	10/20/97 14:06
14	42.087	12.24	>AL	12.59	456.06	34.68	>AL	16.65	1.00	11.933	198.17	10/20/97 14:08
15	10.345	6.11	At AL	12.59	304.17	27.82	>AL	16.65	1.00	2.933	132.17	10/20/97 14:09
16	-0.235	3.53	<MDA	12.59	37.21	9.83	<AL	16.65	1.00	-0.067	16.17	10/20/97 14:11
17	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/20/97 14:12
18	13.872	7.06	At AL	12.59	149.97	19.26	>AL	16.65	1.00	3.933	65.17	10/20/97 14:14
19	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/20/97 14:15
20	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/20/97 14:17
21	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/20/97 14:18
22	3.292	3.53	<AL	12.59	14.19	6.56	<AL	16.65	1.00	0.933	6.17	10/20/97 14:20
23	3.292	3.53	<AL	12.59	110.85	16.54	At AL	16.65	1.00	0.933	48.17	10/20/97 14:21
24	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/20/97 14:23
25	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/20/97 14:24
26	-0.235	3.53	<MDA	12.59	34.90	9.55	<AL	16.65	1.00	-0.067	15.17	10/20/97 14:26

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/20/97
Counting Unit Id: 1
Data file name: C:\LBXL\UNIT1\SME1A066.XLD
Batch Ended: 10/20/97 15:16
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1300-1359

	Alpha Activity				Beta Activity						
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/20/97 14:28
28	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/20/97 14:29
29	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/20/97 14:31
30	-0.235	3.53	<MDA	12.59	30.30	8.97	<AL	16.65	1.00	-0.067	13.17	10/20/97 14:32
31	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/20/97 14:34
32	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/20/97 14:35
33	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/20/97 14:37
34	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/20/97 14:38
35	-0.235	3.53	<MDA	12.59	23.40	8.02	<AL	16.65	1.00	-0.067	10.17	10/20/97 14:40
36	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/20/97 14:41
37	-0.235	3.53	<MDA	12.59	21.10	7.68	<AL	16.65	1.00	-0.067	9.17	10/20/97 14:43
38	3.292	3.53	<AL	12.59	308.77	28.04	>AL	16.65	1.00	0.933	134.17	10/20/97 14:44
39	-0.235	3.53	<MDA	12.59	32.60	9.26	<AL	16.65	1.00	-0.067	14.17	10/20/97 14:46
40	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/20/97 14:47
41	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/20/97 14:49
42	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/20/97 14:50
43	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/20/97 14:52
44	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/20/97 14:53
45	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/20/97 14:55
46	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/20/97 14:56
47	3.292	3.53	<AL	12.59	7.29	5.18	<AL	16.65	1.00	0.933	3.17	10/20/97 14:58
48	6.818	4.99	<AL	12.59	90.14	14.94	At AL	16.65	1.00	1.933	39.17	10/20/97 14:59
49	3.292	3.53	<AL	12.59	170.69	20.57	>AL	16.65	1.00	0.933	74.17	10/20/97 15:01
50	13.872	7.06	At AL	12.59	126.96	17.70	At AL	16.65	1.00	3.933	55.17	10/20/97 15:02
51	6.818	4.99	<AL	12.59	37.21	9.83	<AL	16.65	1.00	1.933	16.17	10/20/97 15:04
52	10.345	6.11	At AL	12.59	108.56	16.37	At AL	16.65	1.00	2.933	47.17	10/20/97 15:05
53	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/20/97 15:07
54	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/20/97 15:08
55	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/20/97 15:10
56	13.872	7.06	At AL	12.59	184.50	21.40	>AL	16.65	1.00	3.933	80.17	10/20/97 15:11

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/20/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A066.XLD
Batch Ended: 10/20/97 15:16
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1300-1359

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
57	3.292	3.53	<AL	12.59	103.95	16.02	At AL	16.65	1.00	0.933	45.17	10/20/97 15:13
58	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/20/97 15:14
59	3.292	3.53	<AL	12.59	41.81	10.37	<AL	16.65	1.00	0.933	18.17	10/20/97 15:16

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/21/97 **Time:** 11:04

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1360	3.292	7.29	-
1361	3.292	0.38	-
1362	-0.235	14.19	-
1363	-0.235	0.38	-
1364	-0.235	0.38	-
1365	-0.235	9.59	-
1366	3.292	2.68	-
1367	-0.235	-4.22	-
1368	-0.235	4.99	-
1369	-0.235	4.99	-
1370	-0.235	16.49	-
1371	-0.235	-1.92	-
1372	3.292	18.79	-
1373	6.818	28	-
1374	-0.235	0.38	-
1375	-0.235	11.89	-
1376	-0.235	9.59	-
1377	-0.235	-1.92	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1378	-0.235	-4.22	-
1379	-0.235	-1.92	-
1380	-0.235	11.89	-
1381	-0.235	4.99	-
1382	3.292	0.38	-
1383	3.292	2.68	-
1384	-0.235	-4.22	-
1385	-0.235	2.68	-
1386	-0.235	0.38	-
1387	3.292	14.19	-
1388	3.292	101.65	-
1389	3.292	14.19	-
1390	3.292	7.29	-
1391	-0.235	0.38	-
1392	3.292	2.68	-
1393	-0.235	0.38	-
1394	-0.235	2.68	-

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/21/97

Reviewed By: Date **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/21/97
Counting Unit Id: 1
Data file name: C:\LBXL\UNIT1\SME1C020.XLD
Batch Ended: 10/21/97 11:04
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1390-1394

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
60	3.292	3.53	<AL	12.59	7.29	5.18	<AL	16.65	1.00	0.933	3.17	10/21/97 10:12
61	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/21/97 10:14
62	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/21/97 10:15
63	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/21/97 10:17
64	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/21/97 10:18
65	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/21/97 10:20
66	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/21/97 10:21
67	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/21/97 10:23
68	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/21/97 10:24
69	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/21/97 10:26
70	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/21/97 10:27
71	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/21/97 10:29
72	3.292	3.53	<AL	12.59	18.79	7.32	<AL	16.65	1.00	0.933	8.17	10/21/97 10:30
73	6.818	4.99	<AL	12.59	28.00	8.66	<AL	16.65	1.00	1.933	12.17	10/21/97 10:32
74	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/21/97 10:33
75	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/21/97 10:35
76	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/21/97 10:36
77	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/21/97 10:38
78	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/21/97 10:40
79	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/21/97 10:41
80	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/21/97 10:43
81	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/21/97 10:44
82	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/21/97 10:46
83	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/21/97 10:47
84	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/21/97 10:49
85	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/21/97 10:50
86	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/21/97 10:52

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/21/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1C020.XLD
Batch Ended: 10/21/97 11:04
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1300-1394

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
87	3.292	3.53	<AL	12.59	14.19	6.55	<AL	16.65	1.00	0.933	6.17	10/21/97 10:53
88	3.292	3.53	<AL	12.59	101.65	15.85	At AL	16.65	1.00	0.933	44.17	10/21/97 10:55
89	3.292	3.53	<AL	12.59	14.19	6.55	<AL	16.65	1.00	0.933	6.17	10/21/97 10:56
90	3.292	3.53	<AL	12.59	7.29	5.18	<AL	16.65	1.00	0.933	3.17	10/21/97 10:58
91	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/21/97 10:59
92	3.292	3.53	<AL	12.59	2.68	4.03	<MDA	16.65	1.00	0.933	1.17	10/21/97 11:01
93	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/21/97 11:02
94	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/21/97 11:04

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 15:04

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1395	-0.235	7.29	-
1396	-0.235	4.99	-
1397	-0.235	-4.22	-
1398	-0.235	-4.22	-
1399	3.292	2.68	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/23/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 12:00

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1400	3.292	46.41	-
1401	-0.235	7.29	-
1402	-0.235	18.79	-
1403	-0.235	2.68	-
1404	-0.235	11.89	-
1405	-0.235	9.59	-
1406	-0.235	2.68	-
1407	-0.235	2.68	-
1408	3.292	23.4	-
1409	17.399	97.04	-
1410	3.292	497.49	-
1411	3.292	23.4	-
1412	17.399	446.86	-
1413	-0.235	32.6	-
1414	6.818	166.08	-
1415	-0.235	0.38	-
1416	3.292	71.73	-
1417	-0.235	94.74	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1418	6.818	74.03	-
1419	-0.235	14.19	-
1420	-0.235	21.1	-
1421	3.292	14.19	-
1422	10.345	92.44	-
1423	-0.235	25.7	-
1424	3.292	51.01	-

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/22/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/22/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1C022.XLD
Batch Ended: 10/22/97 12:00
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1400-1424

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
100	3.292	3.53	<AL	12.59	46.41	10.88	<AL	16.65	1.00	0.933	20.17	10/22/97 11:24
1	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/22/97 11:26
2	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/22/97 11:27
3	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/22/97 11:29
4	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/22/97 11:30
5	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/22/97 11:32
6	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/22/97 11:33
7	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/22/97 11:35
8	3.292	3.53	<AL	12.59	23.40	8.02	<AL	16.65	1.00	0.933	10.17	10/22/97 11:36
✓ 9	17.399	7.89	At AL	12.59	97.04	15.49	At AL	16.65	1.00	4.933	42.17	10/22/97 11:38
✓ 10	3.292	3.53	<AL	12.59	497.49	36.41	>AL	16.65	1.00	0.933	216.17	10/22/97 11:39
11	3.292	3.53	<AL	12.59	23.40	8.02	<AL	16.65	1.00	0.933	10.17	10/22/97 11:41
✓ 12	17.399	7.89	At AL	12.59	446.86	34.29	>AL	16.65	1.00	4.933	194.17	10/22/97 11:42
13	-0.235	3.53	<MDA	12.59	32.60	9.26	<AL	16.65	1.00	-0.067	14.17	10/22/97 11:44
✓ 14	6.818	4.99	<AL	12.59	166.08	20.28	>AL	16.65	1.00	1.933	72.17	10/22/97 11:45
15	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/22/97 11:47
16	3.292	3.53	<AL	12.59	71.73	13.37	<AL	16.65	1.00	0.933	31.17	10/22/97 11:48
✓ 17	-0.235	3.53	<MDA	12.59	94.74	15.31	At AL	16.65	1.00	-0.067	41.17	10/22/97 11:50
18	6.818	4.99	<AL	12.59	74.03	13.57	<AL	16.65	1.00	1.933	32.17	10/22/97 11:51
19	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/22/97 11:53
20	-0.235	3.53	<MDA	12.59	21.10	7.68	<AL	16.65	1.00	-0.067	9.17	10/22/97 11:54
21	3.292	3.53	<AL	12.59	14.19	6.55	<AL	16.65	1.00	0.933	6.17	10/22/97 11:56
✓ 22	10.345	6.11	At AL	12.59	92.44	15.12	At AL	16.65	1.00	2.933	40.17	10/22/97 11:57
23	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65	1.00	-0.067	11.17	10/22/97 11:59
24	3.292	3.53	<AL	12.59	51.01	11.37	<AL	16.65	1.00	0.933	22.17	10/22/97 12:00

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 14:56

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1425	-0.235	4.99	-
1426	-0.235	9.59	-
1427	-0.235	4.99	-
1428	-0.235	4.99	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/23/97

Reviewed By: Peter Kay **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/23/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A077.XLD
Batch Ended: 10/23/97 14:56
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1425-1428

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
25	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 14:52
26	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/23/97 14:53
27	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 14:55
28	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 14:56

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 15:21

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1429	-0.235	7.29	-
1430	-0.235	41.81	-
1431	-0.235	11.89	-
1432	-0.235	4.99	-
1433	-0.235	0.38	-
1434	6.818	0.38	-
1435	-0.235	16.49	-
1436	-0.235	9.59	-
1437	-0.235	9.59	-
1438	3.292	16.49	-
1439	-0.235	16.49	-
1440	3.292	14.19	-
1441	-0.235	11.89	-
1442	-0.235	7.29	-
1443	-0.235	2.68	-
1444	-0.235	4.99	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton 10/23/97 **Date:** 10/23/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/23/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A071.XLD
Batch Ended: 10/21/97 15:21
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1429-1444

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
29	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/21/97 14:59
30	-0.235	3.53	<MDA	12.59	41.81	10.37	<AL	16.65	1.00	-0.067	18.17	10/21/97 15:00
31	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/21/97 15:02
32	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/21/97 15:03
33	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/21/97 15:05
34	6.818	4.99	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	1.933	0.17	10/21/97 15:06
35	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/21/97 15:08
36	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/21/97 15:09
37	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/21/97 15:11
38	3.292	3.53	<AL	12.59	16.49	6.94	<AL	16.65	1.00	0.933	7.17	10/21/97 15:12
39	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/21/97 15:14
40	3.292	3.53	<AL	12.59	14.19	6.55	<AL	16.65	1.00	0.933	6.17	10/21/97 15:15
41	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/21/97 15:17
42	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/21/97 15:18
43	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/21/97 15:20
44	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/21/97 15:21

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 15:56

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
1445	3.292	37.21	-
1446	3.292	67.12	-
1447	17.399	260.44	-
1448	24.453	103.95	-
1449	112.623	1724.14	-

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/22/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/22/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1F006.XLD
Batch Ended: 10/21/97 15:56
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1445-1449

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
45	3.292	3.53	<AL	12.59	37.21	9.83	<AL	16.65	1.00	0.933	16.17	10/21/97 15:50
46	3.292	3.53	<AL	12.59	67.12	12.95	<AL	16.65	1.00	0.933	29.17	10/21/97 15:52
47	17.399	7.89	At AL	12.59	260.44	25.62	>AL	16.65	1.00	4.933	113.17	10/21/97 15:53
48	24.453	9.34	At AL	12.59	103.95	16.02	At AL	16.65	1.00	6.933	45.17	10/21/97 15:55
49	112.623	20.05	>AL	12.59	1724.14	77.60	>AL	16.65	1.00	31.933	749.17	10/21/97 15:56

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 13:13

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1450	13.872	255.84	-
1451	-0.235	69.43	-
1452	10.345	51.01	-
1453	24.453	244.33	-
1454	765.082	17675.18	-
1455	408.874	6057.68	-
1456	3.292	30.3	-
1457	6.818	166.08	-
1458	6.818	45.41	-
1459	-0.235	34.9	-
1460	3.292	44.11	-
1461	6.818	51.01	-
1462	31.506	317.98	-
1463	6.818	71.73	-
1464	24.453	184.5	-
1465	-0.235	30.3	-
1466	3.292	14.19	-
1467	-0.235	48.71	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1468	6.818	23.4	-
1469	6.818	94.74	-
1470	6.818	62.52	-
1471	-0.235	23.4	-
1472	3.292	97.04	-
1473	13.872	25.7	-
1474	-0.235	18.79	-
1475	6.818	85.54	-
1476	3.292	51.01	-
1477	-0.235	14.19	-
1478	6.818	37.21	-
1479	6.818	110.85	-
1480	-0.235	32.6	-
1481	3.292	14.19	-
1482	-0.235	28	-
1483	45.613	456.06	-
1484	-0.235	0.38	-
1485	-0.235	4.99	-

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/23/97

Reviewed By: Date **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 13:13

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1486	-0.235	0.38	-
1487	-0.235	4.99	-
1488	3.292	14.19	-
1489	-0.235	-1.92	-
1490	-0.235	4.99	-
1491	-0.235	7.29	-
1492	3.292	71.73	-
1493	-0.235	16.49	-
1494	-0.235	30.3	-
1495	-0.235	7.29	-
1496	-0.235	25.7	-
1497	-0.235	2.68	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton 10/23/97 **Date:** 10/23/97

Reviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/22/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B008.XLD
Batch Ended: 10/22/97 13:13
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1450-1497

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
50	13.872	7.06	At AL	12.59	255.84	25.38	>AL	16.65	1.00	3.933	111.17	10/22/97 12:02
51	-0.235	3.53	<MDA	12.59	69.43	13.16	<AL	16.65	1.00	-0.067	30.17	10/22/97 12:04
52	10.345	6.11	At AL	12.59	51.01	11.37	<AL	16.65	1.00	2.933	22.17	10/22/97 12:05
53	24.453	9.34	At AL	12.59	244.33	24.77	>AL	16.65	1.00	6.933	106.17	10/22/97 12:06
54	765.082	53.66	>AL	12.59	17675.18	505.28	>AL	16.65	1.00	216.933	7680.17	10/22/97 12:08
55	408.874	38.66	>AL	12.59	6057.68	197.90	>AL	16.65	1.00	115.933	2632.17	10/22/97 12:10
56	3.292	3.53	<AL	12.59	30.30	8.97	<AL	16.65	1.00	0.933	13.17	10/22/97 12:11
57	6.818	4.99	<AL	12.59	166.08	20.28	>AL	16.65	1.00	1.933	72.17	10/22/97 12:13
58	6.818	4.99	<AL	12.59	46.41	10.88	<AL	16.65	1.00	1.933	20.17	10/22/97 12:14
59	-0.235	3.53	<MDA	12.59	34.90	9.55	<AL	16.65	1.00	-0.067	15.17	10/22/97 12:16
60	3.292	3.53	<AL	12.59	44.11	10.63	<AL	16.65	1.00	0.933	19.17	10/22/97 12:17
61	6.818	4.99	<AL	12.59	51.01	11.37	<AL	16.65	1.00	1.933	22.17	10/22/97 12:19
62	31.506	10.60	At AL	12.59	317.98	28.49	>AL	16.65	1.00	8.933	138.17	10/22/97 12:20
63	6.818	4.99	<AL	12.59	71.73	13.37	<AL	16.65	1.00	1.933	31.17	10/22/97 12:22
64	24.453	9.34	At AL	12.59	184.50	21.40	>AL	16.65	1.00	6.933	80.17	10/22/97 12:23
65	-0.235	3.53	<MDA	12.59	30.30	8.97	<AL	16.65	1.00	-0.067	13.17	10/22/97 12:25
66	3.292	3.53	<AL	12.59	14.19	6.55	<AL	16.65	1.00	0.933	6.17	10/22/97 12:26
67	-0.235	3.53	<MDA	12.59	48.71	11.13	<AL	16.65	1.00	-0.067	21.17	10/22/97 12:28
68	6.818	4.99	<AL	12.59	23.40	8.02	<AL	16.65	1.00	1.933	10.17	10/22/97 12:29
69	6.818	4.99	<AL	12.59	94.74	15.31	At AL	16.65	1.00	1.933	41.17	10/22/97 12:31
70	6.818	4.99	<AL	12.59	62.52	12.52	<AL	16.65	1.00	1.933	27.17	10/22/97 12:32
71	-0.235	3.53	<MDA	12.59	23.40	8.02	<AL	16.65	1.00	-0.067	10.17	10/22/97 12:34
72	3.292	3.53	<AL	12.59	97.04	15.49	At AL	16.65	1.00	0.933	42.17	10/22/97 12:35
73	13.872	7.06	At AL	12.59	25.70	8.35	<AL	16.65	1.00	3.933	11.17	10/22/97 12:37
74	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/22/97 12:38
75	6.818	4.99	<AL	12.59	85.54	14.56	At AL	16.65	1.00	1.933	37.17	10/22/97 12:40
76	3.292	3.53	<AL	12.59	51.01	11.37	<AL	16.65	1.00	0.933	22.17	10/22/97 12:41

N-147

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 17:18

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1498	3.292	62.52	-
1499	49.14	435.35	-
1500	31.506	934.75	-
1501	-0.235	18.79	-
1502	17.399	131.56	-
1503	6.818	74.06	-
1504	109.096	10614.46	-
1505	20.926	168.39	-
1506	-0.235	9.59	-
1507	-0.235	25.7	-
1508	6.818	205.21	-
1509	-0.235	2.68	-
1510	-0.235	25.7	-
1511	3.292	25.7	-
1512	-0.235	115.45	-
1513	10.345	34.9	-
1514	45.613	1889.84	-
1515	84.408	2032.52	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1516	84.408	3429.48	-
1517	31.506	591.84	-
1518	3.292	23.4	-
1519	3.292	34.9	-
1520	10.345	74.03	-
1521	-0.235	23.4	-

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/23/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/23/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B010.XLD
Batch Ended: 10/22/97 17:18
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1498-1521

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
98	3.292	3.53	<AL	12.59	62.52	12.52	<AL	16.65	1.00	0.933	27.17	10/22/97 16:43
99	49.140	13.23	>AL	12.59	435.35	33.80	>AL	16.65	1.00	13.933	189.17	10/22/97 16:44
100	31.506	10.60	At AL	12.59	934.75	52.56	>AL	16.65	1.00	8.933	406.17	10/22/97 16:46
1	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/22/97 16:47
2	17.399	7.89	At AL	12.59	131.56	18.02	>AL	16.65	1.00	4.933	57.17	10/22/97 16:49
3	6.818	4.99	<AL	12.59	74.03	13.57	<AL	16.65	1.00	1.933	32.17	10/22/97 16:50
4	109.096	19.73	>AL	12.59	10614.46	319.13	>AL	16.65	1.00	30.933	4612.17	10/22/97 16:52
5	20.926	8.65	At AL	12.59	168.39	20.42	>AL	16.65	1.00	5.933	73.17	10/22/97 16:53
6	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/22/97 16:55
7	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65	1.00	-0.067	11.17	10/22/97 16:56
8	6.818	4.99	<AL	12.59	205.21	22.61	>AL	16.65	1.00	1.933	89.17	10/22/97 16:58
9	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/22/97 16:59
10	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65	1.00	-0.067	11.17	10/22/97 17:01
11	3.292	3.53	<AL	12.59	25.70	8.35	<AL	16.65	1.00	0.933	11.17	10/22/97 17:02
12	-0.235	3.53	<MDA	12.59	115.45	16.88	At AL	16.65	1.00	-0.067	50.17	10/22/97 17:04
13	10.345	6.11	At AL	12.59	34.90	9.55	<AL	16.65	1.00	2.933	15.17	10/22/97 17:06
14	45.613	12.74	>AL	12.59	1889.84	82.55	>AL	16.65	1.00	12.933	821.17	10/22/97 17:07
15	84.408	17.34	>AL	12.59	2032.52	86.76	>AL	16.65	1.00	23.933	883.17	10/22/97 17:09
16	84.408	17.34	>AL	12.59	3429.48	126.43	>AL	16.65	1.00	23.933	1490.17	10/22/97 17:10
17	31.506	10.60	At AL	12.59	591.84	40.16	>AL	16.65	1.00	8.933	257.17	10/22/97 17:12
18	3.292	3.53	<AL	12.59	23.40	8.02	<AL	16.65	1.00	0.933	10.17	10/22/97 17:13
19	3.292	3.53	<AL	12.59	34.90	9.55	<AL	16.65	1.00	0.933	15.17	10/22/97 17:15
20	10.345	6.11	At AL	12.59	74.03	13.57	<AL	16.65	1.00	2.933	32.17	10/22/97 17:16
21	-0.235	3.53	<MDA	12.59	23.40	8.02	<AL	16.65	1.00	-0.067	10.17	10/22/97 17:18

N-149

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 12:24

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1522	-0.235	0.38	-
1523	-0.235	4.99	-
1524	-0.235	7.29	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton 10/23/97 **Date:** 10/23/97

Reviewed By: Pat Frr **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/23/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1D005.XLD
Batch Ended: 10/23/97 12:24
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1522-1524

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
22	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 12:21
23	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 12:22
24	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 12:24

N-151

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 11:00

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)
1525	-0.235	4.99	-
1526	-0.235	0.38	-
1527	-0.235	0.38	-
1528	-0.235	4.99	-
1529	-0.235	-4.22	-
1530	-0.235	0.38	-
1531	-0.235	2.68	-
1532	-0.235	2.68	-
1533	-0.235	-1.92	-
1534	-0.235	2.68	-
1535	3.292	0.38	-
1536	-0.235	0.38	-
1537	-0.235	21.1	-
1538	-0.235	-4.22	-
1539	-0.235	-1.92	-

Location	dpm/ 100 cm² Alpha	dpm/ 100 cm² Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton 10/23/97 **Date:** 10/23/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/23/97
Counting Unit Id: 1
Data file name: C:\LBXL\UNIT1\SME1C024.XLD
Batch Ended: 10/23/97 11:00
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1525-1539

	Alpha Activity				Beta Activity						
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
25	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 10:39
26	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 10:40
27	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 10:42
28	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 10:43
29	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/23/97 10:45
30	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 10:47
31	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 10:48
32	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 10:50
33	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/23/97 10:51
34	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 10:53
35	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/23/97 10:54
36	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 10:56
37	-0.235	3.53	<MDA	12.59	21.10	7.68	<AL	16.65	1.00	-0.067	9.17	10/23/97 10:57
38	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/23/97 10:59
38	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/23/97 11:00

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 14:38

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1540	-0.235	0.38	-
1541	-0.235	0.38	-
1542	-0.235	18.79	-
1543	-0.235	4.99	-
1544	-0.235	4.99	-
1545	-0.235	4.99	-
1546	-0.235	11.89	-
1547	3.292	9.59	-
1548	-0.235	-1.92	-
1549	-0.235	14.19	-
1550	-0.235	7.29	-
1551	-0.235	0.38	-
1552	-0.235	2.68	-
1553	-0.235	4.99	-
1554	-0.235	4.99	-
1555	-0.235	4.99	-
1556	-0.235	7.29	-
1557	-0.235	0.38	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1558	3.292	32.6	-
1559	-0.235	7.29	-
1560	3.292	0.38	-
1561	-0.235	4.99	-
1562	-0.235	0.38	-
1563	-0.235	2.68	-
1564	-	-	-
1565	-0.235	7.29	-
1566	-0.235	0.38	-
1567	3.292	4.99	-
1568	-0.235	16.49	-
1569	-0.235	14.19	-
1570	-0.235	2.68	-
1571	-0.235	4.99	-
1572	-0.235	18.79	-
1573	3.292	21.1	-
1574	-0.235	11.89	-
1575	-0.235	11.89	-

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/23/97

Reviewed By: [signature] **Date:** 1/7/98

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 14:38

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1576	-0.235	-1.92	-
1577	3.292	21.1	-
1578	-0.235	2.68	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/23/97

eviewed By: **Date:**

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/23/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1F007.XLD
Batch Ended: 10/23/97 14:38
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1540-1578

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
40	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 13:42
41	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 13:43
42	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/23/97 13:45
43	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 13:46
44	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 13:48
45	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 13:49
46	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/23/97 13:51
47	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/23/97 13:52
48	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/23/97 13:54
49	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/23/97 13:55
50	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 13:57
51	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 13:58
52	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 14:00
53	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 14:01
54	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 14:03
55	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 14:05
56	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 14:06
57	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 14:08
58	3.292	3.53	<AL	12.59	32.60	9.26	<AL	16.65	1.00	0.933	14.17	10/23/97 14:09
59	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 14:11
60	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/23/97 14:12
61	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 14:14
62	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 14:15
63	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 14:17
65	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 14:18
66	-0.235	3.53	<MDA	12.59	0.38	3.30	<MDA	16.65	1.00	-0.067	0.17	10/23/97 14:20
67	3.292	3.53	<AL	12.59	4.99	4.64	<MDA	16.65	1.00	0.933	2.17	10/23/97 14:21

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/23/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1F007.XLD
Batch Ended: 10/23/97 14:38
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1540-1578

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
68	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/23/97 14:23
69	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/23/97 14:24
70	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 14:26
71	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 14:27
72	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/23/97 14:29
73	3.292	3.53	<AL	12.59	21.10	7.68	<AL	16.65	1.00	0.933	9.17	10/23/97 14:30
74	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/23/97 14:32
75	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/23/97 14:33
76	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/23/97 14:35
77	3.292	3.53	<AL	12.59	21.10	7.68	<AL	16.65	1.00	0.933	9.17	10/23/97 14:36
78	-0.235	3.53	<MDA	12.59	2.68	4.03	<MDA	16.65	1.00	-0.067	1.17	10/23/97 14:38

RS-35 (8-96)

Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 14:50

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1593	-0.235	-4.22	-
1594	-0.235	-1.92	-
1595	3.292	9.59	-
1596	-0.235	7.29	-
1597	-0.235	7.29	-
1598	-0.235	14.19	-
1599	-0.235	23.4	-
1600	-0.235	4.99	-

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/23/97

Reviewed By: Patricia Jay **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/23/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1D006.XLD
Batch Ended: 10/23/97 14:50
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: CS 1593-1600

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
93	-0.235	3.53	<MDA	12.59	-4.22	2.37	<MDA	16.65	1.00	-0.067	-1.83	10/23/97 14:39
94	-0.235	3.53	<MDA	12.59	-1.92	2.37	<MDA	16.65	1.00	-0.067	-0.83	10/23/97 14:41
95	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/23/97 14:42
96	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 14:44
97	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/23/97 14:45
98	-0.235	3.53	<MDA	12.59	14.19	6.55	<AL	16.65	1.00	-0.067	6.17	10/23/97 14:47
99	-0.235	3.53	<MDA	12.59	23.40	8.02	<AL	16.65	1.00	-0.067	10.17	10/23/97 14:48
100	-0.235	3.53	<MDA	12.59	4.99	4.64	<MDA	16.65	1.00	-0.067	2.17	10/23/97 14:50

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/11/97
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B003.XLD
Batch Ended: 10/11/97 10:37
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: PLUG STORAGE AREA 1-27

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
1	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/11/97 9:58
2	-0.235	3.53	<MDA	12.59	23.40	8.02	<AL	16.65	1.00	-0.067	10.17	10/11/97 9:59
3	3.292	3.53	<AL	12.59	30.30	8.97	<AL	16.65	1.00	0.933	13.17	10/11/97 10:01
4	3.292	3.53	<AL	12.59	69.43	13.16	<AL	16.65	1.00	0.933	30.17	10/11/97 10:02
5	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/11/97 10:04
6	3.292	3.53	<AL	12.59	28.00	8.66	<AL	16.65	1.00	0.933	12.17	10/11/97 10:05
7	3.292	3.53	<AL	12.59	44.11	10.63	<AL	16.65	1.00	0.933	19.17	10/11/97 10:07
8	-0.235	3.53	<MDA	12.59	51.01	11.37	<AL	16.65	1.00	-0.067	22.17	10/11/97 10:08
9	3.292	3.53	<AL	12.59	154.58	19.55	>AL	16.65	1.00	0.933	67.17	10/11/97 10:10
10	-0.235	3.53	<MDA	12.59	28.00	8.66	<AL	16.65	1.00	-0.067	12.17	10/11/97 10:12
11	-0.235	3.53	<MDA	12.59	30.30	8.97	<AL	16.65	1.00	-0.067	13.17	10/11/97 10:13
12	6.818	4.99	<AL	12.59	352.50	30.12	>AL	16.65	1.00	1.933	153.17	10/11/97 10:15
13	-0.235	3.53	<MDA	12.59	83.23	14.37	At AL	16.65	1.00	-0.067	36.17	10/11/97 10:16
14	6.818	4.99	<AL	12.59	7.29	5.18	<AL	16.65	1.00	1.933	3.17	10/11/97 10:18
15	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/11/97 10:19
16	-0.235	3.53	<MDA	12.59	292.66	27.25	>AL	16.65	1.00	-0.067	127.17	10/11/97 10:21
17	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/11/97 10:22
18	3.292	3.53	<AL	12.59	21.10	7.68	<AL	16.65	1.00	0.933	9.17	10/11/97 10:24
19	6.818	4.99	<AL	12.59	396.23	32.09	>AL	16.65	1.00	1.933	172.17	10/11/97 10:25
20	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65	1.00	-0.067	11.17	10/11/97 10:27
21	3.292	3.53	<AL	12.59	34.90	9.55	<AL	16.65	1.00	0.933	15.17	10/11/97 10:28
22	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/11/97 10:30
23	3.292	3.53	<AL	12.59	14.19	6.55	<AL	16.65	1.00	0.933	6.17	10/11/97 10:31
24	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/11/97 10:33
25	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/11/97 10:34
26	-0.235	3.53	<MDA	12.59	278.85	26.56	>AL	16.65	1.00	-0.067	121.17	10/11/97 10:36
27	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/11/97 10:37

N-160

RS-35 (8-96)

Survey Data Sheet

Smears 1619-1645

Job Description: Plug Storage Area **Date:** 10/11/97 **Time:** 10:37

Counter Used: LB 5100 W (S/N 13795) **Alpha Eff:** 28.35% **Alpha Bkg (cpm):** 0.07

Calibration Due Date: Aug-98 **Beta Eff:** 43.45% **Beta Bkg (cpm):** 1.83

Survey Instr. Model: N/A **Serial #:** N/A **Cal. Due Date:** N/A

Bkg (cpm): N/A

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
1	3.292	-1.92	N/A
2	-0.235	23.4	N/A
3	3.292	30.3	N/A
4	3.292	69.43	N/A
5	-0.235	7.29	N/A
6	3.292	28	N/A
7	3.292	44.11	N/A
8	-0.235	51.01	N/A
9	3.292	154.58	N/A
10	-0.235	28	N/A
11	-0.235	30.3	N/A
12	6.818	352.5	N/A
13	-0.235	83.23	N/A
14	6.818	7.29	N/A
15	3.292	9.59	N/A
16	-0.235	292.66	N/A
17	-0.235	16.49	N/A
18	3.292	21.1	N/A

Location	dpm/ 100 cm^2 Alpha	dpm/ 100 cm^2 Beta/Gamma	GM Survey (cpm)
19	6.818	396.23	N/A
20	-0.235	25.7	N/A
21	3.292	34.9	N/A
22	-0.235	18.79	N/A
23	3.292	14.19	N/A
24	-0.235	9.59	N/A
25	3.292	0.38	N/A
26	-0.235	278.85	N/A
27	-0.235	11.89	N/A

Comments: Locations with >AL activity: 9, 12, 16, 19, 26

Performed By: Michele R. Sutton MRS 10/11/97 **Date:** 10/11/97

Reviewed By: [signature] **Date:** 1/7/98

LB5100-W Low Background Counting System -- Smear Analysis

Date: 10/11/97
Counting Unit Id: 1
Data file name: C:\LBXL\UNIT1\SME1B003.XLD
Batch Ended: 10/11/97 10:37
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1490

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: TH230AB
Alpha Efficiency: 28.35%
Alpha to Beta Crosstalk: 28.65%
Alpha Background (CPM): 0.066666667
Alpha Correction Factor: 1.000

Beta efficiency log file: SR90AB
Beta Efficiency: 43.45%
Beta into Alpha Crosstalk: 0.66%
Beta Background (CPM): 1.833333333
Beta Correction Factor: 1.000

Batch ID: PLUG STORAGE AREA 1-27

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
1	3.292	3.53	<AL	12.59	-1.92	2.37	<MDA	16.65	1.00	0.933	-0.83	10/11/97 9:58
2	-0.235	3.53	<MDA	12.59	23.40	8.02	<AL	16.65	1.00	-0.067	10.17	10/11/97 9:59
3	3.292	3.53	<AL	12.59	30.30	8.97	<AL	16.65	1.00	0.933	13.17	10/11/97 10:01
4	3.292	3.53	<AL	12.59	69.43	13.16	<AL	16.65	1.00	0.933	30.17	10/11/97 10:02
5	-0.235	3.53	<MDA	12.59	7.29	5.18	<AL	16.65	1.00	-0.067	3.17	10/11/97 10:04
6	3.292	3.53	<AL	12.59	28.00	8.66	<AL	16.65	1.00	0.933	12.17	10/11/97 10:05
7	3.292	3.53	<AL	12.59	44.11	10.63	<AL	16.65	1.00	0.933	19.17	10/11/97 10:07
8	-0.235	3.53	<MDA	12.59	51.01	11.37	<AL	16.65	1.00	-0.067	22.17	10/11/97 10:08
9	3.292	3.53	<AL	12.59	154.58	19.55	>AL	16.65	1.00	0.933	67.17	10/11/97 10:10
10	-0.235	3.53	<MDA	12.59	28.00	8.66	<AL	16.65	1.00	-0.067	12.17	10/11/97 10:12
11	-0.235	3.53	<MDA	12.59	30.30	8.97	<AL	16.65	1.00	-0.067	13.17	10/11/97 10:13
12	6.818	4.99	<AL	12.59	352.50	30.12	>AL	16.65	1.00	1.933	153.17	10/11/97 10:15
13	-0.235	3.53	<MDA	12.59	83.23	14.37	At AL	16.65	1.00	-0.067	36.17	10/11/97 10:16
14	6.818	4.99	<AL	12.59	7.29	5.18	<AL	16.65	1.00	1.933	3.17	10/11/97 10:18
15	3.292	3.53	<AL	12.59	9.59	5.67	<AL	16.65	1.00	0.933	4.17	10/11/97 10:19
16	-0.235	3.53	<MDA	12.59	292.66	27.25	>AL	16.65	1.00	-0.067	127.17	10/11/97 10:21
17	-0.235	3.53	<MDA	12.59	16.49	6.94	<AL	16.65	1.00	-0.067	7.17	10/11/97 10:22
18	3.292	3.53	<AL	12.59	21.10	7.68	<AL	16.65	1.00	0.933	9.17	10/11/97 10:24
19	6.818	4.99	<AL	12.59	396.23	32.09	>AL	16.65	1.00	1.933	172.17	10/11/97 10:25
20	-0.235	3.53	<MDA	12.59	25.70	8.35	<AL	16.65	1.00	-0.067	11.17	10/11/97 10:27
21	3.292	3.53	<AL	12.59	34.90	9.55	<AL	16.65	1.00	0.933	15.17	10/11/97 10:28
22	-0.235	3.53	<MDA	12.59	18.79	7.32	<AL	16.65	1.00	-0.067	8.17	10/11/97 10:30
23	3.292	3.53	<AL	12.59	14.19	6.55	<AL	16.65	1.00	0.933	6.17	10/11/97 10:31
24	-0.235	3.53	<MDA	12.59	9.59	5.67	<AL	16.65	1.00	-0.067	4.17	10/11/97 10:33
25	3.292	3.53	<AL	12.59	0.38	3.30	<MDA	16.65	1.00	0.933	0.17	10/11/97 10:34
26	-0.235	3.53	<MDA	12.59	278.85	26.56	>AL	16.65	1.00	-0.067	121.17	10/11/97 10:36
27	-0.235	3.53	<MDA	12.59	11.89	6.12	<AL	16.65	1.00	-0.067	5.17	10/11/97 10:37

Tritium Samples

All tritium smear samples were counted for 1-min on the liquid scintillation counter, TriCarb 2000CA. Each sample contained 10cc of cocktail (Ecoscint H, National Diagnostics). All liquid samples were counted for 20-min on the LSC. 1cc of liquid was added to 10cc of cocktail. All samples were dark adapted for at least 10 minutes before being counted.

Tritium Smear Samples and Corresponding Survey Locations		
Area	**Tritium Sample Number**	**Smear Number**
Miscellaneous	1	543 (Ground Floor)
	2	544
	3	563
	4	By 544
	5	By 563
	6	1117
	7	1118
	8	1119
	9	1120
	10	1121
	11	1122
	12	1123
	13	1124
	14	1131
Process Equipment Room		
	15	848
	16	By Tank He-1
	17	On Generator MD-2A
	18	On Tank MS2
	19	On Tank T-S1
	20	On Motor MD1
	21	853
	22	On Pipe by 863
	23	862
	24	On Rear of Tank HXD1
	25	On Front of Tank HXD1
	26	On Rear of Tank HXD2
	27	On Front of Tank HXD2
	28	852
	29	by 858
	30	858
	31	859
Miscellaneous	32	1135
	33	1136
	34	1137
DECON Room (Room 168)		
	35	1202
	36	1206
	37	1208
	38	1211
	39	1209
	40	1215
	41	By 1236
	42	1233

	41	By 1236
	42	1233
	43	1232
	44	Under 1230
First Floor		
	45	27
	46	Under 22
	47	36
	48	55
	49	61
	50	60
	51	Bottom 67
	52	86
	53	85
	54	70
	55	101
	56	65
	57	122
	58	137
	59	232
	60	105
	61	109
	62	116
	63	119
	64	117
	65	120
	66	123
	67	129
	68	150
	69	128
	70	147
	71	142
	72	146
	73	157
	74	161
	75	251
	76	250
	77	251
	78	253
	79	257
	80	269
	81	14
	82	186
	83	189
	84	187
	85	195
	86	199
	87	202

	88	203
	89	214
	90	213
	91	224
	92	226
	93	230
	94	236
	95	219
	96	220
	97	206
	98	By 153
	99	168
	100	193
Second Floor		
	101	480
	102	482
	103	488
	104	478
	105	471
	106	467
	107	466
	108	463
	109	461
	110	456
	111	455
	112	447
	113	443
	114	439
	115	438
	116	435
	117	437
	118	434
	119	426
	120	425
	121	484
	122	405
	123	403
	124	407
	125	495
	126	498
	127	408
	128	419
	129	418
	130	422
	131	ECCS Tank Bottom
	1321	ECCS Tank Valves
	133	430
	134	322

	135	331
	136	323
	137	292
	138	591
	139	336
	140	360
	141	Floor by Reactor Top
	142	349
	143	348
	144	437
	145	421
	146	413
	147	404
	148	483
	149	397
	150	407
Ground Floor		
	151	577
	152	581
	153	781
	154	585
	155	565
	156	567
	157	553
	158	769
	159	550
	160	624
	161	631
	162	630
	163	686
	164	684
	165	633
	166	634
	167	680
	168	640
	169	Tank by 639
	170	643
	171	645
	172	648
	173	652
	174	Under pnuematic blower
	175	641
	176	679
	177	603
	178	610
	179	606
	180	612
	181	619

	182	621
	183	618
	184	588
	185	597
	186	596
	187	571
	188	772
	189	657
	190	660
	191	666
	192	694
	193	677
	194	673
	195	770
	196	664
	197	676
	198	778
	199	791
	200	By 780
	201	777
Horizontal Ports		
	202	1301
	203	1302
	204	1309
	205	1310
	206	1313
	207	1314
Equipment in Roped-Off Area		
	208	1349
	209	1336
	210	1334
	211	1337
	212	1327
	213	1329
	214	1350
	215	1324
	216	1326
	217	1321
	218	1322
	219	1322
	273	1339
	274	1342
	275	1346
	276	1345
	277	1332
	278	1323
	279	1356

	280	1333
	289	1355
	290	1335
	291	1341
	292	1357
DECON Room & Walk-in Hood		
	220	782 (Ground Floor)
	221	1367
	222	1373
	223	1374
	224	1364
	225	1365
	226	1366
	227	1368
	228	1369
	229	1360
	230	1371
	231	1372
	232	1373
	233	By 1362
	234	1375
	235	1362
	236	1380
	237	1381
	238	1382
	239	1388
	293	In Hood
	294	1393
	295	1377
	296	1379
	297	1391
	298	By 1391
	299	1392
	300	1390
	301	1390
Vertical Ports		
	240	1254
	241	1257
	242	1260
	243	1263
	244	1266
	245	1269
	246	1272
	247	1275
	248	1473
	249	1452
	250	1421

	251	1424
	252	1455
	253	1458
	254	1461
	255	1464
	256	1467
	257	1470
	258	1496
	259	1476
	260	1479
Reactor Top		
	261	1279
	262	1281
	263	1284
	264	1292
	265	1295
	266	1298
	267	1299
	268	1271
Crane		
	270	892
	271	898
Hood-Radiochemistry Room		
	281	1092
	282	1093
	283	1094
	284	1095
	285	1096
	286	1097
	287	1098
	288	1099
Chemical Addition Tanks	302	1088
	303	1087
	304	1084
	305	1090
	306	1091
Source Casks	309	1479
	310	1479 (117)
	311	1449
	312	1445

Reactor Storage Holes (5)		
	313	1482
	314	1485
	315	1488
	316	1491
	317	1497
Horizontal Beam Ports	307	H2 After Use
	308	H2 After Use
	324	H11 After Use (E side)
	325	H12 After Use (E side)
	318	5000
	326	1504
	327	1508
	328	1512
	329	1516
Elevator Shaft		
	319	1143
	320	1146
	321	1147
Hydraulic Sump		
	322	1142
	323	1139

Tritium Survey Results

Action level (DPM): 1000 dpm/100 cm^2

Tritium Sample Number	Corresponding Smear Number	Location	Tritium Activity (dpm/100 cm^2)
6	1117	Process Equipment Room- Tank He-1	5446
7	1118	Process Equipment Room- Tank He-1	2215
89	214	Horizontal Beam Port No.12 (North)	5282
203	1302	Inside Horizontal Beam Port No.12 (North)	1842
204	1309	Inside Horizontal Beam Port No.11 (North)	1732
205	1310	Inside Horizontal Beam Port No.11 (North)	1062
329	1516	Inside Horizontal Beam Port No.11 (South)	2152

Tritium Survey Analysis- Hazardous Materials and Liquid Samples

Tritium Sample Number	Tritium Activity (dpm/100 cm^2)	Tritium Concentration (pCi/l)
LIQ-1	56	2,293
LIQ-2	33	1,351
LIQ-3	58	2,375
LIQ-4	33	1,351
LIQ-5	38	1,556
LIQ-6	33	1,351
LIQ-7	45	1,843
LIQ-8	2311	94,636
LIQ-9	1	41
LIQ-10	2	82
LIQ-11	1455	59,582
LIQ-12	3629	148,608
LIQ-13	56	2,293
LIQ-14	272252	11,148,731
LIQ-15	514	21,048
LIQ-16	13345	546,478
LIQ-17	16	655
LIQ-18	13	532
Biomed Facility	82	3,358
PT-1	1664	68,141
PT-2	766	31,368
PT-3	67	2,744
BS-1	48	1,966
BS-2	39	1,597
BS-3	90	3,686
BS-4	77	3,153
BS-5	44	1,802
BS-6	74	3,030
BS-7	79	3,235
BS-8	45	1,843

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey Date: 10/16/97 Time: 17:32

Counter Used: TriCarb 2000CA Region: A Efficiency: 59.8%

Suspect Isotope(s): Tritium Bkg (cpm): 12.3

Survey Instr. Model: - Serial #: - Cal. Due Date: -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-1	13	1	-
T-2	16	6	-
T-3	21	15	-
T-4	30	30	-
T-5	15	5	-
T-6	3269	5446	-
T-7	1337	2215	-
T-8	62	83	-
T-9	224	354	-
T-10	98	143	-
T-11	62	83	-
T-12	9	< LLD	-
T-13	15	5	-
T-14	22	16	-
T-15	17	8	-
T-16	16	6	-
T-17	37	41	-
T-18	141	215	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-19	23	18	-
T-20	33	35	-
T-21	10	< LLD	-
T-22	11	< LLD	-
T-23	11	< LLD	-
T-24	21	15	-
T-25	74	103	-
T-26	11	< LLD	-
T-27	20	13	-
T-28	13	1	-
T-29	12	< LLD	-
T-30	16	6	-
T-31	272	434	-
T-32	32	33	-
T-33	29	28	-
T-34	22	16	-
T-35	14	3	-
T-36	15	5	-

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 Date: 10/16/97

Reviewed By: Peter Fpp Date: 1/7/98

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/16/97 **Time:** 17:32

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.8%

Suspect Isotope(s): Tritium **Bkg (cpm):** 12.3

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-37	19	11	-
T-38	16	6	-
T-39	12	< LLD	-
T-40	22	16	-
T-41	17	8	-
T-42	23	18	-
T-43	18	10	-
T-44	13	1	-
T-45	19	11	-
T-46	20	13	-
T-47	16	6	-
T-48	25	21	-
T-49	17	8	-
T-50	16	6	-
T-51	20	13	-
T-52	13	1	-
T-53	16	6	-
T-54	20	13	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-55	12	< LLD	-
T-56	22	16	-
T-57	17	8	-
T-58	13	1	-
T-59	26	23	-
T-60	13	1	-
T-61	19	11	-
T-62	14	3	-
T-63	25	21.	-
T-64	18	10	-
T-65	14	3	-
T-66	13	1	-
T-67	20	13	-
T-68	16	6	-
T-69	16	6	-
T-70	16	6	-
T-71	19	11	-
T-72	15	5	-

Comments:

Performed By: Michele R. Sutton 10/22/97 **Date:** 10/16/97

Reviewed By: **Date:**

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/16/97 **Time:** 17:32

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.8%

Suspect Isotope(s): Tritium **Bkg (cpm):** 12.3

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-73	15	5	-
T-74	21	15	-
T-75	12	< LLD	-
T-76	16	6	-
T-77	11	< LLD	-
T-78	14	3	-
T-79	16	6	-
T-80	29	28	-
T-81	14	3	-
T-82	102	150	-
T-83	10	< LLD	-
T-84	53	68	-
T-85	10	< LLD	-
T-86	17	8	-
T-87	18	10	-
T-88	18	10	-
T-89	3171	5282	-
T-90	30	30	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-91	20	13	-
T-92	15	5	-
T-93	24	20	-
T-94	14	3	-
T-95	13	1	-
T-96	22	16	-
T-97	20	13	-
T-98	14	3	-
T-99	13	1	-
T-100	10	< LLD	-
T-101	19	11	-
T-102	16	6	-
T-103	19	11	-
T-104	15	5	-
T-105	26	23	-
T-106	19	11	-
T-107	13	1	-
T-108	15	5	-

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/16/97

Reviewed By: **Date:**

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/16/97 **Time:** 17:32

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.8%

Suspect Isotope(s): Tritium **Bkg (cpm):** 12.3

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-109	17	8	-
T-110	19	11	-
T-111	14	3	-
T-112	21	15	-
T-113	14	3	-
T-114	14	3	-
T-115	24	20	-
T-116	13	1	-
T-117	17	8	-
T-118	9	< LLD	-
T-119	16	6	-
T-120	11	< LLD	-
T-121	7	< LLD	-
T-122	12	< LLD	-
T-123	11	< LLD	-
T-124	16	6	-
T-125	15	5	-
T-126	12	< LLD	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-127	11	< LLD	-
T-128	8	< LLD	-
T-129	14	3	-
T-130	10	< LLD	-
T-131	15	5	-
T-132	16	6	-

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/16/97

Reviewed By: **Date:**

T1-T132 1/3

Protocol #: 8 Name:Campus Survey 16-Oct-97 17:32
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
1	1.00	13.00	22.00	17.00	208.55	
2	1.00	16.00	19.00	15.00	165.91	
3	1.00	21.00	21.00	18.00	158.09	
4	1.00	30.00	21.00	10.00	154.88	
5	1.00	13.00	14.00	19.00	140.26	
6	1.00	3269.00	283.00	12.00	21.670	
7	1.00	1337.00	148.00	18.00	25.580	
8	1.00	62.00	50.00	21.00	107.39	
9	1.00	224.00	125.00	18.00	91.190	
10	1.00	98.00	56.00	11.00	97.020	
11	1.00	62.00	96.00	37.00	154.20	
12	1.00	9.00	25.00	13.00	291.92	
13	1.00	15.00	24.00	18.00	182.35	
14	1.00	22.00	21.00	15.00	200.73	
15	1.00	17.00	24.00	14.00	198.51	
16	1.00	16.00	20.00	28.00	167.36	
17	1.00	37.00	19.00	17.00	81.320	
18	1.00	141.00	18.00	10.00	45.110	
19	1.00	23.00	19.00	16.00	141.88	
20	1.00	33.00	16.00	17.00	118.96	
21	1.00	10.00	23.00	15.00	178.98	
22	1.00	11.00	12.00	17.00	208.16	
23	1.00	11.00	19.00	14.00	195.48	
24	1.00	21.00	23.00	16.00	140.91	
25	1.00	74.00	25.00	15.00	89.700	
26	1.00	11.00	18.00	10.00	163.81	
27	1.00	20.00	21.00	14.00	172.75	
28	1.00	10.00	18.00	8.00	198.65	
29	1.00	12.00	7.00	14.00	139.46	
30	1.00	16.00	16.00	10.00	146.75	
31	1.00	272.00	245.00	54.00	116.58	
32	1.00	32.00	17.00	13.00	171.70	
33	1.00	28.00	27.00	14.00	180.79	
34	1.00	7.00	13.00	14.00	176.79	

38	1.00	16.00	16.00	16.00	149.61
39	1.00	12.00	21.00	17.00	140.13
40	1.00	21.00	16.00	16.00	122.76
41	1.00	17.00	17.00	18.00	211.67
42	1.00	23.00	21.00	21.00	172.92
43	1.00	16.00	19.00	23.00	133.34
44	1.00	13.00	16.00	19.00	204.11
45	1.00	19.00	18.00	18.00	140.98
46	1.00	20.00	16.00	14.00	150.82
47	1.00	16.00	20.00	14.00	172.40
48	1.00	25.00	27.00	11.00	153.15
49	1.00	17.00	21.00	11.00	143.39
50	1.00	16.00	20.00	24.00	183.77

TI-TI32 2/3

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
51	1.00	20.00	16.00	18.00	144.32	
52	1.00	13.00	22.00	13.00	210.37	
53	1.00	16.00	16.00	9.00	182.51	
54	1.00	20.00	14.00	9.00	142.60	
55	1.00	12.00	17.00	15.00	213.07	
56	1.00	22.00	19.00	20.00	144.38	
57	1.00	17.00	19.00	21.00	147.39	
58	1.00	13.00	29.00	16.00	184.61	
59	1.00	26.00	13.00	12.00	90.040	
60	1.00	13.00	16.00	21.00	170.96	
61	1.00	19.00	17.00	22.00	153.32	
62	1.00	14.00	23.00	13.00	220.79	
63	1.00	25.00	14.00	14.00	84.020	
64	1.00	18.00	17.00	13.00	146.97	
65	1.00	14.00	14.00	14.00	121.47	
66	1.00	13.00	19.00	17.00	201.60	
67	1.00	20.00	14.00	9.00	134.7	
68	1.00	16.00	21.00	15.00	[illegible]	
69	1.00	16.00	21.00	22.00	[illegible]	
70	1.00	16.00	20.00	18.00	[illegible]	
71	1.00	19.00	21.00	15.00	[illegible]	
72	1.00	15.00	18.00	19.00	[illegible]	
73	1.00	15.00	20.00	13.00	[illegible]	
74	1.00	21.00	18.00	21.00	[illegible]	
75	1.00	12.00	22.00	17.00	[illegible]	
76	1.00	16.00	24.00	16.00	[illegible]	
77	1.00	11.00	10.00	13.00	[illegible]	
78	1.00	14.00	18.00	17.00	[illegible]	
79	1.00	16.00	16.00	[illegible]		
80	1.00	29.00	13.00	17.00	[illegible]	
81	1.00	14.00	23.00	8.00	[illegible]	
82	1.00	102.00	19.00	13.00	[illegible]	
83	1.00	10.00	18.00	11.00	[illegible]	
84	1.00	53.00	18.00	21.00	[illegible]	
85	1.00	10.00	16.00	15.00	[illegible]	
86	1.00	17.00	22.00	13.00	[illegible]	
87	1.00	18.00	13.00	21.00	[illegible]	
88	1.00	18.00	27.00	14.00	[illegible]	
89	1.00	3171.00	370.00	[illegible]		
90	1.00	30.00	[illegible]			

94	1.00	14.00	19.00	16.00	233.06
[illegible]	[illegible]	[illegible]	20.00	19.00	191.04
[illegible]	[illegible]	[illegible]	26.00	15.00	133.14
97	1.00	20.00	20.00	13.00	157.25
98	1.00	14.00	14.00	12.00	154.25
99	1.00	10.00	16.00	14.00	170.51
100	1.00	10.00	18.00	10.00	187.15
101	1.00	19.00	26.00	16.00	163.99
102	1.00	16.00	15.00	24.00	125.08
103	1.00	19.00	20.00	13.00	123.18
104	1.00	15.00	14.00	16.00	137.53
105	1.00	26.00	24.00	20.00	188.28
106	1.00	19.00	23.00	15.00	161.30

T1-T132 3/3

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
107	1.00	13.00	20.00	16.00	206.21	
108	1.00	15.00	23.00	16.00	164.17	
109	1.00	17.00	21.00	15.00	165.31	
110	1.00	19.00	19.00	12.00	159.27	
111	1.00	14.00	14.00	12.00	120.94	
112	1.00	21.00	20.00	12.00	149.26	
113	1.00	14.00	19.00	14.00	148.58	
114	1.00	14.00	15.00	10.00	179.01	
115	1.00	24.00	14.00	12.00	146.46	
116	1.00	13.00	20.00	14.00	222.46	
117	1.00	17.00	17.00	11.00	189.43	
118	1.00	9.00	16.00	14.00	176.87	
119	1.00	16.00	19.00	13.00	145.50	
120	1.00	11.00	15.00	14.00	177.90	
121	1.00	7.00	15.00	20.00	169.91	
122	1.00	12.00	10.00	16.00	171.88	
123	1.00	11.00	21.00	11.00	175.91	
124	1.00	16.00	15.00	24.00	171.73	
125	1.00	15.00	12.00	15.00	118.71	
126	1.00	12.00	8.00	15.00	124.76	
127	1.00	11.00	16.00	21.00	125.84	
128	1.00	8.00	15.00	16.00	194.97	
129	1.00	14.00	8.00	16.00	130.73	
130	1.00	10.00	16.00	14.00	195.00	
131	1.00	15.00	9.00	12.00	121.97	
132	1.00	16.00	15.00	14.00	119.02	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/17/97 **Time:** 13:13

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.9%

Suspect Isotope(s): Tritium **Bkg (cpm):** 14.4

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-133	13	< LLD	-
T-134	15	1	-
T-135	24	16	-
T-136	15	1	-
T-137	13	< LLD	-
T-138	14	< LLD	-
T-139	10	< LLD	-
T-140	13	< LLD	-
T-141	14	< LLD	-
T-142	15	1	-
T-143	9	< LLD	-
T-144	16	3	-
T-145	24	16	-
T-146	21	11	-
T-147	19	8	-
T-148	17	4	-
T-149	13	< LLD	-
T-150	16	3	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-151	14	< LLD	-
T-152	14	< LLD	-
T-153	6	< LLD	-
T-154	15	1	-
T-155	18	6	-
T-156	16	3	-
T-157	16	3	-
T-158	13	< LLD	-
T-159	15	1	-
T-160	22	13	-
T-161	15	1	-
T-162	100	145	-
T-163	14	< LLD	-
T-164	22	13	-
T-165	11	< LLD	-
T-166	15	1	-
T-167	17	4	-
T-168	19	8	-

Comments:

Performed By: Michele R. Sutton 10/22/97 **Date:** 10/17/97

Reviewed By: [signature] **Date:** 1/7/98

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/17/97 **Time:** 13:13

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.9%

Suspect Isotope(s): Tritium **Bkg (cpm):** 14.4

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-169	17	4	-
T-170	18	6	-
T-171	8	< LLD	-
T-172	10	< LLD	-
T-173	22	13	-
T-174	12	< LLD	-
T-175	13	< LLD	-
T-176	18	6	-
T-177	36	37	-
T-178	25	18	-
T-179	21	11	-
T-180	20	10	-
T-181	33	32	-
T-182	16	3	-
T-183	22	13	-
T-184	22	13	-
T-185	13	< LLD	-
T-186	31	28	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-188	23	15	-
T-189	21	11	-
T-190	15	1	-
T-191	16	3	-
T-192	20	10	-
T-193	17	4	-
T-194	13	< LLD	-
T-195	25	18	-
T-196	17	4	-
T-197	15	1	-
T-198	16	3	-
T-199	21	11	-
T-200	18	6	-
T-201	11	< LLD	-
T-202	21	11	-

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/17/97

Reviewed By: **Date:**

T133-202 1/2

Protocol #: 8 Name:Campus Survey 17-Oct-97 13:13
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
1	1.00	13.00	22.00	23.00	175.99	
2	1.00	15.00	17.00	15.00	166.11	
3	1.00	24.00	22.00	13.00	167.58	
4	1.00	15.00	11.00	17.00	123.82	
5	1.00	13.00	19.00	11.00	155.23	
6	1.00	14.00	18.00	20.00	225.60	
7	1.00	10.00	15.00	10.00	123.39	
8	1.00	13.00	17.00	16.00	169.05	
9	1.00	14.00	12.00	10.00	109.26	
10	1.00	15.00	19.00	11.00	163.70	
11	1.00	9.00	28.00	17.00	192.64	
12	1.00	16.00	25.00	15.00	183.55	
13	1.00	24.00	23.00	25.00	146.97	
14	1.00	21.00	20.00	14.00	142.61	
15	1.00	19.00	17.00	14.00	192.46	
16	1.00	17.00	22.00	18.00	186.46	
17	1.00	13.00	10.00	21.00	150.93	
18	1.00	16.00	14.00	11.00	203.99	
19	1.00	14.00	15.00	10.00	192.32	
20	1.00	14.00	11.00	13.00	201.33	
21	1.00	6.00	20.00	18.00	194.14	
22	1.00	15.00	19.00	11.00	223.94	
23	1.00	18.00	20.00	14.00	143.42	
24	1.00	16.00	21.00	13.00	147.99	
25	1.00	16.00	15.00	13.00	80.570	
26	1.00	13.00	20.00	15.00	206.80	
27	1.00	15.00	17.00	22.00	168.77	
28	1.00	22.00	22.00	12.00	184.57	
29	1.00	15.00	20.00	19.00	151.67	
30	1.00	100.00	22.00	21.00	58.960	
31	1.00	14.00	22.00	8.00	177.12	
32	1.00	22.00	18.00	12.00	132.00	
33	1.00	11.00	20.00	10.00	186.69	
34	1.00	15.00	11.00	13.00	77.850	

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
170	38	1.00	18.00	19.00	18.00	144.15	
	39	1.00	8.00	16.00	16.00	142.10	
	40	1.00	10.00	24.00	20.00	257.41	
	41	1.00	22.00	15.00	18.00	101.57	
	42	1.00	12.00	16.00	14.00	164.34	
175	43	1.00	13.00	10.00	15.00	121.17	
	44	1.00	18.00	16.00	16.00	131.98	
	45	1.00	36.00	20.00	16.00	106.63	
	46	1.00	25.00	15.00	21.00	113.67	
	47	1.00	21.00	15.00	13.00	97.030	
180	48	1.00	20.00	14.00	12.00	94.780	
	49	1.00	33.00	12.00	15.00	106.03	
	50	1.00	16.00	27.00	15.00	153.81	
	51	1.00	22.00	19.00	18.00	137.56	
	52	1.00	22.00	22.00	23.00	183.37	
185	53	1.00	13.00	16.00	19.00	176.77	
	54	1.00	31.00	19.00	14.00	133.59	
	55	1.00	17.00	19.00	16.00	134.73	
	56	1.00	23.00	22.00	16.00	138.38	
	57	1.00	21.00	14.00	14.00	87.160	
190	58	1.00	15.00	17.00	20.00	133.36	
	59	1.00	16.00	21.00	13.00	170.93	
	60	1.00	20.00	19.00	17.00	100.91	
	61	1.00	17.00	14.00	6.00	117.16	
	62	1.00	13.00	25.00	12.00	120.53	
195	63	1.00	25.00	20.00	10.00	135.67	
	64	1.00	17.00	14.00	15.00	146.26	
	65	1.00	15.00	13.00	12.00	132.52	
	66	1.00	16.00	8.00	15.00	76.460	
	67	1.00	21.00	18.00	12.00	116.76	
200	68	1.00	18.00	23.00	17.00	208.45	
	69	1.00	11.00	10.00	9.00	179.83	
202	70	1.00	21.00	25.00	12.00	129.09	

T133-202 2/2

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 8:15

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.3%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.1

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-203	1087	1842	-
T-204	1023	1732	-
T-205	632	1062	-
T-206	35	38	-
T-207	32	32	-
T-208	25	20	-
T-209	50	63	-
T-210	25	20	-
T-211	21	14	-
T-212	45	55	-
T-213	41	48	-
T-214	29	27	-
T-215	19	10	-
T-216	32	32	-
T-217	18	8	-
T-218	23	17	-
T-219	25	20	-
T-220	289	473	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-221	22	15	-
T-222	17	7	-
T-223	27	24	-
T-224	21	14	-
T-225	42	50	-
T-226	18	8	-
T-227	20	12	-
T-228	22	15	-
T-229	19	10.	-
T-230	20	12	-
T-231	17	7	-
T-232	15	3	-
T-233	18	8	-
T-234	14	2	-
T-235	15	3	-
T-236	26	22	-
T-237	14	2	-
T-238	15	3	-

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/22/97

Reviewed By: [signature] **Date:** 1/7/98

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 8:15

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.3%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.1

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-239	195	312	-
T240	34	36	-
T-241	35	38	-
T-242	34	36	-
T-243	40	46	-
T-244	52	67	-
T-245	47	58	-
T-246	158	249	-
T-247	42	50	-
T-248	21	14	-
T-249	63	86	-
T-250	25	20	-
T-251	175	278	-
T-252	104	156	-
T-253	70	98	-
T-254	67	92	-
T-255	138	214	-
T-256	27	24	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-257	125	192	-
T-258	113	171	-
T-259	77	110	-

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/22/97

Reviewed By: **Date:**

T203 - 259 1/2

Protocol #: 8 Name:Campus Survey 22-Oct-97 08:15
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
203	1	1.00	1087.00	276.00	18.00	57.030	
	2	1.00	1023.00	214.00	32.00	50.070	
25	3	1.00	632.00	195.00	16.00	53.660	
	4	1.00	35.00	40.00	21.00	135.03	
	5	1.00	32.00	30.00	17.00	92.440	
	6	1.00	25.00	35.00	14.00	169.67	
	7	1.00	50.00	32.00	16.00	116.42	
210	8	1.00	25.00	32.00	17.00	165.99	
	9	1.00	21.00	29.00	13.00	184.79	
	10	1.00	45.00	29.00	10.00	79.920	
	11	1.00	41.00	35.00	17.00	132.94	
	12	1.00	29.00	19.00	10.00	112.38	
215	13	1.00	19.00	19.00	15.00	172.03	
	14	1.00	32.00	23.00	22.00	120.60	
	15	1.00	18.00	20.00	13.00	152.39	
	16	1.00	23.00	24.00	13.00	169.17	
	17	1.00	25.00	14.00	9.00	84.520	
220	18	1.00	289.00	126.00	19.00	59.260	
	19	1.00	22.00	16.00	9.00	148.68	
	20	1.00	17.00	22.00	18.00	168.89	
	21	1.00	27.00	14.00	15.00	103.54	
	22	1.00	21.00	19.00	15.00	118.52	
225	23	1.00	42.00	19.00	11.00	77.530	
	24	1.00	18.00	15.00	12.00	160.35	
	25	1.00	20.00	24.00	17.00	187.74	
	26	1.00	22.00	20.00	16.00	112.61	
	27	1.00	19.00	31.00	20.00	177.06	
0	28	1.00	20.00	22.00	8.00	127.29	
	29	1.00	17.00	21.00	12.00	165.27	
	30	1.00	15.00	19.00	25.00	173.14	
	31	1.00	18.00	20.00	11.00	160.28	
	32	1.00	14.00	23.00	13.00	161.38	
235	33	1.00	15.00	20.00	8.00	131.97	
		1.00	16.00	18.00	11.00	117.71	

240	38	1.00	34.00	27.00	17.00	116.61
	39	1.00	35.00	33.00	18.00	125.63
	40	1.00	34.00	35.00	12.00	127.89
	41	1.00	40.00	50.00	13.00	112.72
	42	1.00	52.00	35.00	7.00	101.76
245	43	1.00	47.00	38.00	13.00	88.960
	44	1.00	158.00	58.00	19.00	68.020
	45	1.00	42.00	38.00	15.00	130.92
	46	1.00	31.00	24.00	16.00	153.79
	47	1.00	63.00	58.00	21.00	114.08
250	48	1.00	25.00	26.00	10.00	134.12
	49	1.00	175.00	105.00	21.00	71.720
	50	1.00	104.00	97.00	16.00	78.050

T203-259 2/2

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
	51	1.00	70.00	39.00	11.00	75.220	
	52	1.00	67.00	49.00	14.00	77.680	
255	53	1.00	138.00	48.00	17.00	57.060	
	54	1.00	27.00	21.00	17.00	108.43	
	55	1.00	125.00	42.00	23.00	69.260	
	56	1.00	113.00	68.00	17.00	81.550	
259	57	1.00	77.00	37.00	27.00	102.86	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/20/97 **Time:** 10:39

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.6%

Suspect Isotope(s): Tritium **Bkg (cpm):** 11.3

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-260	26	25	-
T-261	16	8	-
T-262	20	15	-
T-263	28	28	-
T-264	24	22	-
T-265	26	25	-
T-266	22	18	-
T-267	17	10	-
T-268	26	25	-
T-269	18	11	-
T-270	34	39	-
T-271	21	17	-
T-272	33	37	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/20/97

Reviewed By: Date ??? **Date:** 1/7/98

T 260-272 1/1

Protocol #: 9 Name:Campus Survey 20-Oct-97 10:39
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
1	1.00	26.00	16.00	12.00	154.88	
2	1.00	16.00	18.00	13.00	182.19	
3	1.00	20.00	22.00	20.00	142.24	
4	1.00	28.00	25.00	11.00	150.99	
5	1.00	24.00	19.00	17.00	90.990	
6	1.00	26.00	18.00	20.00	109.43	
7	1.00	22.00	23.00	13.00	161.21	
8	1.00	17.00	27.00	12.00	164.07	
9	1.00	26.00	19.00	11.00	119.01	
10	1.00	18.00	24.00	14.00	152.40	
11	1.00	34.00	14.00	8.00	123.91	
12	1.00	21.00	18.00	14.00	132.96	
13	1.00	33.00	25.00	5.00	147.65	

RS-112 (8-96)

Liquid Scintillation
Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 9:31

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.3%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.1

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-273	24	19	-
T-274	74	104	-
T-275	82	118	-
T-276	85	123	-
T-277	20	12	-
T-278	95	140	-
T-279	51	65	-
T-280	86	125	-
T-281	22	15	-
T-282	18	8	-
T-283	20	12	-
T-284	13	< LLD	-
T-285	14	2	-
T-286	20	12	-
T-287	16	5	-
T-288	22	15	-
T-289	20	12	-
T-290	30	29	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-291	20	12	-
T-292	41	48	-
T-293	22	15	-
T-294	36	39	-
T-295	31	31	-
T-296	28	26	-
T-297	25	20	-
T-298	23	17	-
T-299	23	17	-
T-300	37	41	-

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/22/97

Reviewed By: Nate [illegible] **Date:** 1/7/98

T 273 - T300 1/1

Protocol #: 9 Name:Campus Survey 22-Oct-97 09:31
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
273	1	1.00	24.00	28.00	16.00	163.77	
	2	1.00	74.00	13.00	17.00	42.910	
75	3	1.00	82.00	13.00	12.00	47.890	
	4	1.00	85.00	17.00	13.00	64.050	
	5	1.00	20.00	19.00	11.00	147.20	
	6	1.00	95.00	40.00	18.00	81.380	
	7	1.00	51.00	30.00	13.00	99.900	
280	8	1.00	86.00	71.00	19.00	122.80	
	9	1.00	22.00	26.00	15.00	155.58	
	10	1.00	18.00	15.00	10.00	167.50	
	11	1.00	20.00	15.00	13.00	151.34	
	12	1.00	13.00	15.00	14.00	171.67	
285	13	1.00	14.00	22.00	22.00	166.42	
	14	1.00	20.00	19.00	13.00	162.35	
	15	1.00	16.00	17.00	17.00	117.45	
	16	1.00	22.00	20.00	20.00	116.09	
	17	1.00	20.00	15.00	20.00	112.58	
290	18	1.00	30.00	28.00	11.00	127.01	
	19	1.00	20.00	17.00	17.00	136.77	
	20	1.00	41.00	45.00	18.00	122.24	
	21	1.00	22.00	23.00	10.00	132.90	
	22	1.00	36.00	14.00	11.00	61.550	
295	23	1.00	31.00	18.00	16.00	116.05	
	24	1.00	28.00	22.00	17.00	121.47	
	25	1.00	25.00	21.00	21.00	123.61	
	26	1.00	23.00	14.00	14.00	117.85	
300	27	1.00	23.00	14.00	15.00	92.430	
10	28	1.00	37.00	19.00	19.00	103.63	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey Date: 10/20/97 Time: 10:32

Counter Used: TriCarb 2000CA Region: A Efficiency: 58.6%

Suspect Isotope(s): Tritium Bkg (cpm): 11.3

Survey Instr. Model: - Serial #: - Cal. Due Date: -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-301	24	22	-
T-302	11	< LLD	-
T-303	10	< LLD	-
T-304	11	< LLD	-
T-305	17	10	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: _____

Performed By: Michele R. Sutton MRS 10/22/97 Date: 10/20/97

Reviewed By: _____ Date: _____

T301-T305 1/1

Protocol #: 8 Name:Campus Survey 20-Oct-97 10:32
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
1	1.00	24.00	17.00	17.00	139.79	
2	1.00	11.00	15.00	15.00	163.27	
3	1.00	10.00	20.00	13.00	198.68	
4	1.00	11.00	16.00	14.00	212.51	
5	1.00	17.00	17.00	13.00	153.98	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 10:08

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.3%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.1

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-306	328	540	-
T-307	93	137	-
T-308	321	528	-
T-309	58	77	-
T-310	147	230	-
T-311	112	170	-
T-312	43	51	-
T-313	76	108	-
T-314	36	39	-
T-315	17	7	-
T-316	24	19	-
T-317	35	38	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/22/97

Reviewed By: Nate [illegible] **Date:** 1/7/98

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 10:08

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.3%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.1

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-318	58	77	-
T-319	23	17	-
T-320	46	56	-
T-321	20	12	-
T-322	450	749	-
T-323	164	259	-
T-326	45	55	-
T-327	32	32	-
T-328	16	5	-
T-329	1268	2152	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/22/97

Reviewed By: Nate Frye **Date:** 1/7/98

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey Date: 10/23/97 Time: 16:25

Counter Used: TriCarb 2000CA Region: A Efficiency: 57.8%

Suspect Isotope(s): Tritium Bkg (cpm): 12.4

Survey Instr. Model: - Serial #: - Cal. Due Date: -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-324	128	200	-
T-325	485	818	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 Date: 10/23/97

Reviewed By: Date:

T324 - T385

Protocol #: 9 Name:Campus Survey 23-Oct-97 16:25
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
1	1.00	128.00	71.00	10.00	84.780	
2	1.00	485.00	189.00	30.00	69.980	

RS-112 (8-96)

Liquid Scintillation
Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 15:23

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.3%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.1

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-162	18	8	-
T-203	1021	1729	-
T-204	971	1643	-
T-205	691	1163	-
T-239	167	264	-
T-246	156	245	-
T-251	163	257	-
T-252	120	183	-
T-255	142	221	-
T-257	124	190	-
T-258	109	164	-
T-306	337	556	-
T-308	300	492	-
T-310	183	291	-
T-311	104	156	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Recount

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/22/97

Reviewed By: Nate TTT **Date:** 1/7/98

RS-112 (8-96)

Liquid Scintillation
Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 15:23

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.3%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.1

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-322	428	712	-
T-323	176	279	-
T-329	1333	2264	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Recount

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/22/97

Reviewed By: Nat TTT **Date:** 1/7/98

Recount

Protocol #:10 Name:Campus Survey 22-Oct-97 17:18
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
322	1	1.00	428.00	334.00	52.00	96.640	
323	2	1.00	176.00	115.00	21.00	85.640	
329	3	1.00	1333.00	381.00	38.00	53.460	

RS-112 (8-96)

Liquid Scintillation
Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/17/97 **Time:** 10:36

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.9%

Suspect Isotope(s): Tritium **Bkg (cpm):** 14.4

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-6	3495	5909	-
T-7	1391	2337	-
T-9	259	415	-
T-18	59	76	-
T-31	285	459	-
T-82	28	23	-
T-89	3286	5554	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Recount

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/17/97

Reviewed By: [signature] **Date:** 1/7/98

Recount

Protocol #: 8 Name:Campus Survey 17-Oct-97 10:36
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
T-6	1	1.00	3495.00	285.00	8.00	20.910	
T-7	2	1.00	1391.00	148.00	19.00	26.890	
T-9	3	1.00	259.00	124.00	22.00	86.890	
T-18	4	1.00	59.00	15.00	17.00	82.870	
T-31	5	1.00	285.00	228.00	53.00	120.45	
T-82	6	1.00	28.00	16.00	15.00	93.190	
T-89	7	1.00	3286.00	832.00	00.00	45.550	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/14/97 **Time:** 14:38

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.8%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
LIQ-1	46.6	56	-
LIQ-2	33	33	-
LIQ-3	47.6	58	-
LIQ-4	32.45	33	-
LIQ-5	35.95	38	-
LIQ-6	32.5	33	-
LIQ-7	39.65	45	-
LIQ-8	1394.95	2311	-
LIQ-9	13.5	1	-
LIQ-10	14.05	2	-
LIQ-11	883.35	1455	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/14/97

Reviewed By: Nate [illegible] **Date:** 1/7/98

LIQ 1 – LIQ11

Protocol #:11 Name:H-3 20 min 14-Oct-97 14.38
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

LIQ	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
1	1	20.00	46.60	17.00	16.60	93.840	
2	2	20.00	33.00	19.50	15.20	120.45	
3	3	20.00	47.60	18.95	14.45	99.930	
4	4	20.00	32.45	17.40	14.75	112.34	
8	5	20.00	1394.95	382.00	18.95	52.720	
7	6	20.00	39.65	18.60	13.80	109.17	
5	7	20.00	35.95	17.60	14.65	111.05	
9	8	20.00	13.50	20.70	14.90	183.86	
10	9	20.00	14.05	20.35	15.00	188.42	
6	10	20.00	32.50	19.70	14.30	129.27	
11	11	20.00	883.35	19.20	4.35	11.160	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/15/97 **Time:** 16:42

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.7%

Suspect Isotope(s): Tritium **Bkg (cpm):** 12.8

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
LIQ-12	3628.75	6057	-
LIQ-13	56.05	72	-
LIQ-14	272252	456012	-
LIQ-15	319.9	514	-
LIQ-16	13344.8	22332	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/15/97

Reviewed By: Nate Fry **Date:** 1/7/98

LIQ 12 - LIQ16

Protocol #:11 Name:H-3 20 min 15-Oct-97 16.42
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
12	1	20.00	3628.75	135.75	34.10	25.160	
13	2	20.00	56.05	18.60	10.20	72.240	
14	3	20.00	272252.	506.80	40.25	17.620	
15	4	20.00	319.90	22.90	7.40	25.590	
16	5	20.00	13344.8	29.85	15.25	16.560	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/10/97 **Time:** 10:32

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.9%

Suspect Isotope(s): Tritium **Bkg (cpm):** 14.4

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
LIQ-17	16.45	3	-
LIQ-18	13	< LLD	-
BIOMED	81.5	112	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/27/97 **Date:** 10/10/97

Reviewed By: Nate Hyatt **Date:** 1/7/98

LIQ 17 - 18 , BIOMED DRAIN

Protocol #:11 Name:H-3 20 min 10-Oct-97 10:32
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
DALNEY ST	-1	20.00	13.00	17.10	14.00	171.73	LIQ 18
DE SIN	-2	20.00	16.45	17.25	13.75	170.40	LIQ 17
J DRAIN	-3	20.00	81.50	18.25	14.15	67.040	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/10/97 **Time:** 14:27

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.9%

Suspect Isotope(s): Tritium **Bkg (cpm):** 14.4

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
BIOMED	85.55	119	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Recount BIOMED.

Performed By: Michele R. Sutton **Date:** 10/10/97

Reviewed By: Nat Frey **Date:** 1/7/98

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/21/97 **Time:** 9:00

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.5%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.3

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
PT-1	986.8	1664	-
PT-2	461.45	766	-
PT-3	52.65	67	-
BS-1	41.6	48	-
BS-2	36.15	39	-
BS-3	65.75	90	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Concrete Samples

Performed By: Michele R. Sutton MRS 10/21/97 **Date:** 10/21/97

Reviewed By: Nate Fry **Date:** 1/7/98

Concrete Samples

Protocol #:11 Name:H-3 20 min 21-Oct-97 09:00
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
PT 1	1	20.00	986.80	134.85	37.30	46.670	
	2	20.00	461.45	140.00	61.35	72.220	
	3	20.00	52.65	26.15	14.45	96.000	
S1	4	20.00	41.60	23.15	15.50	113.20	
BS2	5	20.00	36.15	22.10	16.15	109.16	
BS3	6	20.00	65.75	30.65	15.15	97.520	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 13:47

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 57.8%

Suspect Isotope(s): Tritium **Bkg (cpm):** 12.4

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
BS-4	57.1	77	-
BS-5	37.75	44	-
BS-6	55.36	74	-
BS-7	58.35	79	-
BS-8	38.65	45	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Concrete Samples

Performed By: Michele R. Sutton **Date:** 10/23/97

Reviewed By: **Date:**

BS4 - BS8

Protocol #:11 Name:H-3 20 min 23-Oct-97 13:47
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
1	20.00	57.10	22.30	17.20	91.070	
2	20.00	37.75	21.25	15.90	111.01	
3	20.00	55.35	24.50	15.35	93.300	
4	20.00	58.35	23.75	15.30	91.940	
5	20.00	38.65	23.70	15.40	122.03	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/15/97 **Time:** 11:02

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.7%

Suspect Isotope(s): Tritium **Bkg (cpm):** 12.8

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
LIQ-8	1394.65	2315	-
LIQ-11	726.85	1196	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Recount LIQ-8 and LIQ-11.

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/15/97

Reviewed By: Nate [illegible] **Date:** 1/7/98

Recount LIQ 8 & LIQ11

Protocol #:11 Name:H-3 20 min 15-Oct-97 11:0_
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
LIQ 8	1	20.00	1394.65	376.45	18.95	51.800	
) 11	2	20.00	726.85	20.80	4.35	13.210	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/11/97 **Time:** 7:42

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.8%

Suspect Isotope(s): Tritium **Bkg (cpm):** 12.8

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
BIOMED1	21	14	-
BIOMED2	22	15	-
BIOMED3	22	15	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Area around BIOMED.

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/11/97

Reviewed By: Nate Frey **Date:** 1/7/98

BIOMED

Protocol #: 9 Name:Campus Survey 11-Oct-97 07:42
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
BIOMED 1	1	1.00	21.00	24.00	29.00	196.16	
BI 2	2	1.00	22.00	30.00	14.00	160.40	
CO 3	3	1.00	22.00	25.00	17.00	170.33	

Gamma Spectrometer

Soil and liquid samples were counted for 1-hr on the gamma spectrometer (EG & G High Purity Germanium Detector, Model # GEM-20180-P, S/N 333-TP10921A). Contaminated smears and point samples were counted for 10-min.

Radioactivity Concentrations in Background Soil Samples

Sample ID	Location	Radionuclides	Activity (in pCi/g)
BG-1	Vacant Lot Behind 763 Techwood Drive	K-40	1.56×10^{4}
		Th-232	1.10×10^{3}
		U-238	7.07×10^{2}
BG-2	Vacant Lot Behind 763 Techwood Drive	K-40	9.32×10^{3}
		Th-232	5.11×10^{2}
		U-238	4.47×10^{2}
BG-3	Vacant Lot Behind 763 Techwood Drive	K-40	2.24×10^{1}
		Kr-85	8.21×10^{1}
		Th-232	1.32×10^{0}
		U-238	9.58×10^{-1}
BG-4	Vacant Lot Behind 763 Techwood Drive	K-40	2.19×10^{1}
		Th-232	1.39×10^{0}
		U-238	<BKG
BG-5	Vacant Lot Behind 763 Techwood Drive	K-40	1.9×10^{1}
		Th-232	1.08×10^{0}
		U-238	<BKG
BG1-5Comp	Vacant Lot Behind 763 Techwood Drive	K-40	1.98×10^{1}
		Th-232	1.08×10^{0}
		U-238	8.93×10^{-1}
BG-6A	Vacant Lot Behind 763 Techwood Drive	K-40	2.42×10^{1}
		Th-232	1.48×10^{0}
		U-238	1.39×10^{0}

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : BG-1

Sample Size	1.00e+000 g	Spectrum File	TEMP.SPC
Sampling Start	10-08-97 11:07	Counting Start	10-08-97 11:07
Sampling Stop	10-08-97 11:07	Live Time	3600 Sec
Current Date	10-11-97 10:28	Real Time	[illegible] Sec

Detector #: 22

Energy(keV) = 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 / 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	78.01	145.06	93	42	75	686	1.09	
2	209.44	418.30	57	32	59	387	1.02	NET < CL
3	238.83	479.39	493	36	51	357	1.17	
4	295.24	596.68	148	24	36	179	1.51	
5	338.31	686.21	108	26	45	202	1.37	
6	351.81	714.28	229	26	40	175	0.93	
7	510.03	1043.21	108	21	35	123	1.74	
8	582.42	1193.71	227	19	21	48	1.59	
9	608.49	1247.92	161	20	28	81	1.65	
10	909.38	1873.46	131	17	23	50	1.78	
11	967.35	1993.99	89	14	20	40	2.14	
12	1457.40	3012.80	400	22	16	21	1.86	
13	1760.09	3642.10	41	9	12	12	2.32	

Neely Nuclear Research Center

Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: BG-1

Sample Size . . . . . 1.00e+000 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-08-97 11:07	Counting Start. 10-08-97 11:07
Sampling Stop 10-08-97 11:07	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-11-97 10:28	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001] 12-05-96 10:47

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 HalfLives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	78.01	93	U-238	77.11	0.1070	6.26e-003	1.00e+000	1.04e+003
1	78.01	93	TH-232	77.11	0.1750	6.26e-003	1.01e+000	6.32e+002
1	78.01	93	Hg-197	77.35	0.1900	6.26e-003	9.95e-001	5.91e+002
1	78.01	93	Pt-197	77.35	0.1700	6.26e-003	9.81e-001	6.69e+002
1	78.01	93	Fr-223	80.00				
1	78.01	93	Ce-144	80.00	0.0200	6.26e-003	1.00e+000	5.58e+003
1	78.01	93	Hg-197	80.20	0.0340	6.26e-003	9.95e-001	3.30e+003
1	78.01	93	Hg-199m	80.20	0.1110	6.26e-003	3.31e-001	3.04e+003
1	78.01	93	Xe-133	80.99	0.3700	6.26e-003	9.97e-001	3.02e+002
1	78.01	93	Ba-133	81.00	0.3429	6.26e-003	1.00e+000	3.26e+002
1	78.01	93	U-235	81.07	0.1480	6.26e-003	1.00e+000	7.54e+002
1	78.01	93	U-235	83.78	0.2460	6.26e-003	1.00e+000	4.54e+002
3	238.83	493	Xe-133m	233.20	0.1000	8.24e-003	9.94e-001	4.52e+003
3	238.83	493	Fr-223	234.60				
3	238.83	493	Th-227	236.00				
3	238.83	493	U-235	236.00	0.1100	8.24e-003	1.00e+000	4.08e+003
3	238.83	493	TH-232	238.63	0.4310	8.24e-003	1.01e+000	1.03e+003
3	238.83	493	Te-131m	240.93	0.0755	8.24e-003	9.89e-001	6.02e+003
3	238.83	493	Ra-224	241.08				
3	238.83	493	Xe-125	243.40	0.2871	8.24e-003	9.80e-001	1.60e+003
3	238.83	493	IN-116M	244.59	0.0038	8.24e-003	6.99e-001	1.69e+005
3	238.83	493	Eu-152	244.67	0.0772	8.24e-003	1.00e+000	5.82e+003
4	295.24	148	Ce-143	293.26	0.4200	7.01e-003	9.90e-001	3.82e+002
4	295.24	148	U-238	295.22	0.1920	7.01e-003	1.00e+000	8.24e+002
4	295.24	148	Ir-192	295.96	0.2872	7.01e-003	1.00e+000	5.52e+002
4	295.24	148	Tl-210	296.00				
4	295.24	148	Ag-113	298.40	0.0900	7.01e-003	9.38e-001	1.88e+003
4	295.24	148	TB-160	298.57	0.2740	7.01e-003	1.00e+000	5.79e+002
4	295.24	148	Pa-231	299.90				
4	295.24	148	Pa-233	300.10	0.0633	7.01e-003	9.99e-001	2.51e+003
4	295.24	148	Ga-67	300.20	0.1900	7.01e-003	9.96e-001	8.38e+002
5	338.31	108	Mg-27	332.73	0.0100	6.27e-003	2.25e-001	5.75e+004
5	338.31	108	Au-196	332.90	0.2300	6.27e-003	9.98e-001	5.63e+002

5	338.31	108	Te-131m	334.27	0.0950	6.27e-003	1.00e+000	1.17e-003
5	338.31	108	Np-239	334.30	0.0210	6.27e-003	9.99e-001	5.31e-003
5	338.31	108	In-115m	336.20	0.4590	6.27e-003	9.97e-001	2.04e-002
5	338.31	108	Ru-95	336.40	0.7100	6.27e-003	9.97e-001	2.03e-002
5	338.31	108	TH-232	338.40	0.1201	6.27e-003	1.01e+000	1.07e-003
5	338.31	108	Ra-223	338.60				
5	338.31	108	Ac-228	338.70				
5	338.31	108	Cs-136	340.60	0.4890	6.27e-003	9.99e-001	2.65e-002
5	338.31	108	Cs-136	340.60	0.4676	6.27e-003	9.99e-001	2.77e-002
5	338.31	108	HF-175	343.40	0.8692	6.27e-003	1.00e+000	1.49e-002
5	338.31	108	EU-152M	344.20	0.0250	6.27e-003	9.64e-001	5.37e-003
5	338.31	108	Eu-152	344.30	0.2720	6.27e-003	1.00e+000	4.75e-002
6	351.81	229	HF-181	345.95	0.1400	6.07e-003	1.00e+000	2.02e-003
6	351.81	229	Ho-167	346.50	0.5700	6.07e-003	8.96e-001	5.54e-002
6	351.81	229	Pt-197m	346.50	0.1110	6.07e-003	8.03e-001	3.15e-003
6	351.81	229	Na-24	346.55	0.0100	6.07e-003	9.77e-001	2.00e-004
6	351.81	229	Bi-211	351.00				
6	351.81	229	U-235	351.10	0.1200	6.07e-003	1.00e+000	2.36e-003
6	351.81	229	U-238	351.99	0.3710	6.07e-003	1.00e+000	7.61e-002
6	351.81	229	Au-196	355.70	0.8760	6.07e-003	9.98e-001	3.24e-002
6	351.81	229	Ba-133	356.00	0.6200	6.07e-003	1.00e+000	4.57e-002
7	510.03	108	Mo-101	505.88	0.1135	4.44e-003	3.31e-001	4.86e+003
7	510.03	108	Te-121	507.59	0.1767	4.44e-003	9.99e-001	1.03e+003
7	510.03	108	Tl-208	510.72				
7	510.03	108	Kr-79	511.00	0.1500	4.44e-003	9.90e-001	1.23e+003
7	510.03	108	Annihila	511.00	1.0000	4.44e-003	1.00e+000	1.83e+002
7	510.03	108	Zn-71m	511.55	0.2806	4.44e-003	9.17e-001	7.10e+002
7	510.03	108	Rh-106m	511.70	0.8640	4.44e-003	8.56e-001	2.47e+002
7	510.03	108	KR-85	514.00	0.0041	4.44e-003	1.00e+000	4.46e+004
8	582.42	227	Tl-208	583.14				
8	582.42	227	TH-232	583.14	0.3090	3.96e-003	1.01e+000	1.38e+003
9	608.49	161	Sb-124	602.72	0.9830	3.82e-003	1.00e+000	3.22e+002
9	608.49	161	Cs-134	604.66	0.9756	3.82e-003	1.00e+000	3.25e+002
9	608.49	161	Kr-79	606.10	0.0810	3.82e-003	9.90e-001	3.95e+003
9	608.49	161	Sb-125	606.82	0.0520	3.82e-003	1.00e+000	6.09e+003
9	608.49	161	Bi-214	609.30				
9	608.49	161	U-238	609.32	0.4609	3.82e-003	1.00e+000	6.86e+002
9	608.49	161	Ir-192	612.45	0.0543	3.82e-003	1.00e+000	5.83e+003
9	608.49	161	Ag-108m	614.37	0.9320	3.82e-003	1.00e+000	3.40e+002
10	909.38	131	TH-232	911.07	0.2900	2.70e-003	1.01e+000	1.24e+003
10	909.38	131	Ac-228	911.20				
10	909.38	131	Sb-129	914.60	0.2140	2.70e-003	9.25e-001	1.84e+003
11	967.35	89	TB-160	962.36	0.1000	2.56e-003	1.00e+000	2.61e+003
11	967.35	89	EU-152M	963.50	0.1200	2.56e-003	9.64e-001	2.26e+003
11	967.35	89	Eu-152	964.00	0.1433	2.56e-003	1.00e+000	1.82e+003
11	967.35	89	Ac-228	964.40				
11	967.35	89	TB-160	966.17	0.2550	2.56e-003	1.00e+000	1.02e+003
11	967.35	89	Ac-228	968.80				
11	967.35	89	TH-232	968.90	0.1746	2.56e-003	1.01e+000	1.48e+003
12	1457.40	400	K-40	1460.81	0.1070	1.80e-003	1.00e+000	1.56e+004
13	1760.09	41	U-238	1764.28	0.1504	1.53e-003	1.00e+000	1.33e+003
13	1760.09	41	Bi-214	1764.50				

INITIAL NUCLIDE EVALUATION

clide	Energy	Fraction	Status	Halflives
J-238	77.11	0.1070	Present	
	295.22	0.1920	Present	

	[illegible]	[illegible]	Present					
	[illegible]	[illegible]	Present					
	1764.28	0.1804	Present					
	Total	1.2813	PRESENT		1.2813	1.2813 =	[illegible]	[illegible]
TH-232	77.11	0.1750	Present					
	238.63	0.4310	Present					
	338.40	0.1201	Present					
	583.14	0.3090	Present					
	911.07	0.2900	Present					
	968.90	0.1746	Present					
	Total	1.4997	PRESENT	(	1.4997/	1.4997 =	100.0000 %	[illegible]
Hg-197	77.35	0.1900	Present					
	80.20	0.0340	Present					
	191.38	0.0057	Absent					
	268.73	0.0005	Absent					
	Total	0.2302	PRESENT	(	0.2240/	0.2302 =	[illegible] %	[illegible]
Pt-197	77.35	0.1700	Present					
	191.31	0.0350	Absent					
	Total	0.2050	PRESENT	(	0.1700/	0.2050 =	82.9268 %	[illegible]
Fr-223	80.00	0.0001	Unable to Calc					
	234.60	0.0001	Unable to Calc					
	Total	0.0002	PRESENT	(	0.0002/	0.0002 =	100.0000 %	[illegible]
Ce-144	80.00	0.0200	Present					
	133.54	0.1110	Absent					
	Total	0.1310	ABSENT	(	0.0200/	0.1310 =	15.2672 %)	[illegible]
Hg-199m	80.20	0.1110	Present					
	158.37	0.5840	Absent					
	374.10	0.1380	Absent					
	Total	0.8330	ABSENT	(	0.1110/	0.8330 =	13.3253 %)	0.000
Xe-133	80.99	0.3700	Present					
	Total	0.3700	PRESENT	(	0.3700/	0.3700 =	100.0000 %)	0.000
[illegible]-133	81.00	0.3429	Present					
	276.40	0.0709	Absent					
	302.85	0.1816	Absent					
	356.00	0.6200	Present					
	383.85	0.0897	Absent					
	Total	1.3051	ABSENT	(	0.9629/	1.3051 =	73.7798 %)	0.000
U-235	81.07	0.1480	Present					
	83.78	0.2460	Present					
	143.76	0.1050	Absent					
	185.72	0.5400	Absent					
	236.00	0.1100	Present					
	269.60	0.1340	Absent					
	351.10	0.1200	Present					
	Total	1.4030	ABSENT	(	0.6240/	1.4030 =	44.4761 %)	0.000
TB-160	86.80	0.1340	Absent					
	197.04	0.0524	Absent					
	215.65	0.0402	Absent					
	298.57	0.2740	Present					
	876.37	0.3000	Absent					
	962.36	0.1000	Present					
	966.17	0.2550	Present					
	1177.95	0.1550	Absent					
	1271.88	0.0760	Absent					
	Total	1.3866	ABSENT	(	0.6290/	1.3866 =	45.3628 %)	0.000
HF-175	89.36	0.0235	Absent					
	343.40	0.8692	Present					
	432.80	0.0156	Absent					
	Total	0.9083	PRESENT	(	0.8692/	0.9083 =	95.6952 %)	0.000
Ga-67	93.30	0.3800	Absent					

	[illegible]	[illegible]	Absent					
	[illegible]	[illegible]	Present					
	Total	[illegible]	ABSENT	[illegible]	[illegible]	=	[illegible]	[illegible]
Te-131m	182.06	0.0790	Absent					
	249.71	0.2054	Absent					
	280.63	0.0752	Absent					
	340.93	0.0755	Present					
	384.27	0.0952	Present					
	452.30	0.0567	Absent					
	773.67	0.3800	Absent					
	782.49	0.0775	Absent					
	793.75	0.1380	Absent					
	822.78	0.0609	Absent					
	852.21	0.2093	Absent					
	1125.46	0.1137	Absent					
	1206.60	0.0971	Absent					
	Total	1.6635	ABSENT	(0.1707/	1.6635	=	[illegible]	[illegible]
Np-239	106.10	0.2320	Absent					
	209.80	0.0410	Absent					
	228.10	0.1270	Absent					
	277.60	0.1420	Absent					
	315.90	0.0150	Absent					
	334.30	0.0200	Present					
	Total	0.5770	ABSENT	(0.0200/	0.5770	=	3.4662 %)	0.000
EU-152M	121.78	0.0720	Absent					
	344.20	0.0250	Present					
	841.60	0.1470	Absent					
	963.50	0.1200	Present					
	Total	0.3640	ABSENT	(0.1450/	0.3640	=	39.8352 %)	0.000
Eu-152	121.78	0.3068	Absent					
	244.67	0.0772	Present					
	344.30	0.2720	Present					
	778.90	0.1272	Absent					
	964.00	0.1433	Present					
	1085.80	0.1010	Absent					
	1112.07	0.1340	Absent					
	1408.08	0.2073	Absent					
	Total	1.3688	ABSENT	(0.4925/	1.3688	=	35.9804 %)	0.000
HF-181	133.05	0.4300	Absent					
	136.25	0.0610	Absent					
	345.95	0.1400	Present					
	482.16	0.8600	Absent					
	Total	1.4910	ABSENT	(0.1400/	1.4910	=	9.3897 %)	0.000
IN-116M	137.92	0.0350	Absent					
	244.59	0.0038	Present					
	416.88	0.2937	Absent					
	463.13	0.0083	Absent					
	818.65	0.1372	Absent					
	1097.23	0.6791	Absent					
	1293.49	1.0000	Absent					
	1507.50	0.1186	Absent					
	1601.12	0.0107	Absent					
	1752.42	0.0289	Absent					
	2212.21	0.1858	Absent					
	Total	2.5011	ABSENT	(0.0038/	2.5011	=	0.1519 %)	0.000
Pa-223	144.30	0.0001	Absent					
	154.30	0.0001	Absent					
	269.60	0.0001	Absent					
	338.60	0.0001	Unable to Calc					
	Total	0.0004	ABSENT	(0.0001/	0.0004	=	25.0000 %)	0.000

[illegible]	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Unable to Calc				
	743.8	0.7140	Absent				
	1014.80	0.3860	Absent				
	Total	1.0170	ABSENT	0.0100	1.0170 =	[illegible]	[illegible]
-125	176.29	0.0630	Absent				
	380.51	0.0140	Absent				
	427.95	0.2960	Absent				
	463.51	0.1000	Absent				
	600.77	0.1840	Absent				
	606.82	0.0520	Present				
	636.15	0.1120	Absent				
	671.66	0.0180	Absent				
	Total	0.8390	ABSENT	(0.0520/	0.8390 =	6.1979 %)	0.000
Xe-125	188.43	0.5500	Absent				
	243.40	0.2871	Present				
	Total	0.8371	ABSENT	0.2871/	0.8371 =	34.2970 %)	0.000
Mo-101	191.93	0.1810	Absent				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				
	1012.35	0.1135	Absent				
	Total	0.6670	ABSENT	(0.1135/	0.6670 =	17.0165 %)	0.000
Ac-228	209.50	0.0001	Absent				
	338.70	0.0001	Unable to Calc				
	790.50	0.0001	Absent				
	911.20	0.0001	Unable to Calc				
	964.40	0.0001	Unable to Calc				
	968.80	0.0001	Unable to Calc				
	Total	0.0006	ABSENT	(0.0004/	0.0006 =	66.6667 %)	0.000
-133m	233.20	0.1000	Present				
	Total	0.1000	PRESENT	(0.1000/	0.1000 =	100.0000 %)	0.000
Th-227	236.00	0.0001	Unable to Calc				
	329.90	0.0001	Absent				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
Ra-224	241.08	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Kr-79	261.30	0.1270	Absent				
	397.50	0.0950	Absent				
	511.00	0.1500	Present				
	606.10	0.0810	Present				
	Total	0.4530	ABSENT	(0.2310/	0.4530 =	50.9934 %)	0.000
Pa-231	283.60	0.0001	Absent				
	299.90	0.0001	Unable to Calc				
	302.50	0.0001	Absent				
	Total	0.0003	ABSENT	(0.0001/	0.0003 =	33.3333 %)	0.000
Ce-143	293.26	0.4200	Present				
	664.55	0.0525	Absent				
	721.96	0.0512	Absent				
	Total	0.5237	PRESENT	(0.4200/	0.5237 =	80.1986 %)	0.000
Ir-192	295.96	0.2872	Present				
	308.46	0.2965	Absent				
	316.51	0.8290	Absent				
	468.06	0.4808	Absent				
	612.45	0.0543	Present				
	Total	1.9478	ABSENT	(0.3415/	1.9478 =	17.5326 %)	0.000
-210	296.00	0.0001	Unable to Calc				
	795.00	0.0001	Absent				
	1060.00	0.0001	Absent				
	1210.00	0.0001	Absent				

	[illegible]	0.0001	Absent			
	Total	0.0006	ABSENT	0.0001	0.0006 = [illegible]	
Ag-111	108.40	0.0900	Present			
	Total	0.0900	PRESENT	0.0900	0.0900 = 100.0000 %	0.000
Pa-233	300.10	0.0633	Present			
	311.90	0.3700	Absent			
	Total	0.4333	ABSENT	0.0633	0.4333 = 14.6088 %	0.000
Ho-167	321.30	0.2390	Absent			
	346.50	0.5700	Present			
	Total	0.8090	ABSENT (	0.5700/	0.8090 = 70.4574 %	0.000
Au-196	332.90	0.2300	Present			
	355.70	0.8760	Present			
	Total	1.1060	PRESENT (	1.1060/	1.1060 = 100.0000 %	0.000
In-115m	336.20	0.4590	Present			
	Total	0.4590	PRESENT (	0.4590/	0.4590 = 100.0000 %	0.000
Ru-95	336.40	0.7100	Present			
	1096.80	0.2100	Absent			
	Total	0.9200	ABSENT (	0.7100/	0.9200 = 77.1739 %	0.000
Cs-136	340.60	0.4890	Present			
	340.60	0.4676	Present			
	818.50	0.9970	Absent			
	818.50	0.9970	Absent			
	1048.07	0.7976	Absent			
	1048.10	0.7980	Absent			
	1235.34	0.1974	Absent			
	Total	4.7436	ABSENT (	0.9566/	4.7436 = 20.1661 %)	0.000
Pt-197m	346.50	0.1110	Present			
	Total	0.1110	PRESENT (	0.1110/	0.1110 = 100.0000 %)	0.000
Na-24	346.55	0.0100	Unable to Calc			
	857.55	0.0100	Absent			
	1368.53	1.0000	Absent			
	1732.10	0.0100	Absent			
	Total	1.0300	ABSENT (	0.0100/	1.0300 = 0.9709 %)	0.000
Bi-211	351.00	0.0001	Unable to Calc			
	Total	0.0001	PRESENT (	0.0001/	0.0001 = 100.0000 %)	0.000
Zn-71m	386.28	0.9200	Absent			
	487.34	0.6164	Absent			
	511.55	0.2806	Present			
	596.97	0.2760	Absent			
	620.19	0.5612	Absent			
	Total	2.6542	ABSENT (	0.2806/	2.6542 = 10.5719 %)	0.000
Ag-108m	434.00	0.9050	Absent			
	614.37	0.9320	Present			
	722.95	0.9230	Absent			
	Total	2.7600	ABSENT (	0.9320/	2.7600 = 33.7681 %)	0.000
Rh-106m	450.80	0.2450	Absent			
	511.70	0.8640	Present			
	616.10	0.2040	Absent			
	748.50	0.1950	Absent			
	1046.70	0.3070	Absent			
	Total	1.8150	ABSENT (	0.8640/	1.8150 = 47.6033 %)	0.000
Te-121	507.59	0.1767	Present			
	573.14	0.8030	Absent			
	Total	0.9797	ABSENT (	0.1767/	0.9797 = 18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc			
	583.14	0.0001	Unable to Calc			
	Total	0.0002	PRESENT (	0.0002/	0.0002 = 100.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc			
	Total	1.0000	PRESENT (	1.0000/	1.0000 = 100.0000 %)	0.000
KR-85	514.00	0.0041	Present			

	Total	1.0041	PRESENT		1.0041 =		
	747.77	1.1000	Absent				
	772.91	1.4600	Absent				
	814.60	0.2140	Present				
	1038.10	0.1350	Absent				
	Total	1.0010	ABSENT	0.2140/	1.0010 =	21.3786 %	1.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT	0.9756/	2.1554 =	45.2631 %	1.000
Sb-124	602.72	0.9830	Present				
	645.82	0.0723	Absent				
	722.78	0.1130	Absent				
	1691.02	0.4900	Absent				
	Total	1.6583	ABSENT	0.9830/	1.6583 =	59.2776 %	1.000
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Absent				
	1764.50	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	0.0002/	0.0004 =	50.0000 %	0.000
K-40	1460.81	0.1070	Present				
	Total	0.1070	PRESENT	0.1070/	0.1070 =	100.0000 %	0.000

PEAK CONTRIBUTION CORRECTION

Pk#	Old Area	Nuclide	Reference Energy Line ===>> Energy	cts/dis	Calculated Contribution Ref Area	Energy	cts/dis	New Area
1	93	U-238	609.32	1.76e-003	161	77.11	6.69e-004	61
1	32	TH-232	911.07	7.83e-004	131	77.11	1.09e-003	32
3	493	TH-232	911.07	7.83e-004	131	238.63	3.55e-003	493
4	148	U-238	609.32	1.76e-003	161	295.22	1.35e-003	123
5	108	TH-232	911.07	7.83e-004	131	338.40	7.53e-004	103
6	229	U-238	609.32	1.76e-003	161	351.99	2.25e-003	206
8	227	TH-232	911.07	7.83e-004	131	583.14	1.22e-003	205

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
1	0	Hg-197	77.35	Deleted [Net < Critical Level]
1	0	Pt-197	77.35	Deleted [Net < Critical Level]
1	0	Fr-223	80.00	Deleted [Net < Critical Level]
1	0	Hg-197	80.20	Deleted [Net < Critical Level]
1	0	Xe-133	80.99	Deleted [Net < Critical Level]
3	0	Xe-133m	233.20	Deleted [Net < Critical Level]
3	0	Fr-223	234.60	Deleted [Net < Critical Level]
3	0	Ra-224	241.08	Deleted [Net < Critical Level]
4	25	Ce-143	293.26	Deleted [Net < Critical Level]
4	25	Ag-113	298.40	Deleted [Net < Critical Level]
5	0	Au-196	332.90	Deleted [Net < Critical Level]
5	0	In-115m	336.20	Deleted [Net < Critical Level]
5	0	HF-175	343.40	Deleted [Net < Critical Level]
6	23	Pt-197m	346.50	Deleted [Net < Critical Level]
6	23	Bi-211	351.00	Deleted [Net < Critical Level]
6	23	Au-196	355.70	Deleted [Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
Hg-197	77.35	0.1900	Absent					
	80.20	0.0340	Absent					
	191.38	0.0057	Absent					
	268.73	0.0005	Absent					
	Total	0.2302	ABSENT	(0.0000/	0.2302 =	0.0000 %)		0.000
Pt-197	77.35	0.1700	Absent					
	191.31	0.0350	Absent					
	Total	0.2050	ABSENT	(0.0000/	0.2050 =	0.0000 %)		0.000
Fr-223	80.00	0.0001	Absent					
	234.60	0.0001	Absent					
	Total	0.0002	ABSENT	(0.0000/	0.0002 =	0.0000 %)		0.000
Xe-133	80.99	0.3700	Absent					
	Total	0.3700	ABSENT	(0.0000/	0.3700 =	0.0000 %)		0.000
Hf-175	89.36	0.0235	Absent					
	343.40	0.8692	Absent					
	432.80	0.0156	Absent					
	Total	0.9083	ABSENT	(0.0000/	0.9083 =	0.0000 %)		0.000
Xe-133m	233.20	0.1000	Absent					
	Total	0.1000	ABSENT	(0.0000/	0.1000 =	0.0000 %)		0.000
Ra-224	241.08	0.0001	Absent					
	Total	0.0001	ABSENT	(0.0000/	0.0001 =	0.0000 %)		0.000
Ce-143	293.26	0.4200	Absent					
	664.55	0.0525	Absent					
	721.96	0.0512	Absent					
	Total	0.5237	ABSENT	(0.0000/	0.5237 =	0.0000 %)		0.000
Ag-113	298.40	0.0900	Absent					
	Total	0.0900	ABSENT	(0.0000/	0.0900 =	0.0000 %)		0.000
Au-196	332.90	0.2300	Absent					
	355.70	0.8760	Absent					
	Total	1.1060	ABSENT	(0.0000/	1.1060 =	0.0000 %)		0.000
In-115m	336.20	0.4590	Absent					
	Total	0.4590	ABSENT	(0.0000/	0.4590 =	0.0000 %)		0.000
Pt-197m	346.50	0.1110	Absent					
	Total	0.1110	ABSENT	(0.0000/	0.1110 =	0.0000 %)		0.000
Bi-211	351.00	0.0001	Absent					
	Total	0.0001	ABSENT	(0.0000/	0.0001 =	0.0000 %)		0.000

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +-1.00sigma (pCi /g)	Halflife (hrs)	Peaks Found	MPC Fraction
U-238	Average:	7.07e+002 +-5.35e+001	4.12e+013	5 of 5	0.00
	77.11	6.82e+002 +-4.66e+002			
	295.22	6.85e+002 +-1.31e+002			
	351.99	6.85e+002 +-8.72e+001			
	609.32	6.86e+002 +-8.36e+001			
	1764.28	1.33e+003 +-2.90e+002			
-232	Average:	1.10e+003 +-5.44e+001	1.24e+014	6 of 6	0.00
	77.11	2.17e+002 +-2.83e+002			
	238.63	1.03e+003 +-7.53e+001			
	338.40	1.07e+003 +-2.57e+002			

[illegible]	[illegible]	1.05e-003	--1.15e-002			
[illegible]	[illegible]	1.24e-003	--1.39e-002			
[illegible]	[illegible]	1.48e-003	--2.05e-002			
TL-208	510.72		BKG	1.00e+012	2 of 2	
	583.14		BKG			
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	4.46e+004	--8.78e+003	9.39e+004	1 of 1	
K-40	1460.81	1.56e+004	+-8.43e+002	1.12e+013	1 of 1	

TOTAL: 6.20e+004 pCi /g MPC Total: 1.00

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma sec
None							

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : BG-2

Sample Size	1.00e+000 g	Spectrum File	TEMP.SPC
Sampling Start	10-08-97 12:15	Counting Start	10-08-97 12:15
Sampling Stop	10-08-97 12:15	Live Time	3600 Sec
Current Date	10-11-97 10:29	Real Time	3 Sec

Detector #: 22

Energy(keV) = 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	186.45	370.50	79	33	58	375	1.00	
2	238.89	479.53	195	28	43	253	1.13	
3	295.21	596.60	93	24	40	177	1.84	
4	351.80	714.25	115	23	39	156	1.54	
5	510.60	1044.41	116	20	33	100	2.20	
6	582.54	1193.96	107	15	21	46	1.32	
7	608.39	1247.71	106	16	24	62	1.24	
8	909.72	1874.18	77	13	19	32	1.65	
9	966.89	1993.03	30	13	23	50	1.30	
10	1457.38	3012.76	239	17	13	13	1.92	
11	1760.27	3642.48	35	8	12	12	0.83	

Neely Nuclear Research Center

Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: BG-2

Sample Size . . . . . 1.00e+000 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-08-97 12:15	Counting Start. 10-08-97 12:15
Sampling Stop 10-08-97 12:15	Buildup Time. . . . . 0.00e-000 Hrs
Current Date. 10-11-97 10:29	Decay Time. . . . . 0.00e-000 Hrs
Efficiency File:c:\gdr\eff\550mlliq.ef	Library File. . .c:\gdr library nes.lib
ID.	IDGeneral Radionuclide Analysis Library
Eff.= 1/[6.66e-002*En^-2.92e-000 + 4.02e+002*En^3.62e-001]	12-05-96 10:47
Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 HalfLives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	186.45	79	Mo-99	181.07	0.0629	9.66e-003	9.95e-001	9.81e+002
1	186.45	79	Cu-67	184.50	0.4700	9.66e-003	9.94e-001	1.31e+002
1	186.45	79	Ga-67	184.60	0.2360	9.66e-003	9.96e-001	2.61e+002
1	186.45	79	U-235	185.72	0.5400	9.66e-003	1.00e+000	1.14e+002
1	186.45	79	Ra-226	186.20				
1	186.45	79	Xe-125	188.43	0.5500	9.66e-003	9.80e-001	1.14e+002
1	186.45	79	In-114m	190.24	0.1564	9.66e-003	1.00e+000	3.93e+002
1	186.45	79	Pt-197	191.31	0.0350	9.66e-003	9.81e-001	1.79e+003
1	186.45	79	Hg-197	191.38	0.0057	9.66e-003	9.95e-001	1.08e+004
1	186.45	79	Zn-72	191.50	0.0940	9.66e-003	9.93e-001	6.58e+002
1	186.45	79	Mo-101	191.93	0.1810	9.66e-003	3.31e-001	1.02e+003
1	186.45	79	Fe-59	192.34	0.0311	9.66e-003	1.00e+000	1.97e+003
2	238.89	195	Xe-133m	233.20	0.1000	8.24e-003	9.94e-001	1.79e+003
2	238.89	195	Fr-223	234.60				
2	238.89	195	Th-227	236.00				
2	238.89	195	U-235	236.00	0.1100	8.24e-003	1.00e+000	1.62e+003
2	238.89	195	TH-232	238.63	0.4310	8.24e-003	1.01e+000	4.08e+002
2	238.89	195	Te-131m	240.93	0.0755	8.24e-003	9.89e-001	2.38e+003
2	238.89	195	Ra-224	241.08				
2	238.89	195	Xe-125	243.40	0.2871	8.24e-003	9.80e-001	6.32e+002
2	238.89	195	IN-116M	244.59	0.0038	8.24e-003	6.99e-001	6.69e+004
2	238.89	195	Eu-152	244.67	0.0772	8.24e-003	1.00e+000	2.30e+003
3	295.21	93	Ce-143	293.26	0.4200	7.01e-003	9.90e-001	2.40e+002
3	295.21	93	U-238	295.22	0.1920	7.01e-003	1.00e+000	5.18e+002
3	295.21	93	Ir-192	295.96	0.2872	7.01e-003	1.00e+000	3.47e+002
3	295.21	93	Tl-210	296.00				
3	295.21	93	Ag-113	298.40	0.0900	7.01e-003	9.38e-001	1.13e+003
3	295.21	93	TB-160	298.57	0.2740	7.01e-003	1.00e+000	3.64e+002
3	295.21	93	Pa-231	299.90				
3	295.21	93	Pa-233	300.10	0.0633	7.01e-003	9.99e-001	1.58e+003
3	295.21	93	Ga-67	300.20	0.1900	7.01e-003	9.96e-001	5.27e+002
4	351.80	115	HF-181	345.95	0.1400	6.07e-003	1.00e+000	1.02e+003
4	351.80	115	Ho-167	346.50	0.5700	6.07e-003	8.96e-001	2.78e+002

[illegible]		[illegible]	[illegible]					
[illegible]		[illegible]	[illegible]					
[illegible]		[illegible]	[illegible]					
4	351.80	115	Bi-211	351.00				
4	351.80	115	U-235	351.10	0.1200	6.07e-003	[illegible]	[illegible]
4	351.80	115	U-238	351.99	0.3710	6.07e-003	[illegible]	[illegible]
4	351.80	115	Au-196	355.70	0.8760	6.07e-003	[illegible]	[illegible]
4	351.80	115	Ba-133	356.00	0.6200	6.07e-003	[illegible]	[illegible]
5	510.60	116	Mo-101	505.88	0.1135	4.43e-003	[illegible]	[illegible]
5	510.60	116	Te-121	507.59	0.1767	4.43e-003	9.99e-001	1.11e-003
5	510.60	116	Tl-208	510.72				
5	510.60	116	Kr-79	511.00	0.1500	4.43e-003	[illegible]	[illegible]
5	510.60	116	Annihila	511.00	1.0000	4.43e-003	1.00e+000	1.96e-002
5	510.60	116	Zn-71m	511.55	0.2806	4.43e-003	9.17e-001	7.64e-002
5	510.60	116	Rh-106m	511.70	0.8640	4.43e-003	8.56e-001	2.66e-002
5	510.60	116	KR-85	514.00	0.0041	4.43e-003	1.00e+000	4.79e-004
6	582.54	107	Tl-208	583.14				
6	582.54	107	TH-232	583.14	0.3090	3.96e-003	1.01e+000	6.50e-002
7	608.39	106	Sb-124	602.72	0.9830	3.82e-003	1.00e+000	2.12e-002
7	608.39	106	Cs-134	604.66	0.9756	3.82e-003	1.00e+000	2.14e-002
7	608.39	106	Kr-79	606.10	0.0810	3.82e-003	9.90e-001	2.60e-003
7	608.39	106	Sb-125	606.82	0.0520	3.82e-003	1.00e+000	4.01e-003
7	608.39	106	Bi-214	609.30				
7	608.39	106	U-238	609.32	0.4609	3.82e-003	1.00e+000	4.51e-002
7	608.39	106	Ir-192	612.45	0.0543	3.82e-003	1.00e+000	3.84e-003
7	608.39	106	Ag-108m	614.37	0.9320	3.82e-003	1.00e+000	2.24e-002
8	909.72	77	TH-232	911.07	0.2900	2.70e-003	1.01e+000	7.31e-002
8	909.72	77	Ac-228	911.20				
8	909.72	77	Sb-129	914.60	0.2140	2.70e-003	9.25e-001	1.08e-003
9	966.89	30	TB-160	962.36	0.1000	2.56e-003	1.00e+000	8.79e-002
9	966.89	30	EU-152M	963.50	0.1200	2.56e-003	9.64e-001	7.60e-002
9	966.89	30	Eu-152	964.00	0.1433	2.56e-003	1.00e+000	6.13e-002
9	966.89	30	Ac-228	964.40				
9	966.89	30	TB-160	966.17	0.2550	2.56e-003	1.00e+000	3.45e-002
9	966.89	30	Ac-228	968.80				
9	966.89	30	TH-232	968.90	0.1746	2.56e-003	1.01e+000	4.99e-002
10	1457.38	239	K-40	1460.81	0.1070	1.80e-003	1.00e+000	9.32e-003
11	1760.27	35	U-238	1764.28	0.1504	1.53e-003	1.00e+000	1.14e-003
11	1760.27	35	Bi-214	1764.50				

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status				Halflives
U-238	77.11	0.1070	Absent				
	295.22	0.1920	Present				
	351.99	0.3710	Present				
	609.32	0.4609	Present				
	1764.28	0.1504	Present				
	Total	1.2813	PRESENT (	1.1743/	1.2813 =	91.6491 %)	0.000
TH-232	77.11	0.1750	Absent				
	238.63	0.4310	Present				
	338.40	0.1201	Absent				
	583.14	0.3090	Present				
	911.07	0.2900	Present				
	968.90	0.1746	Present				
	Total	1.4997	PRESENT (	1.2046/	1.4997 =	80.3227 %)	0.000
Hg-197	77.35	0.1900	Absent				
	80.20	0.0340	Absent				
	191.38	0.0057	Present				

	199.71	0.0005	Absent				
	Total	0.0005	ABSENT	0.0005	0.0005 =	1.0000	0.000
Pb-197	77.95	0.1700	Absent				
	191.41	0.0350	Present				
	Total	0.2050	ABSENT	0.0350	0.2050 =	17.0732 %	0.000
I-123	80.00	0.0001	Absent				
	284.60	0.0001	Unable to Calc				
	Total	0.0002	ABSENT	0.0001	0.0002 =	50.0000 %	0.000
Ba-133	81.00	0.3429	Absent				
	276.40	0.0709	Absent				
	302.85	0.1816	Absent				
	356.00	0.6200	Present				
	383.85	0.0897	Absent				
	Total	1.3051	ABSENT	(0.6200/	1.3051 =	47.5059 %)	0.000
U-235	81.07	0.1480	Absent				
	83.78	0.2460	Absent				
	143.76	0.1050	Absent				
	185.72	0.5400	Present				
	236.00	0.1100	Present				
	269.60	0.1340	Absent				
	351.10	0.1200	Present				
	Total	1.4030	ABSENT	(0.7700/	1.4030 =	54.8824 %)	0.000
TB-160	86.80	0.1340	Absent				
	197.04	0.0524	Absent				
	215.65	0.0402	Absent				
	298.57	0.2740	Present				
	876.37	0.3000	Absent				
	962.36	0.1000	Present				
	966.17	0.2550	Present				
	1177.95	0.1550	Absent				
	1271.88	0.0760	Absent				
	Total	1.3866	ABSENT	(0.6290/	1.3866 =	45.3628 %)	0.000
Cu-67	93.30	0.1690	Absent				
	184.50	0.4700	Present				
	Total	0.6390	ABSENT	(0.4700/	0.6390 =	73.5524 %)	0.000
Ga-67	93.30	0.3800	Absent				
	184.60	0.2360	Present				
	300.20	0.1900	Present				
	Total	0.8060	ABSENT	(0.4260/	0.8060 =	52.8536 %)	0.000
Te-131m	102.06	0.0790	Absent				
	149.71	0.2054	Absent				
	200.63	0.0752	Absent				
	240.93	0.0755	Present				
	334.27	0.0952	Absent				
	452.30	0.0567	Absent				
	773.67	0.3800	Absent				
	782.49	0.0775	Absent				
	793.75	0.1380	Absent				
	822.78	0.0609	Absent				
	852.21	0.2093	Absent				
	1125.46	0.1137	Absent				
	1206.60	0.0971	Absent				
	Total	1.6635	ABSENT	(0.0755/	1.6635 =	4.5386 %)	0.000
EU-152M	121.78	0.0720	Absent				
	344.20	0.0250	Absent				
	841.60	0.1470	Absent				
	963.50	0.1200	Present				
	Total	0.3640	ABSENT	(0.1200/	0.3640 =	32.9670 %)	0.000
Eu-152	121.78	0.3068	Absent				
	244.67	0.0772	Present				

	[illegible]	.0720	Absent				
	[illegible]	.1072	Absent				
	[illegible]	.1433	Present				
	1086.80	0.1010	Absent				
	1212.97	0.1340	Absent				
	1408.08	0.2073	Absent				
	Total	1.3688	ABSENT	0.2205/	1.3688 =	[illegible] %	[illegible]
HF-181	133.05	0.4300	Absent				
	136.25	0.0610	Absent				
	345.95	0.1400	Present				
	482.16	0.8600	Absent				
	Total	1.4910	ABSENT	(0.1400/	1.4910 =	[illegible] %	[illegible]
IN-116M	137.92	0.0350	Absent				
	244.59	0.0038	Present				
	416.88	0.2937	Absent				
	463.13	0.0083	Absent				
	818.65	0.1372	Absent				
	1097.23	0.6791	Absent				
	1293.49	1.0000	Absent				
	1507.50	0.1186	Absent				
	1601.12	0.0107	Absent				
	1752.42	0.0289	Absent				
	2212.21	0.1858	Absent				
	Total	2.5011	ABSENT	(0.0038/	2.5011 =	[illegible] %)	0.000
Mo-99	140.51	0.0379	Absent				
	181.07	0.0629	Present				
	739.40	0.1260	Absent				
	Total	0.2268	ABSENT	(0.0629/	0.2268 =	27.7266 %)	0.000
Fe-59	142.65	0.0103	Absent				
	192.34	0.0311	Present				
	1099.22	0.5680	Absent				
	1291.56	0.4320	Absent				
	Total	1.0414	ABSENT	(0.0311/	1.0414 =	2.9864 %)	0.000
Zn-72	144.70	0.8300	Absent				
	191.50	0.0940	Present				
	Total	0.9240	ABSENT	(0.0940/	0.9240 =	[illegible] %	[illegible]
Sb-125	176.29	0.0630	Absent				
	380.51	0.0140	Absent				
	427.95	0.2960	Absent				
	463.51	0.1000	Absent				
	600.77	0.1840	Absent				
	606.82	0.0520	Present				
	636.15	0.1120	Absent				
	671.66	0.0180	Absent				
	Total	0.8390	ABSENT	(0.0520/	0.8390 =	6.1979 %)	0.000
Ra-226	186.20	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Xe-125	188.43	0.5500	Present				
	243.40	0.2871	Present				
	Total	0.8371	PRESENT	(0.8371/	0.8371 =	100.0000 %)	0.000
In-114m	190.24	0.1564	Present				
	558.43	0.2850	Absent				
	725.24	0.2810	Absent				
	1283.67	0.0003	Absent				
	1299.83	0.0012	Absent				
	Total	0.7239	ABSENT	(0.1564/	0.7239 =	21.6052 %)	0.000
[illegible]-101	191.93	0.1810	Present				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				

	1112.36	0.1135	Absent				
	Total	0.8670	ABSENT	0.0945	0.8670	=	10.9054
Ag-108	614.31	0.0001	Absent				
	633.70	0.0001	Absent				
	722.90	0.0001	Absent				
	911.20	0.0001	Unable to Calc				
	964.40	0.0001	Unable to Calc				
	968.80	0.0001	Unable to Calc				
	Total	0.0006	ABSENT (	0.0003/	0.0006	=	50.0000 %)
Xe-133m	233.20	0.1000	Present				
	Total	0.1000	PRESENT (	0.1000/	0.1000	=	100.0000 %)
Th-227	236.00	0.0001	Unable to Calc				
	329.90	0.0001	Absent				
	Total	0.0002	ABSENT (	0.0001/	0.0002	=	50.0000 %)
Ra-224	241.08	0.0001	Unable to Calc				
	Total	0.0001	PRESENT (	0.0001/	0.0001	=	100.0000 %)
Kr-79	261.30	0.1270	Absent				
	397.50	0.0950	Absent				
	511.00	0.1500	Present				
	606.10	0.0810	Present				
	Total	0.4530	ABSENT (	0.2310/	0.4530	=	50.9934 %)
Pa-231	283.60	0.0001	Absent				
	299.90	0.0001	Unable to Calc				
	302.50	0.0001	Absent				
	Total	0.0003	ABSENT (	0.0001/	0.0003	=	33.3333 %)
Ce-143	293.26	0.4200	Present				
	664.55	0.0525	Absent				
	721.96	0.0512	Absent				
	Total	0.5237	PRESENT (	0.4200/	0.5237	=	80.1986 %)
Ir-192	295.96	0.2872	Present				
	308.46	0.2965	Absent				
	316.51	0.8290	Absent				
	468.06	0.4808	Absent				
	612.45	0.0543	Present				
	Total	1.9478	ABSENT (	0.3415/	1.9478	=	17.5326 %)
Tl-210	296.00	0.0001	Unable to Calc				
	795.00	0.0001	Absent				
	1060.00	0.0001	Absent				
	1210.00	0.0001	Absent				
	1310.00	0.0001	Absent				
	Total	0.0005	ABSENT (	0.0001/	0.0005	=	20.0000 %)
Ag-113	298.40	0.0900	Present				
	Total	0.0900	PRESENT (	0.0900/	0.0900	=	100.0000 %)
Pa-233	300.10	0.0633	Present				
	311.90	0.3700	Absent				
	Total	0.4333	ABSENT (	0.0633/	0.4333	=	14.6088 %)
Ho-167	321.30	0.2390	Absent				
	346.50	0.5700	Present				
	Total	0.8090	ABSENT (	0.5700/	0.8090	=	70.4574 %)
Au-196	332.90	0.2300	Absent				
	355.70	0.8760	Present				
	Total	1.1060	ABSENT (	0.8760/	1.1060	=	79.2043 %)
Pt-197m	346.50	0.1110	Present				
	Total	0.1110	PRESENT (	0.1110/	0.1110	=	100.0000 %)
Na-24	346.55	0.0100	Unable to Calc				
	857.55	0.0100	Absent				
	1368.53	1.0000	Absent				
	1732.10	0.0100	Absent				
	Total	1.0300	ABSENT (	0.0100/	1.0300	=	0.9709 %)
Bi-211	351.00	0.0001	Unable to Calc				

	Total	1.0001	PRESENT				
[illegible]	[illegible]	[illegible]	Absent				
	697.04	0.0164	Absent				
	811.85	0.2806	Present				
	896.97	0.2760	Absent				
	620.19	0.5612	Absent				
	Total	2.6542	ABSENT	0.2806/	2.6542 =	10.5710 %	0.000
Ag-108m	434.00	0.9050	Absent				
	614.37	0.9320	Present				
	722.95	0.9230	Absent				
	Total	2.7600	ABSENT	0.9320/	2.7600 =	33.7681 %	0.000
Rh-106m	450.80	0.2450	Absent				
	511.70	0.8640	Present				
	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT	0.8640/	1.8150 =	47.6033 %	0.000
Te-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT	0.1767/	0.9797 =	18.0361 %	0.000
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	0.0002/	0.0002 =	100.0000 %	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT	1.0000/	1.0000 =	100.0000 %	0.000
KR-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT	0.0041/	0.0041 =	100.0000 %	0.000
Sb-129	544.70	0.1920	Absent				
	812.80	0.4600	Absent				
	914.60	0.2140	Present				
	1030.10	0.1350	Absent				
	Total	1.0010	ABSENT	0.2140/	1.0010 =	21.3786 %	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT	0.9756/	2.1554 =	45.2631 %	0.000
Sb-124	602.72	0.9830	Present				
	645.82	0.0723	Absent				
	722.78	0.1130	Absent				
	1691.02	0.4900	Absent				
	Total	1.6583	ABSENT	0.9830/	1.6583 =	59.2776 %	0.000
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Absent				
	1764.50	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	0.0002/	0.0004 =	50.0000 %	0.000
K-40	1460.81	0.1070	Present				
	Total	0.1070	PRESENT	0.1070/	0.1070 =	100.0000 %	0.000

PEAK CONTRIBUTION CORRECTION

#	Old Area	Nuclide	Reference Energy Line ===>> Energy	cts/dis	Ref Area	Calculated Contribution Energy	cts/dis	New Area
2	195	TH-232	911.07	7.83e-004	77	238.63	3.55e-003	195
3	93	U-238	609.32	1.76e-003	106	295.22	1.35e-003	81
4	115	U-238	609.32	1.76e-003	106	351.99	2.25e-003	115

		TH-232	911.07	7.83e-004		583.14	1.02e-	

PEAK INTERFERENCE CORRECTION

#	New Area	Nuclide	Energy	Status	
2	0	Xe-133m	233.20	Deleted	[Net < Critical Level]
3	0	Ra-224	241.08	Deleted	[Net < Critical Level]
3	0	Xe-125	243.40	Deleted	[Net < Critical Level]
3	12	Ce-143	293.26	Deleted	[Net < Critical Level]
3	12	Ag-113	298.40	Deleted	[Net < Critical Level]
4	0	Pt-197m	346.50	Deleted	[Net < Critical Level]
4	0	Bi-211	351.00	Deleted	[Net < Critical Level]
6	0	Tl-208	583.14	Deleted	[Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
Xe-125	188.43	0.5500	Present					
	243.40	0.2871	Absent					
	Total	0.8371	ABSENT	(	0.5500/	0.8371 =	65.7030 %)	0.000
Xe-133m	233.20	0.1000	Absent					
	Total	0.1000	ABSENT	(	0.0000/	0.1000 =	0.0000 %)	0.000
Ra-224	241.08	0.0001	Absent					
	Total	0.0001	ABSENT	(	0.0000/	0.0001 =	0.0000 %)	0.000
Ce-143	293.26	0.4200	Absent					
	664.55	0.0525	Absent					
	721.96	0.0512	Absent					
	Total	0.5237	ABSENT	(	0.0000/	0.5237 =	0.0000 %)	0.000
Ag-113	298.40	0.0900	Absent					
	Total	0.0900	ABSENT	(	0.0000/	0.0900 =	0.0000 %)	0.000
Pt-197m	346.50	0.1110	Absent					
	Total	0.1110	ABSENT	(	0.0000/	0.1110 =	0.0000 %)	0.000
Bi-211	351.00	0.0001	Absent					
	Total	0.0001	ABSENT	(	0.0000/	0.0001 =	0.0000 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc					
	583.14	0.0001	Absent					
	Total	0.0002	ABSENT	(	0.0001/	0.0002 =	50.0000 %)	0.000

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)		Halflife (hrs)	Peaks Found	MPC Fraction
U-238	Average:	4.47e+002	+-4.74e+001	4.12e+013	4 of 5	0.00
	295.22	4.51e+002	+-1.31e+002			
	351.99	3.82e+002	+-7.76e+001			
	609.32	4.51e+002	+-6.95e+001			
	1764.28	1.14e+003	+-2.69e+002			
TH-232	Average:	5.11e+002	+-4.49e+001	1.24e+014	4 of 6	0.00
	238.63	4.08e+002	+-5.84e+001			
	583.14	6.50e+002	+-9.30e+001			
	911.07	7.31e+002	+-1.24e+002			
	968.90	4.99e+002	+-2.16e+002			
Ra-226	186.20		BKG	1.00e+012	1 of 1	
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	

[illegible]	[illegible]	[illegible]	4.79e-004	+-3.38e-003	7.18e-004	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	5.82e-003	+-6.58e-002	1.32e-003	[illegible]	[illegible]
TOTAL:			5.82e-004 pCi	g		MPC Total:	

UNKNOWN PEAKS

Energy keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM keV)	Net Gamma/sec
None							

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : BG-3

Sample Size	6.14e+002 g	Spectrum File	TEMP.SPC
Sampling Start	10-08-97 14:04	Counting Start	10-08-97 14:04
Sampling Stop	10-08-97 14:04	Live Time	3600 Sec
Current Date	10-13-97 10:13	Real Time	0 Sec

Detector #: 22

Energy(keV) = 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 / 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	78.24	145.52	70	32	55	485	0.87	
2	238.91	479.57	372	33	49	296	0.96	a
3	242.06	486.11	55	28	48	288	0.82	b
4	295.25	596.69	82	22	36	175	1.77	
5	338.50	686.61	79	21	34	146	0.80	
6	351.87	714.41	184	24	37	153	1.29	
7	510.63	1044.48	122	21	34	119	1.77	
8	582.60	1194.10	177	19	27	72	1.49	
9	608.50	1247.95	145	18	25	67	1.52	
10	909.57	1873.86	101	14	19	37	1.51	
11	967.36	1994.01	59	13	20	40	2.01	
12	1457.54	3013.09	352	20	12	13	1.63	

Neely Nuclear Research Center

Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: BG-3

Sample Size . . . . . 6.14e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-08-97 14:04	Counting Start. 10-08-97 14:04
Sampling Stop 10-08-97 14:04	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-13-97 10:13	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef ID.	Library File. . .c:\gdr\library nes.lib IDGeneral Radionuclide Analysis Library
Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001]	12-05-96 10:4
Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy Fraction	Eff	Decay	Conc
1	78.24	70	U-238	77.11	0.1070	6.29e-003	1.00e+000 1.27e+000
1	78.24	70	TH-232	77.11	0.1750	6.29e-003	1.01e+000 7.71e-001
1	78.24	70	Hg-197	77.35	0.1900	6.29e-003	9.95e-001 7.20e-001
1	78.24	70	Pt-197	77.35	0.1700	6.29e-003	9.81e-001 8.16e-001
1	78.24	70	Fr-223	80.00			
1	78.24	70	Ce-144	80.00	0.0200	6.29e-003	1.00e+000 6.80e+000
1	78.24	70	Hg-197	80.20	0.0340	6.29e-003	9.95e-001 4.02e+000
1	78.24	70	Hg-199m	80.20	0.1110	6.29e-003	3.31e-001 3.71e+000
1	78.24	70	Xe-133	80.99	0.3700	6.29e-003	9.97e-001 3.69e-001
1	78.24	70	Ba-133	81.00	0.3429	6.29e-003	1.00e+000 3.97e-001
1	78.24	70	U-235	81.07	0.1480	6.29e-003	1.00e+000 9.20e-001
1	78.24	70	U-235	83.78	0.2460	6.29e-003	1.00e+000 5.53e-001
2	238.91	372	Xe-133m	233.20	0.1000	8.24e-003	9.94e-001 5.55e+000
2	238.91	372	Fr-223	234.60			
2	238.91	372	Th-227	236.00			
2	238.91	372	U-235	236.00	0.1100	8.24e-003	1.00e+000 5.02e+000
2	238.91	372	TH-232	238.63	0.4310	8.24e-003	1.01e+000 1.27e+000
3	242.06	55	Te-131m	240.93	0.0755	8.16e-003	9.89e-001 1.10e+000
3	242.06	55	Ra-224	241.08			
3	242.06	55	Xe-125	243.40	0.2871	8.16e-003	9.80e-001 2.93e-001
3	242.06	55	IN-116M	244.59	0.0038	8.16e-003	6.99e-001 3.10e+001
3	242.06	55	Eu-152	244.67	0.0772	8.16e-003	1.00e+000 1.07e+000
3	242.06	55	Sm-155	245.73	0.0373	8.16e-003	4.51e-001 4.90e+000
3	242.06	55	Xe-135	247.79	0.9000	8.16e-003	9.63e-001 9.51e-002
3	242.06	55	Eu-154	248.00	0.0660	8.16e-003	1.00e+000 1.25e+000
4	295.25	82	Ce-143	293.26	0.4200	7.01e-003	9.90e-001 3.44e-001
4	295.25	82	U-238	295.22	0.1920	7.01e-003	1.00e+000 7.43e-001
4	295.25	82	Ir-192	295.96	0.2872	7.01e-003	1.00e+000 4.98e-001
4	295.25	82	Tl-210	296.00			
4	295.25	82	Ag-113	298.40	0.0900	7.01e-003	9.38e-001 1.69e+000
4	295.25	82	TB-160	298.57	0.2740	7.01e-003	1.00e+000 5.22e-001
4	295.25	82	Pa-231	299.90			
4	295.25	82	Pa-233	300.10	0.0633	7.01e-003	9.99e-001 2.26e+000

5	338.50	79	Ba-87	331.21	0.1201	6.27e-003	1.01e+000 1.27e+000
5	338.50	79	Mg-27	332.73	0.1200	6.27e-003	2.03e+000 [illegible]
5	338.50	79	Au-196	332.90	0.2300	6.27e-003	[illegible] [illegible]
5	338.50	79	Te-131m	334.27	0.0952	6.27e-003	[illegible] [illegible]
5	338.50	79	Np-239	334.30	0.0200	6.27e-003	9.80e-001 1.44e+000
5	338.50	79	In-115m	336.20	0.4590	6.27e-003	9.94e-001 [illegible]
5	338.50	79	Ru-95	336.40	0.7100	6.27e-003	9.97e-001 1.62e+000
5	338.50	79	TH-232	338.40	0.1201	6.27e-003	1.01e+000 1.27e+000
5	338.50	79	Ra-223	338.60			
5	338.50	79	Ac-228	338.70			
5	338.50	79	Cs-136	340.60	0.4890	6.27e-003	9.99e-001 1.15e+000
5	338.50	79	Cs-136	340.60	0.4676	6.27e-003	9.99e-001 1.30e+000
5	338.50	79	HF-175	343.40	0.8692	6.27e-003	1.00e+000 1.77e+000
5	338.50	79	EU-152M	344.20	0.0250	6.27e-003	9.84e-001 4.40e+000
5	338.50	79	Eu-152	344.30	0.2720	6.27e-003	1.00e+000 3.66e+000
5	338.50	79	Cd-117	344.46	0.1769	6.27e-003	9.99e-001 1.33e+000
6	351.87	184	HF-181	345.95	0.1400	6.07e-003	1.00e+000 2.65e+000
6	351.87	184	Ho-167	346.50	0.5700	6.07e-003	9.96e-001 [illegible]
6	351.87	184	Pt-197m	346.50	0.1110	6.07e-003	9.99e-001 4.13e+000
6	351.87	184	Na-24	346.55	0.0100	6.07e-003	[illegible] [illegible]
6	351.87	184	Bi-211	351.00			
6	351.87	184	U-235	351.10	0.1200	6.07e-003	1.00e+000 3.00e+000
6	351.87	184	U-238	351.99	0.3710	6.07e-003	1.00e+000 9.96e-001
6	351.87	184	Au-196	355.70	0.8760	6.07e-003	9.98e-001 4.24e-001
6	351.87	184	Ba-133	356.00	0.6200	6.07e-003	1.00e+000 5.98e-001
7	510.63	122	Mo-101	505.88	0.1135	4.43e-003	3.31e-001 8.95e+000
7	510.63	122	Te-121	507.59	0.1767	4.43e-003	9.99e-001 1.91e+000
7	510.63	122	Tl-208	510.72			
7	510.63	122	Kr-79	511.00	0.1500	4.43e-003	9.90e-001 2.27e+000
7	510.63	122	Annihila	511.00	1.0000	4.43e-003	1.00e+000 3.37e-001
7	510.63	122	Zn-71m	511.55	0.2806	4.43e-003	9.17e-001 1.31e+000
7	510.63	122	Rh-106m	511.70	0.8640	4.43e-003	8.56e-001 4.55e-001
7	510.63	122	KR-85	514.00	0.0041	4.43e-003	1.00e+000 8.21e-001
8	582.60	177	Tl-208	583.14			
8	582.60	177	TH-232	583.14	0.3090	3.96e-003	1.01e+000 1.75e+000
9	608.50	145	Sb-124	602.72	0.9830	3.82e-003	1.00e+000 4.73e-001
9	608.50	145	Cs-134	604.66	0.9756	3.82e-003	1.00e+000 4.76e-001
9	608.50	145	Kr-79	606.10	0.0810	3.82e-003	9.90e-001 5.79e+000
9	608.50	145	Sb-125	606.82	0.0520	3.82e-003	1.00e+000 8.94e+000
9	608.50	145	Bi-214	609.30			
9	608.50	145	U-238	609.32	0.4609	3.82e-003	1.00e+000 1.01e+000
9	608.50	145	Ir-192	612.45	0.0543	3.82e-003	1.00e+000 8.56e+000
9	608.50	145	Ag-108m	614.37	0.9320	3.82e-003	1.00e+000 4.99e-001
10	909.57	101	TH-232	911.07	0.2900	2.70e-003	1.01e+000 1.56e+000
10	909.57	101	Ac-228	911.20			
10	909.57	101	Sb-129	914.60	0.2140	2.70e-003	9.25e-001 2.31e+000
11	967.36	59	TB-160	962.36	0.1000	2.56e-003	1.00e+000 2.82e+000
11	967.36	59	EU-152M	963.50	0.1200	2.56e-003	9.64e-001 2.44e+000
11	967.36	59	Eu-152	964.00	0.1433	2.56e-003	1.00e+000 1.97e+000
11	967.36	59	Ac-228	964.40			
11	967.36	59	TB-160	966.17	0.2550	2.56e-003	1.00e+000 1.10e+000
11	967.36	59	Ac-228	968.80			
11	967.36	59	TH-232	968.90	0.1746	2.56e-003	1.01e+000 1.60e+000
12	1457.54	352	K-40	1460.81	0.1070	1.80e-003	1.00e+000 2.24e+001

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status	Halflives

[illegible]	[illegible]	[illegible]	Present				
	[illegible]	[illegible]	Present				
	881.39	0.3710	Present				
	919.32	0.4609	Present				
	1764.28	0.1504	Absent				
	Total	1.2813	PRESENT	1.1309/	1.2813 =	88.2619 %)	[illegible]
TH-232	77.11	0.1750	Present				
	238.63	0.4310	Present				
	338.40	0.1201	Present				
	583.14	0.3090	Present				
	911.07	0.2900	Present				
	968.90	0.1746	Present				
	Total	1.4997	PRESENT	1.4997/	1.4997 =	100.0000 %)	0.000
Hg-197	77.35	0.1900	Present				
	80.20	0.0340	Present				
	191.38	0.0057	Absent				
	268.73	0.0005	Absent				
	Total	0.2302	PRESENT	0.2240/	0.2302 =	97.3067 %)	[illegible]
Pt-197	77.35	0.1700	Present				
	191.31	0.0350	Absent				
	Total	0.2050	PRESENT	0.1700/	0.2050 =	82.9268 %)	0.000
Fr-223	80.00	0.0001	Unable to Calc				
	234.60	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	0.0002/	0.0002 =	100.0000 %)	0.000
Ce-144	80.00	0.0200	Present				
	133.54	0.1110	Absent				
	Total	0.1310	ABSENT	0.0200/	0.1310 =	15.2672 %)	0.000
Hg-199m	80.20	0.1110	Present				
	158.37	0.5840	Absent				
	374.10	0.1380	Absent				
	Total	0.8330	ABSENT	0.1110/	0.8330 =	13.3253 %)	0.000
Xe-133	80.99	0.3700	Present				
	Total	0.3700	PRESENT	0.3700/	0.3700 =	100.0000 %)	0.000
Ba-133	81.00	0.3429	Present				
	276.40	0.0709	Absent				
	302.85	0.1816	Absent				
	356.00	0.6200	Present				
	383.85	0.0897	Absent				
	Total	1.3051	ABSENT	0.9629/	1.3051 =	73.7798 %)	0.000
U-235	81.07	0.1480	Present				
	83.78	0.2460	Present				
	143.76	0.1050	Absent				
	185.72	0.5400	Absent				
	236.00	0.1100	Present				
	269.60	0.1340	Absent				
	351.10	0.1200	Present				
	Total	1.4030	ABSENT	0.6240/	1.4030 =	44.4761 %)	0.000
TB-160	86.80	0.1340	Absent				
	197.04	0.0524	Absent				
	215.65	0.0402	Absent				
	298.57	0.2740	Present				
	876.37	0.3000	Absent				
	962.36	0.1000	Present				
	966.17	0.2550	Present				
	1177.95	0.1550	Absent				
	1271.88	0.0760	Absent				
	Total	1.3866	ABSENT	0.6290/	1.3866 =	45.3628 %)	0.000
HF-175	89.36	0.0235	Absent				
	343.40	0.8692	Present				
	432.80	0.0156	Absent				

[illegible]	Total	[illegible]	PRESENT	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Present				
	Total	0.8060	ABSENT	0.1900	0.8060 =	[illegible]	[illegible]
[illegible]-131m	102.06	0.0790	Absent				
	149.71	0.2054	Absent				
	200.63	0.0752	Absent				
	240.93	0.0755	Present				
	334.27	0.0952	Present				
	452.30	0.0567	Absent				
	773.67	0.3800	Absent				
	782.49	0.0775	Absent				
	793.75	0.1380	Absent				
	822.78	0.0609	Absent				
	852.21	0.2093	Absent				
	1125.46	0.1137	Absent				
	1206.60	0.0971	Absent				
	Total	1.6635	ABSENT	(0.1707/	1.6635 =	10.2615 %)	0.000
Sm-155	104.30	0.7464	Absent				
	141.41	0.0202	Absent				
	245.73	0.0373	Present				
	Total	0.8039	ABSENT	(0.0373/	0.8039 =	4.6425 %)	0.000
Np-239	106.10	0.2320	Absent				
	209.80	0.0410	Absent				
	228.10	0.1270	Absent				
	277.60	0.1420	Absent				
	315.90	0.0150	Absent				
	334.30	0.0200	Present				
	Total	0.5770	ABSENT	(0.0200/	0.5770 =	3.4662 %)	0.000
[illegible]-152M	121.78	0.0720	Absent				
	344.20	0.0250	Present				
	841.60	0.1470	Absent				
	963.50	0.1200	Present				
	Total	0.3640	ABSENT	(0.1450/	0.3640 =	39.8352 %)	0.000
Eu-152	121.78	0.3068	Absent				
	244.67	0.0772	Present				
	344.30	0.2720	Present				
	778.90	0.1272	Absent				
	964.00	0.1433	Present				
	1085.80	0.1010	Absent				
	1112.07	0.1340	Absent				
	1408.08	0.2073	Absent				
	Total	1.3688	ABSENT	(0.4925/	1.3688 =	35.9804 %)	0.000
Eu-154	123.10	0.4047	Absent				
	248.00	0.0660	Present				
	723.30	0.1970	Absent				
	873.19	0.1150	Absent				
	996.32	0.1029	Absent				
	1004.76	0.1736	Absent				
	1274.39	0.3550	Absent				
	Total	1.4143	ABSENT	(0.0660/	1.4143 =	4.6666 %)	0.000
HF-181	133.05	0.4300	Absent				
	136.25	0.0610	Absent				
	345.95	0.1400	Present				
	482.16	0.8600	Absent				
	Total	1.4910	ABSENT	(0.1400/	1.4910 =	9.3897 %)	0.000
[illegible]N-116M	137.92	0.0350	Absent				
	244.59	0.0038	Present				
	416.88	0.2937	Absent				

	463.13	0.0083	Absent				
	818.35	0.1372	Absent				
	1097.23	0.6731	Absent				
	1293.49	1.0000	Absent				
	1507.50	0.1186	Absent				
	1601.12	0.0107	Absent				
	1752.42	0.0289	Absent				
	2212.21	0.1858	Absent				
	Total	2.5011	ABSENT	(0.0038/	2.5011 =	0.1519 %)	0.000
Ra-223	144.30	0.0001	Absent				
	154.30	0.0001	Absent				
	269.60	0.0001	Absent				
	338.60	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	(0.0001/	0.0004 =	25.0000 %)	0.000
Mg-27	170.82	0.0070	Absent				
	332.73	0.0100	Unable to Calc				
	843.80	0.7140	Absent				
	1014.50	0.2860	Absent				
	Total	1.0170	ABSENT	(0.0100/	1.0170 =	0.9833 %)	0.000
Sb-125	176.29	0.0630	Absent				
	380.51	0.0140	Absent				
	427.95	0.2960	Absent				
	463.51	0.1000	Absent				
	600.77	0.1840	Absent				
	606.82	0.0520	Present				
	636.15	0.1120	Absent				
	671.66	0.0180	Absent				
	Total	0.8390	ABSENT	(0.0520/	0.8390 =	6.1979 %)	0.000
Xe-125	188.43	0.5500	Absent				
	243.40	0.2871	Present				
	Total	0.8371	ABSENT	(0.2871/	0.8371 =	34.2970 %)	0.000
Mo-101	191.93	0.1810	Absent				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				
	1012.35	0.1135	Absent				
	Total	0.6670	ABSENT	(0.1135/	0.6670 =	17.0165 %)	0.000
Ac-228	209.50	0.0001	Absent				
	338.70	0.0001	Unable to Calc				
	790.50	0.0001	Absent				
	911.20	0.0001	Unable to Calc				
	964.40	0.0001	Unable to Calc				
	968.80	0.0001	Unable to Calc				
	Total	0.0006	ABSENT	(0.0004/	0.0006 =	66.6667 %)	0.000
Xe-133m	233.20	0.1000	Present				
	Total	0.1000	PRESENT	(0.1000/	0.1000 =	100.0000 %)	0.000
Th-227	236.00	0.0001	Unable to Calc				
	329.90	0.0001	Absent				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
Ra-224	241.08	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Xe-135	247.79	0.9000	Present				
	Total	0.9000	PRESENT	(0.9000/	0.9000 =	100.0000 %)	0.000
Kr-79	261.30	0.1270	Absent				
	397.50	0.0950	Absent				
	511.00	0.1500	Present				
	606.10	0.0810	Present				
	Total	0.4530	ABSENT	(0.2310/	0.4530 =	50.9934 %)	0.000
Cd-117	273.28	0.2900	Absent				
	344.46	0.1769	Present				

	[illegible]	[illegible]	Absent			
	[illegible]	[illegible]	Absent			
	[illegible]	[illegible]	Absent			
	Total	0.8662	ABSENT	0.1769/	0.8662 =	[illegible] % [illegible]
Pa-231	283.60	0.0001	Absent			
	299.90	0.0001	Unable to Calc			
	302.50	0.0001	Absent			
	Total	0.0003	ABSENT	0.0001/	0.0003 =	33.3333 % [illegible]
Ce-143	293.26	0.4200	Present			
	664.55	0.0525	Absent			
	721.96	0.0512	Absent			
	Total	0.5237	PRESENT (	0.4200/	0.5237 =	80.1986 % [illegible]
Ir-192	295.96	0.2872	Present			
	308.46	0.2965	Absent			
	316.51	0.8290	Absent			
	468.06	0.4808	Absent			
	612.45	0.0543	Present			
	Total	1.9478	ABSENT (	0.3415/	1.9478 =	17.5336 % [illegible]
Tl-210	296.00	0.0001	Unable to Calc			
	795.00	0.0001	Absent			
	1060.00	0.0001	Absent			
	1210.00	0.0001	Absent			
	1310.00	0.0001	Absent			
	Total	0.0005	ABSENT (	0.0001/	0.0005 =	20.0000 %) 0.000
Ag-113	298.40	0.0900	Present			
	Total	0.0900	PRESENT (	0.0900/	0.0900 =	100.0000 %) 0.000
Pa-233	300.10	0.0633	Present			
	311.90	0.3700	Absent			
	Total	0.4333	ABSENT (	0.0633/	0.4333 =	14.6088 %) 0.000
Ho-167	321.30	0.2390	Absent			
	346.50	0.5700	Present			
	Total	0.8090	ABSENT (	0.5700/	0.8090 =	70.4574 % [illegible]
Au-196	332.90	0.2300	Present			
	355.70	0.8760	Present			
	Total	1.1060	PRESENT (	1.1060/	1.1060 =	100.0000 %) 0.000
In-115m	336.20	0.4590	Present			
	Total	0.4590	PRESENT (	0.4590/	0.4590 =	100.0000 %) 0.000
Ru-95	336.40	0.7100	Present			
	1096.80	0.2100	Absent			
	Total	0.9200	ABSENT (	0.7100/	0.9200 =	77.1739 %) 0.000
Cs-136	340.60	0.4890	Present			
	340.60	0.4676	Present			
	818.50	0.9970	Absent			
	818.50	0.9970	Absent			
	1048.07	0.7976	Absent			
	1048.10	0.7980	Absent			
	1235.34	0.1974	Absent			
	Total	4.7436	ABSENT (	0.9566/	4.7436 =	20.1661 %) 0.000
Pt-197m	346.50	0.1110	Present			
	Total	0.1110	PRESENT (	0.1110/	0.1110 =	100.0000 %) 0.000
Na-24	346.55	0.0100	Unable to Calc			
	857.55	0.0100	Absent			
	1368.53	1.0000	Absent			
	1732.10	0.0100	Absent			
	Total	1.0300	ABSENT (	0.0100/	1.0300 =	0.9709 %) 0.000
Bi-211	351.00	0.0001	Unable to Calc			
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %) 0.000
In-71m	386.28	0.9200	Absent			
	487.34	0.6164	Absent			
	511.55	0.2806	Present			

	[illegible]	.2790	Absent				
	[illegible]	.8610	Absent				
	Total	2.6842	ABSENT	0.2806	2.6842 =	[illegible]	[illegible]
Ag-108m	434.00	0.9050	Absent				
	614.37	0.9320	Present				
	722.95	0.9230	Absent				
	Total	2.7600	ABSENT	0.9320/	2.7600 =	33.7681 %	[illegible]
Rh-106m	450.80	0.2450	Absent				
	511.70	0.8640	Present				
	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT	(0.8640/	1.8150 =	47.6033 %	0.000
Te-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT	(0.1767/	0.9797 =	18.0361 %	[illegible]
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	(0.0002/	0.0002 =	100.0000 %	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT	(1.0000/	1.0000 =	100.0000 %	0.000
KR-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT	(0.0041/	0.0041 =	100.0000 %	0.000
Sb-129	544.70	0.1920	Absent				
	812.80	0.4600	Absent				
	914.60	0.2140	Present				
	1030.10	0.1350	Absent				
	Total	1.0010	ABSENT	(0.2140/	1.0010 =	21.3786 %)	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT	(0.9756/	2.1554 =	45.2631 %)	0.000
Sb-124	602.72	0.9830	Present				
	645.82	0.0723	Absent				
	722.78	0.1130	Absent				
	1691.02	0.4900	Absent				
	Total	1.6583	ABSENT	(0.9830/	1.6583 =	59.2776 %)	0.000
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Absent				
	1764.50	0.0001	Absent				
	Total	0.0004	ABSENT	(0.0001/	0.0004 =	25.0000 %)	0.000
K-40	1460.81	0.1070	Present				
	Total	0.1070	PRESENT	(0.1070/	0.1070 =	100.0000 %)	0.000

PEAK CONTRIBUTION CORRECTION

			Reference Energy Line			===>> Calculated Contribution		
Pk#	Old Area	Nuclide	Energy	cts/dis	Ref Area	Energy	cts/dis	New Area
1	70	U-238	609.32	1.76e-003	145	77.11	6.73e-004	55
1	15	TH-232	911.07	7.83e-004	101	77.11	1.10e-003	15
2	372	TH-232	911.07	7.83e-004	101	238.63	3.55e-003	372
4	82	U-238	609.32	1.76e-003	145	295.22	1.35e-003	82
5	79	TH-232	911.07	7.83e-004	101	338.40	7.53e-004	79
6	184	U-238	609.32	1.76e-003	145	351.99	2.25e-003	184
8	177	TH-232	911.07	7.83e-004	101	583.14	1.22e-003	158

Xe-133	233.20	6.03e-000	+-6.22e-001	5.42e-001	1 of 1		
Ra-224	241.08		BKG	1.00e+012	1 of 1		
Ce-143	293.26	4.38e-001	+-1.30e-001	3.30e+001	1 of 3		2.19
Ag-113	298.40	2.15e+000	+-6.39e-001	5.37e+000	1 of 1		
[illegible]-196	Average:	5.22e-001	+-6.70e-002	1.48e+002	2 of 2		0.00
	332.90	8.00e-001	+-2.04e-001				
	355.70	4.88e-001	+-7.09e-002				
In-115m	336.20	4.32e-001	+-1.10e-001	4.49e+000	1 of 1		
Pt-197m	346.50	4.75e+000	+-6.90e-001	1.57e+000	1 of 1		
Bi-211	351.00		BKG	1.00e+012	1 of 1		
Tl-208	510.72		BKG	1.00e+012	2 of 2		
	583.14		BKG				
Annihila	511.00		I.D.Only	1.00e+003	1 of 1		
KR-85	514.00	1.08e+002	+-1.86e+001	9.39e+004	1 of 1		
Zn-65	1115.52	5.55e-001	+-1.63e-001	5.86e+003	1 of 1		9.25
K-40	1460.81	2.77e+001	+-1.63e+000	1.12e+013	1 of 1		
TOTAL:		1.51e+002 pCi	/g		MPC Total:		11.43

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
608.04	1246.99	145	19	27	80	1.43	1.055e+001
908.54	1871.73	98	15	22	41	2.02	1.007e+001

[illegible]	[illegible]	[illegible]	Absent				
	Total	[illegible]	ABSENT	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	Unable to Calc				
	583.14	0.0001	Absent				
	Total	0.0002	ABSENT	0.0001	0.0003	[illegible]	[illegible]

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)		Halflife (hrs)	Peaks Found	MPC Fraction
U-238	Average:	9.58e-001	+-8.12e-002	4.12e+013	4 of 5	0.00
	77.11	9.97e-001	+-5.88e-001			
	295.22	7.43e-001	+-1.98e-001			
	351.99	9.96e-001	+-1.30e-001			
	609.32	1.01e+000	+-1.25e-001			
TH-232	Average:	1.32e+000	+-8.17e-002	1.24e+014	6 of 6	0.00
	77.11	1.65e-001	+-3.57e-001			
	238.63	1.27e+000	+-1.14e-001			
	338.40	1.27e+000	+-3.35e-001			
	583.14	1.56e+000	+-1.91e-001			
	911.07	1.56e+000	+-2.18e-001			
	968.90	1.60e+000	+-3.55e-001			
Ra-224	241.08		BKG	1.00e+012	1 of 1	
Xe-135	247.79	9.51e-002	+-4.79e-002	9.10e+000	1 of 1	
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	8.21e+001	+-1.44e+001	9.39e+004	1 of 1	
K-40	1460.81	2.24e+001	+-1.26e+000	1.12e+013	1 of 1	
TAL:		1.07e+002 pCi /g			MPC Total:	0.00

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
1	0	Hg-197	77.35	Deleted { Net < Critical Level }
1	0	Pt-197	77.35	Deleted { Net < Critical Level }
1	0	Fr-223	80.00	Deleted { Net < Critical Level }
1	0	Hg-197	80.20	Deleted { Net < Critical Level }
1	0	Xe-133	80.99	Deleted { Net < Critical Level }
2	0	Xe-133m	233.20	Deleted { Net < Critical Level }
2	0	Fr-223	234.60	Deleted { Net < Critical Level }
4	0	Ce-143	293.26	Deleted { Net < Critical Level }
4	0	Ag-113	298.40	Deleted { Net < Critical Level }
5	0	Au-196	332.90	Deleted { Net < Critical Level }
5	0	In-115m	336.20	Deleted { Net < Critical Level }
5	0	HF-175	343.40	Deleted { Net < Critical Level }
6	0	Pt-197m	346.50	Deleted { Net < Critical Level }
6	0	Bi-211	351.00	Deleted { Net < Critical Level }
6	0	Au-196	355.70	Deleted { Net < Critical Level }
8	19	Tl-208	583.14	Deleted { Net < Critical Level }

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
Hg-197	77.35	0.1900	Absent					
	80.20	0.0340	Absent					
	191.38	0.0057	Absent					
	268.73	0.0005	Absent					
	Total	0.2302	ABSENT	(	0.0000/	0.2302 =	0.0000 %)	0.000
Pt-197	77.35	0.1700	Absent					
	191.31	0.0350	Absent					
	Total	0.2050	ABSENT	(	0.0000/	0.2050 =	0.0000 %)	0.000
Fr-223	80.00	0.0001	Absent					
	234.60	0.0001	Absent					
	Total	0.0002	ABSENT	(	0.0000/	0.0002 =	0.0000 %)	0.000
Xe-133	80.99	0.3700	Absent					
	Total	0.3700	ABSENT	(	0.0000/	0.3700 =	0.0000 %)	0.000
HF-175	89.36	0.0235	Absent					
	343.40	0.8692	Absent					
	432.80	0.0156	Absent					
	Total	0.9083	ABSENT	(	0.0000/	0.9083 =	0.0000 %)	0.000
Xe-133m	233.20	0.1000	Absent					
	Total	0.1000	ABSENT	(	0.0000/	0.1000 =	0.0000 %)	0.000
Ce-143	293.26	0.4200	Absent					
	664.55	0.0525	Absent					
	721.96	0.0512	Absent					
	Total	0.5237	ABSENT	(	0.0000/	0.5237 =	0.0000 %)	0.000
Ag-113	298.40	0.0900	Absent					
	Total	0.0900	ABSENT	(	0.0000/	0.0900 =	0.0000 %)	0.000
Au-196	332.90	0.2300	Absent					
	355.70	0.8760	Absent					
	Total	1.1060	ABSENT	(	0.0000/	1.1060 =	0.0000 %)	0.000
-115m	336.20	0.4590	Absent					
	Total	0.4590	ABSENT	(	0.0000/	0.4590 =	0.0000 %)	0.000
t-197m	346.50	0.1110	Absent					
	Total	0.1110	ABSENT	(	0.0000/	0.1110 =	0.0000 %)	0.000

Neely Nuclear Research Center

Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: BG-4

Sample Size . . . . . 6.69e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-08-97 15:11	Counting Start. 10-08-97 15:11
Sampling Stop 10-08-97 15:11	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-13-97 10:25	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef ID.	Library File. . .c:\gdr\library\nes.lib IDGeneral Radionuclide Analysis Library
Eff.= 1/(6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001)	10-06-96 10:47
Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 3.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy Fraction	Eff	Decay	Conc
1	94.12	82	Lu-176	88.35			
1	94.12	82	Ra-221	89.00			
1	94.12	82	HF-175	89.36	0.0235	8.40e-003	1.00e+000 4.66e+000
1	94.12	82	Th-234	92.80			
1	94.12	82	Cu-67	93.30	0.1690	8.40e-003	9.94e-001 6.52e-001
1	94.12	82	Ga-67	93.30	0.3800	8.40e-003	9.96e-001 2.89e-001
1	94.12	82	Gd-153	97.43	0.2730	8.40e-003	1.00e+000 4.01e-001
1	94.12	82	Pt-195m	98.90	0.1110	8.40e-003	9.96e-001 9.90e-001
1	94.12	82	Ac-225	99.80			
1	94.12	82	Ta-182	100.10	0.1411	8.40e-003	1.00e+000 7.76e-001
2	239.02	373	Xe-133m	233.20	0.1000	8.24e-003	9.94e-001 5.11e+000
2	239.02	373	Fr-223	234.60			
2	239.02	373	Th-227	236.00			
2	239.02	373	U-235	236.00	0.1100	8.24e-003	1.00e+000 4.62e+000
2	239.02	373	TH-232	238.63	0.4310	8.24e-003	1.01e+000 1.17e+000
2	239.02	373	Te-131m	240.93	0.0755	8.24e-003	9.89e-001 6.81e+000
2	239.02	373	Ra-224	241.08			
2	239.02	373	Xe-125	243.40	0.2871	8.24e-003	9.80e-001 1.81e+000
2	239.02	373	IN-116M	244.59	0.0038	8.24e-003	6.99e-001 1.91e+002
2	239.02	373	Eu-152	244.67	0.0772	8.24e-003	1.00e+000 6.58e+000
3	295.25	75	Ce-143	293.26	0.4200	7.01e-003	9.90e-001 2.89e-001
3	295.25	75	U-238	295.22	0.1920	7.01e-003	1.00e+000 6.24e-001
3	295.25	75	Ir-192	295.96	0.2872	7.01e-003	1.00e+000 4.18e-001
3	295.25	75	Tl-210	296.00			
3	295.25	75	Ag-113	298.40	0.0900	7.01e-003	9.38e-001 1.42e+000
3	295.25	75	TB-160	298.57	0.2740	7.01e-003	1.00e+000 4.39e-001
3	295.25	75	Pa-231	299.90			
3	295.25	75	Pa-233	300.10	0.0633	7.01e-003	9.99e-001 1.90e+000
3	295.25	75	Ga-67	300.20	0.1900	7.01e-003	9.96e-001 6.35e-001
4	338.36	74	Mg-27	332.73	0.0100	6.27e-003	2.25e-001 5.89e+001
4	338.36	74	Au-196	332.90	0.2300	6.27e-003	9.98e-001 5.77e-001
4	338.36	74	Te-131m	334.27	0.0952	6.27e-003	9.89e-001 1.41e+000
4	338.36	74	Np-239	334.30	0.0200	6.27e-003	9.94e-001 6.66e+000

4	338.36	74	In-115m	336.20	0.4589	6.27e-003	[illegible]
4	338.36	74	Ra-88	336.40	0.7100	6.27e-003	[illegible]
4	338.36	74	TH-232	338.40	0.1201	6.27e-003	[illegible]
4	338.36	74	Ra-223	338.60			
4	338.36	74	Ac-228	338.70			
4	338.36	74	Cs-136	340.60	0.4890	6.27e-003	[illegible]
4	338.36	74	Cs-136	340.60	0.4676	6.27e-003	[illegible]
4	338.36	74	HF-175	343.40	0.8692	6.27e-003	[illegible]
4	338.36	74	EU-152M	344.20	0.0250	6.27e-003	9.64e-001	[illegible]
4	338.36	74	Eu-152	344.30	0.2720	6.27e-003	1.00e+000	[illegible]
5	352.02	163	Ho-167	346.50	0.5700	6.07e-003	[illegible]
5	352.02	163	Pt-197m	346.50	0.1110	6.07e-003	[illegible]
5	352.02	163	Na-24	346.55	0.0100	6.07e-003	9.77e-001	[illegible]
5	352.02	163	Bi-211	351.00			
5	352.02	163	U-235	351.10	0.1200	6.07e-003	1.00e+000	[illegible]
5	352.02	163	U-238	351.99	0.3710	6.07e-003	1.00e+000	[illegible]
5	352.02	163	Au-196	355.70	0.8760	6.07e-003	[illegible]
5	352.02	163	Ba-133	356.00	0.6200	6.07e-003	[illegible]
6	510.42	115	Mo-101	505.88	0.1135	4.44e-003	3.31e-001	[illegible]
6	510.42	115	Te-121	507.59	0.1767	4.44e-003	[illegible]
6	510.42	115	Tl-208	510.72			
6	510.42	115	Kr-79	511.00	0.1500	4.44e-003	9.90e-001	[illegible]
6	510.42	115	Annihila	511.00	1.0000	4.44e-003	1.00e+000	[illegible]
6	510.42	115	Zn-71m	511.55	0.2806	4.44e-003	9.17e-001	[illegible]
6	510.42	115	Rh-106m	511.70	0.8640	4.44e-003	8.56e-001	[illegible]
6	510.42	115	KR-85	514.00	0.0041	4.44e-003	1.00e+000	[illegible]
7	582.54	188	Tl-208	583.14			
7	582.54	188	TH-232	583.14	0.3090	3.96e-003	1.01e+000	[illegible]
8	608.70	155	Sb-124	602.72	0.9830	3.81e-003	1.00e+000	[illegible]
8	608.70	155	Cs-134	604.66	0.9756	3.81e-003	1.00e+000	[illegible]
8	608.70	155	Kr-79	606.10	0.0810	3.81e-003	9.90e-001	[illegible]
8	608.70	155	Sb-125	606.82	0.0520	3.81e-003	1.00e+000	[illegible]
8	608.70	155	Bi-214	609.30			
8	608.70	155	U-238	609.32	0.4609	3.81e-003	1.00e+000	9.87e-001
8	608.70	155	Ir-192	612.45	0.0543	3.81e-003	1.00e+000	[illegible]
8	608.70	155	Ag-108m	614.37	0.9320	3.81e-003	1.00e+000	4.89e-001
9	726.40	34	Sb-126	720.50	0.5780	3.28e-003	9.99e-001	2.02e-001
9	726.40	34	Ce-143	721.96	0.0512	3.28e-003	9.90e-001	2.30e+000
9	726.40	34	Sb-124	722.78	0.1130	3.28e-003	1.00e+000	[illegible]
9	726.40	34	Ag-108m	722.95	0.9230	3.28e-003	1.00e+000	[illegible]
9	726.40	34	Eu-154	723.30	0.1970	3.28e-003	1.00e+000	[illegible]
9	726.40	34	Zr-95	724.18	0.3399	3.28e-003	1.00e+000	[illegible]
9	726.40	34	In-114m	725.24	0.2810	3.28e-003	1.00e+000	4.14e-001
9	726.40	34	Bi-212	727.30			
10	909.46	123	TH-232	911.07	0.2900	2.70e-003	1.01e+000	[illegible]
10	909.46	123	Ac-228	911.20			
10	909.46	123	Sb-129	914.60	0.2140	2.70e-003	9.25e-001	2.58e+000
11	967.17	68	TB-160	962.36	0.1000	2.56e-003	1.00e+000	2.98e+000
11	967.17	68	EU-152M	963.50	0.1200	2.56e-003	9.64e-001	2.58e+000
11	967.17	68	Eu-152	964.00	0.1433	2.56e-003	1.00e+000	2.08e+000
11	967.17	68	Ac-228	964.40			
11	967.17	68	TB-160	966.17	0.2550	2.56e-003	1.00e+000	[illegible]
11	967.17	68	Ac-228	968.80			
11	967.17	68	TH-232	968.90	0.1746	2.56e-003	1.01e+000	1.69e+000
12	1457.67	376	K-40	1460.81	0.1070	1.80e-003	1.00e+000	2.19e+001
13	1760.47	44	U-238	1764.28	0.1504	1.53e-003	1.00e+000	2.14e+000
13	1760.47	44	Bi-214	1764.50			

Nuclide	Energy	Fraction	Status					Ratio
U-238	77.11	0.1070	Absent					
	295.22	0.1920	Present					
	351.99	0.3710	Present					
	609.32	0.4609	Present					
	1764.28	0.1504	Present					
	Total	1.2813	PRESENT	(	1.1743/	1.2813 =	91.6491 %)	1.000
TH-232	77.11	0.1750	Absent					
	238.63	0.4310	Present					
	338.40	0.1201	Present					
	583.14	0.3090	Present					
	911.07	0.2900	Present					
	968.90	0.1746	Present					
	Total	1.4997	PRESENT	(	1.3247/	1.4997 =	88.3310 %)	1.000
Fr-223	80.00	0.0001	Absent					
	234.60	0.0001	Unable to Calc					
	Total	0.0002	ABSENT	(	0.0001/	0.0002 =	50.0000 %)	1.000
Ba-133	81.00	0.3429	Absent					
	276.40	0.0709	Absent					
	302.85	0.1816	Absent					
	356.00	0.6200	Present					
	383.85	0.0897	Absent					
	Total	1.3051	ABSENT	(	0.6200/	1.3051 =	47.5059 %)	0.000
U-235	81.07	0.1480	Absent					
	83.78	0.2460	Absent					
	143.76	0.1050	Absent					
	185.72	0.5400	Absent					
	236.00	0.1100	Present					
	269.60	0.1340	Absent					
	351.10	0.1200	Present					
	Total	1.4030	ABSENT	(	0.2300/	1.4030 =	16.3934 %)	0.000
TB-160	86.80	0.1340	Absent					
	197.04	0.0524	Absent					
	215.65	0.0402	Absent					
	298.57	0.2740	Present					
	876.37	0.3000	Absent					
	962.36	0.1000	Present					
	966.17	0.2550	Present					
	1177.95	0.1550	Absent					
	1271.88	0.0760	Absent					
	Total	1.3866	ABSENT	(	0.6290/	1.3866 =	45.3628 %)	0.000
Lu-176	88.35	0.0001	Unable to Calc					
	201.80	0.0001	Absent					
	306.90	0.0001	Absent					
	Total	0.0003	ABSENT	(	0.0001/	0.0003 =	33.3333 %)	0.000
Ra-221	89.00	0.0001	Unable to Calc					
	152.00	0.0001	Absent					
	176.00	0.0001	Absent					
	Total	0.0003	ABSENT	(	0.0001/	0.0003 =	33.3333 %)	0.000
HF-175	89.36	0.0235	Present					
	343.40	0.8692	Present					
	432.80	0.0156	Absent					
	Total	0.9083	PRESENT	(	0.8927/	0.9083 =	98.2825 %)	0.000
Th-234	92.80	0.0001	Unable to Calc					
	Total	0.0001	PRESENT	(	0.0001/	0.0001 =	100.0000 %)	0.000
Lu-67	93.30	0.1690	Present					
	184.50	0.4700	Absent					
	Total	0.6390	ABSENT	(	0.1690/	0.6390 =	26.4476 %)	0.000

Ta-[illegible]	[illegible]	[illegible]	Present				
	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Present				
	Total	[illegible]	ABSENT	[illegible]	[illegible] =	[illegible]	[illegible]
Ta-183	97.43	0.2730	Present				
	103.18	0.1992	Absent				
	Total	0.4722	ABSENT	(0.2730/	0.4722 =	57.8145 %)	0.000
Pt-195m	98.90	0.1110	Present				
	Total	0.1110	PRESENT	(0.1110/	0.1110 =	100.0000 %)	0.000
Ac-225	99.80	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Ta-182	100.10	0.1411	Present				
	152.43	0.0720	Absent				
	222.10	0.0758	Absent				
	1121.28	0.3510	Absent				
	1189.04	0.1636	Absent				
	1221.42	0.2713	Absent				
	1230.97	0.1155	Absent				
	Total	1.1903	ABSENT	(0.1411/	1.1903 =	11.8542 %)	0.000
Te-131m	102.06	0.0790	Absent				
	149.71	0.2054	Absent				
	200.63	0.0752	Absent				
	240.93	0.0755	Present				
	334.27	0.0952	Present				
	452.30	0.0567	Absent				
	773.67	0.3800	Absent				
	782.49	0.0775	Absent				
	793.75	0.1380	Absent				
	822.78	0.0609	Absent				
	852.21	0.2093	Absent				
	1125.46	0.1137	Absent				
	1206.60	0.0971	Absent				
	Total	1.6635	ABSENT	(0.1707/	1.6635 =	10.2615 %)	0.000
Np-239	106.10	0.2320	Absent				
	209.80	0.0410	Absent				
	228.10	0.1270	Absent				
	277.60	0.1420	Absent				
	315.90	0.0150	Absent				
	334.30	0.0200	Present				
	Total	0.5770	ABSENT	(0.0200/	0.5770 =	3.4662 %)	0.000
EU-152M	121.78	0.0720	Absent				
	344.20	0.0250	Present				
	841.60	0.1470	Absent				
	963.50	0.1200	Present				
	Total	0.3640	ABSENT	(0.1450/	0.3640 =	39.8352 %)	0.000
Eu-152	121.78	0.3068	Absent				
	244.67	0.0772	Present				
	344.30	0.2720	Present				
	778.90	0.1272	Absent				
	964.00	0.1433	Present				
	1085.80	0.1010	Absent				
	1112.07	0.1340	Absent				
	1408.08	0.2073	Absent				
	Total	1.3688	ABSENT	(0.4925/	1.3688 =	35.9804 %)	0.000
Eu-154	123.10	0.4047	Absent				
	248.00	0.0660	Absent				
	723.30	0.1970	Present				
	873.19	0.1150	Absent				
	996.32	0.1029	Absent				
	1004.76	0.1736	Absent				

[illegible]	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Absent				
	811.85	[illegible]	Present				
	[illegible]	0.2760	Absent				
	[illegible]	0.3612	Absent				
	Total	2.6542	ABSENT	0.2806/	2.6542 =	[illegible]	[illegible]
Sb-126	414.80	0.8770	Absent				
	666.30	0.9970	Absent				
	695.00	0.9970	Absent				
	697.00	0.3190	Absent				
	720.50	0.5780	Present				
	Total	3.7680	ABSENT	(0.5780/	3.7680 =	15.3397 %)	0.000
Ag-108m	434.00	0.9050	Absent				
	614.37	0.9320	Present				
	722.95	0.9230	Present				
	Total	2.7600	ABSENT	(1.8550/	2.7600 =	[illegible]	[illegible]
Rh-106m	450.30	0.2450	Absent				
	511.70	0.3640	Present				
	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT	(0.8640/	1.8150 =	47.6033 %)	0.000
Te-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT	(0.1767/	0.9797 =	18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	(0.0002/	0.0002 =	100.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT	(1.0000/	1.0000 =	100.0000 %)	0.000
-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT	(0.0041/	0.0041 =	100.0000 %)	0.000
Sb-129	544.70	0.1920	Absent				
	812.80	0.4600	Absent				
	914.60	0.2140	Present				
	1030.10	0.1350	Absent				
	Total	1.0010	ABSENT	(0.2140/	1.0010 =	21.3786 %)	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT	(0.9756/	2.1554 =	45.2631 %)	0.000
Sb-124	602.72	0.9830	Present				
	645.82	0.0723	Absent				
	722.78	0.1130	Present				
	1691.02	0.4900	Absent				
	Total	1.6583	ABSENT	(1.0960/	1.6583 =	66.0918 %)	0.000
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Absent				
	1764.50	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	(0.0002/	0.0004 =	50.0000 %)	0.000
Zr-95	724.18	0.3399	Present				
	756.72	0.5460	Absent				
	Total	0.8859	ABSENT	(0.3399/	0.8859 =	38.3678 %)	0.000
-212	727.30	0.0001	Unable to Calc				
	785.50	0.0001	Absent				
	1620.60	0.0001	Absent				
	Total	0.0003	ABSENT	(0.0001/	0.0003 =	33.3333 %)	0.000

Ra-224	[illegible]	[illegible]	Unable to Calc			
	Total	[illegible]	PRESENT	[illegible]	[illegible] =	[illegible]
Mn-54	834.83	0.1270	Absent			
	897.80	0.0950	Absent			
	811.00	0.1500	Present			
	606.10	0.0810	Present			
	Total	0.4530	ABSENT	0.2310/	0.4530 =	50.9934 %
Pa-231	283.60	0.0001	Absent			
	299.90	0.0001	Unable to Calc			
	302.50	0.0001	Absent			
	Total	0.0003	ABSENT (	0.0001/	0.0003 =	33.3333 %
Ce-143	293.26	0.4200	Present			
	664.55	0.0525	Absent			
	721.96	0.0512	Present			
	Total	0.5237	PRESENT (	0.4712/	0.5237 =	89.9752 %
Ir-192	295.96	0.2872	Present			
	308.46	0.2965	Absent			
	316.51	0.8290	Absent			
	468.06	0.4808	Absent			
	612.45	0.0543	Present			
	Total	1.9478	ABSENT (	0.3415/	1.9478 =	17.5326 %
Tl-210	296.00	0.0001	Unable to Calc			
	795.00	0.0001	Absent			
	1060.00	0.0001	Absent			
	1210.00	0.0001	Absent			
	1310.00	0.0001	Absent			
	Total	0.0005	ABSENT (	0.0001/	0.0005 =	20.0000 %)
Ag-113	298.40	0.0900	Present			
	Total	0.0900	PRESENT (	0.0900/	0.0900 =	100.0000 %)
Pa-233	300.10	0.0633	Present			
	311.90	0.3700	Absent			
	Total	0.4333	ABSENT (	0.0633/	0.4333 =	14.6088 %
Ho-167	321.30	0.2390	Absent			
	346.50	0.5700	Present			
	Total	0.8090	ABSENT (	0.5700/	0.8090 =	70.4574 %)
Au-196	332.90	0.2300	Present			
	355.70	0.8760	Present			
	Total	1.1060	PRESENT (	1.1060/	1.1060 =	100.0000 %)
In-115m	336.20	0.4590	Present			
	Total	0.4590	PRESENT (	0.4590/	0.4590 =	100.0000 %)
Ru-95	336.40	0.7100	Present			
	1096.80	0.2100	Absent			
	Total	0.9200	ABSENT (	0.7100/	0.9200 =	77.1739 %)
Cs-136	340.60	0.4890	Present			
	340.60	0.4676	Present			
	818.50	0.9970	Absent			
	818.50	0.9970	Absent			
	1048.07	0.7976	Absent			
	1048.10	0.7980	Absent			
	1235.34	0.1974	Absent			
	Total	4.7436	ABSENT (	0.9566/	4.7436 =	20.1661 %)
Pt-197m	346.50	0.1110	Present			
	Total	0.1110	PRESENT (	0.1110/	0.1110 =	100.0000 %)
Na-24	346.55	0.0100	Unable to Calc			
	857.55	0.0100	Absent			
	1368.53	1.0000	Absent			
	1732.10	0.0100	Absent			
	Total	1.0300	ABSENT (	0.0100/	1.0300 =	0.9709 %)
Bi-211	351.00	0.0001	Unable to Calc			
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %)

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Protocol #: 9 Name:Campus Survey 20-Oct-97 10:39
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
1	1.00	26.00	16.00	12.00	154.88	
2	1.00	16.00	18.00	13.00	182.19	
3	1.00	20.00	22.00	20.00	142.24	
4	1.00	28.00	25.00	11.00	150.99	
5	1.00	24.00	19.00	17.00	90.990	
6	1.00	26.00	18.00	20.00	109.43	
7	1.00	22.00	23.00	13.00	161.21	
8	1.00	17.00	27.00	12.00	164.07	
9	1.00	26.00	19.00	11.00	119.01	
10	1.00	18.00	24.00	14.00	152.40	
11	1.00	34.00	14.00	8.00	123.91	
12	1.00	21.00	18.00	14.00	132.96	
13	1.00	33.00	25.00	5.00	147.65	

RS-112 (8-96)

Liquid Scintillation
Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 9:31

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.3%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.1

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-273	24	19	-
T-274	74	104	-
T-275	82	118	-
T-276	85	123	-
T-277	20	12	-
T-278	95	140	-
T-279	51	65	-
T-280	86	125	-
T-281	22	15	-
T-282	18	8	-
T-283	20	12	-
T-284	13	< LLD	-
T-285	14	2	-
T-286	20	12	-
T-287	16	5	-
T-288	22	15	-
T-289	20	12	-
T-290	30	29	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-291	20	12	-
T-292	41	48	-
T-293	22	15	-
T-294	36	39	-
T-295	31	31	-
T-296	28	26	-
T-297	25	20	-
T-298	23	17	-
T-299	23	17	-
T-300	37	41	-

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/22/97

Reviewed By: Nate [illegible] **Date:** 1/7/98

T 273 - T300 1/1

Protocol #: 9 Name:Campus Survey 22-Oct-97 09:31
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS FLAG
273	1	1.00	24.00	28.00	16.00	163.77
	2	1.00	74.00	13.00	17.00	42.910
75	3	1.00	82.00	13.00	12.00	47.890
	4	1.00	85.00	17.00	13.00	64.050
	5	1.00	20.00	19.00	11.00	147.20
	6	1.00	95.00	40.00	18.00	81.380
	7	1.00	51.00	30.00	13.00	99.900
280	8	1.00	86.00	71.00	19.00	122.80
	9	1.00	22.00	26.00	15.00	155.58
	10	1.00	18.00	15.00	10.00	167.50
	11	1.00	20.00	15.00	13.00	151.34
	12	1.00	13.00	15.00	14.00	171.67
285	13	1.00	14.00	22.00	22.00	166.42
	14	1.00	20.00	19.00	13.00	162.35
	15	1.00	16.00	17.00	17.00	117.45
	16	1.00	22.00	20.00	20.00	116.09
	17	1.00	20.00	15.00	20.00	112.58
290	18	1.00	30.00	28.00	11.00	127.01
	19	1.00	20.00	17.00	17.00	136.77
	20	1.00	41.00	45.00	18.00	122.24
	21	1.00	22.00	23.00	10.00	132.90
	22	1.00	36.00	14.00	11.00	61.550
295	23	1.00	31.00	18.00	16.00	116.05
	24	1.00	28.00	22.00	17.00	121.47
	25	1.00	25.00	21.00	21.00	123.61
	26	1.00	23.00	14.00	14.00	117.85
20	27	1.00	23.00	14.00	15.00	92.430
10	28	1.00	37.00	19.00	19.00	103.63

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey Date: 10/20/97 Time: 10:32

Counter Used: TriCarb 2000CA Region: A Efficiency: 58.6%

Suspect Isotope(s): Tritium Bkg (cpm): 11.3

Survey Instr. Model: - Serial #: - Cal. Due Date: -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-301	24	22	-
T-302	11	< LLD	-
T-303	10	< LLD	-
T-304	11	< LLD	-
T-305	17	10	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: _____

Performed By: Michele R. Sutton MRS 10/22/97 Date: 10/20/97

Reviewed By: _____ Date: _____

T301 - T305 1/1

Protocol #: 8 Name:Campus Survey 20-Oct-97 10:32
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
1	1.00	24.00	17.00	17.00	139.79	
2	1.00	11.00	15.00	15.00	163.27	
3	1.00	10.00	20.00	13.00	198.68	
4	1.00	11.00	16.00	14.00	212.51	
5	1.00	17.00	17.00	13.00	153.98	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 10:08

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.3%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.1

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-306	328	540	-
T-307	93	137	-
T-308	321	528	-
T-309	58	77	-
T-310	147	230	-
T-311	112	170	-
T-312	43	51	-
T-313	76	108	-
T-314	36	39	-
T-315	17	7	-
T-316	24	19	-
T-317	35	38	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/22/97

Reviewed By: Nate 1/7/98 **Date:** 1/7/98

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 10:08

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.3%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.1

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-318	58	77	-
T-319	23	17	-
T-320	46	56	-
T-321	20	12	-
T-322	450	749	-
T-323	164	259	-
T-326	45	55	-
T-327	32	32	-
T-328	16	5	-
T-329	1268	2152	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/22/97

Reviewed By: Nate Frey **Date:** 1/7/98

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey Date: 10/23/97 Time: 16:25

Counter Used: TriCarb 2000CA Region: A Efficiency: 57.8%

Suspect Isotope(s): Tritium Bkg (cpm): 12.4

Survey Instr. Model: - Serial #: - Cal. Due Date: -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-324	128	200	-
T-325	485	818	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/23/97 Date: 10/23/97

Reviewed By: Date:

T324 - T385

Protocol #: 9 Name:Campus Survey 23-Oct-97 16:25
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
324 1	1.00	128.00	71.00	10.00	84.780	
325 2	1.00	485.00	189.00	30.00	69.980	

RS-112 (8-96)

Liquid Scintillation
Survey Data Sheet

Job Description: NES Characterization Survey Date: 10/22/97 Time: 15:23

Counter Used: TriCarb 2000CA Region: A Efficiency: 58.3%

Suspect Isotope(s): Tritium Bkg (cpm): 13.1

Survey Instr. Model: - Serial #: - Cal. Due Date: -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-162	18	8	-
T-203	1021	1729	-
T-204	971	1643	-
T-205	691	1163	-
T-239	167	264	-
T-246	156	245	-
T-251	163	257	-
T-252	120	183	-
T-255	142	221	-
T-257	124	190	-
T-258	109	164	-
T-306	337	556	-
T-308	300	492	-
T-310	183	291	-
T-311	104	156	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Recount

Performed By: Michele R. Sutton MRS 10/23/97 Date: 10/22/97

Reviewed By: Nate TTT Date: 1/7/98

RS-112 (8-96)

Liquid Scintillation
Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/22/97 **Time:** 15:23

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.3%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.1

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-322	428	712	-
T-323	176	279	-
T-329	1333	2264	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Recount

Performed By: Michele R. Sutton MRS 10/23/97 **Date:** 10/22/97

Reviewed By: Jac FFF **Date:** 1/7/98

Recount

Protocol #:10 Name:Campus Survey 22-Oct-97 17:18
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
322 1	1.00	428.00	334.00	52.00	96.640	
323 2	1.00	176.00	115.00	21.00	85.640	
329 3	1.00	1333.00	381.00	38.00	53.460	

RS-112 (8-96)

Liquid Scintillation
Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/17/97 **Time:** 10:36

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.9%

Suspect Isotope(s): Tritium **Bkg (cpm):** 14.4

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
T-6	3495	5909	-
T-7	1391	2337	-
T-9	259	415	-
T-18	59	76	-
T-31	285	459	-
T-82	28	23	-
T-89	3286	5554	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Recount

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/17/97

Reviewed By: [signature] **Date:** 1/7/98

Recount

Protocol #: 8 Name:Campus Survey 17-Oct-97 10:36
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
T-6	1	1.00	3495.00	285.00	8.00	20.910	
T-7	2	1.00	1391.00	148.00	19.00	26.890	
T-9	3	1.00	259.00	124.00	22.00	86.890	
T-18	4	1.00	59.00	15.00	17.00	82.870	
T-31	5	1.00	285.00	228.00	53.00	120.45	
T-82	6	1.00	28.00	16.00	15.00	93.190	
T-89	7	1.00	3286.00	832.00	00.00	45.550	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/14/97 **Time:** 14:38

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.8%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
LIQ-1	46.6	56	-
LIQ-2	33	33	-
LIQ-3	47.6	58	-
LIQ-4	32.45	33	-
LIQ-5	35.95	38	-
LIQ-6	32.5	33	-
LIQ-7	39.65	45	-
LIQ-8	1394.95	2311	-
LIQ-9	13.5	1	-
LIQ-10	14.05	2	-
LIQ-11	883.35	1455	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/14/97

Reviewed By: Nate FFF **Date:** 1/7/98

LIQ 1 – LIQ11

Protocol #:11 Name:H-3 20 min 14-Oct-97 14:38
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

LIQ	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
1	1	20.00	46.60	17.00	16.60	93.840	
2	2	20.00	33.00	19.50	15.20	120.45	
3	3	20.00	47.60	18.95	14.45	99.930	
4	4	20.00	32.45	17.40	14.75	112.34	
8	5	20.00	1394.95	382.00	18.95	52.720	
7	6	20.00	39.65	18.60	13.80	109.17	
5	7	20.00	35.95	17.60	14.65	111.05	
9	8	20.00	13.50	20.70	14.90	183.86	
10	9	20.00	14.05	20.35	15.00	188.42	
6	10	20.00	32.50	19.70	14.30	129.27	
11	11	20.00	883.35	19.20	4.35	11.160	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/15/97 **Time:** 16:42

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.7%

Suspect Isotope(s): Tritium **Bkg (cpm):** 12.8

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
LIQ-12	3628.75	6057	-
LIQ-13	56.05	72	-
LIQ-14	272252	456012	-
LIQ-15	319.9	514	-
LIQ-16	13344.8	22332	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/15/97

Reviewed By: Nate Fry **Date:** 1/7/98

LIQ 12 - LIQ16

Protocol #:11 Name:H-3 20 min 15-Oct-97 16.42
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
12	1	20.00	3628.75	135.75	34.10	25.160	
13	2	20.00	56.05	18.60	10.20	72.240	
14	3	20.00	272252.	506.80	40.25	17.620	
15	4	20.00	319.90	22.90	7.40	25.590	
16	5	20.00	13344.8	29.35	15.25	16.560	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/10/97 **Time:** 10:32

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.9%

Suspect Isotope(s): Tritium **Bkg (cpm):** 14.4

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
LIQ-17	16.45	3	-
LIQ-18	13	< LLD	-
BIOMED	81.5	112	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments:

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/10/97

Reviewed By: Nate Fort **Date:** 1/7/98

LIQ 17 - 18 , BIOMED DRAIN

Protocol #:11 Name:H-3 20 min 10-Oct-97 10:32
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
DALNEY ST	-1	20.00	13.00	17.10	14.00	171.73	LIQ 18
DE SIN	-2	20.00	16.45	17.25	13.75	170.40	LIQ 17
J DRAIN	-3	20.00	81.50	18.25	14.15	67.040	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/10/97 **Time:** 14:27

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.9%

Suspect Isotope(s): Tritium **Bkg (cpm):** 14.4

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
BIOMED	85.55	119	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Recount BIOMED.

Performed By: Michele R. Sutton **Date:** 10/10/97

Reviewed By: Nat Frf **Date:** 1/7/98

RS-112 (8-96)

Liquid Scintillation
Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/21/97 **Time:** 9:00

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 58.5%

Suspect Isotope(s): Tritium **Bkg (cpm):** 13.3

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
PT-1	986.8	1664	-
PT-2	461.45	766	-
PT-3	52.65	67	-
BS-1	41.6	48	-
BS-2	36.15	39	-
BS-3	65.75	90	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Concrete Samples

Performed By: Michele R. Sutton 10/22/97 **Date:** 10/21/97

Reviewed By: Nate Fry **Date:** 1/7/98

Concrete Samples

Protocol #:11 Name:H-3 20 min 21-Oct-97 09:00
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
PT1	1	20.00	986.80	134.85	37.30	46.670	
	2	20.00	461.45	140.00	61.35	72.220	
	3	20.00	52.65	26.15	14.45	96.000	
BS1	4	20.00	41.60	23.15	15.50	113.20	
BS2	5	20.00	36.15	22.10	16.15	109.16	
BS3	6	20.00	65.75	30.65	15.15	97.520	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/23/97 **Time:** 13:47

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 57.8%

Suspect Isotope(s): Tritium **Bkg (cpm):** 12.4

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
BS-4	57.1	77	-
BS-5	37.75	44	-
BS-6	55.36	74	-
BS-7	58.35	79	-
BS-8	38.65	45	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Concrete Samples

Performed By: Michele R. Sutton **Date:** 10/23/97

Reviewed By: **Date:**

BS4 - BS8

Protocol #:11 Name:H-3 20 min 23-Oct-97 13:47
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
1	20.00	57.10	22.30	17.20	91.070	
2	20.00	37.75	21.25	15.90	111.01	
3	20.00	55.35	24.50	15.35	93.300	
4	20.00	58.35	23.75	15.30	91.940	
5	20.00	38.65	23.70	15.40	122.03	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/15/97 **Time:** 11:02

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.7%

Suspect Isotope(s): Tritium **Bkg (cpm):** 12.8

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
LIQ-8	1394.65	2315	-
LIQ-11	726.85	1196	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Recount LIQ-8 and LIQ-11.

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/15/97

Reviewed By: Nate [illegible] **Date:** 1/7/98

Recount LIQ 8 & LIQ 11

Protocol #:11 Name:H-3 20 min 15-Oct-97 11:0

Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 20.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
LIQ 8	1	20.00	1394.65	376.45	18.95	51.800	
) 11	2	20.00	726.85	20.80	4.35	13.210	

RS-112 (8-96)

Liquid Scintillation Survey Data Sheet

Job Description: NES Characterization Survey **Date:** 10/11/97 **Time:** 7:42

Counter Used: TriCarb 2000CA **Region:** A **Efficiency:** 59.8%

Suspect Isotope(s): Tritium **Bkg (cpm):** 12.8

Survey Instr. Model: - **Serial #:** - **Cal. Due Date:** -

Bkg (cpm): -

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)
BIOMED1	21	14	-
BIOMED2	22	15	-
BIOMED3	22	15	-

Location	Gross Counts (cpm)	Net Activity (dpm)	GM Survey (cpm)

Comments: Area around BIOMED.

Performed By: Michele R. Sutton MRS 10/22/97 **Date:** 10/11/97

Reviewed By: Nate Fry **Date:** 1/7/98

BIOMED

Protocol #: 9 Name:Campus Survey 11-Oct-97 07:42
Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL=18.6-256. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=256.-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = SIS

	S#	TIME	CPMA	CPMB	CPMC	SIS	FLAG
BIOMED 1	1	1.00	21.00	24.00	29.00	196.16	
BIOMED 2	2	1.00	22.00	30.00	14.00	160.40	
BIOMED 3	3	1.00	22.00	25.00	17.00	170.33	

Gamma Spectrometer

Soil and liquid samples were counted for 1-hr on the gamma spectrometer (EG & G High Purity Germanium Detector, Model # GEM-20180-P, S/N 333-TP10921A). Contaminated smears and point samples were counted for 10-min.

Radioactivity Concentrations in Background Soil Samples

Sample ID	Location	Radionuclides	Activity (in pCi/g)
BG-1	Vacant Lot Behind 763 Techwood Drive	K-40	1.56×10^{4}
		Th-232	1.10×10^{3}
		U-238	7.07×10^{2}
BG-2	Vacant Lot Behind 763 Techwood Drive	K-40	9.32×10^{3}
		Th-232	5.11×10^{2}
		U-238	4.47×10^{2}
BG-3	Vacant Lot Behind 763 Techwood Drive	K-40	2.24×10^{1}
		Kr-85	8.21×10^{1}
		Th-232	1.32×10^{0}
		U-238	9.58×10^{-1}
BG-4	Vacant Lot Behind 763 Techwood Drive	K-40	2.19×10^{1}
		Th-232	1.39×10^{0}
		U-238	<BKG
BG-5	Vacant Lot Behind 763 Techwood Drive	K-40	1.9×10^{1}
		Th-232	1.08×10^{0}
		U-238	<BKG
BG1-5Comp	Vacant Lot Behind 763 Techwood Drive	K-40	1.98×10^{1}
		Th-232	1.08×10^{0}
		U-238	8.93×10^{-1}
BG-6A	Vacant Lot Behind 763 Techwood Drive	K-40	2.42×10^{1}
		Th-232	1.48×10^{0}
		U-238	1.39×10^{0}

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Quantum Technology
GDR_C Version 5.0

Sample ID : BG-1

Sample Size	1.00e+000 g	Spectrum File	TEMP.SPC
Sampling Start	10-08-97 11:07	Counting Start	10-08-97 11:07
Sampling Stop	10-08-97 11:07	Live Time	3600 Sec
Current Date	10-11-97 10:28	Real Time	[illegible] Sec

Detector #: 22

Energy(keV) = 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 / 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	78.01	145.06	93	42	75	686	1.09	
2	209.44	418.30	57	32	59	387	1.02	NET < CL
3	238.83	479.39	493	36	51	357	1.17	
4	295.24	596.68	148	24	36	179	1.51	
5	338.31	686.21	108	26	45	202	1.37	
6	351.81	714.28	229	26	40	175	0.93	
7	510.03	1043.21	108	21	35	123	1.74	
8	582.42	1193.71	227	19	21	48	1.59	
9	608.49	1247.92	161	20	28	81	1.65	
10	909.38	1873.46	131	17	23	50	1.78	
11	967.35	1993.99	89	14	20	40	2.14	
12	1457.40	3012.80	400	22	16	21	1.86	
13	1760.09	3642.10	41	9	12	12	2.32	

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Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: BG-1

Sample Size . . . . . 1.00e+000 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-08-97 11:07	Counting Start. 10-08-97 11:07
Sampling Stop 10-08-97 11:07	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-11-97 10:28	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library
Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001]	12-05-96 10:47
Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	78.01	93	U-238	77.11	0.1070	6.26e-003	1.00e+000	1.04e+003
1	78.01	93	TH-232	77.11	0.1750	6.26e-003	1.01e+000	6.32e+002
1	78.01	93	Hg-197	77.35	0.1900	6.26e-003	9.95e-001	5.91e+002
1	78.01	93	Pt-197	77.35	0.1700	6.26e-003	9.81e-001	6.69e+002
1	78.01	93	Fr-223	80.00				
1	78.01	93	Ce-144	80.00	0.0200	6.26e-003	1.00e+000	5.58e+003
1	78.01	93	Hg-197	80.20	0.0340	6.26e-003	9.95e-001	3.30e+003
1	78.01	93	Hg-199m	80.20	0.1110	6.26e-003	3.31e-001	3.04e+003
1	78.01	93	Xe-133	80.99	0.3700	6.26e-003	9.97e-001	3.02e+002
1	78.01	93	Ba-133	81.00	0.3429	6.26e-003	1.00e+000	3.26e+002
1	78.01	93	U-235	81.07	0.1480	6.26e-003	1.00e+000	7.54e+002
1	78.01	93	U-235	83.78	0.2460	6.26e-003	1.00e+000	4.54e+002
3	238.83	493	Xe-133m	233.20	0.1000	8.24e-003	9.94e-001	4.52e+003
3	238.83	493	Fr-223	234.60				
3	238.83	493	Th-227	236.00				
3	238.83	493	U-235	236.00	0.1100	8.24e-003	1.00e+000	4.08e+003
3	238.83	493	TH-232	238.63	0.4310	8.24e-003	1.01e+000	1.03e+003
3	238.83	493	Te-131m	240.93	0.0755	8.24e-003	9.89e-001	6.02e+003
3	238.83	493	Ra-224	241.08				
3	238.83	493	Xe-125	243.40	0.2871	8.24e-003	9.80e-001	1.60e+003
3	238.83	493	IN-116M	244.59	0.0038	8.24e-003	6.99e-001	1.69e+005
3	238.83	493	Eu-152	244.67	0.0772	8.24e-003	1.00e+000	5.82e+003
4	295.24	148	Ce-143	293.26	0.4200	7.01e-003	9.90e-001	3.82e+002
4	295.24	148	U-238	295.22	0.1920	7.01e-003	1.00e+000	8.24e+002
4	295.24	148	Ir-192	295.96	0.2872	7.01e-003	1.00e+000	5.52e+002
4	295.24	148	Tl-210	296.00				
4	295.24	148	Ag-113	298.40	0.0900	7.01e-003	9.38e-001	1.88e+003
4	295.24	148	TB-160	298.57	0.2740	7.01e-003	1.00e+000	5.79e+002
4	295.24	148	Pa-231	299.90				
4	295.24	148	Pa-233	300.10	0.0633	7.01e-003	9.99e-001	2.51e+003
4	295.24	148	Ga-67	300.20	0.1900	7.01e-003	9.96e-001	8.38e+002
5	338.31	108	Mg-27	332.73	0.0100	6.27e-003	2.25e-001	5.75e+004
5	338.31	108	Au-196	332.90	0.2300	6.27e-003	9.98e-001	5.63e+002

5	338.31	108	Te-131m	334.27	0.0950	6.27e-003	9.99e-001 1.17e+003
5	338.31	108	Np-239	334.30	0.0210	6.27e-003	9.99e-001 7.81e+003
5	338.31	108	In-115m	336.20	0.4590	6.27e-003	9.97e-001 3.04e+002
5	338.31	108	Ru-95	336.40	0.7100	6.27e-003	9.97e-001 2.03e+002
5	338.31	108	TH-232	338.40	0.1201	6.27e-003	1.01e+000 1.07e+003
5	338.31	108	Ra-223	338.60			
5	338.31	108	Ac-228	338.70			
5	338.31	108	Cs-136	340.60	0.4890	6.27e-003	9.99e-001 2.65e+002
5	338.31	108	Cs-136	340.60	0.4676	6.27e-003	9.99e-001 2.77e+002
5	338.31	108	HF-175	343.40	0.8692	6.27e-003	1.00e+000 1.49e+002
5	338.31	108	EU-152M	344.20	0.0250	6.27e-003	9.64e-001 5.37e+003
5	338.31	108	Eu-152	344.30	0.2720	6.27e-003	1.00e+000 4.75e+002
6	351.81	229	HF-181	345.95	0.1400	6.07e-003	1.00e+000 2.32e+003
6	351.81	229	Ho-167	346.50	0.5700	6.07e-003	8.96e-001 5.54e+002
6	351.81	229	Pt-197m	346.50	0.1110	6.07e-003	8.03e-001 3.15e+003
6	351.81	229	Na-24	346.55	0.0100	6.07e-003	9.77e-001 2.00e+004
6	351.81	229	Bi-211	351.00			
6	351.81	229	U-235	351.10	0.1200	6.07e-003	1.00e+000 2.36e+003
6	351.81	229	U-238	351.99	0.3710	6.07e-003	1.00e+000 7.61e+002
6	351.81	229	Au-196	355.70	0.8760	6.07e-003	9.98e-001 3.24e+002
6	351.81	229	Ba-133	356.00	0.6200	6.07e-003	1.00e+000 4.57e+002
7	510.03	108	Mo-101	505.88	0.1135	4.44e-003	3.31e-001 4.86e+003
7	510.03	108	Te-121	507.59	0.1767	4.44e-003	9.99e-001 1.03e+003
7	510.03	108	Tl-208	510.72			
7	510.03	108	Kr-79	511.00	0.1500	4.44e-003	9.90e-001 1.23e+003
7	510.03	108	Annihila	511.00	1.0000	4.44e-003	1.00e+000 1.83e+002
7	510.03	108	Zn-71m	511.55	0.2806	4.44e-003	9.17e-001 7.10e+002
7	510.03	108	Rh-106m	511.70	0.8640	4.44e-003	8.56e-001 2.47e+002
7	510.03	108	KR-85	514.00	0.0041	4.44e-003	1.00e+000 4.46e+004
8	582.42	227	Tl-208	583.14			
8	582.42	227	TH-232	583.14	0.3090	3.96e-003	1.01e+000 1.38e+003
9	608.49	161	Sb-124	602.72	0.9830	3.82e-003	1.00e+000 3.22e+002
9	608.49	161	Cs-134	604.66	0.9756	3.82e-003	1.00e+000 3.25e+002
9	608.49	161	Kr-79	606.10	0.0810	3.82e-003	9.90e-001 3.95e+003
9	608.49	161	Sb-125	606.82	0.0520	3.82e-003	1.00e+000 6.09e+003
9	608.49	161	Bi-214	609.30			
9	608.49	161	U-238	609.32	0.4609	3.82e-003	1.00e+000 6.86e+002
9	608.49	161	Ir-192	612.45	0.0543	3.82e-003	1.00e+000 5.83e+003
9	608.49	161	Ag-108m	614.37	0.9320	3.82e-003	1.00e+000 3.40e+002
10	909.38	131	TH-232	911.07	0.2900	2.70e-003	1.01e+000 1.24e+003
10	909.38	131	Ac-228	911.20			
10	909.38	131	Sb-129	914.60	0.2140	2.70e-003	9.25e-001 1.84e+003
11	967.35	89	TB-160	962.36	0.1000	2.56e-003	1.00e+000 2.61e+003
11	967.35	89	EU-152M	963.50	0.1200	2.56e-003	9.64e-001 2.26e+003
11	967.35	89	Eu-152	964.00	0.1433	2.56e-003	1.00e+000 1.82e+003
11	967.35	89	Ac-228	964.40			
11	967.35	89	TB-160	966.17	0.2550	2.56e-003	1.00e+000 1.02e+003
11	967.35	89	Ac-228	968.80			
11	967.35	89	TH-232	968.90	0.1746	2.56e-003	1.01e+000 1.48e+003
12	1457.40	400	K-40	1460.81	0.1070	1.80e-003	1.00e+000 1.56e+004
13	1760.09	41	U-238	1764.28	0.1504	1.53e-003	1.00e+000 1.33e+003
13	1760.09	41	Bi-214	1764.50			

INITIAL NUCLIDE EVALUATION

clide	Energy	Fraction	Status	Halflives
-238	77.11	0.1070	Present	
	295.22	0.1920	Present	

	881.99	1.3710	Present				
	89.42	1.4609	Present				
	1764.08	1.1804	Present				
	Total	1.2813	PRESENT	1.2813/	1.2813 =	100.0000 %	0.000
TH-232	77.11	0.1750	Present				
	238.63	0.4310	Present				
	338.40	0.1201	Present				
	583.14	0.3090	Present				
	911.07	0.2900	Present				
	968.90	0.1746	Present				
	Total	1.4997	PRESENT	1.4997/	1.4997 =	100.0000 %	0.000
Hg-197	77.35	0.1900	Present				
	80.20	0.0340	Present				
	191.38	0.0057	Absent				
	268.73	0.0005	Absent				
	Total	0.2302	PRESENT	0.2240/	0.2302 =	97.3067 %	0.000
Pt-197	77.35	0.1700	Present				
	191.31	0.0350	Absent				
	Total	0.2050	PRESENT	0.1700/	0.2050 =	82.9268 %	0.000
Fr-223	80.00	0.0001	Unable to Calc				
	234.60	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	0.0002/	0.0002 =	100.0000 %	0.000
Ce-144	80.00	0.0200	Present				
	133.54	0.1110	Absent				
	Total	0.1310	ABSENT	0.0200/	0.1310 =	15.2672 %)	0.000
Hg-199m	80.20	0.1110	Present				
	158.37	0.5840	Absent				
	374.10	0.1380	Absent				
	Total	0.8330	ABSENT	0.1110/	0.8330 =	13.3253 %)	0.000
Xe-133	80.99	0.3700	Present				
	Total	0.3700	PRESENT	0.3700/	0.3700 =	100.0000 %)	0.000
I-133	81.00	0.3429	Present				
	276.40	0.0709	Absent				
	302.85	0.1816	Absent				
	356.00	0.6200	Present				
	383.85	0.0897	Absent				
	Total	1.3051	ABSENT	0.9629/	1.3051 =	73.7798 %)	0.000
U-235	81.07	0.1480	Present				
	83.78	0.2460	Present				
	143.76	0.1050	Absent				
	185.72	0.5400	Absent				
	236.00	0.1100	Present				
	269.60	0.1340	Absent				
	351.10	0.1200	Present				
	Total	1.4030	ABSENT	0.6240/	1.4030 =	44.4761 %)	0.000
TB-160	86.80	0.1340	Absent				
	197.04	0.0524	Absent				
	215.65	0.0402	Absent				
	298.57	0.2740	Present				
	876.37	0.3000	Absent				
	962.36	0.1000	Present				
	966.17	0.2550	Present				
	1177.95	0.1550	Absent				
	1271.88	0.0760	Absent				
	Total	1.3866	ABSENT	0.6290/	1.3866 =	45.3628 %)	0.000
HF-175	89.36	0.0235	Absent				
	343.40	0.8692	Present				
	432.80	0.0156	Absent				
	Total	0.9083	PRESENT	0.8692/	0.9083 =	95.6952 %)	0.000
Ga-67	93.30	0.3800	Absent				

	144.90	0.0360	Absent					
	[illegible]	[illegible]	Present					
	Total	1.8060	ABSENT	[illegible]	[illegible]	=	[illegible]	[illegible]
Te-131m	102.06	0.0790	Absent					
	149.71	0.2054	Absent					
	200.63	0.0752	Absent					
	240.93	0.0755	Present					
	334.27	0.0952	Present					
	452.30	0.0567	Absent					
	773.67	0.3800	Absent					
	782.49	0.0775	Absent					
	793.75	0.1380	Absent					
	822.78	0.0609	Absent					
	852.21	0.2093	Absent					
	1125.46	0.1137	Absent					
	1206.60	0.0971	Absent					
	Total	1.6635	ABSENT	(0.1707/	1.6635	=	[illegible]	[illegible]
Np-239	106.10	0.2320	Absent					
	209.80	0.0410	Absent					
	228.10	0.1270	Absent					
	277.60	0.1420	Absent					
	315.90	0.0150	Absent					
	334.30	0.0200	Present					
	Total	0.5770	ABSENT	(0.0200/	0.5770	=	3.4662 %)	0.000
EU-152M	121.78	0.0720	Absent					
	344.20	0.0250	Present					
	841.60	0.1470	Absent					
	963.50	0.1200	Present					
	Total	0.3640	ABSENT	(0.1450/	0.3640	=	39.8352 %)	0.000
Eu-152	121.78	0.3068	Absent					
	244.67	0.0772	Present					
	344.30	0.2720	Present					
	778.90	0.1272	Absent					
	964.00	0.1433	Present					
	1085.80	0.1010	Absent					
	1112.07	0.1340	Absent					
	1408.08	0.2073	Absent					
	Total	1.3688	ABSENT	(0.4925/	1.3688	=	35.9804 %)	0.000
HF-181	133.05	0.4300	Absent					
	136.25	0.0610	Absent					
	345.95	0.1400	Present					
	482.16	0.8600	Absent					
	Total	1.4910	ABSENT	(0.1400/	1.4910	=	9.3897 %)	0.000
IN-116M	137.92	0.0350	Absent					
	244.59	0.0038	Present					
	416.88	0.2937	Absent					
	463.13	0.0083	Absent					
	818.65	0.1372	Absent					
	1097.23	0.6791	Absent					
	1293.49	1.0000	Absent					
	1507.50	0.1186	Absent					
	1601.12	0.0107	Absent					
	1752.42	0.0289	Absent					
	2212.21	0.1858	Absent					
	Total	2.5011	ABSENT	(0.0038/	2.5011	=	0.1519 %)	0.000
Pa-223	144.30	0.0001	Absent					
	154.30	0.0001	Absent					
	269.60	0.0001	Absent					
	338.60	0.0001	Unable to Calc					
	Total	0.0004	ABSENT	(0.0001/	0.0004	=	25.0000 %)	0.000

[illegible]	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Unable to Calc				
	[illegible]	[illegible]	Absent				
	1014.80	0.0860	Absent				
	Total	1.0170	ABSENT	0.0100	1.0170 =	[illegible]	[illegible]
-125	176.29	0.0630	Absent				
	380.51	0.0140	Absent				
	427.95	0.2960	Absent				
	463.51	0.1000	Absent				
	600.77	0.1840	Absent				
	606.82	0.0520	Present				
	636.15	0.1120	Absent				
	671.66	0.0180	Absent				
	Total	0.8390	ABSENT	(0.0520/	0.8390 =	6.1979 %)	1.000
Xe-125	188.43	0.5500	Absent				
	243.40	0.2871	Present				
	Total	0.8371	ABSENT	(0.2871/	0.8371 =	34.2970 %)	1.000
Mo-101	191.93	0.1810	Absent				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				
	1012.35	0.1135	Absent				
	Total	0.6670	ABSENT	(0.1135/	0.6670 =	17.0165 %)	1.000
Ac-228	209.50	0.0001	Absent				
	338.70	0.0001	Unable to Calc				
	790.50	0.0001	Absent				
	911.20	0.0001	Unable to Calc				
	964.40	0.0001	Unable to Calc				
	968.80	0.0001	Unable to Calc				
	Total	0.0006	ABSENT	(0.0004/	0.0006 =	66.6667 %)	0.000
-133m	233.20	0.1000	Present				
	Total	0.1000	PRESENT	(0.1000/	0.1000 =	100.0000 %)	0.000
Th-227	236.00	0.0001	Unable to Calc				
	329.90	0.0001	Absent				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
Ra-224	241.08	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Kr-79	261.30	0.1270	Absent				
	397.50	0.0950	Absent				
	511.00	0.1500	Present				
	606.10	0.0810	Present				
	Total	0.4530	ABSENT	(0.2310/	0.4530 =	50.9934 %)	0.000
Pa-231	283.60	0.0001	Absent				
	299.90	0.0001	Unable to Calc				
	302.50	0.0001	Absent				
	Total	0.0003	ABSENT	(0.0001/	0.0003 =	33.3333 %)	0.000
Ce-143	293.26	0.4200	Present				
	664.55	0.0525	Absent				
	721.96	0.0512	Absent				
	Total	0.5237	PRESENT	(0.4200/	0.5237 =	80.1986 %)	0.000
Ir-192	295.96	0.2872	Present				
	308.46	0.2965	Absent				
	316.51	0.8290	Absent				
	468.06	0.4808	Absent				
	612.45	0.0543	Present				
	Total	1.9478	ABSENT	(0.3415/	1.9478 =	17.5326 %)	0.000
-210	296.00	0.0001	Unable to Calc				
	795.00	0.0001	Absent				
	1060.00	0.0001	Absent				
	1210.00	0.0001	Absent				

	[illegible]	0.0001	Absent				
	Total	0.0008	ABSENT	0.0001	0.0008 =	[illegible]	[illegible]
Ag-110	884.40	0.0900	Present				
	Total	0.0900	PRESENT	0.0900	0.0900 =	100.0000 %	0.000
Pa-233	300.10	0.0633	Present				
	311.90	0.3700	Absent				
	Total	0.4333	ABSENT	0.0633	0.4333 =	14.6088 %	0.000
Ho-167	321.30	0.2390	Absent				
	346.50	0.5700	Present				
	Total	0.8090	ABSENT (	0.5700/	0.8090 =	70.4574 %)	0.000
Au-196	332.90	0.2300	Present				
	355.70	0.8760	Present				
	Total	1.1060	PRESENT (	1.1060/	1.1060 =	100.0000 %)	0.000
In-115m	336.20	0.4590	Present				
	Total	0.4590	PRESENT (	0.4590/	0.4590 =	100.0000 %)	0.000
Ru-95	336.40	0.7100	Present				
	1096.80	0.2100	Absent				
	Total	0.9200	ABSENT (	0.7100/	0.9200 =	77.1739 %)	0.000
Cs-136	340.60	0.4890	Present				
	340.60	0.4676	Present				
	818.50	0.9970	Absent				
	818.50	0.9970	Absent				
	1048.07	0.7976	Absent				
	1048.10	0.7980	Absent				
	1235.34	0.1974	Absent				
	Total	4.7436	ABSENT (	0.9566/	4.7436 =	20.1661 %)	0.000
Pt-197m	346.50	0.1110	Present				
	Total	0.1110	PRESENT (	0.1110/	0.1110 =	100.0000 %)	0.000
Na-24	346.55	0.0100	Unable to Calc				
	857.55	0.0100	Absent				
	1368.53	1.0000	Absent				
	1732.10	0.0100	Absent				
	Total	1.0300	ABSENT (	0.0100/	1.0300 =	0.9709 %)	0.000
Bi-211	351.00	0.0001	Unable to Calc				
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %)	0.000
Zn-71m	386.28	0.9200	Absent				
	487.34	0.6164	Absent				
	511.55	0.2806	Present				
	596.97	0.2760	Absent				
	620.19	0.5612	Absent				
	Total	2.6542	ABSENT (	0.2806/	2.6542 =	10.5719 %)	0.000
Ag-108m	434.00	0.9050	Absent				
	614.37	0.9320	Present				
	722.95	0.9230	Absent				
	Total	2.7600	ABSENT (	0.9320/	2.7600 =	33.7681 %)	0.000
Rh-106m	450.80	0.2450	Absent				
	511.70	0.8640	Present				
	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT (	0.8640/	1.8150 =	47.6033 %)	0.000
Te-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT (	0.1767/	0.9797 =	18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Unable to Calc				
	Total	0.0002	PRESENT (	0.0002/	0.0002 =	100.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT (	1.0000/	1.0000 =	100.0000 %)	0.000
KR-85	514.00	0.0041	Present				

	Total	1.0041	PRESENT	1.0041	1.0041 =	[illegible]	
	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Absent				
	914.60	0.2140	Present				
	1030.10	0.1350	Absent				
	Total	1.0010	ABSENT	(0.2140/	1.0010 =	21.3786 %	[illegible]
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.94	0.0873	Absent				
	Total	2.1554	ABSENT	(0.9756/	2.1554 =	45.2631 %	[illegible]
Sb-124	602.72	0.9830	Present				
	645.82	0.0723	Absent				
	722.78	0.1130	Absent				
	1691.02	0.4900	Absent				
	Total	1.6583	ABSENT	(0.9830/	1.6583 =	59.2776 %	[illegible]
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Absent				
	1764.50	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	(0.0002/	0.0004 =	50.0000 %	0.000
K-40	1460.81	0.1070	Present				
	Total	0.1070	PRESENT	(0.1070/	0.1070 =	100.0000 %	0.000

PEAK CONTRIBUTION CORRECTION

Pk#	Old Area	Nuclide	Reference Energy Line Energy	cts/dis	Ref Area	===>> Calculated Contribution Energy	cts/dis	New Area
1	93	U-238	609.32	1.76e-003	161	77.11	6.69e-004	61
1	32	TH-232	911.07	7.83e-004	131	77.11	1.09e-003	32
3	493	TH-232	911.07	7.83e-004	131	238.63	3.55e-003	493
4	148	U-238	609.32	1.76e-003	161	295.22	1.35e-003	123
5	108	TH-232	911.07	7.83e-004	131	338.40	7.53e-004	103
6	229	U-238	609.32	1.76e-003	161	351.99	2.25e-003	206
8	227	TH-232	911.07	7.83e-004	131	583.14	1.22e-003	205

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
1	0	Hg-197	77.35	Deleted [Net < Critical Level]
1	0	Pt-197	77.35	Deleted [Net < Critical Level]
1	0	Fr-223	80.00	Deleted [Net < Critical Level]
1	0	Hg-197	80.20	Deleted [Net < Critical Level]
1	0	Xe-133	80.99	Deleted [Net < Critical Level]
3	0	Xe-133m	233.20	Deleted [Net < Critical Level]
3	0	Fr-223	234.60	Deleted [Net < Critical Level]
3	0	Ra-224	241.08	Deleted [Net < Critical Level]
4	25	Ce-143	293.26	Deleted [Net < Critical Level]
4	25	Ag-113	298.40	Deleted [Net < Critical Level]
5	0	Au-196	332.90	Deleted [Net < Critical Level]
5	0	In-115m	336.20	Deleted [Net < Critical Level]
5	0	HF-175	343.40	Deleted [Net < Critical Level]
6	23	Pt-197m	346.50	Deleted [Net < Critical Level]
6	23	Bi-211	351.00	Deleted [Net < Critical Level]
6	23	Au-196	355.70	Deleted [Net < Critical Level]

22 Tl-210 583.14 Net Counts Corrected

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status				Halflives
Hg-197	77.35	0.1900	Absent				
	80.20	0.0340	Absent				
	191.38	0.0057	Absent				
	268.73	0.0005	Absent				
	Total	0.2302	ABSENT	(0.0000/	0.2302 =	0.0000 %)	0.000
Pt-197	77.35	0.1700	Absent				
	191.31	0.0350	Absent				
	Total	0.2050	ABSENT	(0.0000/	0.2050 =	0.0000 %)	0.000
Fr-223	80.00	0.0001	Absent				
	234.60	0.0001	Absent				
	Total	0.0002	ABSENT	(0.0000/	0.0002 =	0.0000 %)	0.000
Xe-133	80.99	0.3700	Absent				
	Total	0.3700	ABSENT	(0.0000/	0.3700 =	0.0000 %)	0.000
HF-175	89.36	0.0235	Absent				
	343.40	0.8692	Absent				
	432.80	0.0156	Absent				
	Total	0.9083	ABSENT	(0.0000/	0.9083 =	0.0000 %)	0.000
Xe-133m	233.20	0.1000	Absent				
	Total	0.1000	ABSENT	(0.0000/	0.1000 =	0.0000 %)	0.000
Ra-224	241.08	0.0001	Absent				
	Total	0.0001	ABSENT	(0.0000/	0.0001 =	0.0000 %)	0.000
Ce-143	293.26	0.4200	Absent				
	664.55	0.0525	Absent				
	721.96	0.0512	Absent				
	Total	0.5237	ABSENT	(0.0000/	0.5237 =	0.0000 %)	0.000
Ag-113	298.40	0.0900	Absent				
	Total	0.0900	ABSENT	(0.0000/	0.0900 =	0.0000 %)	0.000
Au-196	332.90	0.2300	Absent				
	355.70	0.8760	Absent				
	Total	1.1060	ABSENT	(0.0000/	1.1060 =	0.0000 %)	0.000
In-115m	336.20	0.4590	Absent				
	Total	0.4590	ABSENT	(0.0000/	0.4590 =	0.0000 %)	0.000
Pt-197m	346.50	0.1110	Absent				
	Total	0.1110	ABSENT	(0.0000/	0.1110 =	0.0000 %)	0.000
Bi-211	351.00	0.0001	Absent				
	Total	0.0001	ABSENT	(0.0000/	0.0001 =	0.0000 %)	0.000

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +-1.00sigma (pCi /g)		Halflife (hrs)	Peaks Found	MPC Fraction
U-238	Average:	7.07e+002	+-5.35e+001	4.12e+013	5 of 5	0.00
	77.11	6.82e+002	+-4.66e+002			
	295.22	6.85e+002	+-1.31e+002			
	351.99	6.85e+002	+-8.72e+001			
	609.32	6.86e+002	+-8.36e+001			
	1764.28	1.33e+003	+-2.90e+002			
-232	Average:	1.10e+003	+-5.44e+001	1.24e+014	6 of 6	0.00
	77.11	2.17e+002	+-2.83e+002			
	238.63	1.03e+003	+-7.53e+001			
	338.40	1.07e+003	+-2.57e+002			

	[illegible]	1.05e-003	--1.15e-002			
	[illegible]	1.24e-003	--1.39e-002			
	[illegible]	1.48e-003	--2.35e-002			
Tl-208	510.72		BKG	1.00e+012	2 of 2	
	583.14		BKG			
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	4.46e+004	+-8.78e+003	9.39e+004	1 of 1	
K-40	1460.81	1.56e+004	+-8.43e+002	1.12e+013	1 of 1	

TOTAL: 6.20e+004 pCi /g MPC Total: 1.00

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : BG-2

Sample Size	1.00e+000 g	Spectrum File	TEMP.SPC
Sampling Start	10-08-97 12:15	Counting Start	10-08-97 12:15
Sampling Stop	10-08-97 12:15	Live Time	3600 Sec
Current Date	10-11-97 10:29	Real Time	3 Sec

Detector #: 22

Energy(keV) = 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	186.45	370.50	79	33	58	375	1.00	
2	238.89	479.53	195	28	43	253	1.13	
3	295.21	596.60	93	24	40	177	1.84	
4	351.80	714.25	115	23	39	156	1.54	
5	510.60	1044.41	116	20	33	100	2.20	
6	582.54	1193.96	107	15	21	46	1.32	
7	608.39	1247.71	106	16	24	62	1.24	
8	909.72	1874.18	77	13	19	32	1.65	
9	966.89	1993.03	30	13	23	50	1.30	
10	1457.38	3012.76	239	17	13	13	1.92	
11	1760.27	3642.48	35	8	12	12	0.83	

Neely Nuclear Research Center

Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: BG-2

Sample Size . . . . . 1.00e+000 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-08-97 12:15	Counting Start. 10-08-97 12:15
Sampling Stop 10-08-97 12:15	Buildup Time. . . . . 0.00e-000 Hrs
Current Date. 10-11-97 10:29	Decay Time. . . . . 0.00e-000 Hrs
Efficiency File:c:\gdr\eff\550mlliq.ef	Library File. . .c:\gdr\library nes.lib
ID.	IDGeneral Radionuclide Analysis Library
Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^3.62e-001]	12-05-96 10:47
Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 3.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	186.45	79	Mo-99	181.07	0.0629	9.66e-003	9.95e-001	9.81e+002
1	186.45	79	Cu-67	184.50	0.4700	9.66e-003	9.94e-001	1.31e+002
1	186.45	79	Ga-67	184.60	0.2360	9.66e-003	9.96e-001	2.61e+002
1	186.45	79	U-235	185.72	0.5400	9.66e-003	1.00e+000	1.14e+002
1	186.45	79	Ra-226	186.20				
1	186.45	79	Xe-125	188.43	0.5500	9.66e-003	9.80e-001	1.14e+002
1	186.45	79	In-114m	190.24	0.1564	9.66e-003	1.00e+000	3.93e+002
1	186.45	79	Pt-197	191.31	0.0350	9.66e-003	9.81e-001	1.79e+003
1	186.45	79	Hg-197	191.38	0.0057	9.66e-003	9.95e-001	1.08e+004
1	186.45	79	Zn-72	191.50	0.0940	9.66e-003	9.93e-001	6.58e+002
1	186.45	79	Mo-101	191.93	0.1810	9.66e-003	3.31e-001	1.02e+003
1	186.45	79	Fe-59	192.34	0.0311	9.66e-003	1.00e+000	1.97e+003
2	238.89	195	Xe-133m	233.20	0.1000	8.24e-003	9.94e-001	1.79e+003
2	238.89	195	Fr-223	234.60				
2	238.89	195	Th-227	236.00				
2	238.89	195	U-235	236.00	0.1100	8.24e-003	1.00e+000	1.62e+003
2	238.89	195	TH-232	238.63	0.4310	8.24e-003	1.01e+000	4.08e+002
2	238.89	195	Te-131m	240.93	0.0755	8.24e-003	9.89e-001	2.38e+003
2	238.89	195	Ra-224	241.08				
2	238.89	195	Xe-125	243.40	0.2871	8.24e-003	9.80e-001	6.32e+002
2	238.89	195	IN-116M	244.59	0.0038	8.24e-003	6.99e-001	6.69e+004
2	238.89	195	Eu-152	244.67	0.0772	8.24e-003	1.00e+000	2.30e+003
3	295.21	93	Ce-143	293.26	0.4200	7.01e-003	9.90e-001	2.40e+002
3	295.21	93	U-238	295.22	0.1920	7.01e-003	1.00e+000	5.18e+002
3	295.21	93	Ir-192	295.96	0.2872	7.01e-003	1.00e+000	3.47e+002
3	295.21	93	Tl-210	296.00				
3	295.21	93	Ag-113	298.40	0.0900	7.01e-003	9.38e-001	1.18e+003
3	295.21	93	TB-160	298.57	0.2740	7.01e-003	1.00e+000	3.64e+002
3	295.21	93	Pa-231	299.90				
3	295.21	93	Pa-233	300.10	0.0633	7.01e-003	9.99e-001	1.58e+003
3	295.21	93	Ga-67	300.20	0.1900	7.01e-003	9.96e-001	5.27e+002
4	351.80	115	HF-181	345.95	0.1400	6.07e-003	1.00e+000	1.02e+003
4	351.80	115	Ho-167	346.50	0.5700	6.07e-003	8.96e-001	2.78e+002

4	351.91	113	Pb-197m	346.80	1.1110	4.07e-003	[illegible]	[illegible]
4	351.91	113	Na-24	346.85	0.0100	4.07e-003	[illegible]	[illegible]
4	351.80	115	Bi-211	351.00				
4	351.80	115	U-235	351.10	0.1200	6.07e-003	1.00e-000	1.18e-003
4	351.80	115	U-238	351.99	0.3710	6.07e-003	1.00e-000	3.61e-003
4	351.80	115	Au-196	355.70	0.8760	6.07e-003	9.98e-001	1.48e-002
4	351.80	115	Ba-133	356.00	0.6200	6.07e-003	1.00e-000	2.09e-002
5	510.60	116	Mo-101	505.88	0.1135	4.43e-003	3.31e-001	5.23e-003
5	510.60	116	Te-121	507.59	0.1767	4.43e-003	9.99e-001	1.11e-003
5	510.60	116	Tl-208	510.72				
5	510.60	116	Kr-79	511.00	0.1500	4.43e-003	9.99e-001	1.33e-003
5	510.60	116	Annihila	511.00	1.0000	4.43e-003	1.00e+000	1.96e-002
5	510.60	116	Zn-71m	511.55	0.2806	4.43e-003	9.17e-001	7.64e-002
5	510.60	116	Rh-106m	511.70	0.8640	4.43e-003	8.56e-001	2.66e-002
5	510.60	116	KR-85	514.00	0.0041	4.43e-003	1.00e-000	4.79e-004
6	582.54	107	Tl-208	583.14				
6	582.54	107	TH-232	583.14	0.3090	3.96e-003	1.01e+000	6.50e-002
7	608.39	106	Sb-124	602.72	0.9830	3.82e-003	1.00e-000	2.12e-002
7	608.39	106	Cs-134	604.66	0.9756	3.82e-003	1.00e-000	2.14e-002
7	608.39	106	Kr-79	606.10	0.0810	3.82e-003	9.90e-001	2.60e-003
7	608.39	106	Sb-125	606.82	0.0520	3.82e-003	1.00e+000	4.01e-003
7	608.39	106	Bi-214	609.30				
7	608.39	106	U-238	609.32	0.4609	3.82e-003	1.00e-000	4.51e-002
7	608.39	106	Ir-192	612.45	0.0543	3.82e-003	1.00e+000	3.84e+003
7	608.39	106	Ag-108m	614.37	0.9320	3.82e-003	1.00e+000	2.24e+002
8	909.72	77	TH-232	911.07	0.2900	2.70e-003	1.01e+000	7.31e+002
8	909.72	77	Ac-228	911.20				
8	909.72	77	Sb-129	914.60	0.2140	2.70e-003	9.25e-001	1.08e+003
9	966.89	30	TB-160	962.36	0.1000	2.56e-003	1.00e+000	8.79e+002
9	966.89	30	EU-152M	963.50	0.1200	2.56e-003	9.64e-001	7.60e+002
9	966.89	30	Eu-152	964.00	0.1433	2.56e-003	1.00e+000	6.13e+002
9	966.89	30	Ac-228	964.40				
9	966.89	30	TB-160	966.17	0.2550	2.56e-003	1.00e+000	3.45e-002
9	966.89	30	Ac-228	968.80				
9	966.89	30	TH-232	968.90	0.1746	2.56e-003	1.01e+000	4.99e-002
10	1457.38	239	K-40	1460.81	0.1070	1.80e-003	1.00e+000	9.32e+003
11	1760.27	35	U-238	1764.28	0.1504	1.53e-003	1.00e+000	1.14e+003
11	1760.27	35	Bi-214	1764.50				

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status				Halflives
U-238	77.11	0.1070	Absent				
	295.22	0.1920	Present				
	351.99	0.3710	Present				
	609.32	0.4609	Present				
	1764.28	0.1504	Present				
	Total	1.2813	PRESENT (	1.1743/	1.2813 =	91.6491 %)	0.000
TH-232	77.11	0.1750	Absent				
	238.63	0.4310	Present				
	338.40	0.1201	Absent				
	583.14	0.3090	Present				
	911.07	0.2900	Present				
	968.90	0.1746	Present				
	Total	1.4997	PRESENT (	1.2046/	1.4997 =	80.3227 %)	0.000
[illegible]g-197	77.35	0.1900	Absent				
	80.20	0.0340	Absent				
	191.38	0.0057	Present				

	118.71	0.0005	Absent				
	Total	0.0302	ABSENT	0.0057	0.0302 =	18.8741 %	0.000
Eu-154	77.35	0.1700	Absent				
	1004.81	0.0350	Present				
	Total	0.2050	ABSENT	0.0350	0.2050 =	17.0732 %	0.000
I-223	80.00	0.0001	Absent				
	234.60	0.0001	Unable to Calc				
	Total	0.0002	ABSENT	0.0001	0.0002 =	50.0000 %	0.000
Ba-133	81.00	0.3429	Absent				
	276.40	0.0709	Absent				
	302.85	0.1816	Absent				
	356.00	0.6200	Present				
	383.85	0.0897	Absent				
	Total	1.3051	ABSENT	0.6200	1.3051 =	47.5059 %	0.000
U-235	81.07	0.1480	Absent				
	83.78	0.2460	Absent				
	143.76	0.1050	Absent				
	185.72	0.5400	Present				
	236.00	0.1100	Present				
	269.60	0.1340	Absent				
	351.10	0.1200	Present				
	Total	1.4030	ABSENT	0.7700	1.4030 =	54.8824 %	0.000
TB-160	86.80	0.1340	Absent				
	197.04	0.0524	Absent				
	215.65	0.0402	Absent				
	298.57	0.2740	Present				
	876.37	0.3000	Absent				
	962.36	0.1000	Present				
	966.17	0.2550	Present				
	1177.95	0.1550	Absent				
	1271.88	0.0760	Absent				
	Total	1.3866	ABSENT	0.6290	1.3866 =	45.3628 %	0.000
Cu-67	93.30	0.1690	Absent				
	184.50	0.4700	Present				
	Total	0.6390	ABSENT	0.4700	0.6390 =	73.5524 %	0.000
Ga-67	93.30	0.3800	Absent				
	184.60	0.2360	Present				
	300.20	0.1900	Present				
	Total	0.8060	ABSENT	0.4260	0.8060 =	52.8536 %	0.000
Te-131m	102.06	0.0790	Absent				
	149.71	0.2054	Absent				
	200.63	0.0752	Absent				
	240.93	0.0755	Present				
	334.27	0.0952	Absent				
	452.30	0.0567	Absent				
	773.67	0.3800	Absent				
	782.49	0.0775	Absent				
	793.75	0.1380	Absent				
	822.78	0.0609	Absent				
	852.21	0.2093	Absent				
	1125.46	0.1137	Absent				
	1206.60	0.0971	Absent				
	Total	1.6635	ABSENT	0.0755	1.6635 =	4.5386 %	0.000
EU-152M	121.78	0.0720	Absent				
	344.20	0.0250	Absent				
	841.60	0.1470	Absent				
	963.50	0.1200	Present				
	Total	0.3640	ABSENT	0.1200	0.3640 =	32.9670 %	0.000
Eu-152	121.78	0.3068	Absent				
	244.67	0.0772	Present				

	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Absent				
	[illegible]	0.1433	Present				
	1085.80	0.1010	Absent				
	1112.07	0.1340	Absent				
	1408.08	0.2073	Absent				
	Total	1.3688	ABSENT	(	0.2205/	1.3688 =	16.1090 %) 0.000
HF-181	133.05	0.4300	Absent				
	136.25	0.0610	Absent				
	345.95	0.1400	Present				
	482.16	0.8600	Absent				
	Total	1.4910	ABSENT	(	0.1400/	1.4910 =	9.3897 %) 0.000
IN-116M	137.92	0.0350	Absent				
	244.59	0.0038	Present				
	416.88	0.2937	Absent				
	463.13	0.0083	Absent				
	818.65	0.1372	Absent				
	1097.23	0.6791	Absent				
	1293.49	1.0000	Absent				
	1507.50	0.1186	Absent				
	1601.12	0.0107	Absent				
	1752.42	0.0289	Absent				
	2212.21	0.1858	Absent				
	Total	2.5011	ABSENT	(	0.0038/	2.5011 =	0.1519 %) 0.000
Mo-99	140.51	0.0379	Absent				
	181.07	0.0629	Present				
	739.40	0.1260	Absent				
	Total	0.2268	ABSENT	(	0.0629/	0.2268 =	27.7266 %) 0.000
Fe-59	142.65	0.0103	Absent				
	192.34	0.0311	Present				
	1099.22	0.5680	Absent				
	1291.56	0.4320	Absent				
	Total	1.0414	ABSENT	(	0.0311/	1.0414 =	2.9864 %) 0.000
Zn-72	144.70	0.8300	Absent				
	191.50	0.0940	Present				
	Total	0.9240	ABSENT	(	0.0940/	0.9240 =	10.1732 %) 0.000
Sb-125	176.29	0.0630	Absent				
	380.51	0.0140	Absent				
	427.95	0.2960	Absent				
	463.51	0.1000	Absent				
	600.77	0.1840	Absent				
	606.82	0.0520	Present				
	636.15	0.1120	Absent				
	671.66	0.0180	Absent				
	Total	0.8390	ABSENT	(	0.0520/	0.8390 =	6.1979 %) 0.000
Ra-226	186.20	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(	0.0001/	0.0001 =	100.0000 %) 0.000
Xe-125	188.43	0.5500	Present				
	243.40	0.2871	Present				
	Total	0.8371	PRESENT	(	0.8371/	0.8371 =	100.0000 %) 0.000
In-114m	190.24	0.1564	Present				
	558.43	0.2850	Absent				
	725.24	0.2810	Absent				
	1283.67	0.0003	Absent				
	1299.83	0.0012	Absent				
	Total	0.7239	ABSENT	(	0.1564/	0.7239 =	21.6052 %) 0.000
[illegible]-101	191.93	0.1810	Present				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				

	1112.38	0.1135	Absent			
	Total	0.8670	ABSENT	0.0948	0.8670 =	10.9382 %
Ag-108	614.31	0.0001	Absent			
	633.70	0.0001	Absent			
	720.50	0.0001	Absent			
	811.20	0.0001	Unable to Calc			
	964.40	0.0001	Unable to Calc			
	968.80	0.0001	Unable to Calc			
	Total	0.0006	ABSENT (	0.0003/	0.0006 =	50.0000 %)
Xe-133m	233.20	0.1000	Present			
	Total	0.1000	PRESENT (	0.1000/	0.1000 =	100.0000 %)
Th-227	236.00	0.0001	Unable to Calc			
	329.90	0.0001	Absent			
	Total	0.0002	ABSENT (	0.0001/	0.0002 =	50.0000 %)
Ra-224	241.08	0.0001	Unable to Calc			
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %)
Kr-79	261.30	0.1270	Absent			
	397.50	0.0950	Absent			
	511.00	0.1500	Present			
	606.10	0.0810	Present			
	Total	0.4530	ABSENT (	0.2310/	0.4530 =	50.9934 %)
Pa-231	283.60	0.0001	Absent			
	299.90	0.0001	Unable to Calc			
	302.50	0.0001	Absent			
	Total	0.0003	ABSENT (	0.0001/	0.0003 =	33.3333 %)
Ce-143	293.26	0.4200	Present			
	664.55	0.0525	Absent			
	721.96	0.0512	Absent			
	Total	0.5237	PRESENT (	0.4200/	0.5237 =	80.1986 %)
Ir-192	295.96	0.2872	Present			
	308.46	0.2965	Absent			
	316.51	0.8290	Absent			
	468.06	0.4808	Absent			
	612.45	0.0543	Present			
	Total	1.9478	ABSENT (	0.3415/	1.9478 =	17.5326 %)
Tl-210	296.00	0.0001	Unable to Calc			
	795.00	0.0001	Absent			
	1060.00	0.0001	Absent			
	1210.00	0.0001	Absent			
	1310.00	0.0001	Absent			
	Total	0.0005	ABSENT (	0.0001/	0.0005 =	20.0000 %)
Ag-113	298.40	0.0900	Present			
	Total	0.0900	PRESENT (	0.0900/	0.0900 =	100.0000 %)
Pa-233	300.10	0.0633	Present			
	311.90	0.3700	Absent			
	Total	0.4333	ABSENT (	0.0633/	0.4333 =	14.6088 %)
Ho-167	321.30	0.2390	Absent			
	346.50	0.5700	Present			
	Total	0.8090	ABSENT (	0.5700/	0.8090 =	70.4574 %)
Au-196	332.90	0.2300	Absent			
	355.70	0.8760	Present			
	Total	1.1060	ABSENT (	0.8760/	1.1060 =	79.2043 %)
Pt-197m	346.50	0.1110	Present			
	Total	0.1110	PRESENT (	0.1110/	0.1110 =	100.0000 %)
Na-24	346.55	0.0100	Unable to Calc			
	857.55	0.0100	Absent			
	1368.53	1.0000	Absent			
	1732.10	0.0100	Absent			
	Total	1.0300	ABSENT (	0.0100/	1.0300 =	0.9709 %)
Bi-211	351.00	0.0001	Unable to Calc			

	Total	0.0001	PRESENT				
In-111m	171.28	0.9000	Absent				
	247.34	0.9164	Absent				
	511.85	0.2806	Present				
	596.97	0.2760	Absent				
	620.19	0.5612	Absent				
	Total	2.6542	ABSENT	0.2806/	2.6542 =	10.5712 %	0.000
Ag-108m	434.00	0.9050	Absent				
	614.37	0.9320	Present				
	722.95	0.9230	Absent				
	Total	2.7600	ABSENT	0.9320/	2.7600 =	33.7681 %	0.000
Rh-106m	450.80	0.2450	Absent				
	511.70	0.8640	Present				
	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT	0.8640/	1.8150 =	47.6033 %	0.000
Te-121	507.69	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT	0.1767/	0.9797 =	18.0361 %	0.000
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	0.0002/	0.0002 =	100.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT	1.0000/	1.0000 =	100.0000 %)	0.000
KR-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT	0.0041/	0.0041 =	100.0000 %)	0.000
Sb-129	544.70	0.1920	Absent				
	812.80	0.4600	Absent				
	914.60	0.2140	Present				
	1030.10	0.1350	Absent				
	Total	1.0010	ABSENT	0.2140/	1.0010 =	21.3786 %)	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT	0.9756/	2.1554 =	45.2631 %	0.000
Sb-124	602.72	0.9830	Present				
	645.82	0.0723	Absent				
	722.78	0.1130	Absent				
	1691.02	0.4900	Absent				
	Total	1.6583	ABSENT	0.9830/	1.6583 =	59.2776 %)	0.000
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Absent				
	1764.50	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	0.0002/	0.0004 =	50.0000 %)	0.000
K-40	1460.81	0.1070	Present				
	Total	0.1070	PRESENT	0.1070/	0.1070 =	100.0000 %)	0.000

PEAK CONTRIBUTION CORRECTION

#	Old Area	Nuclide	Reference Energy Line Energy	cts/dis	Ref Area	Calculated Contribution Energy	cts/dis	New Area
2	195	TH-232	911.07	7.83e-004	77	238.63	3.55e-003	195
3	93	U-238	609.32	1.76e-003	106	295.22	1.35e-003	81
4	115	U-238	609.32	1.76e-003	106	351.99	2.25e-003	115

2	107	TH-232	911.07	7.83e-004	--	581.14	1.02e-003	1 -

PEAK INTERFERENCE CORRECTION

##	New Area	Nuclide	Energy	Status
2	0	Xe-133m	233.20	Deleted [Net < Critical Level]
2	0	Ra-224	241.08	Deleted [Net < Critical Level]
2	0	Xe-125	243.40	Deleted [Net < Critical Level]
3	12	Ce-143	293.26	Deleted [Net < Critical Level]
3	12	Ag-113	298.40	Deleted [Net < Critical Level]
4	0	Pt-197m	346.50	Deleted [Net < Critical Level]
4	0	Bi-211	351.00	Deleted [Net < Critical Level]
6	0	Tl-208	583.14	Deleted [Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
Xe-125	188.43	0.5500	Present					
	243.40	0.2871	Absent					
	Total	0.8371	ABSENT	(	0.5500/	0.8371 =	65.7030 %)	0.000
Xe-133m	233.20	0.1000	Absent					
	Total	0.1000	ABSENT	(	0.0000/	0.1000 =	0.0000 %)	0.000
Ra-224	241.08	0.0001	Absent					
	Total	0.0001	ABSENT	(	0.0000/	0.0001 =	0.0000 %)	0.000
Ce-143	293.26	0.4200	Absent					
	664.55	0.0525	Absent					
	721.96	0.0512	Absent					
	Total	0.5237	ABSENT	(	0.0000/	0.5237 =	0.0000 %)	0.000
Ag-113	298.40	0.0900	Absent					
	Total	0.0900	ABSENT	(	0.0000/	0.0900 =	0.0000 %)	0.000
Pt-197m	346.50	0.1110	Absent					
	Total	0.1110	ABSENT	(	0.0000/	0.1110 =	0.0000 %)	0.000
Bi-211	351.00	0.0001	Absent					
	Total	0.0001	ABSENT	(	0.0000/	0.0001 =	0.0000 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc					
	583.14	0.0001	Absent					
	Total	0.0002	ABSENT	(	0.0001/	0.0002 =	50.0000 %)	0.000

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)		Halflife (hrs)	Peaks Found	MPC Fraction
U-238	Average:	4.47e+002	+-4.74e+001	4.12e+013	4 of 5	0.00
	295.22	4.51e+002	+-1.31e+002			
	351.99	3.82e+002	+-7.76e+001			
	609.32	4.51e+002	+-6.95e+001			
	1764.28	1.14e+003	+-2.69e+002			
TH-232	Average:	5.11e+002	+-4.49e+001	1.24e+014	4 of 6	0.00
	238.63	4.08e+002	+-5.84e+001			
	583.14	6.50e+002	+-9.30e+001			
	911.07	7.31e+002	+-1.24e+002			
	968.90	4.99e+002	+-2.16e+002			
a-226	186.20		BKG	1.00e+012	1 of 1	
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	

[illegible]	[illegible]	4.72e-004	+-8.38e-003	8.38e-004	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	5.32e-003	+-6.58e-002	1.10e-003	[illegible]	[illegible]	[illegible]

TOTAL: 5.82e-004 pCi/g MPC Total: [illegible]

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : BG-3

Sample Size . . . . . 6.14e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-08-97 14:04	Counting Start. 10-08-97 14:04
Sampling Stop 10-08-97 14:04	Live Time . . . . . 3600 Sec
Current Date. 10-13-97 10:13	Real Time . . . . . 0 Sec

Detector #: 22

Energy(keV) = 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity 2.00	Search Start / End. . . . . 0 / 4095
Sigma Multiplier. 1.00	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	78.24	145.52	70	32	55	485	0.87	
2	238.91	479.57	372	33	49	296	0.96	a
3	242.06	486.11	55	28	48	288	0.82	b
4	295.25	596.69	82	22	36	175	1.77	
5	338.50	686.61	79	21	34	146	0.80	
6	351.87	714.41	184	24	37	153	1.29	
7	510.63	1044.48	122	21	34	119	1.77	
8	582.60	1194.10	177	19	27	72	1.49	
9	608.50	1247.95	145	18	25	67	1.52	
10	909.57	1873.86	101	14	19	37	1.51	
11	967.36	1994.01	59	13	20	40	2.01	
12	1457.54	3013.09	352	20	12	13	1.63	

Neely Nuclear Research Center

Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: BG-3

Sample Size . . . . . 6.14e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-08-97 14:04	Counting Start. 10-08-97 14:04
Sampling Stop 10-08-97 14:04	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-13-97 10:13	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef ID.	Library File. . .c:\gdr\library\nes.lib IDGeneral Radionuclide Analysis Library
Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001]	12-05-96 10:47
Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	78.24	70	U-238	77.11	0.1070	6.29e-003	1.00e+000	1.27e+000
1	78.24	70	TH-232	77.11	0.1750	6.29e-003	1.01e+000	7.71e-001
1	78.24	70	Hg-197	77.35	0.1900	6.29e-003	9.95e-001	7.20e-001
1	78.24	70	Pt-197	77.35	0.1700	6.29e-003	9.81e-001	8.16e-001
1	78.24	70	Fr-223	80.00				
1	78.24	70	Ce-144	80.00	0.0200	6.29e-003	1.00e+000	6.80e+000
1	78.24	70	Hg-197	80.20	0.0340	6.29e-003	9.95e-001	4.02e+000
1	78.24	70	Hg-199m	80.20	0.1110	6.29e-003	3.31e-001	3.71e+000
1	78.24	70	Xe-133	80.99	0.3700	6.29e-003	9.97e-001	3.69e-001
1	78.24	70	Ba-133	81.00	0.3429	6.29e-003	1.00e+000	3.97e-001
1	78.24	70	U-235	81.07	0.1480	6.29e-003	1.00e+000	9.20e-001
1	78.24	70	U-235	83.78	0.2460	6.29e-003	1.00e+000	5.53e-001
2	238.91	372	Xe-133m	233.20	0.1000	8.24e-003	9.94e-001	5.55e+000
2	238.91	372	Fr-223	234.60				
2	238.91	372	Th-227	236.00				
2	238.91	372	U-235	236.00	0.1100	8.24e-003	1.00e+000	5.02e+000
2	238.91	372	TH-232	238.63	0.4310	8.24e-003	1.01e+000	1.27e+000
3	242.06	55	Te-131m	240.93	0.0755	8.16e-003	9.89e-001	1.10e+000
3	242.06	55	Ra-224	241.08				
3	242.06	55	Xe-125	243.40	0.2871	8.16e-003	9.80e-001	2.93e-001
3	242.06	55	IN-116M	244.59	0.0038	8.16e-003	6.99e-001	3.10e+001
3	242.06	55	Eu-152	244.67	0.0772	8.16e-003	1.00e+000	1.07e+000
3	242.06	55	Sm-155	245.73	0.0373	8.16e-003	4.51e-001	4.90e+000
3	242.06	55	Xe-135	247.79	0.9000	8.16e-003	9.63e-001	9.51e-002
3	242.06	55	Eu-154	248.00	0.0660	8.16e-003	1.00e+000	1.25e+000
4	295.25	82	Ce-143	293.26	0.4200	7.01e-003	9.90e-001	3.44e-001
4	295.25	82	U-238	295.22	0.1920	7.01e-003	1.00e+000	7.43e-001
4	295.25	82	Ir-192	295.96	0.2872	7.01e-003	1.00e+000	4.98e-001
4	295.25	82	Tl-210	296.00				
4	295.25	82	Ag-113	298.40	0.0900	7.01e-003	9.38e-001	1.69e+000
4	295.25	82	TB-160	298.57	0.2740	7.01e-003	1.00e+000	5.22e-001
4	295.25	82	Pa-231	299.90				
4	295.25	82	Pa-233	300.10	0.0633	7.01e-003	9.99e-001	2.26e+000

5	338.32	79	Ba-67	338.33	0.2300	6.27e-003	9.98e-001	1.71e-001
5	338.50	79	Mg-27	338.73	0.0100	6.27e-003	1.00e-001	8.44e-001
5	338.50	79	Au-196	338.90	0.2300	6.27e-003	9.98e-001	1.71e-001
5	338.50	79	Te-131m	339.27	0.0952	6.27e-003	9.80e-001	1.04e+000
5	338.50	79	Np-239	339.30	0.0200	6.27e-003	9.94e-001	7.75e-001
5	338.50	79	In-115m	339.20	0.4590	6.27e-003	9.27e-001	3.62e-001
5	338.50	79	Ru-95	339.40	0.7100	6.27e-003	8.17e-001	2.66e-001
5	338.50	79	TH-232	338.40	0.1201	6.27e-003	1.01e+000	1.27e-001
5	338.50	79	Ra-223	338.60				
5	338.50	79	Ac-228	338.70				
5	338.50	79	Cs-136	340.60	0.4890	6.27e-003	9.99e-001	3.15e-001
5	338.50	79	Cs-136	340.60	0.4676	6.27e-003	9.99e-001	3.30e-001
5	338.50	79	HF-175	343.40	0.8692	6.27e-003	1.00e+000	1.77e-001
5	338.50	79	EU-152M	344.20	0.0250	6.27e-003	9.64e-001	6.40e-001
5	338.50	79	Eu-152	344.30	0.2720	6.27e-003	1.00e+000	5.66e-001
5	338.50	79	Cd-117	344.46	0.1769	6.27e-003	8.73e-001	1.00e+000
6	351.87	184	HF-181	345.95	0.1400	6.07e-003	1.00e+000	2.65e-001
6	351.87	184	Ho-167	346.50	0.5700	6.07e-003	8.96e-001	7.25e-001
6	351.87	184	Pt-197m	346.50	0.1110	6.07e-003	8.09e-001	4.13e-001
6	351.87	184	Na-24	346.55	0.0100	6.07e-003	9.77e-001	3.70e-001
6	351.87	184	Bi-211	351.00				
6	351.87	184	U-235	351.10	0.1200	6.07e-003	1.00e+000	3.00e-001
6	351.87	184	U-238	351.99	0.3710	6.07e-003	1.00e+000	9.96e-001
6	351.87	184	Au-196	355.70	0.8760	6.07e-003	9.98e-001	4.24e-001
6	351.87	184	Ba-133	356.00	0.6200	6.07e-003	1.00e+000	5.98e-001
7	510.63	122	Mo-101	505.88	0.1135	4.43e-003	3.31e-001	8.95e+000
7	510.63	122	Te-121	507.59	0.1767	4.43e-003	9.99e-001	1.91e+000
7	510.63	122	Tl-208	510.72				
7	510.63	122	Kr-79	511.00	0.1500	4.43e-003	9.90e-001	2.27e+000
7	510.63	122	Annihila	511.00	1.0000	4.43e-003	1.00e+000	3.37e-001
7	510.63	122	Zn-71m	511.55	0.2806	4.43e-003	9.17e-001	1.31e+000
7	510.63	122	Rh-106m	511.70	0.8640	4.43e-003	8.56e-001	4.55e-001
7	510.63	122	KR-85	514.00	0.0041	4.43e-003	1.00e+000	8.21e-001
8	582.60	177	Tl-208	583.14				
8	582.60	177	TH-232	583.14	0.3090	3.96e-003	1.01e+000	1.75e+000
9	608.50	145	Sb-124	602.72	0.9830	3.82e-003	1.00e+000	4.73e-001
9	608.50	145	Cs-134	604.66	0.9756	3.82e-003	1.00e+000	4.76e-001
9	608.50	145	Kr-79	606.10	0.0810	3.82e-003	9.90e-001	5.79e+000
9	608.50	145	Sb-125	606.82	0.0520	3.82e-003	1.00e+000	8.94e+000
9	608.50	145	Bi-214	609.30				
9	608.50	145	U-238	609.32	0.4609	3.82e-003	1.00e+000	1.01e+000
9	608.50	145	Ir-192	612.45	0.0543	3.82e-003	1.00e+000	8.56e+000
9	608.50	145	Ag-108m	614.37	0.9320	3.82e-003	1.00e+000	4.99e-001
10	909.57	101	TH-232	911.07	0.2900	2.70e-003	1.01e+000	1.56e+000
10	909.57	101	Ac-228	911.20				
10	909.57	101	Sb-129	914.60	0.2140	2.70e-003	9.25e-001	2.31e+000
11	967.36	59	TB-160	962.36	0.1000	2.56e-003	1.00e+000	2.82e+000
11	967.36	59	EU-152M	963.50	0.1200	2.56e-003	9.64e-001	2.44e+000
11	967.36	59	Eu-152	964.00	0.1433	2.56e-003	1.00e+000	1.97e+000
11	967.36	59	Ac-228	964.40				
11	967.36	59	TB-160	966.17	0.2550	2.56e-003	1.00e+000	1.10e+000
11	967.36	59	Ac-228	968.80				
11	967.36	59	TH-232	968.90	0.1746	2.56e-003	1.01e+000	1.60e+000
12	1457.54	352	K-40	1460.81	0.1070	1.80e-003	1.00e+000	2.24e+001

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status	Halflives

[illegible]	[illegible]	[illegible]	Present				
	[illegible]	[illegible]	Present				
	[illegible]	[illegible]	Present				
	[illegible]	[illegible]	Present				
	1764.28	0.1504	Absent				
	Total	1.2813	PRESENT	1.1309/	1.2813 =	88.2619 %)	[illegible]
TH-232	77.11	0.1750	Present				
	238.63	0.4310	Present				
	338.40	0.1201	Present				
	583.14	0.3090	Present				
	911.07	0.2900	Present				
	968.90	0.1746	Present				
	Total	1.4997	PRESENT	1.4997/	1.4997 =	100.0000 %)	0.000
Hg-197	77.35	0.1900	Present				
	80.20	0.0340	Present				
	191.38	0.0057	Absent				
	268.73	0.0005	Absent				
	Total	0.2302	PRESENT	0.2240/	0.2302 =	97.3067 %)	[illegible]
Pt-197	77.35	0.1700	Present				
	191.31	0.0350	Absent				
	Total	0.2050	PRESENT	0.1700/	0.2050 =	82.9268 %)	[illegible]
Fr-223	80.00	0.0001	Unable to Calc				
	234.60	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	0.0002/	0.0002 =	100.0000 %)	0.000
Ce-144	80.00	0.0200	Present				
	133.54	0.1110	Absent				
	Total	0.1310	ABSENT	0.0200/	0.1310 =	15.2672 %)	0.000
Hg-199m	80.20	0.1110	Present				
	158.37	0.5840	Absent				
	374.10	0.1380	Absent				
	Total	0.8330	ABSENT	0.1110/	0.8330 =	13.3253 %)	0.000
[illegible]e-133	80.99	0.3700	Present				
	Total	0.3700	PRESENT	0.3700/	0.3700 =	100.0000 %)	0.000
Ba-133	81.00	0.3429	Present				
	276.40	0.0709	Absent				
	302.85	0.1816	Absent				
	356.00	0.6200	Present				
	383.85	0.0897	Absent				
	Total	1.3051	ABSENT	0.9629/	1.3051 =	73.7798 %)	0.000
U-235	81.07	0.1480	Present				
	83.78	0.2460	Present				
	143.76	0.1050	Absent				
	185.72	0.5400	Absent				
	236.00	0.1100	Present				
	269.60	0.1340	Absent				
	351.10	0.1200	Present				
	Total	1.4030	ABSENT	0.6240/	1.4030 =	44.4761 %)	0.000
TB-160	86.80	0.1340	Absent				
	197.04	0.0524	Absent				
	215.65	0.0402	Absent				
	298.57	0.2740	Present				
	876.37	0.3000	Absent				
	962.36	0.1000	Present				
	966.17	0.2550	Present				
	1177.95	0.1550	Absent				
	1271.88	0.0760	Absent				
	Total	1.3866	ABSENT	0.6290/	1.3866 =	45.3628 %)	0.000
[illegible]F-175	89.36	0.0235	Absent				
	343.40	0.8692	Present				
	432.80	0.0156	Absent				

[illegible]	Total	[illegible]	PRESENT	[illegible]	[illegible]	[illegible]	
	[illegible]	[illegible]	Absent				
	184.00	0.2360	Absent				
	300.20	0.1900	Present				
	Total	0.8060	ABSENT	0.1900/	0.8060 =	23.5732 %	[illegible]
[illegible]-131m	102.06	0.0790	Absent				
	149.71	0.2054	Absent				
	200.63	0.0752	Absent				
	240.93	0.0755	Present				
	334.27	0.0952	Present				
	452.30	0.0567	Absent				
	773.67	0.3800	Absent				
	782.49	0.0775	Absent				
	793.75	0.1380	Absent				
	822.78	0.0609	Absent				
	852.21	0.2093	Absent				
	1125.46	0.1137	Absent				
	1206.60	0.0971	Absent				
	Total	1.6635	ABSENT	(0.1707/	1.6635 =	10.2615 %	0.000
Sm-155	104.30	0.7464	Absent				
	141.41	0.0202	Absent				
	245.73	0.0373	Present				
	Total	0.8039	ABSENT	(0.0373/	0.8039 =	4.6425 %	0.000
Np-239	106.10	0.2320	Absent				
	209.80	0.0410	Absent				
	228.10	0.1270	Absent				
	277.60	0.1420	Absent				
	315.90	0.0150	Absent				
	334.30	0.0200	Present				
	Total	0.5770	ABSENT	(0.0200/	0.5770 =	3.4662 %)	0.000
[illegible]-152M	121.78	0.0720	Absent				
	344.20	0.0250	Present				
	841.60	0.1470	Absent				
	963.50	0.1200	Present				
	Total	0.3640	ABSENT	(0.1450/	0.3640 =	39.8352 %)	0.000
Eu-152	121.78	0.3068	Absent				
	244.67	0.0772	Present				
	344.30	0.2720	Present				
	778.90	0.1272	Absent				
	964.00	0.1433	Present				
	1085.80	0.1010	Absent				
	1112.07	0.1340	Absent				
	1408.08	0.2073	Absent				
	Total	1.3688	ABSENT	(0.4925/	1.3688 =	35.9804 %)	0.000
Eu-154	123.10	0.4047	Absent				
	248.00	0.0660	Present				
	723.30	0.1970	Absent				
	873.19	0.1150	Absent				
	996.32	0.1029	Absent				
	1004.76	0.1736	Absent				
	1274.39	0.3550	Absent				
	Total	1.4143	ABSENT	(0.0660/	1.4143 =	4.6666 %)	0.000
HF-181	133.05	0.4300	Absent				
	136.25	0.0610	Absent				
	345.95	0.1400	Present				
	482.16	0.8600	Absent				
	Total	1.4910	ABSENT	(0.1400/	1.4910 =	9.3897 %)	0.000
[illegible]N-116M	137.92	0.0350	Absent				
	244.59	0.0038	Present				
	416.88	0.2937	Absent				

	463.13	0.0083	Absent				
	818.65	0.1372	Absent				
	1097.23	0.6791	Absent				
	1293.49	1.0000	Absent				
	1507.50	0.1186	Absent				
	1601.12	0.0107	Absent				
	1752.42	0.0289	Absent				
	2212.21	0.1858	Absent				
	Total	2.5011	ABSENT	(0.0038/	2.5011 =	0.1519 %)	0.000
Ra-223	144.30	0.0001	Absent				
	154.30	0.0001	Absent				
	269.60	0.0001	Absent				
	338.60	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	(0.0001/	0.0004 =	25.0000 %)	0.000
Mg-27	170.82	0.0070	Absent				
	332.73	0.0100	Unable to Calc				
	843.80	0.7140	Absent				
	1014.50	0.2860	Absent				
	Total	1.0170	ABSENT	(0.0100/	1.0170 =	0.9833 %)	0.000
Sb-125	176.29	0.0630	Absent				
	380.51	0.0140	Absent				
	427.95	0.2960	Absent				
	463.51	0.1000	Absent				
	600.77	0.1840	Absent				
	606.82	0.0520	Present				
	636.15	0.1120	Absent				
	671.66	0.0180	Absent				
	Total	0.8390	ABSENT	(0.0520/	0.8390 =	6.1979 %)	0.000
Xe-125	188.43	0.5500	Absent				
	243.40	0.2871	Present				
	Total	0.8371	ABSENT	(0.2871/	0.8371 =	34.2970 %)	0.000
Mo-101	191.93	0.1810	Absent				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				
	1012.35	0.1135	Absent				
	Total	0.6670	ABSENT	(0.1135/	0.6670 =	17.0165 %)	0.000
Ac-228	209.50	0.0001	Absent				
	338.70	0.0001	Unable to Calc				
	790.50	0.0001	Absent				
	911.20	0.0001	Unable to Calc				
	964.40	0.0001	Unable to Calc				
	968.80	0.0001	Unable to Calc				
	Total	0.0006	ABSENT	(0.0004/	0.0006 =	66.6667 %)	0.000
Xe-133m	233.20	0.1000	Present				
	Total	0.1000	PRESENT	(0.1000/	0.1000 =	100.0000 %)	0.000
Th-227	236.00	0.0001	Unable to Calc				
	329.90	0.0001	Absent				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
Ra-224	241.08	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Xe-135	247.79	0.9000	Present				
	Total	0.9000	PRESENT	(0.9000/	0.9000 =	100.0000 %)	0.000
Kr-79	261.30	0.1270	Absent				
	397.50	0.0950	Absent				
	511.00	0.1500	Present				
	606.10	0.0810	Present				
	Total	0.4530	ABSENT	(0.2310/	0.4530 =	50.9934 %)	0.000
Cd-117	273.28	0.2900	Absent				
	344.46	0.1769	Present				

	[illegible]	[illegible]	Absent			
	1013.34	[illegible]	Absent			
	1576.80	[illegible]	Absent			
	Total	0.8662	ABSENT	0.1769/	0.8662 =	[illegible] % [illegible]
Pa-231	283.60	0.0001	Absent			
	299.90	0.0001	Unable to Calc			
	302.50	0.0001	Absent			
	Total	0.0003	ABSENT	0.0001/	0.0003 =	33.3333 % [illegible]
Ce-143	293.26	0.4200	Present			
	664.55	0.0525	Absent			
	721.96	0.0512	Absent			
	Total	0.5237	PRESENT	0.4200/	0.5237 =	80.1986 % [illegible]
Ir-192	295.96	0.2872	Present			
	308.46	0.2965	Absent			
	316.51	0.8290	Absent			
	468.06	0.4808	Absent			
	612.45	0.0543	Present			
	Total	1.9478	ABSENT	0.3415/	1.9478 =	17.5326 % [illegible]
Tl-210	296.00	0.0001	Unable to Calc			
	795.00	0.0001	Absent			
	1060.00	0.0001	Absent			
	1210.00	0.0001	Absent			
	1310.00	0.0001	Absent			
	Total	0.0005	ABSENT	0.0001/	0.0005 =	20.0000 %) 0.000
Ag-113	298.40	0.0900	Present			
	Total	0.0900	PRESENT	0.0900/	0.0900 =	100.0000 %) 0.000
Pa-233	300.10	0.0633	Present			
	311.90	0.3700	Absent			
	Total	0.4333	ABSENT	0.0633/	0.4333 =	14.6088 %) 0.000
Ho-167	321.30	0.2390	Absent			
	346.50	0.5700	Present			
	Total	0.8090	ABSENT	0.5700/	0.8090 =	70.4574 % [illegible]
Au-196	332.90	0.2300	Present			
	355.70	0.8760	Present			
	Total	1.1060	PRESENT	1.1060/	1.1060 =	100.0000 %) 0.000
In-115m	336.20	0.4590	Present			
	Total	0.4590	PRESENT	0.4590/	0.4590 =	100.0000 %) 0.000
Ru-95	336.40	0.7100	Present			
	1096.80	0.2100	Absent			
	Total	0.9200	ABSENT	0.7100/	0.9200 =	77.1739 %) 0.000
Cs-136	340.60	0.4890	Present			
	340.60	0.4676	Present			
	818.50	0.9970	Absent			
	818.50	0.9970	Absent			
	1048.07	0.7976	Absent			
	1048.10	0.7980	Absent			
	1235.34	0.1974	Absent			
	Total	4.7436	ABSENT	0.9566/	4.7436 =	20.1661 %) 0.000
Pt-197m	346.50	0.1110	Present			
	Total	0.1110	PRESENT	0.1110/	0.1110 =	100.0000 %) 0.000
Na-24	346.55	0.0100	Unable to Calc			
	857.55	0.0100	Absent			
	1368.53	1.0000	Absent			
	1732.10	0.0100	Absent			
	Total	1.0300	ABSENT	0.0100/	1.0300 =	0.9709 %) 0.000
Bi-211	351.00	0.0001	Unable to Calc			
	Total	0.0001	PRESENT	0.0001/	0.0001 =	100.0000 %) 0.000
[illegible]-71m	386.28	0.9200	Absent			
	487.34	0.6164	Absent			
	511.55	0.2806	Present			

	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Absent				
	Total	2.6542	ABSENT	0.2806/	2.6542 =	[illegible]	[illegible]
Ag-108m	434.00	0.9050	Absent				
	614.37	0.9320	Present				
	722.95	0.9230	Absent				
	Total	2.7600	ABSENT	0.9320/	2.7600 =	33.7681 %	[illegible]
Rh-106m	450.80	0.2450	Absent				
	511.70	0.8640	Present				
	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT	0.8640/	1.8150 =	47.6033 %	0.000
Te-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT	0.1767/	0.9797 =	18.0361 %	[illegible]
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	0.0002/	0.0002 =	100.0000 %	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT	1.0000/	1.0000 =	100.0000 %	0.000
KR-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT	0.0041/	0.0041 =	100.0000 %	0.000
Sb-129	544.70	0.1920	Absent				
	812.80	0.4600	Absent				
	914.60	0.2140	Present				
	1030.10	0.1350	Absent				
	Total	1.0010	ABSENT	0.2140/	1.0010 =	21.3786 %	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT	0.9756/	2.1554 =	45.2631 %	0.000
Sb-124	602.72	0.9830	Present				
	645.82	0.0723	Absent				
	722.78	0.1130	Absent				
	1691.02	0.4900	Absent				
	Total	1.6583	ABSENT	0.9830/	1.6583 =	59.2776 %	0.000
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Absent				
	1764.50	0.0001	Absent				
	Total	0.0004	ABSENT	0.0001/	0.0004 =	25.0000 %	0.000
K-40	1460.81	0.1070	Present				
	Total	0.1070	PRESENT	0.1070/	0.1070 =	100.0000 %	0.000

PEAK CONTRIBUTION CORRECTION

			Reference Energy Line ===>>			Calculated Contribution		
Pk#	Old Area	Nuclide	Energy	cts/dis	Ref Area	Energy	cts/dis	New Area
1	70	U-238	609.32	1.76e-003	145	77.11	6.73e-004	55
1	15	TH-232	911.07	7.83e-004	101	77.11	1.10e-003	15
2	372	TH-232	911.07	7.83e-004	101	238.63	3.55e-003	372
4	82	U-238	609.32	1.76e-003	145	295.22	1.35e-003	82
5	79	TH-232	911.07	7.83e-004	101	338.40	7.53e-004	79
6	184	U-238	609.32	1.76e-003	145	351.99	2.25e-003	184
8	177	TH-232	911.07	7.83e-004	101	583.14	1.22e-003	158

Xe-133m	233.20	6.03e+000	+-6.22e-001	5.42e+001	1 of	1	
Ra-224	241.08		BKG	1.00e+012	1 of	1	
Ce-143	293.26	4.38e-001	+-1.30e-001	3.30e+001	1 of	3	2.19
Ag-113	298.40	2.15e+000	+-6.39e-001	5.37e+000	1 of	1	
Au-196	Average:	5.22e-001	+-6.70e-002	1.48e+002	2 of	2	3.00
	332.90	8.00e-001	+-2.04e-001				
	355.70	4.88e-001	+-7.09e-002				
In-115m	336.20	4.32e-001	+-1.10e-001	4.49e+000	1 of	1	
Pt-197m	346.50	4.75e+000	+-6.90e-001	1.57e+000	1 of	1	
Bi-211	351.00		BKG	1.00e+012	1 of	1	
Tl-208	510.72		BKG	1.00e+012	2 of	2	
	583.14		BKG				
Annihila	511.00		I.D.Only	1.00e+003	1 of	1	
KR-85	514.00	1.08e+002	+-1.86e+001	9.39e+004	1 of	1	
Zn-65	1115.52	5.55e-001	+-1.63e-001	5.86e+003	1 of	1	9.25
K-40	1460.81	2.77e+001	+-1.63e+000	1.12e+013	1 of	1	
TOTAL:		1.51e+002 pCi	/g		MPC Total:		11.43

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
608.04	1246.99	145	19	27	80	1.43	1.055e+001
908.54	1871.73	98	15	22	41	2.02	1.007e+001

[illegible]	[illegible]	[illegible]	Absent				
	Total	[illegible]	ABSENT	[illegible]	[illegible]	=	[illegible]
TL-208	510.72	[illegible]	Unable to Calc				
	583.14	0.0001	Absent				
	Total	0.0002	ABSENT	0.0001/	0.0002	=	50.0000 %

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)		Halflife (hrs)	Peaks Found	MPC Fraction
U-238	Average:	9.58e-001	+-8.12e-002	4.12e+013	4 of 5	0.00
	77.11	9.97e-001	+-5.88e-001			
	295.22	7.43e-001	+-1.98e-001			
	351.99	9.96e-001	+-1.30e-001			
	609.32	1.01e+000	+-1.25e-001			
TH-232	Average:	1.32e+000	+-8.17e-002	1.24e+014	6 of 6	0.00
	77.11	1.65e-001	+-3.57e-001			
	238.63	1.27e+000	+-1.14e-001			
	338.40	1.27e+000	+-3.35e-001			
	583.14	1.56e+000	+-1.91e-001			
	911.07	1.56e+000	+-2.18e-001			
	968.90	1.60e+000	+-3.55e-001			
Ra-224	241.08		BKG	1.00e+012	1 of 1	
Xe-135	247.79	9.51e-002	+-4.79e-002	9.10e+000	1 of 1	
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	8.21e+001	+-1.44e+001	9.39e+004	1 of 1	
K-40	1460.81	2.24e+001	+-1.26e+000	1.12e+013	1 of 1	
TAL:		1.07e+002	pCi /g		MPC Total:	0.00

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
1	0	Hg-197	77.35	Deleted [Net < Critical Level]
1	0	Pt-197	77.35	Deleted [Net < Critical Level]
1	0	Fr-223	80.00	Deleted [Net < Critical Level]
1	0	Hg-197	80.20	Deleted [Net < Critical Level]
1	0	Xe-133	80.99	Deleted [Net < Critical Level]
2	0	Xe-133m	233.20	Deleted [Net < Critical Level]
2	0	Fr-223	234.60	Deleted [Net < Critical Level]
4	0	Ce-143	293.26	Deleted [Net < Critical Level]
4	0	Ag-113	298.40	Deleted [Net < Critical Level]
5	0	Au-196	332.90	Deleted [Net < Critical Level]
5	0	In-115m	336.20	Deleted [Net < Critical Level]
5	0	HF-175	343.40	Deleted [Net < Critical Level]
6	0	Pt-197m	346.50	Deleted [Net < Critical Level]
6	0	Bi-211	351.00	Deleted [Net < Critical Level]
6	0	Au-196	355.70	Deleted [Net < Critical Level]
8	19	Tl-208	583.14	Deleted [Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
Hg-197	77.35	0.1900	Absent					
	80.20	0.0340	Absent					
	191.38	0.0057	Absent					
	268.73	0.0005	Absent					
	Total	0.2302	ABSENT	(	0.0000/	0.2302 =	0.0000 %)	0.000
Pt-197	77.35	0.1700	Absent					
	191.31	0.0350	Absent					
	Total	0.2050	ABSENT	(	0.0000/	0.2050 =	0.0000 %)	0.000
Fr-223	80.00	0.0001	Absent					
	234.60	0.0001	Absent					
	Total	0.0002	ABSENT	(	0.0000/	0.0002 =	0.0000 %)	0.000
Xe-133	80.99	0.3700	Absent					
	Total	0.3700	ABSENT	(	0.0000/	0.3700 =	0.0000 %)	0.000
HF-175	89.36	0.0235	Absent					
	343.40	0.8692	Absent					
	432.80	0.0156	Absent					
	Total	0.9083	ABSENT	(	0.0000/	0.9083 =	0.0000 %)	0.000
Xe-133m	233.20	0.1000	Absent					
	Total	0.1000	ABSENT	(	0.0000/	0.1000 =	0.0000 %)	0.000
Ce-143	293.26	0.4200	Absent					
	664.55	0.0525	Absent					
	721.96	0.0512	Absent					
	Total	0.5237	ABSENT	(	0.0000/	0.5237 =	0.0000 %)	0.000
Ag-113	298.40	0.0900	Absent					
	Total	0.0900	ABSENT	(	0.0000/	0.0900 =	0.0000 %)	0.000
Au-196	332.90	0.2300	Absent					
	355.70	0.8760	Absent					
	Total	1.1060	ABSENT	(	0.0000/	1.1060 =	0.0000 %)	0.000
-115m	336.20	0.4590	Absent					
	Total	0.4590	ABSENT	(	0.0000/	0.4590 =	0.0000 %)	0.000
Pt-197m	346.50	0.1110	Absent					
	Total	0.1110	ABSENT	(	0.0000/	0.1110 =	0.0000 %)	0.000

Neely Nuclear Research Center

Quantum Technology
GDR_C Nuclide Activity Summary

Sample ID: BG-4

Sample Size . . . . . 6.69e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-08-97 15:11	Counting Start. 10-08-97 15:11
Sampling Stop 10-08-97 15:11	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-13-97 10:25	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library
Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001]	12-05-96 10:47
Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	94.12	82	Lu-176	88.35				
1	94.12	82	Ra-221	89.00				
1	94.12	82	HF-175	89.36	0.0235	8.40e-003	1.00e+000	4.66e+000
1	94.12	82	Th-234	92.80				
1	94.12	82	Cu-67	93.30	0.1690	8.40e-003	9.94e-001	6.52e-001
1	94.12	82	Ga-67	93.30	0.3800	8.40e-003	9.96e-001	2.89e-001
1	94.12	82	Gd-153	97.43	0.2730	8.40e-003	1.00e+000	4.01e-001
1	94.12	82	Pt-195m	98.90	0.1110	8.40e-003	9.96e-001	9.90e-001
1	94.12	82	Ac-225	99.80				
1	94.12	82	Ta-182	100.10	0.1411	8.40e-003	1.00e+000	7.76e-001
2	239.02	373	Xe-133m	233.20	0.1000	8.24e-003	9.94e-001	5.11e+000
2	239.02	373	Fr-223	234.60				
2	239.02	373	Th-227	236.00				
2	239.02	373	U-235	236.00	0.1100	8.24e-003	1.00e+000	4.62e+000
2	239.02	373	TH-232	238.63	0.4310	8.24e-003	1.01e+000	1.17e+000
2	239.02	373	Te-131m	240.93	0.0755	8.24e-003	9.89e-001	6.81e+000
2	239.02	373	Ra-224	241.08				
2	239.02	373	Xe-125	243.40	0.2871	8.24e-003	9.80e-001	1.31e+000
2	239.02	373	IN-116M	244.59	0.0038	8.24e-003	6.99e-001	1.91e+002
2	239.02	373	Eu-152	244.67	0.0772	8.24e-003	1.00e+000	6.58e+000
3	295.25	75	Ce-143	293.26	0.4200	7.01e-003	9.90e-001	2.89e-001
3	295.25	75	U-238	295.22	0.1920	7.01e-003	1.00e+000	6.24e-001
3	295.25	75	Ir-192	295.96	0.2872	7.01e-003	1.00e+000	4.18e-001
3	295.25	75	Tl-210	296.00				
3	295.25	75	Ag-113	298.40	0.0900	7.01e-003	9.38e-001	1.42e+000
3	295.25	75	TB-160	298.57	0.2740	7.01e-003	1.00e+000	4.39e-001
3	295.25	75	Pa-231	299.90				
3	295.25	75	Pa-233	300.10	0.0633	7.01e-003	9.99e-001	1.90e+000
3	295.25	75	Ga-67	300.20	0.1900	7.01e-003	9.96e-001	6.35e-001
4	338.36	74	Mg-27	332.73	0.0100	6.27e-003	2.25e-001	5.89e+001
4	338.36	74	Au-196	332.90	0.2300	6.27e-003	9.98e-001	5.77e-001
4	338.36	74	Te-131m	334.27	0.0952	6.27e-003	9.89e-001	1.41e+000
4	338.36	74	Np-239	334.30	0.0200	6.27e-003	9.94e-001	6.66e+000

4	338.36	74	In-115m	336.20	0.4590	6.27e-003	[illegible]
4	338.36	74	Ra-95	336.40	0.7100	6.27e-003	[illegible]
4	338.36	74	TH-232	338.40	0.1201	6.27e-003	[illegible]
4	338.36	74	Ra-223	338.60			
4	338.36	74	Ac-228	338.70			
4	338.36	74	Cs-136	340.60	0.4890	6.27e-003	[illegible]
4	338.36	74	Cs-136	340.60	0.4676	6.27e-003	[illegible]
4	338.36	74	HF-175	343.40	0.8692	6.27e-003	[illegible]
4	338.36	74	EU-152M	344.20	0.0250	6.27e-003	[illegible]
4	338.36	74	Eu-152	344.30	0.2720	6.27e-003	[illegible]
5	352.02	163	Ho-167	346.50	0.5700	6.07e-003	[illegible]
5	352.02	163	Pt-197m	346.50	0.1110	6.07e-003	[illegible]
5	352.02	163	Na-24	346.55	0.0100	6.07e-003	[illegible]
5	352.02	163	Bi-211	351.00			
5	352.02	163	U-235	351.10	0.1200	6.07e-003	[illegible]
5	352.02	163	U-238	351.99	0.3710	6.07e-003	[illegible]
5	352.02	163	Au-196	355.70	0.8760	6.07e-003	[illegible]
5	352.02	163	Ba-133	356.00	0.6200	6.07e-003	[illegible]
6	510.42	115	Mo-101	505.88	0.1135	4.44e-003	[illegible]
6	510.42	115	Te-121	507.59	0.1767	4.44e-003	[illegible]
6	510.42	115	Tl-208	510.72			
6	510.42	115	Kr-79	511.00	0.1500	4.44e-003	[illegible]
6	510.42	115	Annihila	511.00	1.0000	4.44e-003	[illegible]
6	510.42	115	Zn-71m	511.55	0.2806	4.44e-003	[illegible]
6	510.42	115	Rh-106m	511.70	0.8640	4.44e-003	[illegible]
6	510.42	115	KR-85	514.00	0.0041	4.44e-003	[illegible]
7	582.54	188	Tl-208	583.14			
7	582.54	188	TH-232	583.14	0.3090	3.96e-003	1.01e+000 1.71e+000
8	608.70	155	Sb-124	602.72	0.9830	3.81e-003	1.00e+000 4.64e-001
8	608.70	155	Cs-134	604.66	0.9756	3.81e-003	1.00e+000 4.67e-001
8	608.70	155	Kr-79	606.10	0.0810	3.81e-003	9.90e-001 5.69e+000
8	608.70	155	Sb-125	606.82	0.0520	3.81e-003	1.00e+000 8.77e+000
8	608.70	155	Bi-214	609.30			
8	608.70	155	U-238	609.32	0.4609	3.81e-003	1.00e+000 9.87e-001
8	608.70	155	Ir-192	612.45	0.0543	3.81e-003	1.00e+000 8.40e+000
8	608.70	155	Ag-108m	614.37	0.9320	3.81e-003	1.00e+000 4.89e-001
9	726.40	34	Sb-126	720.50	0.5780	3.28e-003	9.99e-001 2.02e-001
9	726.40	34	Ce-143	721.96	0.0512	3.28e-003	9.90e-001 2.30e+000
9	726.40	34	Sb-124	722.78	0.1130	3.28e-003	1.00e+000 1.03e+000
9	726.40	34	Ag-108m	722.95	0.9230	3.28e-003	1.00e+000 1.26e-001
9	726.40	34	Eu-154	723.30	0.1970	3.28e-003	1.00e+000 5.91e-001
9	726.40	34	Zr-95	724.18	0.3399	3.28e-003	1.00e+000 3.43e-001
9	726.40	34	In-114m	725.24	0.2810	3.28e-003	1.00e+000 4.14e-001
9	726.40	34	Bi-212	727.30			
10	909.46	123	TH-232	911.07	0.2900	2.70e-003	1.01e+000 1.75e+000
10	909.46	123	Ac-228	911.20			
10	909.46	123	Sb-129	914.60	0.2140	2.70e-003	9.25e-001 2.58e+000
11	967.17	68	TB-160	962.36	0.1000	2.56e-003	1.00e+000 2.98e+000
11	967.17	68	EU-152M	963.50	0.1200	2.56e-003	9.64e-001 2.58e+000
11	967.17	68	Eu-152	964.00	0.1433	2.56e-003	1.00e+000 2.08e+000
11	967.17	68	Ac-228	964.40			
11	967.17	68	TB-160	966.17	0.2550	2.56e-003	1.00e+000 1.17e+000
11	967.17	68	Ac-228	968.80			
11	967.17	68	TH-232	968.90	0.1746	2.56e-003	1.01e+000 1.69e+000
12	1457.67	376	K-40	1460.81	0.1070	1.80e-003	1.00e+000 2.19e+001
13	1760.47	44	U-238	1764.28	0.1504	1.53e-003	1.00e+000 2.14e+000
13	1760.47	44	Bi-214	1764.50			

Nuclide	Energy	Fraction	Status				Halflives
U-238	77.11	0.1070	Absent				
	295.22	0.1920	Present				
	351.99	0.3710	Present				
	609.32	0.4609	Present				
	1764.28	0.1504	Present				
	Total	1.2813	PRESENT (	1.1743/	1.2813 =	91.6491 %)	1.000
TH-232	77.11	0.1750	Absent				
	238.63	0.4310	Present				
	338.40	0.1201	Present				
	583.14	0.3090	Present				
	911.07	0.2900	Present				
	968.90	0.1746	Present				
	Total	1.4997	PRESENT (	1.3247/	1.4997 =	88.3310 %)	1.000
Fr-223	80.00	0.0001	Absent				
	234.60	0.0001	Unable to Calc				
	Total	0.0002	ABSENT (	0.0001/	0.0002 =	50.0000 %)	1.000
Ba-133	81.00	0.3429	Absent				
	276.40	0.0709	Absent				
	302.85	0.1816	Absent				
	356.00	0.6200	Present				
	383.85	0.0897	Absent				
	Total	1.3051	ABSENT (	0.6200/	1.3051 =	47.5059 %)	0.000
U-235	81.07	0.1480	Absent				
	83.78	0.2460	Absent				
	143.76	0.1050	Absent				
	185.72	0.5400	Absent				
	236.00	0.1100	Present				
	269.60	0.1340	Absent				
	351.10	0.1200	Present				
	Total	1.4030	ABSENT (	0.2300/	1.4030 =	16.3934 %)	0.000
TB-160	86.80	0.1340	Absent				
	197.04	0.0524	Absent				
	215.65	0.0402	Absent				
	298.57	0.2740	Present				
	876.37	0.3000	Absent				
	962.36	0.1000	Present				
	966.17	0.2550	Present				
	1177.95	0.1550	Absent				
	1271.88	0.0760	Absent				
	Total	1.3866	ABSENT (	0.6290/	1.3866 =	45.3628 %)	0.000
Lu-176	88.35	0.0001	Unable to Calc				
	201.80	0.0001	Absent				
	306.90	0.0001	Absent				
	Total	0.0003	ABSENT (	0.0001/	0.0003 =	33.3333 %)	0.000
Ra-221	89.00	0.0001	Unable to Calc				
	152.00	0.0001	Absent				
	176.00	0.0001	Absent				
	Total	0.0003	ABSENT (	0.0001/	0.0003 =	33.3333 %)	0.000
HF-175	89.36	0.0235	Present				
	343.40	0.8692	Present				
	432.80	0.0156	Absent				
	Total	0.9083	PRESENT (	0.8927/	0.9083 =	98.2825 %)	0.000
Th-234	92.80	0.0001	Unable to Calc				
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %)	0.000
Lu-67	93.30	0.1690	Present				
	184.50	0.4700	Absent				
	Total	0.6390	ABSENT (	0.1690/	0.6390 =	26.4476 %)	0.000

Ba-[illegible]	[illegible]	[illegible]	Present				
	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Present				
	Total	0.8060	ABSENT	0.6700/	0.8060 =	[illegible]	[illegible]
Pd-153	97.43	0.2730	Present				
	103.18	0.1992	Absent				
	Total	0.4722	ABSENT	(0.2730/	0.4722 =	57.8145 %)	0.000
Pt-195m	98.90	0.1110	Present				
	Total	0.1110	PRESENT	(0.1110/	0.1110 =	100.0000 %)	0.000
Ac-225	99.80	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Ta-182	100.10	0.1411	Present				
	152.43	0.0720	Absent				
	222.10	0.0758	Absent				
	1121.28	0.3510	Absent				
	1189.04	0.1636	Absent				
	1221.42	0.2713	Absent				
	1230.97	0.1155	Absent				
	Total	1.1903	ABSENT	(0.1411/	1.1903 =	11.8542 %)	0.000
Te-131m	102.06	0.0790	Absent				
	149.71	0.2054	Absent				
	200.63	0.0752	Absent				
	240.93	0.0755	Present				
	334.27	0.0952	Present				
	452.30	0.0567	Absent				
	773.67	0.3800	Absent				
	782.49	0.0775	Absent				
	793.75	0.1380	Absent				
	822.78	0.0609	Absent				
	852.21	0.2093	Absent				
	1125.46	0.1137	Absent				
	1206.60	0.0971	Absent				
	Total	1.6635	ABSENT	(0.1707/	1.6635 =	10.2615 %)	0.000
Np-239	106.10	0.2320	Absent				
	209.80	0.0410	Absent				
	228.10	0.1270	Absent				
	277.60	0.1420	Absent				
	315.90	0.0150	Absent				
	334.30	0.0200	Present				
	Total	0.5770	ABSENT	(0.0200/	0.5770 =	3.4662 %)	0.000
EU-152M	121.78	0.0720	Absent				
	344.20	0.0250	Present				
	841.60	0.1470	Absent				
	963.50	0.1200	Present				
	Total	0.3640	ABSENT	(0.1450/	0.3640 =	39.8352 %)	0.000
Eu-152	121.78	0.3068	Absent				
	244.67	0.0772	Present				
	344.30	0.2720	Present				
	778.90	0.1272	Absent				
	964.00	0.1433	Present				
	1085.80	0.1010	Absent				
	1112.07	0.1340	Absent				
	1408.08	0.2073	Absent				
	Total	1.3688	ABSENT	(0.4925/	1.3688 =	35.9804 %)	0.000
Eu-154	123.10	0.4047	Absent				
	248.00	0.0660	Absent				
	723.30	0.1970	Present				
	873.19	0.1150	Absent				
	996.32	0.1029	Absent				
	1004.76	0.1736	Absent				

In-[illegible]	[illegible]	.0201	Absent				
	[illegible]	.0164	Absent				
	511.85	1.2806	Present				
	596.97	1.2760	Absent				
	820.19	0.5612	Absent				
	Total	2.6542	ABSENT	0.2806/	2.6542 =	[illegible]	. 00
Sb-126	414.80	0.8770	Absent				
	666.30	0.9970	Absent				
	695.00	0.9970	Absent				
	697.00	0.3190	Absent				
	720.50	0.5780	Present				
	Total	3.7680	ABSENT	(0.5780/	3.7680 =	15.3397 %)	0.000
Ag-108m	434.00	0.9050	Absent				
	614.37	0.9320	Present				
	722.95	0.9230	Present				
	Total	2.7600	ABSENT	(1.8550/	2.7600 =	67.2100	. 00
Rh-106m	450.80	0.2450	Absent				
	511.70	0.8640	Present				
	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT	(0.8640/	1.8150 =	47.6033 %)	0.000
Te-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT	(0.1767/	0.9797 =	18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	(0.0002/	0.0002 =	100.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT	(1.0000/	1.0000 =	100.0000 %)	0.000
-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT	(0.0041/	0.0041 =	100.0000 %)	0.000
Sb-129	544.70	0.1920	Absent				
	812.80	0.4600	Absent				
	914.60	0.2140	Present				
	1030.10	0.1350	Absent				
	Total	1.0010	ABSENT	(0.2140/	1.0010 =	21.3786 %)	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT	(0.9756/	2.1554 =	45.2631 %)	0.000
Sb-124	602.72	0.9830	Present				
	645.82	0.0723	Absent				
	722.78	0.1130	Present				
	1691.02	0.4900	Absent				
	Total	1.6583	ABSENT	(1.0960/	1.6583 =	66.0918 %)	0.000
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Absent				
	1764.50	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	(0.0002/	0.0004 =	50.0000 %)	0.000
Zr-95	724.18	0.3399	Present				
	756.72	0.5460	Absent				
	Total	0.8859	ABSENT	(0.3399/	0.8859 =	38.3678 %)	0.000
-212	727.30	0.0001	Unable to Calc				
	785.50	0.0001	Absent				
	1620.60	0.0001	Absent				
	Total	0.0003	ABSENT	(0.0001/	0.0003 =	33.3333 %)	0.000

Ra-224	[illegible]	[illegible]	Unable to Calc			
	Total	[illegible]	PRESENT	[illegible]	[illegible] =	[illegible]
Mn-54	834.83	0.1270	Absent			
	897.80	0.0950	Absent			
	911.00	0.1500	Present			
	606.10	0.0810	Present			
	Total	0.4530	ABSENT	0.2310/	0.4530 =	50.9934 %
Pa-231	283.60	0.0001	Absent			
	299.90	0.0001	Unable to Calc			
	302.50	0.0001	Absent			
	Total	0.0003	ABSENT (	0.0001/	0.0003 =	33.3333 %
Ce-143	293.26	0.4200	Present			
	664.55	0.0525	Absent			
	721.96	0.0512	Present			
	Total	0.5237	PRESENT (	0.4712/	0.5237 =	89.9752 %
Ir-192	295.96	0.2872	Present			
	308.46	0.2965	Absent			
	316.51	0.8290	Absent			
	468.06	0.4808	Absent			
	612.45	0.0543	Present			
	Total	1.9478	ABSENT (	0.3415/	1.9478 =	17.5326 %
Tl-210	296.00	0.0001	Unable to Calc			
	795.00	0.0001	Absent			
	1060.00	0.0001	Absent			
	1210.00	0.0001	Absent			
	1310.00	0.0001	Absent			
	Total	0.0005	ABSENT (	0.0001/	0.0005 =	20.0000 %)
Ag-113	298.40	0.0900	Present			
	Total	0.0900	PRESENT (	0.0900/	0.0900 =	100.0000 %)
Pa-233	300.10	0.0633	Present			
	311.90	0.3700	Absent			
	Total	0.4333	ABSENT (	0.0633/	0.4333 =	14.6088 %
Ho-167	321.30	0.2390	Absent			
	346.50	0.5700	Present			
	Total	0.8090	ABSENT (	0.5700/	0.8090 =	70.4574 %)
Au-196	332.90	0.2300	Present			
	355.70	0.8760	Present			
	Total	1.1060	PRESENT (	1.1060/	1.1060 =	100.0000 %)
In-115m	336.20	0.4590	Present			
	Total	0.4590	PRESENT (	0.4590/	0.4590 =	100.0000 %)
Ru-95	336.40	0.7100	Present			
	1096.80	0.2100	Absent			
	Total	0.9200	ABSENT (	0.7100/	0.9200 =	77.1739 %)
Cs-136	340.60	0.4890	Present			
	340.60	0.4676	Present			
	818.50	0.9970	Absent			
	818.50	0.9970	Absent			
	1048.07	0.7976	Absent			
	1048.10	0.7980	Absent			
	1235.34	0.1974	Absent			
	Total	4.7436	ABSENT (	0.9566/	4.7436 =	20.1661 %)
Pt-197m	346.50	0.1110	Present			
	Total	0.1110	PRESENT (	0.1110/	0.1110 =	100.0000 %)
Na-24	346.55	0.0100	Unable to Calc			
	857.55	0.0100	Absent			
	1368.53	1.0000	Absent			
	1732.10	0.0100	Absent			
	Total	1.0300	ABSENT (	0.0100/	1.0300 =	0.9709 %)
Bi-211	351.00	0.0001	Unable to Calc			
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %)

	1274.39	0.3550	Absent				
	Total	1.4143	ABSENT	[illegible]	1.4143 =	[illegible]	
In-114M	1[illegible]	[illegible]	Absent				
	244.69	0.0038	Present				
	416.88	0.2937	Absent				
	463.13	0.0083	Absent				
	818.65	0.1372	Absent				
	1097.23	0.6791	Absent				
	1293.49	1.0000	Absent				
	1507.50	0.1186	Absent				
	1601.12	0.0107	Absent				
	1752.42	0.0289	Absent				
	2212.21	0.1858	Absent				
	Total	2.5011	ABSENT	(0.0038/	2.5011 =	0.1519 %)	0.000
Ra-223	144.30	0.0001	Absent				
	154.30	0.0001	Absent				
	269.60	0.0001	Absent				
	338.60	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	(0.0001/	0.0004 =	25.0000 %)	0.000
Mg-27	170.82	0.0070	Absent				
	332.73	0.0100	Unable to Calc				
	843.80	0.7140	Absent				
	1014.50	0.2860	Absent				
	Total	1.0170	ABSENT	(0.0100/	1.0170 =	0.9833 %)	0.000
Sb-125	176.29	0.0630	Absent				
	380.51	0.0140	Absent				
	427.95	0.2960	Absent				
	463.51	0.1000	Absent				
	600.77	0.1840	Absent				
	606.82	0.0520	Present				
	636.15	0.1120	Absent				
	671.66	0.0180	Absent				
	Total	0.8390	ABSENT	(0.0520/	0.8390 =	6.1979 %)	0.000
Xe-125	188.43	0.5500	Absent				
	243.40	0.2871	Present				
	Total	0.8371	ABSENT	(0.2871/	0.8371 =	34.2970 %)	0.000
In-114m	190.24	0.1564	Absent				
	558.43	0.2850	Absent				
	725.24	0.2810	Present				
	1283.67	0.0003	Absent				
	1299.83	0.0012	Absent				
	Total	0.7239	ABSENT	(0.2810/	0.7239 =	38.8175 %)	0.000
Mo-101	191.93	0.1810	Absent				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				
	1012.35	0.1135	Absent				
	Total	0.6670	ABSENT	(0.1135/	0.6670 =	17.0165 %)	0.000
Ac-228	209.50	0.0001	Absent				
	338.70	0.0001	Unable to Calc				
	790.50	0.0001	Absent				
	911.20	0.0001	Unable to Calc				
	964.40	0.0001	Unable to Calc				
	968.80	0.0001	Unable to Calc				
	Total	0.0006	ABSENT	(0.0004/	0.0006 =	66.6667 %)	0.000
Xe-133m	233.20	0.1000	Present				
	Total	0.1000	PRESENT	(0.1000/	0.1000 =	100.0000 %)	0.000
[illegible]-227	236.00	0.0001	Unable to Calc				
	329.90	0.0001	Absent				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000

[illegible] 1460.81 [illegible] Present
Total [illegible] PRESENT [illegible] [illegible] = [illegible]

PEAK CONTRIBUTION CORRECTION

Pk#	Old Area	Nuclide	Reference Energy Line Energy	cts/dis	Ref Area	Calculated Contribution Energy	cts/dis	New Area
2	373	TH-232	911.07	7.83e-004	123	238.63	3.55e-003	373
3	75	Ce-143	721.96	1.68e-004	34	293.26	2.94e-003	75
3	0	U-238	609.32	1.76e-003	155	295.22	1.35e-003	0
4	74	TH-232	911.07	7.83e-004	123	338.40	7.53e-004	74
5	163	U-238	609.32	1.76e-003	155	351.99	2.25e-003	163
7	188	TH-232	911.07	7.83e-004	123	583.14	1.22e-003	188

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
2	0	Xe-133m	233.20	Deleted [Net < Critical Level]
2	0	Ra-224	241.08	Deleted [Net < Critical Level]
3	0	Ag-113	298.40	Deleted [Net < Critical Level]
4	0	Au-196	332.90	Deleted [Net < Critical Level]
4	0	In-115m	336.20	Deleted [Net < Critical Level]
4	0	HF-175	343.40	Deleted [Net < Critical Level]
5	0	Pt-197m	346.50	Deleted [Net < Critical Level]
5	0	Bi-211	351.00	Deleted [Net < Critical Level]
5	0	Au-196	355.70	Deleted [Net < Critical Level]
7	0	Tl-208	583.14	Deleted [Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
U-238	77.11	0.1070	Absent					
	295.22	0.1920	Absent					
	351.99	0.3710	Present					
	609.32	0.4609	Present					
	1764.28	0.1504	Present					
	Total	1.2813	ABSENT	(0.9823/	1.2813 =	76.6643 %)		0.000
HF-175	89.36	0.0235	Present					
	343.40	0.8692	Absent					
	432.80	0.0156	Absent					
	Total	0.9083	ABSENT	(0.0235/	0.9083 =	2.5873 %)		0.000
Xe-133m	233.20	0.1000	Absent					
	Total	0.1000	ABSENT	(0.0000/	0.1000 =	0.0000 %)		0.000
Ra-224	241.08	0.0001	Absent					
	Total	0.0001	ABSENT	(0.0000/	0.0001 =	0.0000 %)		0.000
Ag-113	298.40	0.0900	Absent					
	Total	0.0900	ABSENT	(0.0000/	0.0900 =	0.0000 %)		0.000
Au-196	332.90	0.2300	Absent					
	355.70	0.8760	Absent					
	Total	1.1060	ABSENT	(0.0000/	1.1060 =	0.0000 %)		0.000
.-115m	336.20	0.4590	Absent					
	Total	0.4590	ABSENT	(0.0000/	0.4590 =	0.0000 %)		0.000
Pt-197m	346.50	0.1110	Absent					
	Total	0.1110	ABSENT	(0.0000/	0.1110 =	0.0000 %)		0.000

Bi-211	351.00	0.0001	Absent				
	Total	0.0001	ABSENT	0.0000	0.0001	=	[illegible]
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Absent				
	Total	0.0002	ABSENT	0.0001	0.0002	=	50.0000 [illegible]

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)		Halflife (hrs)	Peaks Found	MPC Fraction
TH-232	Average:	1.39e+000	+-7.81e-002	1.24e+014	5 of 6	1.39
	238.63	1.17e+000	+-1.06e-001			
	338.40	1.09e+000	+-3.57e-001			
	583.14	1.71e+000	+-1.77e-001			
	911.07	1.75e+000	+-1.98e-001			
	968.90	1.69e+000	+-3.10e-001			
Th-234	92.80		BKG	1.00e+012	1 of 1	
Pt-195m	98.90	9.90e-001	+-4.05e-001	9.65e+001	1 of 1	
Ac-225	99.80		BKG	1.00e+012	1 of 1	
Ce-143	Average:	3.04e-001	+-9.50e-002	3.30e+001	2 of 3	1.52
	293.26	2.89e-001	+-9.53e-002			
	721.96	2.30e+000	+-1.08e+000			
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	7.10e+001	+-1.38e+001	9.39e+004	1 of 1	
K-40	1460.81	2.19e+001	+-1.22e+000	1.12e+013	1 of 1	
TOTAL:		9.56e+001	pCi /g		MPC Total:	1.52

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
352.02	714.72	163	25	41	169	1.06	7.460e+000
608.70	1248.37	155	18	25	61	1.38	1.129e+001
1760.47	3642.88	44	9	11	9	2.04	7.993e+000

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : BG-5

Sample Size . . . . . 6.79e+002 g	Spectrum File . . . . . TEMP.SPC
Sampling Start. 10-08-97 16:28	Counting Start. 10-08-97 16:28
Sampling Stop 10-08-97 16:28	Live Time . . . . . 3600 Sec
Current Date. 10-13-97 10:33	Real Time . . . . . 0 Sec

Detector #: 22

Energy(keV) = 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity 2.00	Search Start / End. . . . . 0 / 4095
Sigma Multiplier. 1.00	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	238.92	479.59	327	32	48	315	1.16	
2	295.23	596.66	144	27	45	200	1.80	
3	338.28	686.16	89	21	34	141	0.92	
4	351.86	714.38	166	24	37	155	1.26	
5	510.45	1044.10	161	20	31	86	1.64	
6	582.52	1193.93	111	18	27	83	1.47	
7	608.58	1248.10	130	18	27	75	1.75	
8	909.53	1873.79	96	14	20	40	1.59	
9	967.09	1993.45	52	13	20	39	1.65	
10	1118.25	2307.71	41	11	17	33	1.02	
11	1457.58	3013.17	330	19	12	13	1.44	

Neely Nuclear Research Center

Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: BG-5

Sample Size . . . . . 6.79e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-08-97 16:28	Counting Start. 10-08-97 16:28
Sampling Stop 10-08-97 16:28	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-13-97 10:33	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef ID.	Library File. . .c:\gdr\library\nes.lib IDGeneral Radionuclide Analysis Library

Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001] 10-08-97 10:47

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	238.92	327	Xe-133m	233.20	0.1000	8.24e-003	9.94e-001	4.42e+000
1	238.92	327	Fr-223	234.60				
1	238.92	327	Th-227	236.00				
1	238.92	327	U-235	236.00	0.1100	8.24e-003	1.00e+000	3.99e+000
1	238.92	327	TH-232	238.63	0.4310	8.24e-003	1.01e+000	1.01e+000
1	238.92	327	Te-131m	240.93	0.0755	8.24e-003	9.89e-001	5.88e+000
1	238.92	327	Ra-224	241.08				
1	238.92	327	Xe-125	243.40	0.2871	8.24e-003	9.80e-001	1.56e+000
1	238.92	327	IN-116M	244.59	0.0038	8.24e-003	6.99e-001	1.65e+002
1	238.92	327	Eu-152	244.67	0.0772	8.24e-003	1.00e+000	5.68e+000
2	295.23	144	Ce-143	293.26	0.4200	7.01e-003	9.90e-001	5.47e-001
2	295.23	144	U-238	295.22	0.1920	7.01e-003	1.00e+000	1.18e+000
2	295.23	144	Ir-192	295.96	0.2872	7.01e-003	1.00e+000	7.91e-001
2	295.23	144	Tl-210	296.00				
2	295.23	144	Ag-113	298.40	0.0900	7.01e-003	9.38e-001	2.69e+000
2	295.23	144	TB-160	298.57	0.2740	7.01e-003	1.00e+000	8.30e-001
2	295.23	144	Pa-231	299.90				
2	295.23	144	Pa-233	300.10	0.0633	7.01e-003	9.99e-001	3.59e+000
2	295.23	144	Ga-67	300.20	0.1900	7.01e-003	9.96e-001	1.20e+000
3	338.28	89	Mg-27	332.73	0.0100	6.27e-003	2.25e-001	6.98e+001
3	338.28	89	Au-196	332.90	0.2300	6.27e-003	9.98e-001	6.84e-001
3	338.28	89	Te-131m	334.27	0.0952	6.27e-003	9.89e-001	1.67e+000
3	338.28	89	Np-239	334.30	0.0200	6.27e-003	9.94e-001	7.89e+000
3	338.28	89	In-115m	336.20	0.4590	6.27e-003	9.27e-001	3.69e-001
3	338.28	89	Ru-95	336.40	0.7100	6.27e-003	8.17e-001	2.71e-001
3	338.28	89	TH-232	338.40	0.1201	6.27e-003	1.01e+000	1.29e+000
3	338.28	89	Ra-223	338.60				
3	338.28	89	Ac-228	338.70				
3	338.28	89	Cs-136	340.60	0.4890	6.27e-003	9.99e-001	3.21e-001
3	338.28	89	Cs-136	340.60	0.4676	6.27e-003	9.99e-001	3.36e-001
3	338.28	89	HF-175	343.40	0.8692	6.27e-003	1.00e+000	1.81e-001
3	338.28	89	EU-152M	344.20	0.0250	6.27e-003	9.64e-001	6.51e+000
4	351.86	166	HF-181	345.95	0.1400	6.07e-003	1.00e+000	2.16e+000

4	351.86	166	Ho-167	346.80	0.8700	6.07e-003	9.98e-001 1.15e-000
4	351.86	166	Pt-197m	346.80	0.1110	6.07e-003	9.98e-001 9.01e-000
4	351.86	166	Na-24	346.85	0.9100	6.07e-003	9.99e-001 1.10e-000
4	351.86	166	Bi-211	351.00			
4	351.86	166	U-235	351.10	0.1200	6.07e-003	1.00e-000 1.82e-001
4	351.86	166	U-238	351.99	0.3710	6.07e-003	1.00e-000 5.13e-001
4	351.86	166	Au-196	355.70	0.8760	6.07e-003	9.98e-001 3.46e-001
4	351.86	166	Ba-133	356.00	0.6200	6.07e-003	1.00e-000 4.88e-001
5	510.45	161	Mo-101	505.88	0.1135	4.43e-003	3.31e-001 1.07e-001
5	510.45	161	Te-121	507.59	0.1767	4.43e-003	9.99e-001 2.27e-000
5	510.45	161	Tl-208	510.72			
5	510.45	161	Kr-79	511.00	0.1500	4.43e-003	9.90e-001 2.70e-000
5	510.45	161	Annihila	511.00	1.0000	4.43e-003	1.00e+000 4.02e-001
5	510.45	161	Zn-71m	511.55	0.2806	4.43e-003	9.17e-001 1.36e-000
5	510.45	161	Rh-106m	511.70	0.8640	4.43e-003	8.56e-001 3.43e-001
5	510.45	161	KR-85	514.00	0.0041	4.43e-003	1.00e-000 3.71e-001
6	582.52	111	Tl-208	583.14			
6	582.52	111	TH-232	583.14	0.3090	3.96e-003	1.01e-000 9.94e-001
7	608.58	130	Sb-124	602.72	0.9830	3.82e-003	1.00e-000 3.83e-001
7	608.58	130	Cs-134	604.66	0.9756	3.82e-003	1.00e-000 3.96e-001
7	608.58	130	Kr-79	606.10	0.0810	3.82e-003	9.90e-001 4.70e-000
7	608.58	130	Sb-125	606.82	0.0520	3.82e-003	1.00e+000 7.25e+000
7	608.58	130	Bi-214	609.30			
7	608.58	130	U-238	609.32	0.4609	3.82e-003	1.00e+000 8.15e-001
7	608.58	130	Ir-192	612.45	0.0543	3.82e-003	1.00e+000 6.94e+000
7	608.58	130	Ag-108m	614.37	0.9320	3.82e-003	1.00e+000 4.04e-001
8	909.53	96	TH-232	911.07	0.2900	2.70e-003	1.01e+000 1.34e+000
8	909.53	96	Ac-228	911.20			
8	909.53	96	Sb-129	914.60	0.2140	2.70e-003	9.25e-001 1.98e+000
9	967.09	52	TB-160	962.36	0.1000	2.56e-003	1.00e+000 2.24e+000
9	967.09	52	EU-152M	963.50	0.1200	2.56e-003	9.64e-001 1.94e+000
9	967.09	52	Eu-152	964.00	0.1433	2.56e-003	1.00e+000 1.57e+000
9	967.09	52	Ac-228	964.40			
9	967.09	52	TB-160	966.17	0.2550	2.56e-003	1.00e+000 8.30e-001
9	967.09	52	Ac-228	968.80			
9	967.09	52	TH-232	968.90	0.1746	2.56e-003	1.01e+000 1.27e+000
10	1118.25	41	Sn-127	1114.30	0.3800	2.26e-003	8.55e-001 6.17e-001
10	1118.25	41	Zn-65	1115.52	0.5075	2.26e-003	1.00e+000 3.95e-001
10	1118.25	41	Ni-65	1115.53	0.1513	2.26e-003	8.76e-001 1.51e-000
10	1118.25	41	Bi-214	1120.30			
10	1118.25	41	Sc-46	1120.51	1.0000	2.26e-003	1.00e+000 2.01e-001
10	1118.25	41	Ta-182	1121.28	0.3510	2.26e-003	1.00e+000 5.71e-001
11	1457.58	330	K-40	1460.81	0.1070	1.80e-003	1.00e+000 1.90e+001

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status				Halflives
U-238	77.11	0.1070	Absent				
	295.22	0.1920	Present				
	351.99	0.3710	Present				
	609.32	0.4609	Present				
	1764.28	0.1504	Absent				
	Total	1.2813	ABSENT	(1.0239/	1.2813 =	79.9110 %)	0.000
TH-232	77.11	0.1750	Absent				
	238.63	0.4310	Present				
	338.40	0.1201	Present				
	583.14	0.3090	Present				
	911.07	0.2900	Present				

	968.90	0.1746	Present				
	Total	1.4997	PRESENT	1.3247	1.4997 =	88.3331 %	0.000
Fr-223	80.00	0.0001	Absent				
	234.60	0.0001	Unable to Calc				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %	0.000
-133	81.00	0.3429	Absent				
	276.40	0.0709	Absent				
	302.85	0.1816	Absent				
	356.00	0.6200	Present				
	383.85	0.0897	Absent				
	Total	1.3051	ABSENT	(0.6200/	1.3051 =	47.5059 %)	0.000
U-235	81.07	0.1480	Absent				
	83.78	0.2460	Absent				
	143.76	0.1050	Absent				
	185.72	0.5400	Absent				
	236.00	0.1100	Present				
	269.60	0.1340	Absent				
	351.10	0.1200	Present				
	Total	1.4030	ABSENT	(0.2300/	1.4030 =	16.3934 %)	0.000
TB-160	86.80	0.1340	Absent				
	197.04	0.0524	Absent				
	215.65	0.0402	Absent				
	298.57	0.2740	Present				
	876.37	0.3000	Absent				
	962.36	0.1000	Present				
	966.17	0.2550	Present				
	1177.95	0.1550	Absent				
	1271.88	0.0760	Absent				
	Total	1.3866	ABSENT	(0.6290/	1.3866 =	45.3628 %)	0.000
HF-175	89.36	0.0235	Absent				
	343.40	0.8692	Present				
	432.80	0.0156	Absent				
	Total	0.9083	PRESENT	(0.8692/	0.9083 =	95.6952 %)	0.000
Ga-67	93.30	0.3800	Absent				
	184.60	0.2360	Absent				
	300.20	0.1900	Present				
	Total	0.8060	ABSENT	(0.1900/	0.8060 =	23.5732 %)	0.000
Ta-182	100.10	0.1411	Absent				
	152.43	0.0720	Absent				
	222.10	0.0758	Absent				
	1121.28	0.3510	Present				
	1189.04	0.1636	Absent				
	1221.42	0.2713	Absent				
	1230.97	0.1155	Absent				
	Total	1.1903	ABSENT	(0.3510/	1.1903 =	29.4884 %)	0.000
Te-131m	102.06	0.0790	Absent				
	149.71	0.2054	Absent				
	200.63	0.0752	Absent				
	240.93	0.0755	Present				
	334.27	0.0952	Present				
	452.30	0.0567	Absent				
	773.67	0.3800	Absent				
	782.49	0.0775	Absent				
	793.75	0.1380	Absent				
	822.78	0.0609	Absent				
	852.21	0.2093	Absent				
	1125.46	0.1137	Absent				
	1206.60	0.0971	Absent				
	Total	1.6635	ABSENT	(0.1707/	1.6635 =	10.2615 %)	0.000
Np-239	106.10	0.2320	Absent				

	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Absent				
	[illegible]	[illegible]	Absent				
	815.90	0.0150	Absent				
	834.80	0.0200	Present				
	Total	0.5770	ABSENT	0.0200/	0.5770 =	3.4662 %	[illegible]
EU-152M	121.78	0.0720	Absent				
	344.20	0.0250	Present				
	841.60	0.1470	Absent				
	963.50	0.1200	Present				
	Total	0.3640	ABSENT	(0.1450/	0.3640 =	39.8352 %)	0.000
Eu-152	121.78	0.3068	Absent				
	244.67	0.0772	Present				
	344.30	0.2720	Absent				
	778.90	0.1272	Absent				
	964.00	0.1433	Present				
	1085.80	0.1010	Absent				
	1112.07	0.1340	Absent				
	1408.08	0.2073	Absent				
	Total	1.3688	ABSENT	(0.2205/	1.3688 =	16.1090 %	[illegible]
HF-181	133.05	0.4300	Absent				
	136.25	0.0610	Absent				
	345.95	0.1400	Present				
	482.16	0.8600	Absent				
	Total	1.4910	ABSENT	(0.1400/	1.4910 =	9.3897 %)	0.000
IN-116M	137.92	0.0350	Absent				
	244.59	0.0038	Present				
	416.88	0.2937	Absent				
	463.13	0.0083	Absent				
	818.65	0.1372	Absent				
	1097.23	0.6791	Absent				
	1293.49	1.0000	Absent				
	1507.50	0.1186	Absent				
	1601.12	0.0107	Absent				
	1752.42	0.0289	Absent				
	2212.21	0.1858	Absent				
	Total	2.5011	ABSENT	(0.0038/	2.5011 =	0.1519 %)	0.000
Ra-223	144.30	0.0001	Absent				
	154.30	0.0001	Absent				
	269.60	0.0001	Absent				
	338.60	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	(0.0001/	0.0004 =	25.0000 %)	0.000
Mg-27	170.82	0.0070	Absent				
	332.73	0.0100	Unable to Calc				
	843.80	0.7140	Absent				
	1014.50	0.2860	Absent				
	Total	1.0170	ABSENT	(0.0100/	1.0170 =	0.9833 %)	0.000
Sb-125	176.29	0.0630	Absent				
	380.51	0.0140	Absent				
	427.95	0.2960	Absent				
	463.51	0.1000	Absent				
	600.77	0.1840	Absent				
	606.82	0.0520	Present				
	636.15	0.1120	Absent				
	671.66	0.0180	Absent				
	Total	0.8390	ABSENT	(0.0520/	0.8390 =	6.1979 %)	0.000
-125	188.43	0.5500	Absent				
	243.40	0.2871	Present				
	Total	0.8371	ABSENT	(0.2871/	0.8371 =	34.2970 %)	0.000
Mo-101	191.93	0.1810	Absent				

	[illegible]	[illegible]	Present			
	880.82	0.1930	Absent			
	935.53	0.0660	Absent			
	1012.35	0.1135	Absent			
	Total	0.6670	ABSENT	0.1135/	0.6670 =	17.0165 %
c-228	209.50	0.0001	Absent			
	338.70	0.0001	Unable to Calc			
	790.50	0.0001	Absent			
	911.20	0.0001	Unable to Calc			
	964.40	0.0001	Unable to Calc			
	968.80	0.0001	Unable to Calc			
	Total	0.0006	ABSENT (	0.0004/	0.0006 =	66.6667 %
Xe-133m	233.20	0.1000	Present			
	Total	0.1000	PRESENT (	0.1000/	0.1000 =	100.0000 %
Th-227	236.00	0.0001	Unable to Calc			
	329.90	0.0001	Absent			
	Total	0.0002	ABSENT (	0.0001/	0.0002 =	50.0000 %
Ra-224	241.08	0.0001	Unable to Calc			
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %
Kr-79	261.30	0.1270	Absent			
	397.50	0.0950	Absent			
	511.00	0.1500	Present			
	606.10	0.0810	Present			
	Total	0.4530	ABSENT (	0.2310/	0.4530 =	50.9934 %)
Pa-231	283.60	0.0001	Absent			
	299.90	0.0001	Unable to Calc			
	302.50	0.0001	Absent			
	Total	0.0003	ABSENT (	0.0001/	0.0003 =	33.3333 %)
Ce-143	293.26	0.4200	Present			
	664.55	0.0525	Absent			
	721.96	0.0512	Absent			
	Total	0.5237	PRESENT (	0.4200/	0.5237 =	80.1986 %)
Ir-192	295.96	0.2872	Present			
	308.46	0.2965	Absent			
	316.51	0.8290	Absent			
	468.06	0.4808	Absent			
	612.45	0.0543	Present			
	Total	1.9478	ABSENT (	0.3415/	1.9478 =	17.5326 %)
Tl-210	296.00	0.0001	Unable to Calc			
	795.00	0.0001	Absent			
	1060.00	0.0001	Absent			
	1210.00	0.0001	Absent			
	1310.00	0.0001	Absent			
	Total	0.0005	ABSENT (	0.0001/	0.0005 =	20.0000 %)
Ag-113	298.40	0.0900	Present			
	Total	0.0900	PRESENT (	0.0900/	0.0900 =	100.0000 %)
Pa-233	300.10	0.0633	Present			
	311.90	0.3700	Absent			
	Total	0.4333	ABSENT (	0.0633/	0.4333 =	14.6088 %)
Ho-167	321.30	0.2390	Absent			
	346.50	0.5700	Present			
	Total	0.8090	ABSENT (	0.5700/	0.8090 =	70.4574 %)
Au-196	332.90	0.2300	Present			
	355.70	0.8760	Present			
	Total	1.1060	PRESENT (	1.1060/	1.1060 =	100.0000 %)
-115m	336.20	0.4590	Present			
	Total	0.4590	PRESENT (	0.4590/	0.4590 =	100.0000 %)
Ru-95	336.40	0.7100	Present			
	1096.80	0.2100	Absent			
	Total	0.9200	ABSENT (	0.7100/	0.9200 =	77.1739 %)

Ag-110	[illegible]	[illegible]	Present				
	[illegible]	[illegible]	Present				
	818.00	0.9970	Absent				
	818.50	0.9970	Absent				
	1048.07	0.7976	Absent				
	1048.10	0.7980	Absent				
	1235.34	0.1974	Absent				
	Total	4.7436	ABSENT	0.9566/	4.7436 =	[illegible]	[illegible]
Pt-197m	346.50	0.1110	Present				
	Total	0.1110	PRESENT (	0.1110/	0.1110 =	100.0000 %)	0.000
Na-24	346.55	0.0100	Unable to Calc				
	857.55	0.0100	Absent				
	1368.53	1.0000	Absent				
	1732.10	0.0100	Absent				
	Total	1.0300	ABSENT (	0.0100/	1.0300 =	0.9709 %)	0.000
Bi-211	351.00	0.0001	Unable to Calc				
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %)	0.000
Zn-71m	386.28	0.9200	Absent				
	487.34	0.6164	Absent				
	511.55	0.2806	Present				
	596.97	0.2760	Absent				
	620.19	0.5612	Absent				
	Total	2.6542	ABSENT (	0.2806/	2.6542 =	10.5719 %)	0.000
Ag-108m	434.00	0.9050	Absent				
	614.37	0.9320	Present				
	722.95	0.9230	Absent				
	Total	2.7600	ABSENT (	0.9320/	2.7600 =	33.7681 %)	0.000
Rh-106m	450.80	0.2450	Absent				
	511.70	0.8640	Present				
	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT (	0.8640/	1.8150 =	47.6033 %)	0.000
Te-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT (	0.1767/	0.9797 =	18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Unable to Calc				
	Total	0.0002	PRESENT (	0.0002/	0.0002 =	100.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT (	1.0000/	1.0000 =	100.0000 %)	0.000
KR-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT (	0.0041/	0.0041 =	100.0000 %)	0.000
Sb-129	544.70	0.1920	Absent				
	812.80	0.4600	Absent				
	914.60	0.2140	Present				
	1030.10	0.1350	Absent				
	Total	1.0010	ABSENT (	0.2140/	1.0010 =	21.3786 %)	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT (	0.9756/	2.1554 =	45.2631 %)	0.000
Sb-124	602.72	0.9830	Present				
	645.82	0.0723	Absent				
	722.78	0.1130	Absent				
	1691.02	0.4900	Absent				
	Total	1.6583	ABSENT (	0.9830/	1.6583 =	59.2776 %)	0.000
Bi-214	609.30	0.0001	Unable to Calc				

	[illegible]	[illegible]	Absent					
	[illegible]	[illegible]	Unable to Calc					
	[illegible]	[illegible]	Absent					
	Total	0.0004	ABSENT	[illegible]	0.0004	=	[illegible]	[illegible]
I-127	823.10	0.1060	Absent					
	1095.60	0.1940	Absent					
	1114.30	0.3800	Present					
	Total	0.6800	ABSENT	(0.3800/	0.6800	=	55.8824 %	[illegible]
Sc-46	889.25	1.0000	Absent					
	1120.51	1.0000	Present					
	2009.76	0.1000	Absent					
	Total	2.1000	ABSENT	(1.0000/	2.1000	=	47.6190 %	0.000
Zn-65	1115.52	0.5075	Present					
	Total	0.5075	PRESENT	(0.5075/	0.5075	=	100.0000 %	[illegible]
Ni-65	1115.53	0.1513	Present					
	1481.84	0.2350	Absent					
	Total	0.3863	ABSENT	(0.1513/	0.3863	=	39.1665 %	[illegible]
K-40	1460.81	0.1070	Present					
	Total	0.1070	PRESENT	(0.1070/	0.1070	=	100.0000 %	[illegible]

PEAK CONTRIBUTION CORRECTION

Pk#	Old Area	Nuclide	Reference Energy Line ===>> Energy	cts/dis	Ref Area	Calculated Contribution Energy	cts/dis	New Area
1	327	TH-232	911.07	7.83e-004	96	238.63	3.55e-003	327
3	89	TH-232	911.07	7.83e-004	96	338.40	7.53e-004	89
6	111	TH-232	911.07	7.83e-004	96	583.14	1.22e-003	111

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
1	0	Xe-133m	233.20	Deleted [Net < Critical Level]
1	0	Ra-224	241.08	Deleted [Net < Critical Level]
3	0	Au-196	332.90	Deleted [Net < Critical Level]
3	0	In-115m	336.20	Deleted [Net < Critical Level]
3	0	HF-175	343.40	Deleted [Net < Critical Level]
6	0	Tl-208	583.14	Deleted [Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
HF-175	89.36	0.0235	Absent					
	343.40	0.8692	Absent					
	432.80	0.0156	Absent					
	Total	0.9083	ABSENT	(0.0000/	0.9083	=	0.0000 %)	0.000
Xe-133m	233.20	0.1000	Absent					
	Total	0.1000	ABSENT	(0.0000/	0.1000	=	0.0000 %)	0.000
Ra-224	241.08	0.0001	Absent					
	Total	0.0001	ABSENT	(0.0000/	0.0001	=	0.0000 %)	0.000
Au-196	332.90	0.2300	Absent					
	355.70	0.8760	Present					
	Total	1.1060	ABSENT	(0.8760/	1.1060	=	79.2043 %)	0.000
In-115m	336.20	0.4590	Absent					
	Total	0.4590	ABSENT	(0.0000/	0.4590	=	0.0000 %)	0.000

Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Absent				
	Total	0.0002	ABSENT	0.0001 /	0.0002 =	50.0000 %	0.00

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)		Halflife (hrs)	Peaks Found	MPC Fraction
TH-232	Average:	1.08e+000	+-7.36e-002	1.24e+014	5 of 6	0.00
	238.63	1.01e+000	+-9.96e-002			
	338.40	1.29e+000	+-3.04e-001			
	583.14	9.94e-001	+-1.62e-001			
	911.07	1.34e+000	+-2.02e-001			
	968.90	1.27e+000	+-3.07e-001			
Ce-143	293.26	5.47e-001	+-1.01e-001	3.30e+001	1 of 3	2.73
Ag-113	298.40	2.69e+000	+-4.96e-001	5.37e+000	1 of 1	
Pt-197m	346.50	3.37e+000	+-4.84e-001	1.57e+000	1 of 1	
Bi-211	351.00		BKG	1.00e+012	1 of 1	
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	9.79e+001	+-1.24e+001	9.39e+004	1 of 1	
Zn-65	1115.52	3.95e-001	+-1.06e-001	5.86e+003	1 of 1	6.59
K-40	1460.81	1.90e+001	+-1.11e+000	1.12e+013	1 of 1	
TOTAL:		1.25e+002 pCi /g			MPC Total:	9.32

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
608.58	1248.10	130	18	27	75	1.75	9.465e+000

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : BG1-5 COMP

Sample Size	7.95e+002 g	Spectrum File	.TEMP.SPC
Sampling Start	.10-14-97 14:14	Counting Start	10-14-97 14:14
Sampling Stop	.10-14-97 14:14	Live Time	3600 Sec
Current Date	.10-15-97 07:42	Real Time	0 Sec

Detector #: 22

Energy(keV) = 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 / 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	78.05	145.14	75	40	72	638	0.82	
2	238.86	479.46	393	38	61	405	1.21	
3	295.32	596.84	112	23	36	179	0.99	
4	338.15	685.89	74	28	51	262	1.43	
5	351.76	714.19	206	24	36	147	1.44	
6	510.39	1043.98	128	21	33	123	2.40	
7	582.72	1194.34	166	19	25	72	1.40	
8	608.87	1248.70	181	19	26	70	1.95	
9	910.11	1874.99	101	16	25	56	1.70	
10	967.95	1995.25	70	14	23	43	1.45	
11	1458.62	3015.35	403	21	11	9	2.12	

Neely Nuclear Research Center

Quantum Technology
GDR_C Nuclide Activity Summary

Sample ID: BG1-5 COMP

Sample Size . . . . . 7.95e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-14-97 14:14	Counting Start. 10-14-97 14:14
Sampling Stop 10-14-97 14:14	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-15-97 07:42	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001] 12-05-96 10:47

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	78.05	75	U-238	77.11	0.1070	6.26e-003	1.00e+000	1.05e+000
1	78.05	75	TH-232	77.11	0.1750	6.26e-003	1.01e+000	6.41e-001
1	78.05	75	Hg-197	77.35	0.1900	6.26e-003	9.95e-001	5.99e-001
1	78.05	75	Pt-197	77.35	0.1700	6.26e-003	9.81e-001	6.78e-001
1	78.05	75	Fr-223	80.00				
1	78.05	75	Ce-144	80.00	0.0200	6.26e-003	1.00e+000	5.66e+000
1	78.05	75	Hg-197	80.20	0.0340	6.26e-003	9.95e-001	3.35e+000
1	78.05	75	Hg-199m	80.20	0.1110	6.26e-003	3.31e-001	3.08e+000
1	78.05	75	Xe-133	80.99	0.3700	6.26e-003	9.97e-001	3.07e-001
1	78.05	75	Ba-133	81.00	0.3429	6.26e-003	1.00e+000	3.30e-001
1	78.05	75	U-235	81.07	0.1480	6.26e-003	1.00e+000	7.64e-001
1	78.05	75	U-235	83.78	0.2460	6.26e-003	1.00e+000	4.60e-001
2	238.86	393	Xe-133m	233.20	0.1000	8.24e-003	9.94e-001	4.53e+000
2	238.86	393	Fr-223	234.60				
2	238.86	393	Th-227	236.00				
2	238.86	393	U-235	236.00	0.1100	8.24e-003	1.00e+000	4.09e+000
2	238.86	393	TH-232	238.63	0.4310	8.24e-003	1.01e+000	1.04e+000
2	238.86	393	Te-131m	240.93	0.0755	8.24e-003	9.89e-001	6.03e+000
2	238.86	393	Ra-224	241.08				
2	238.86	393	Xe-125	243.40	0.2871	8.24e-003	9.80e-001	1.60e+000
2	238.86	393	IN-116M	244.59	0.0038	8.24e-003	6.99e-001	1.70e+002
2	238.86	393	Eu-152	244.67	0.0772	8.24e-003	1.00e+000	5.83e+000
3	295.32	112	Ce-143	293.26	0.4200	7.00e-003	9.90e-001	3.63e-001
3	295.32	112	U-238	295.22	0.1920	7.00e-003	1.00e+000	7.84e-001
3	295.32	112	Ir-192	295.96	0.2872	7.00e-003	1.00e+000	5.26e-001
3	295.32	112	Tl-210	296.00				
3	295.32	112	Ag-113	298.40	0.0900	7.00e-003	9.38e-001	1.79e+000
3	295.32	112	TB-160	298.57	0.2740	7.00e-003	1.00e+000	5.51e-001
3	295.32	112	Pa-231	299.90				
3	295.32	112	Pa-233	300.10	0.0633	7.00e-003	9.99e-001	2.39e+000
3	295.32	112	Ga-67	300.20	0.1900	7.00e-003	9.96e-001	7.98e-001
4	338.15	74	Mg-27	332.73	0.0100	6.27e-003	2.25e-001	4.96e+001
4	338.15	74	Au-196	332.90	0.2300	6.27e-003	9.98e-001	4.85e-001

4	338.15	74	Te-131m	334.27	0.0952	6.27e-003	9.89e-001	1.18e-001
4	338.15	74	Np-239	334.30	0.0200	6.27e-003	9.94e-001	5.60e-001
4	338.15	74	In-115m	336.20	0.4590	6.27e-003	9.27e-001	2.62e-001
4	338.15	74	Ru-95	336.40	0.7100	6.27e-003	8.17e-001	1.92e-001
4	338.15	74	TH-232	338.40	0.1201	6.27e-003	1.01e+000	9.19e-001
4	338.15	74	Ra-223	338.60				
4	338.15	74	Ac-228	338.70				
4	338.15	74	Cs-136	340.60	0.4890	6.27e-003	9.99e-001	2.28e-001
4	338.15	74	Cs-136	340.60	0.4676	6.27e-003	9.99e-001	2.38e-001
4	338.15	74	HF-175	343.40	0.8692	6.27e-003	1.00e+000	1.28e-001
5	351.76	206	HF-181	345.95	0.1400	6.07e-003	1.00e+000	2.29e+000
5	351.76	206	Ho-167	346.50	0.5700	6.07e-003	8.96e-001	6.27e-001
5	351.76	206	Pt-197m	346.50	0.1110	6.07e-003	8.09e-001	3.57e+000
5	351.76	206	Na-24	346.55	0.0100	6.07e-003	9.77e-001	3.28e-001
5	351.76	206	Bi-211	351.00				
5	351.76	206	U-235	351.10	0.1200	6.07e-003	1.00e+000	2.67e+000
5	351.76	206	U-238	351.99	0.3710	6.07e-003	1.00e+000	8.61e-001
5	351.76	206	Au-196	355.70	0.8760	6.07e-003	9.98e-001	3.67e-001
5	351.76	206	Ba-133	356.00	0.6200	6.07e-003	1.00e+000	5.17e-001
6	510.39	128	Mo-101	505.88	0.1135	4.44e-003	3.31e-001	7.25e+000
6	510.39	128	Te-121	507.59	0.1767	4.44e-003	9.99e-001	1.54e+000
6	510.39	128	Tl-208	510.72				
6	510.39	128	Kr-79	511.00	0.1500	4.44e-003	9.90e-001	1.83e+000
6	510.39	128	Annihila	511.00	1.0000	4.44e-003	1.00e+000	2.73e-001
6	510.39	128	Zn-71m	511.55	0.2806	4.44e-003	9.17e-001	1.06e+000
6	510.39	128	Rh-106m	511.70	0.8640	4.44e-003	8.56e-001	3.69e-001
6	510.39	128	KR-85	514.00	0.0041	4.44e-003	1.00e+000	6.65e+001
7	582.72	166	Tl-208	583.14				
7	582.72	166	TH-232	583.14	0.3090	3.96e-003	1.01e+000	1.27e+000
8	608.87	181	Cs-134	604.66	0.9756	3.81e-003	1.00e+000	4.59e-001
8	608.87	181	Kr-79	606.10	0.0810	3.81e-003	9.90e-001	5.59e+000
8	608.87	181	Sb-125	606.82	0.0520	3.81e-003	1.00e+000	8.62e+000
8	608.87	181	Bi-214	609.30				
8	608.87	181	U-238	609.32	0.4609	3.81e-003	1.00e+000	9.70e-001
8	608.87	181	Ir-192	612.45	0.0543	3.81e-003	1.00e+000	8.26e+000
8	608.87	181	Ag-108m	614.37	0.9320	3.81e-003	1.00e+000	4.81e-001
9	910.11	101	TH-232	911.07	0.2900	2.70e-003	1.01e+000	1.21e+000
9	910.11	101	Ac-228	911.20				
9	910.11	101	Sb-129	914.60	0.2140	2.70e-003	9.25e-001	1.78e+000
10	967.95	70	TB-160	962.36	0.1000	2.56e-003	1.00e+000	2.58e+000
10	967.95	70	EU-152M	963.50	0.1200	2.56e-003	9.64e-001	2.23e+000
10	967.95	70	Eu-152	964.00	0.1433	2.56e-003	1.00e+000	1.80e+000
10	967.95	70	Ac-228	964.40				
10	967.95	70	TB-160	966.17	0.2550	2.56e-003	1.00e+000	1.01e+000
10	967.95	70	Ac-228	968.80				
10	967.95	70	TH-232	968.90	0.1746	2.56e-003	1.01e+000	1.47e+000
11	1458.62	403	K-40	1460.81	0.1070	1.80e-003	1.00e+000	1.98e+001

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status				Halflives
U-238	77.11	0.1070	Present				
	295.22	0.1920	Present				
	351.99	0.3710	Present				
	609.32	0.4609	Present				
	1764.28	0.1504	Absent				
	Total	1.2813	PRESENT (	1.1309/	1.2813 =	88.2619 %)	0.000
TH-232	77.11	0.1750	Present				

	238.63	0.4310	Present					
	338.40	0.1201	Present					
	583.14	0.3090	Present					
	911.07	0.2900	Present					
	968.90	0.1746	Present					
	Total	1.4997	PRESENT	(	1.4997/	1.4997 =	100.0000 %)	0.000
Hg-197	77.35	0.1900	Present					
	80.20	0.0340	Present					
	191.38	0.0057	Absent					
	268.73	0.0005	Absent					
	Total	0.2302	PRESENT	(	0.2240/	0.2302 =	97.3067 %)	0.000
Pt-197	77.35	0.1700	Present					
	191.31	0.0350	Absent					
	Total	0.2050	PRESENT	(	0.1700/	0.2050 =	82.9268 %)	0.000
Fr-223	80.00	0.0001	Unable to Calc					
	234.60	0.0001	Unable to Calc					
	Total	0.0002	PRESENT	(	0.0002/	0.0002 =	100.0000 %)	0.000
Ce-144	80.00	0.0200	Present					
	133.54	0.1110	Absent					
	Total	0.1310	ABSENT	(	0.0200/	0.1310 =	15.2672 %)	0.000
Hg-199m	80.20	0.1110	Present					
	158.37	0.5840	Absent					
	374.10	0.1380	Absent					
	Total	0.8330	ABSENT	(	0.1110/	0.8330 =	13.3253 %)	0.000
Xe-133	80.99	0.3700	Present					
	Total	0.3700	PRESENT	(	0.3700/	0.3700 =	100.0000 %)	0.000
Ba-133	81.00	0.3429	Present					
	276.40	0.0709	Absent					
	302.85	0.1816	Absent					
	356.00	0.6200	Present					
	383.85	0.0897	Absent					
	Total	1.3051	ABSENT	(	0.9629/	1.3051 =	73.7798 %)	0.000
U-235	81.07	0.1480	Present					
	83.78	0.2460	Present					
	143.76	0.1050	Absent					
	185.72	0.5400	Absent					
	236.00	0.1100	Present					
	269.60	0.1340	Absent					
	351.10	0.1200	Present					
	Total	1.4030	ABSENT	(	0.6240/	1.4030 =	44.4761 %)	0.000
TB-160	86.80	0.1340	Absent					
	197.04	0.0524	Absent					
	215.65	0.0402	Absent					
	298.57	0.2740	Present					
	876.37	0.3000	Absent					
	962.36	0.1000	Present					
	966.17	0.2550	Present					
	1177.95	0.1550	Absent					
	1271.88	0.0760	Absent					
	Total	1.3866	ABSENT	(	0.6290/	1.3866 =	45.3628 %)	0.000
HF-175	89.36	0.0235	Absent					
	343.40	0.8692	Present					
	432.80	0.0156	Absent					
	Total	0.9083	PRESENT	(	0.8692/	0.9083 =	95.6952 %)	0.000
Ga-67	93.30	0.3800	Absent					
	184.60	0.2360	Absent					
	300.20	0.1900	Present					
	Total	0.8060	ABSENT	(	0.1900/	0.8060 =	23.5732 %)	0.000
Te-131m	102.06	0.0790	Absent					
	149.71	0.2054	Absent					

	239.63	0.0752	Absent				
	240.93	0.0755	Present				
	334.27	0.0952	Present				
	452.30	0.0567	Absent				
	773.67	0.3800	Absent				
	782.49	0.0775	Absent				
	793.75	0.1380	Absent				
	822.78	0.0609	Absent				
	852.21	0.2093	Absent				
	1125.46	0.1137	Absent				
	1206.60	0.0971	Absent				
	Total	1.6635	ABSENT	(0.1707/	1.6635 =	10.2615 %)	0.000
Np-239	106.10	0.2320	Absent				
	209.80	0.0410	Absent				
	228.10	0.1270	Absent				
	277.60	0.1420	Absent				
	315.90	0.0150	Absent				
	334.30	0.0200	Present				
	Total	0.5770	ABSENT	(0.0200/	0.5770 =	3.4662 %)	0.000
EU-152M	121.78	0.0720	Absent				
	344.20	0.0250	Absent				
	841.60	0.1470	Absent				
	963.50	0.1200	Present				
	Total	0.3640	ABSENT	(0.1200/	0.3640 =	32.9670 %)	0.000
Eu-152	121.78	0.3068	Absent				
	244.67	0.0772	Present				
	344.30	0.2720	Absent				
	778.90	0.1272	Absent				
	964.00	0.1433	Present				
	1085.80	0.1010	Absent				
	1112.07	0.1340	Absent				
	1408.08	0.2073	Absent				
	Total	1.3688	ABSENT	(0.2205/	1.3688 =	16.1090 %)	0.000
HF-181	133.05	0.4300	Absent				
	136.25	0.0610	Absent				
	345.95	0.1400	Present				
	482.16	0.8600	Absent				
	Total	1.4910	ABSENT	(0.1400/	1.4910 =	9.3897 %)	0.000
IN-116M	137.92	0.0350	Absent				
	244.59	0.0038	Present				
	416.88	0.2937	Absent				
	463.13	0.0083	Absent				
	818.65	0.1372	Absent				
	1097.23	0.6791	Absent				
	1293.49	1.0000	Absent				
	1507.50	0.1186	Absent				
	1601.12	0.0107	Absent				
	1752.42	0.0289	Absent				
	2212.21	0.1858	Absent				
	Total	2.5011	ABSENT	(0.0038/	2.5011 =	0.1519 %)	0.000
Ra-223	144.30	0.0001	Absent				
	154.30	0.0001	Absent				
	269.60	0.0001	Absent				
	338.60	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	(0.0001/	0.0004 =	25.0000 %)	0.000
-27	170.82	0.0070	Absent				
	332.73	0.0100	Unable to Calc				
	843.80	0.7140	Absent				
	1014.50	0.2860	Absent				
	Total	1.0170	ABSENT	(0.0100/	1.0170 =	0.9833 %)	0.000

Sb-125	176.29	0.0630	Absent				
	380.51	0.0140	Absent				
	427.95	0.2960	Absent				
	463.51	0.1000	Absent				
	600.77	0.1840	Absent				
	606.82	0.0520	Present				
	636.15	0.1120	Absent				
	671.66	0.0180	Absent				
	Total	0.8390	ABSENT	(0.0520/	0.8390 =	6.1979 %)	0.000
Xe-125	188.43	0.5500	Absent				
	243.40	0.2871	Present				
	Total	0.8371	ABSENT	(0.2871/	0.8371 =	34.2970 %)	0.000
Mo-101	191.93	0.1810	Absent				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				
	1012.35	0.1135	Absent				
	Total	0.6670	ABSENT	(0.1135/	0.6670 =	17.0165 %)	0.000
Ac-228	209.50	0.0001	Absent				
	338.70	0.0001	Unable to Calc				
	790.50	0.0001	Absent				
	911.20	0.0001	Unable to Calc				
	964.40	0.0001	Unable to Calc				
	968.80	0.0001	Unable to Calc				
	Total	0.0006	ABSENT	(0.0004/	0.0006 =	66.6667 %)	0.000
Xe-133m	233.20	0.1000	Present				
	Total	0.1000	PRESENT	(0.1000/	0.1000 =	100.0000 %)	0.000
Th-227	236.00	0.0001	Unable to Calc				
	329.90	0.0001	Absent				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
-224	241.08	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Kr-79	261.30	0.1270	Absent				
	397.50	0.0950	Absent				
	511.00	0.1500	Present				
	606.10	0.0810	Present				
	Total	0.4530	ABSENT	(0.2310/	0.4530 =	50.9934 %)	0.000
Pa-231	283.60	0.0001	Absent				
	299.90	0.0001	Unable to Calc				
	302.50	0.0001	Absent				
	Total	0.0003	ABSENT	(0.0001/	0.0003 =	33.3333 %)	0.000
Ce-143	293.26	0.4200	Present				
	664.55	0.0525	Absent				
	721.96	0.0512	Absent				
	Total	0.5237	PRESENT	(0.4200/	0.5237 =	80.1986 %)	0.000
Ir-192	295.96	0.2872	Present				
	308.46	0.2965	Absent				
	316.51	0.8290	Absent				
	468.06	0.4808	Absent				
	612.45	0.0543	Present				
	Total	1.9478	ABSENT	(0.3415/	1.9478 =	17.5326 %)	0.000
Tl-210	296.00	0.0001	Unable to Calc				
	795.00	0.0001	Absent				
	1060.00	0.0001	Absent				
	1210.00	0.0001	Absent				
	1310.00	0.0001	Absent				
	Total	0.0005	ABSENT	(0.0001/	0.0005 =	20.0000 %)	0.000
Ag-113	298.40	0.0900	Present				
	Total	0.0900	PRESENT	(0.0900/	0.0900 =	100.0000 %)	0.000
Pa-233	300.10	0.0633	Present				

	311.90	0.3700	Absent					
	Total	0.4333	ABSENT	(	0.0633/	0.4333 =	14.6088 %	0.000
Ho-167	321.30	0.2390	Absent					
	346.50	0.5700	Present					
	Total	0.8090	ABSENT	(	0.5700/	0.8090 =	70.4574 %	0.000
Au-196	332.90	0.2300	Present					
	355.70	0.8760	Present					
	Total	1.1060	PRESENT	(	1.1060/	1.1060 =	100.0000 %)	0.000
In-115m	336.20	0.4590	Present					
	Total	0.4590	PRESENT	(	0.4590/	0.4590 =	100.0000 %)	0.000
Ru-95	336.40	0.7100	Present					
	1096.80	0.2100	Absent					
	Total	0.9200	ABSENT	(	0.7100/	0.9200 =	77.1739 %)	0.000
Cs-136	340.60	0.4890	Present					
	340.60	0.4676	Present					
	818.50	0.9970	Absent					
	818.50	0.9970	Absent					
	1048.07	0.7976	Absent					
	1048.10	0.7980	Absent					
	1235.34	0.1974	Absent					
	Total	4.7436	ABSENT	(	0.9566/	4.7436 =	20.1661 %)	0.000
Pt-197m	346.50	0.1110	Present					
	Total	0.1110	PRESENT	(	0.1110/	0.1110 =	100.0000 %)	0.000
Na-24	346.55	0.0100	Unable to Calc					
	857.55	0.0100	Absent					
	1368.53	1.0000	Absent					
	1732.10	0.0100	Absent					
	Total	1.0300	ABSENT	(	0.0100/	1.0300 =	0.9709 %)	0.000
Bi-211	351.00	0.0001	Unable to Calc					
	Total	0.0001	PRESENT	(	0.0001/	0.0001 =	100.0000 %)	0.000
Ir-71m	386.28	0.9200	Absent					
	487.34	0.6164	Absent					
	511.55	0.2806	Present					
	596.97	0.2760	Absent					
	620.19	0.5612	Absent					
	Total	2.6542	ABSENT	(	0.2806/	2.6542 =	10.5719 %)	0.000
Ag-108m	434.00	0.9050	Absent					
	614.37	0.9320	Present					
	722.95	0.9230	Absent					
	Total	2.7600	ABSENT	(	0.9320/	2.7600 =	33.7681 %)	0.000
Rh-106m	450.80	0.2450	Absent					
	511.70	0.8640	Present					
	616.10	0.2040	Absent					
	748.50	0.1950	Absent					
	1046.70	0.3070	Absent					
	Total	1.8150	ABSENT	(	0.8640/	1.8150 =	47.6033 %)	0.000
Te-121	507.59	0.1767	Present					
	573.14	0.8030	Absent					
	Total	0.9797	ABSENT	(	0.1767/	0.9797 =	18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc					
	583.14	0.0001	Unable to Calc					
	Total	0.0002	PRESENT	(	0.0002/	0.0002 =	100.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc					
	Total	1.0000	PRESENT	(	1.0000/	1.0000 =	100.0000 %)	0.000
KR-85	514.00	0.0041	Present					
	Total	0.0041	PRESENT	(	0.0041/	0.0041 =	100.0000 %)	0.000
Sb-129	544.70	0.1920	Absent					
	812.80	0.4600	Absent					
	914.60	0.2140	Present					
	1030.10	0.1350	Absent					

	Total	1.0010	ABSENT	(0.2140/	1.0010 =	21.3786 %)	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT	(0.9756/	2.1554 =	45.2631 %)	0.000
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Absent				
	1764.50	0.0001	Absent				
	Total	0.0004	ABSENT	(0.0001/	0.0004 =	25.0000 %)	0.000
K-40	1460.81	0.1070	Present				
	Total	0.1070	PRESENT	(0.1070/	0.1070 =	100.0000 %)	0.000

PEAK CONTRIBUTION CORRECTION

			Reference Energy Line		===>> Calculated Contribution			
Pk#	Old Area	Nuclide	Energy	cts/dis	Ref Area	Energy	cts/dis	New Area
1	75	U-238	609.32	1.76e-003	181	77.11	6.70e-004	69
1	6	TH-232	911.07	7.83e-004	101	77.11	1.10e-003	6
2	393	TH-232	911.07	7.83e-004	101	238.63	3.55e-003	393
3	112	U-238	609.32	1.76e-003	181	295.22	1.34e-003	112
4	74	TH-232	911.07	7.83e-004	101	338.40	7.54e-004	74
5	206	U-238	609.32	1.76e-003	181	351.99	2.25e-003	206
7	166	TH-232	911.07	7.83e-004	101	583.14	1.22e-003	158

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
1	0	Hg-197	77.35	Deleted [Net < Critical Level]
1	0	Pt-197	77.35	Deleted [Net < Critical Level]
1	0	Fr-223	80.00	Deleted [Net < Critical Level]
1	0	Hg-197	80.20	Deleted [Net < Critical Level]
1	0	Xe-133	80.99	Deleted [Net < Critical Level]
2	0	Xe-133m	233.20	Deleted [Net < Critical Level]
2	0	Fr-223	234.60	Deleted [Net < Critical Level]
2	0	Ra-224	241.08	Deleted [Net < Critical Level]
3	0	Ce-143	293.26	Deleted [Net < Critical Level]
3	0	Ag-113	298.40	Deleted [Net < Critical Level]
4	0	Au-196	332.90	Deleted [Net < Critical Level]
4	0	In-115m	336.20	Deleted [Net < Critical Level]
4	0	HF-175	343.40	Deleted [Net < Critical Level]
5	0	Pt-197m	346.50	Deleted [Net < Critical Level]
5	0	Bi-211	351.00	Deleted [Net < Critical Level]
5	0	Au-196	355.70	Deleted [Net < Critical Level]
7	8	Tl-208	583.14	Deleted [Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status	Halflives
Hg-197	77.35	0.1900	Absent	
	80.20	0.0340	Absent	
	191.38	0.0057	Absent	

	268.73	0.0005	Absent					
	Total	0.2302	ABSENT	(	0.0000/	0.2302 =	0.0000 %	0.000
Pt-197	77.35	0.1700	Absent					
	191.31	0.0350	Absent					
	Total	0.2050	ABSENT	(	0.0000/	0.2050 =	0.0000 %)	0.000
-223	80.00	0.0001	Absent					
	234.60	0.0001	Absent					
	Total	0.0002	ABSENT	(	0.0000/	0.0002 =	0.0000 %)	0.000
Xe-133	80.99	0.3700	Absent					
	Total	0.3700	ABSENT	(	0.0000/	0.3700 =	0.0000 %)	0.000
HF-175	89.36	0.0235	Absent					
	343.40	0.8692	Absent					
	432.80	0.0156	Absent					
	Total	0.9083	ABSENT	(	0.0000/	0.9083 =	0.0000 %)	0.000
Xe-133m	233.20	0.1000	Absent					
	Total	0.1000	ABSENT	(	0.0000/	0.1000 =	0.0000 %)	0.000
Ra-224	241.08	0.0001	Absent					
	Total	0.0001	ABSENT	(	0.0000/	0.0001 =	0.0000 %)	0.000
Ce-143	293.26	0.4200	Absent					
	664.55	0.0525	Absent					
	721.96	0.0512	Absent					
	Total	0.5237	ABSENT	(	0.0000/	0.5237 =	0.0000 %)	0.000
Ag-113	298.40	0.0900	Absent					
	Total	0.0900	ABSENT	(	0.0000/	0.0900 =	0.0000 %)	0.000
Au-196	332.90	0.2300	Absent					
	355.70	0.8760	Absent					
	Total	1.1060	ABSENT	(	0.0000/	1.1060 =	0.0000 %)	0.000
In-115m	336.20	0.4590	Absent					
	Total	0.4590	ABSENT	(	0.0000/	0.4590 =	0.0000 %)	0.000
Pt-197m	346.50	0.1110	Absent					
	Total	0.1110	ABSENT	(	0.0000/	0.1110 =	0.0000 %)	0.000
[illegible]-211	351.00	0.0001	Absent					
	Total	0.0001	ABSENT	(	0.0000/	0.0001 =	0.0000 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc					
	583.14	0.0001	Absent					
	Total	0.0002	ABSENT	(	0.0001/	0.0002 =	50.0000 %)	0.000

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)	Halflife (hrs)	Peaks Found	MPC Fraction
U-238	Average:	8.93e-001 +-6.57e-002	4.12e+013	4 of 5	0.00
	77.11	9.70e-001 +-5.67e-001			
	295.22	7.84e-001 +-1.59e-001			
	351.99	8.61e-001 +-1.02e-001			
	609.32	9.70e-001 +-1.04e-001			
TH-232	Average:	1.08e+000 +-7.05e-002	1.24e+014	6 of 6	0.00
	77.11	5.12e-002 +-3.45e-001			
	238.63	1.04e+000 +-1.01e-001			
	338.40	9.19e-001 +-3.50e-001			
	583.14	1.21e+000 +-1.44e-001			
	911.07	1.21e+000 +-1.94e-001			
	968.90	1.47e+000 +-2.99e-001			
[illegible]nnihila	511.00	I.D.Only	1.00e+003	1 of 1	
-85	514.00	6.65e+001 +-1.11e+001	9.39e+004	1 of 1	
K-40	1460.81	1.98e+001 +-1.02e+000	1.12e+013	1 of 1	
TOTAL:		8.82e+001 pCi /g		MPC Total:	0.00

UNKNOWN PEAKS

ergy keV)	Centroid Channel	Net Counts	Un- Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : BG6A

Sample Size	7.45e+002 g	Spectrum File	TEMP.SPC
Sampling Start	10-14-97 16:15	Counting Start	10-14-97 16:15
Sampling Stop	10-14-97 16:15	Live Time	3600 Sec
Current Date	10-15-97 07:39	Real Time	0 Sec

Detector #: 22

Energy(keV) = 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 / 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	77.89	144.81	77	36	62	600	0.82	
2	186.41	370.41	132	34	58	414	1.27	
3	238.87	479.48	535	35	47	271	1.06	a
4	241.85	485.68	143	26	41	229	1.41	b
5	295.29	596.78	152	30	51	285	1.35	
6	338.29	686.18	90	22	34	164	1.35	
7	351.90	714.48	318	32	53	241	1.36	
8	510.40	1044.00	113	22	37	138	1.48	
9	582.83	1194.57	206	22	31	99	1.55	
10	608.75	1248.47	244	24	36	122	1.48	
11	910.07	1874.91	124	17	24	54	1.62	
12	967.68	1994.69	46	13	22	53	1.40	
13	1118.43	2308.10	55	13	20	40	1.61	
14	1458.70	3015.51	463	24	19	28	2.08	
15	1761.57	3645.18	51	9	11	9	1.23	

Neely Nuclear Research Center

Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: BG6A

Sample Size . . . . . 7.45e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-14-97 16:15	Counting Start. 10-14-97 16:15
Sampling Stop 10-14-97 16:15	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-15-97 07:40	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef ID.	Library File. . .c:\gdr\library\nes.lib IDGeneral Radionuclide Analysis Library
Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001]	12-05-96 10:47
Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy Fraction	Eff	Decay	Conc
1	77.89	77	U-238	77.11	0.1070	6.24e-003	1.00e+000 1.16e+000
1	77.89	77	TH-232	77.11	0.1750	6.24e-003	1.01e+000 7.04e-001
1	77.89	77	Hg-197	77.35	0.1900	6.24e-003	9.95e-001 6.58e-001
1	77.89	77	Pt-197	77.35	0.1700	6.24e-003	9.81e-001 7.46e-001
1	77.89	77	Fr-223	80.00			
1	77.89	77	Ce-144	80.00	0.0200	6.24e-003	1.00e+000 6.22e+000
1	77.89	77	Hg-197	80.20	0.0340	6.24e-003	9.95e-001 3.68e+000
1	77.89	77	Hg-199m	80.20	0.1110	6.24e-003	3.31e-001 3.39e+000
1	77.89	77	Xe-133	80.99	0.3700	6.24e-003	9.97e-001 3.37e-001
1	77.89	77	Ba-133	81.00	0.3429	6.24e-003	1.00e+000 3.63e-001
1	77.89	77	U-235	81.07	0.1480	6.24e-003	1.00e+000 8.41e-001
1	77.89	77	U-235	83.78	0.2460	6.24e-003	1.00e+000 5.06e-001
2	186.41	132	Mo-99	181.07	0.0629	9.66e-003	9.95e-001 2.20e+000
2	186.41	132	Cu-67	184.50	0.4700	9.66e-003	9.94e-001 2.95e-001
2	186.41	132	Ga-67	184.60	0.2360	9.66e-003	9.96e-001 5.86e-001
2	186.41	132	U-235	185.72	0.5400	9.66e-003	1.00e+000 2.55e-001
2	186.41	132	Ra-226	186.20			
2	186.41	132	Xe-125	188.43	0.5500	9.66e-003	9.80e-001 2.55e-001
2	186.41	132	In-114m	190.24	0.1564	9.66e-003	1.00e+000 8.80e-001
2	186.41	132	Pt-197	191.31	0.0350	9.66e-003	9.81e-001 4.01e+000
2	186.41	132	Hg-197	191.38	0.0057	9.66e-003	9.95e-001 2.43e+001
2	186.41	132	Zn-72	191.50	0.0940	9.66e-003	9.93e-001 1.48e+000
2	186.41	132	Mo-101	191.93	0.1810	9.66e-003	3.31e-001 2.30e+000
2	186.41	132	Fe-59	192.34	0.0311	9.66e-003	1.00e+000 4.43e+000
3	238.87	535	Xe-133m	233.20	0.1000	8.24e-003	9.94e-001 6.58e+000
3	238.87	535	Fr-223	234.60			
3	238.87	535	Th-227	236.00			
3	238.87	535	U-235	236.00	0.1100	8.24e-003	1.00e+000 5.95e+000
3	238.87	535	TH-232	238.63	0.4310	8.24e-003	1.01e+000 1.50e+000
4	241.85	143	Te-131m	240.93	0.0755	8.17e-003	9.89e-001 2.36e+000
4	241.85	143	Ra-224	241.08			
4	241.85	143	Xe-125	243.40	0.2871	8.17e-003	9.80e-001 6.27e-001
4	241.85	143	IN-116M	244.59	0.0038	8.17e-003	6.99e-001 6.64e+001

4	241.85	143	Eu-152	244.67	0.0772	8.17e-003	1.00e+000	2.29e-001
4	241.85	143	Sm-155	245.73	0.0373	8.17e-003	4.51e-001	1.03e-001
4	241.85	143	Xe-135	247.79	0.9000	8.17e-003	9.63e-001	2.04e-001
5	295.29	152	Ce-143	293.26	0.4200	7.00e-003	9.90e-001	5.26e-001
5	295.29	152	U-238	295.22	0.1920	7.00e-003	1.00e+000	1.14e-000
5	295.29	152	Ir-192	295.96	0.2872	7.00e-003	1.00e+000	7.62e-001
5	295.29	152	Tl-210	296.00				
5	295.29	152	Ag-113	298.40	0.0900	7.00e-003	9.38e-001	2.59e+000
5	295.29	152	TB-160	298.57	0.2740	7.00e-003	1.00e+000	7.98e-001
5	295.29	152	Pa-231	299.90				
5	295.29	152	Pa-233	300.10	0.0633	7.00e-003	9.99e-001	3.46e+000
5	295.29	152	Ga-67	300.20	0.1900	7.00e-003	9.96e-001	1.16e+000
6	338.29	90	Mg-27	332.73	0.0100	6.27e-003	2.25e-001	6.43e+001
6	338.29	90	Au-196	332.90	0.2300	6.27e-003	9.98e-001	6.30e-001
6	338.29	90	Te-131m	334.27	0.0952	6.27e-003	9.89e-001	1.54e+000
6	338.29	90	Np-239	334.30	0.0200	6.27e-003	9.94e-001	7.27e+000
6	338.29	90	In-115m	336.20	0.4590	6.27e-003	9.27e-001	3.40e-001
6	338.29	90	Ru-95	336.40	0.7100	6.27e-003	8.17e-001	2.49e-001
6	338.29	90	TH-232	338.40	0.1201	6.27e-003	1.01e+000	1.19e-000
6	338.29	90	Ra-223	338.60				
6	338.29	90	Ac-228	338.70				
6	338.29	90	Cs-136	340.60	0.4890	6.27e-003	9.99e-001	2.96e-001
6	338.29	90	Cs-136	340.60	0.4676	6.27e-003	9.99e-001	3.10e-001
6	338.29	90	HF-175	343.40	0.8692	6.27e-003	1.00e+000	1.66e-001
6	338.29	90	EU-152M	344.20	0.0250	6.27e-003	9.64e-001	6.00e+000
7	351.90	318	HF-181	345.95	0.1400	6.07e-003	1.00e+000	3.77e+000
7	351.90	318	Ho-167	346.50	0.5700	6.07e-003	8.96e-001	1.03e+000
7	351.90	318	Pt-197m	346.50	0.1110	6.07e-003	8.09e-001	5.88e+000
7	351.90	318	Na-24	346.55	0.0100	6.07e-003	9.77e-001	5.40e+001
7	351.90	318	Bi-211	351.00				
7	351.90	318	U-235	351.10	0.1200	6.07e-003	1.00e+000	4.40e+000
7	351.90	318	U-238	351.99	0.3710	6.07e-003	1.00e+000	1.42e+000
7	351.90	318	Au-196	355.70	0.8760	6.07e-003	9.98e-001	6.04e-001
7	351.90	318	Ba-133	356.00	0.6200	6.07e-003	1.00e+000	8.51e-001
8	510.40	113	Mo-101	505.88	0.1135	4.44e-003	3.31e-001	6.83e+000
8	510.40	113	Te-121	507.59	0.1767	4.44e-003	9.99e-001	1.45e+000
8	510.40	113	Tl-208	510.72				
8	510.40	113	Kr-79	511.00	0.1500	4.44e-003	9.90e-001	1.73e+000
8	510.40	113	Annihila	511.00	1.0000	4.44e-003	1.00e+000	2.57e-001
8	510.40	113	Zn-71m	511.55	0.2806	4.44e-003	9.17e-001	9.98e-001
8	510.40	113	Rh-106m	511.70	0.8640	4.44e-003	8.56e-001	3.47e-001
8	510.40	113	KR-85	514.00	0.0041	4.44e-003	1.00e+000	6.26e+001
9	582.83	206	Tl-208	583.14				
9	582.83	206	TH-232	583.14	0.3090	3.96e-003	1.01e+000	1.68e+000
10	608.75	244	Cs-134	604.66	0.9756	3.81e-003	1.00e+000	6.61e-001
10	608.75	244	Kr-79	606.10	0.0810	3.81e-003	9.90e-001	8.04e+000
10	608.75	244	Sb-125	606.82	0.0520	3.81e-003	1.00e+000	1.24e+001
10	608.75	244	Bi-214	609.30				
10	608.75	244	U-238	609.32	0.4609	3.81e-003	1.00e+000	1.40e+000
10	608.75	244	Ir-192	612.45	0.0543	3.81e-003	1.00e+000	1.19e+001
10	608.75	244	Ag-108m	614.37	0.9320	3.81e-003	1.00e+000	6.92e-001
11	910.07	124	TH-232	911.07	0.2900	2.70e-003	1.01e+000	1.58e+000
11	910.07	124	Ac-228	911.20				
11	910.07	124	Sb-129	914.60	0.2140	2.70e-003	9.25e-001	2.34e+000
12	967.68	46	TB-160	962.36	0.1000	2.56e-003	1.00e+000	1.81e+000
12	967.68	46	EU-152M	963.50	0.1200	2.56e-003	9.64e-001	1.57e+000
2	967.68	46	Eu-152	964.00	0.1433	2.56e-003	1.00e+000	1.26e+000
12	967.68	46	Ac-228	964.40				
12	967.68	46	TB-160	966.17	0.2550	2.56e-003	1.00e+000	7.10e-001
12	967.68	46	Ac-228	968.80				

12	967.68	46	TH-232	968.90	0.1746	2.56e-003	1.00e+000	1.13e-001
13	1118.43	55	Sn-127	1114.30	0.3800	2.26e-003	8.55e-001	7.54e-001
13	1118.43	55	Zn-65	1115.52	0.5075	2.26e-003	1.00e+000	4.83e-001
13	1118.43	55	Ni-65	1115.53	0.1513	2.26e-003	8.76e-001	1.85e+000
3	1118.43	55	Bi-214	1120.30				
13	1118.43	55	Sc-46	1120.51	1.0000	2.26e-003	1.00e+000	2.45e-001
13	1118.43	55	Ta-182	1121.28	0.3510	2.26e-003	1.00e+000	6.99e-001
14	1458.70	463	K-40	1460.81	0.1070	1.80e-003	1.00e+000	2.42e+001
15	1761.57	51	U-238	1764.28	0.1504	1.53e-003	1.00e+000	2.23e+000
15	1761.57	51	Bi-214	1764.50				

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
U-238	77.11	0.1070	Present					
	295.22	0.1920	Present					
	351.99	0.3710	Present					
	609.32	0.4609	Present					
	1764.28	0.1504	Present					
	Total	1.2813	PRESENT	(	1.2813/	1.2813 =	100.0000 %)	0.000
TH-232	77.11	0.1750	Present					
	238.63	0.4310	Present					
	338.40	0.1201	Present					
	583.14	0.3090	Present					
	911.07	0.2900	Present					
	968.90	0.1746	Present					
	Total	1.4997	PRESENT	(	1.4997/	1.4997 =	100.0000 %)	0.000
Hg-197	77.35	0.1900	Present					
	80.20	0.0340	Present					
	191.38	0.0057	Present					
	268.73	0.0005	Absent					
	Total	0.2302	PRESENT	(	0.2297/	0.2302 =	99.7828 %)	0.000
Pt-197	77.35	0.1700	Present					
	191.31	0.0350	Present					
	Total	0.2050	PRESENT	(	0.2050/	0.2050 =	100.0000 %)	0.000
Fr-223	80.00	0.0001	Unable to Calc					
	234.60	0.0001	Unable to Calc					
	Total	0.0002	PRESENT	(	0.0002/	0.0002 =	100.0000 %)	0.000
Ce-144	80.00	0.0200	Present					
	133.54	0.1110	Absent					
	Total	0.1310	ABSENT	(	0.0200/	0.1310 =	15.2672 %)	0.000
Hg-199m	80.20	0.1110	Present					
	158.37	0.5840	Absent					
	374.10	0.1380	Absent					
	Total	0.8330	ABSENT	(	0.1110/	0.8330 =	13.3253 %)	0.000
Xe-133	80.99	0.3700	Present					
	Total	0.3700	PRESENT	(	0.3700/	0.3700 =	100.0000 %)	0.000
Ba-133	81.00	0.3429	Present					
	276.40	0.0709	Absent					
	302.85	0.1816	Absent					
	356.00	0.6200	Present					
	383.85	0.0897	Absent					
	Total	1.3051	ABSENT	(	0.9629/	1.3051 =	73.7798 %)	0.000
U-235	81.07	0.1480	Present					
	83.78	0.2460	Present					
	143.76	0.1050	Absent					
	185.72	0.5400	Present					
	236.00	0.1100	Present					

	269.60	0.1340	Absent					
	351.10	0.1200	Present					
	Total	1.4030	PRESENT	(	1.1640/	1.4030	= 82.9651 %	0.00
3-160	86.80	0.1340	Absent					
	197.04	0.0524	Absent					
	215.65	0.0402	Absent					
	298.57	0.2740	Present					
	876.37	0.3000	Absent					
	962.36	0.1000	Present					
	966.17	0.2550	Present					
	1177.95	0.1550	Absent					
	1271.88	0.0760	Absent					
	Total	1.3866	ABSENT	(	0.6290/	1.3866	= 45.3628 %)	0.000
HF-175	89.36	0.0235	Absent					
	343.40	0.8692	Present					
	432.80	0.0156	Absent					
	Total	0.9083	PRESENT	(	0.8692/	0.9083	= 95.6952 %)	0.000
Cu-67	93.30	0.1690	Absent					
	184.50	0.4700	Present					
	Total	0.6390	ABSENT	(	0.4700/	0.6390	= 73.5524 %)	0.000
Ga-67	93.30	0.3800	Absent					
	184.60	0.2360	Present					
	300.20	0.1900	Present					
	Total	0.8060	ABSENT	(	0.4260/	0.8060	= 52.8536 %)	0.000
Ta-182	100.10	0.1411	Absent					
	152.43	0.0720	Absent					
	222.10	0.0758	Absent					
	1121.28	0.3510	Present					
	1189.04	0.1636	Absent					
	1221.42	0.2713	Absent					
	1230.97	0.1155	Absent					
	Total	1.1903	ABSENT	(	0.3510/	1.1903	= 29.4884 %)	0.000
Te-131m	102.06	0.0790	Absent					
	149.71	0.2054	Absent					
	200.63	0.0752	Absent					
	240.93	0.0755	Present					
	334.27	0.0952	Present					
	452.30	0.0567	Absent					
	773.67	0.3800	Absent					
	782.49	0.0775	Absent					
	793.75	0.1380	Absent					
	822.78	0.0609	Absent					
	852.21	0.2093	Absent					
	1125.46	0.1137	Absent					
	1206.60	0.0971	Absent					
	Total	1.6635	ABSENT	(	0.1707/	1.6635	= 10.2615 %)	0.000
Sm-155	104.30	0.7464	Absent					
	141.41	0.0202	Absent					
	245.73	0.0373	Present					
	Total	0.8039	ABSENT	(	0.0373/	0.8039	= 4.6425 %)	0.000
Np-239	106.10	0.2320	Absent					
	209.80	0.0410	Absent					
	228.10	0.1270	Absent					
	277.60	0.1420	Absent					
	315.90	0.0150	Absent					
	334.30	0.0200	Present					
	Total	0.5770	ABSENT	(	0.0200/	0.5770	= 3.4662 %)	0.000
EU-152M	121.78	0.0720	Absent					
	344.20	0.0250	Present					
	841.60	0.1470	Absent					

	963.50	0.1200	Present					
	Total	0.3640	ABSENT	(	0.1450/	0.3640 =	39.8352 %	0.000
Eu-152	121.78	0.3068	Absent					
	244.67	0.0772	Present					
	344.30	0.2720	Absent					
	778.90	0.1272	Absent					
	964.00	0.1433	Present					
	1085.80	0.1010	Absent					
	1112.07	0.1340	Absent					
	1408.08	0.2073	Absent					
	Total	1.3688	ABSENT	(	0.2205/	1.3688 =	16.1090 %)	0.000
HF-181	133.05	0.4300	Absent					
	136.25	0.0610	Absent					
	345.95	0.1400	Present					
	482.16	0.8600	Absent					
	Total	1.4910	ABSENT	(	0.1400/	1.4910 =	9.3897 %)	0.000
IN-116M	137.92	0.0350	Absent					
	244.59	0.0038	Present					
	416.88	0.2937	Absent					
	463.13	0.0083	Absent					
	818.65	0.1372	Absent					
	1097.23	0.6791	Absent					
	1293.49	1.0000	Absent					
	1507.50	0.1186	Absent					
	1601.12	0.0107	Absent					
	1752.42	0.0289	Absent					
	2212.21	0.1858	Absent					
	Total	2.5011	ABSENT	(	0.0038/	2.5011 =	0.1519 %)	0.000
Mo-99	140.51	0.0379	Absent					
	181.07	0.0629	Present					
	739.40	0.1260	Absent					
	Total	0.2268	ABSENT	(	0.0629/	0.2268 =	27.7266 %)	0.000
Fe-59	142.65	0.0103	Absent					
	192.34	0.0311	Present					
	1099.22	0.5680	Absent					
	1291.56	0.4320	Absent					
	Total	1.0414	ABSENT	(	0.0311/	1.0414 =	2.9864 %)	0.000
Ra-223	144.30	0.0001	Absent					
	154.30	0.0001	Absent					
	269.60	0.0001	Absent					
	338.60	0.0001	Unable to Calc					
	Total	0.0004	ABSENT	(	0.0001/	0.0004 =	25.0000 %)	0.000
Zn-72	144.70	0.8300	Absent					
	191.50	0.0940	Present					
	Total	0.9240	ABSENT	(	0.0940/	0.9240 =	10.1732 %)	0.000
Mg-27	170.82	0.0070	Absent					
	332.73	0.0100	Unable to Calc					
	843.80	0.7140	Absent					
	1014.50	0.2860	Absent					
	Total	1.0170	ABSENT	(	0.0100/	1.0170 =	0.9833 %)	0.000
Sb-125	176.29	0.0630	Absent					
	380.51	0.0140	Absent					
	427.95	0.2960	Absent					
	463.51	0.1000	Absent					
	600.77	0.1840	Absent					
	606.82	0.0520	Present					
	636.15	0.1120	Absent					
	671.66	0.0180	Absent					
	Total	0.8390	ABSENT	(	0.0520/	0.8390 =	6.1979 %)	0.000
Ra-226	186.20	0.0001	Unable to Calc					

	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %	0.00
Xe-135	188.43	0.8500	Present				
	243.40	0.2871	Present				
	Total	0.8371	PRESENT	(0.8371/	0.8371 =	100.0000 %	0.00
I-114m	190.24	0.1564	Present				
	558.43	0.2850	Absent				
	725.24	0.2810	Absent				
	1283.67	0.0003	Absent				
	1299.83	0.0012	Absent				
	Total	0.7239	ABSENT	(0.1564/	0.7239 =	21.6052 %)	0.000
Mo-101	191.93	0.1810	Present				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				
	1012.35	0.1135	Absent				
	Total	0.6670	ABSENT	(0.2945/	0.6670 =	44.1529 %)	0.000
Ac-228	209.50	0.0001	Absent				
	338.70	0.0001	Unable to Calc				
	790.50	0.0001	Absent				
	911.20	0.0001	Unable to Calc				
	964.40	0.0001	Unable to Calc				
	968.80	0.0001	Unable to Calc				
	Total	0.0006	ABSENT	(0.0004/	0.0006 =	66.6667 %)	0.000
Xe-133m	233.20	0.1000	Present				
	Total	0.1000	PRESENT	(0.1000/	0.1000 =	100.0000 %)	0.000
Th-227	236.00	0.0001	Unable to Calc				
	329.90	0.0001	Absent				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
Ra-224	241.08	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
I-135	247.79	0.9000	Present				
	Total	0.9000	PRESENT	(0.9000/	0.9000 =	100.0000 %)	0.000
Kr-79	261.30	0.1270	Absent				
	397.50	0.0950	Absent				
	511.00	0.1500	Present				
	606.10	0.0810	Present				
	Total	0.4530	ABSENT	(0.2310/	0.4530 =	50.9934 %)	0.000
Pa-231	283.60	0.0001	Absent				
	299.90	0.0001	Unable to Calc				
	302.50	0.0001	Absent				
	Total	0.0003	ABSENT	(0.0001/	0.0003 =	33.3333 %)	0.000
Ce-143	293.26	0.4200	Present				
	664.55	0.0525	Absent				
	721.96	0.0512	Absent				
	Total	0.5237	PRESENT	(0.4200/	0.5237 =	80.1986 %)	0.000
Ir-192	295.96	0.2872	Present				
	308.46	0.2965	Absent				
	316.51	0.8290	Absent				
	468.06	0.4808	Absent				
	612.45	0.0543	Present				
	Total	1.9478	ABSENT	(0.3415/	1.9478 =	17.5326 %)	0.000
Tl-210	296.00	0.0001	Unable to Calc				
	795.00	0.0001	Absent				
	1060.00	0.0001	Absent				
	1210.00	0.0001	Absent				
	1310.00	0.0001	Absent				
	Total	0.0005	ABSENT	(0.0001/	0.0005 =	20.0000 %)	0.000
Ag-113	298.40	0.0900	Present				
	Total	0.0900	PRESENT	(0.0900/	0.0900 =	100.0000 %)	0.000
Pa-233	300.10	0.0633	Present				

	311.90	0.3700	Absent				
	Total	0.4333	ABSENT	(0.0633/	0.4333 =	14.6088 %)	0.000
Ho-167	321.30	0.2390	Absent				
	346.50	0.5700	Present				
	Total	0.8090	ABSENT	(0.5700/	0.8090 =	70.4574 %)	0.000
-196	332.90	0.2300	Present				
	355.70	0.8760	Present				
	Total	1.1060	PRESENT	(1.1060/	1.1060 =	100.0000 %)	0.000
In-115m	336.20	0.4590	Present				
	Total	0.4590	PRESENT	(0.4590/	0.4590 =	100.0000 %)	0.000
Ru-95	336.40	0.7100	Present				
	1096.80	0.2100	Absent				
	Total	0.9200	ABSENT	(0.7100/	0.9200 =	77.1739 %)	0.000
Cs-136	340.60	0.4890	Present				
	340.60	0.4676	Present				
	818.50	0.9970	Absent				
	818.50	0.9970	Absent				
	1048.07	0.7976	Absent				
	1048.10	0.7980	Absent				
	1235.34	0.1974	Absent				
	Total	4.7436	ABSENT	(0.9566/	4.7436 =	20.1661 %)	0.000
Pt-197m	346.50	0.1110	Present				
	Total	0.1110	PRESENT	(0.1110/	0.1110 =	100.0000 %)	0.000
Na-24	346.55	0.0100	Unable to Calc				
	857.55	0.0100	Absent				
	1368.53	1.0000	Absent				
	1732.10	0.0100	Absent				
	Total	1.0300	ABSENT	(0.0100/	1.0300 =	0.9709 %)	0.000
Bi-211	351.00	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
-71m	386.28	0.9200	Absent				
	487.34	0.6164	Absent				
	511.55	0.2806	Present				
	596.97	0.2760	Absent				
	620.19	0.5612	Absent				
	Total	2.6542	ABSENT	(0.2806/	2.6542 =	10.5719 %)	0.000
Ag-108m	434.00	0.9050	Absent				
	614.37	0.9320	Present				
	722.95	0.9230	Absent				
	Total	2.7600	ABSENT	(0.9320/	2.7600 =	33.7681 %)	0.000
Rh-106m	450.80	0.2450	Absent				
	511.70	0.8640	Present				
	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT	(0.8640/	1.8150 =	47.6033 %)	0.000
Te-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT	(0.1767/	0.9797 =	18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	(0.0002/	0.0002 =	100.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT	(1.0000/	1.0000 =	100.0000 %)	0.000
KR-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT	(0.0041/	0.0041 =	100.0000 %)	0.000
-129	544.70	0.1920	Absent				
	812.80	0.4600	Absent				
	914.60	0.2140	Present				
	1030.10	0.1350	Absent				

	Total	1.0010	ABSENT	(0.2140/	1.0010 =	21.3786 %	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT	(0.9756/	2.1554 =	45.2631 %)	0.000
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Unable to Calc				
	1764.50	0.0001	Unable to Calc				
	Total	0.0004	ABSENT	(0.0003/	0.0004 =	75.0000 %)	0.000
Sn-127	823.10	0.1060	Absent				
	1095.60	0.1940	Absent				
	1114.30	0.3800	Present				
	Total	0.6800	ABSENT	(0.3800/	0.6800 =	55.8824 %)	0.000
Sc-46	889.25	1.0000	Absent				
	1120.51	1.0000	Present				
	2009.76	0.1000	Absent				
	Total	2.1000	ABSENT	(1.0000/	2.1000 =	47.6190 %)	0.000
Zn-65	1115.52	0.5075	Present				
	Total	0.5075	PRESENT	(0.5075/	0.5075 =	100.0000 %)	0.000
Ni-65	1115.53	0.1513	Present				
	1481.84	0.2350	Absent				
	Total	0.3863	ABSENT	(0.1513/	0.3863 =	39.1665 %)	0.000
K-40	1460.81	0.1070	Present				
	Total	0.1070	PRESENT	(0.1070/	0.1070 =	100.0000 %)	0.000

PEAK CONTRIBUTION CORRECTION

			Reference Energy Line ===>>			Calculated Contribution		
Pk#	Old Area	Nuclide	Energy	cts/dis	Ref Area	Energy	cts/dis	New Area
1	77	U-238	609.32	1.76e-003	244	77.11	6.67e-004	77
1	0	TH-232	911.07	7.83e-004	124	77.11	1.09e-003	0
3	535	TH-232	911.07	7.83e-004	124	238.63	3.55e-003	535
5	152	U-238	609.32	1.76e-003	244	295.22	1.34e-003	152
6	90	TH-232	911.07	7.83e-004	124	338.40	7.53e-004	90
7	318	U-238	609.32	1.76e-003	244	351.99	2.25e-003	313
9	206	TH-232	911.07	7.83e-004	124	583.14	1.22e-003	194

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
1	0	Hg-197	77.35	Deleted [Net < Critical Level]
1	0	Pt-197	77.35	Deleted [Net < Critical Level]
1	0	Fr-223	80.00	Deleted [Net < Critical Level]
1	0	Hg-197	80.20	Deleted [Net < Critical Level]
1	0	Xe-133	80.99	Deleted [Net < Critical Level]
1	0	U-235	81.07	Deleted [Net < Critical Level]
1	0	U-235	83.78	Deleted [Net < Critical Level]
3	0	Xe-133m	233.20	Deleted [Net < Critical Level]
3	0	Fr-223	234.60	Deleted [Net < Critical Level]
3	0	U-235	236.00	Deleted [Net < Critical Level]
5	0	Ce-143	293.26	Deleted [Net < Critical Level]
5	0	Ag-113	298.40	Deleted [Net < Critical Level]
6	0	Au-196	332.90	Deleted [Net < Critical Level]

6	0	In-115m	336.20	Deleted	[Net < Critical Level]
6	0	HF-175	343.40	Deleted	[Net < Critical Level]
7	5	Pt-197m	346.50	Deleted	[Net < Critical Level]
7	5	Bi-211	351.00	Deleted	[Net < Critical Level]
7	5	U-235	351.10	Deleted	[Net < Critical Level]
7	5	Au-196	355.70	Deleted	[Net < Critical Level]
9	12	Tl-208	583.14	Deleted	[Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
TH-232	77.11	0.1750	Absent					
	238.63	0.4310	Present					
	338.40	0.1201	Present					
	583.14	0.3090	Present					
	911.07	0.2900	Present					
	968.90	0.1746	Present					
	Total	1.4997	PRESENT	(1.3247/	1.4997 =	88.3310 %)		0.000
Hg-197	77.35	0.1900	Absent					
	80.20	0.0340	Absent					
	191.38	0.0057	Present					
	268.73	0.0005	Absent					
	Total	0.2302	ABSENT	(0.0057/	0.2302 =	2.4761 %)		0.000
Pt-197	77.35	0.1700	Absent					
	191.31	0.0350	Present					
	Total	0.2050	ABSENT	(0.0350/	0.2050 =	17.0732 %)		0.000
Fr-223	80.00	0.0001	Absent					
	234.60	0.0001	Absent					
	Total	0.0002	ABSENT	(0.0000/	0.0002 =	0.0000 %)		0.000
Xe-133	80.99	0.3700	Absent					
	Total	0.3700	ABSENT	(0.0000/	0.3700 =	0.0000 %)		0.000
U-235	81.07	0.1480	Absent					
	83.78	0.2460	Absent					
	143.76	0.1050	Absent					
	185.72	0.5400	Present					
	236.00	0.1100	Absent					
	269.60	0.1340	Absent					
	351.10	0.1200	Absent					
	Total	1.4030	ABSENT	(0.5400/	1.4030 =	38.4890 %)		0.000
HF-175	89.36	0.0235	Absent					
	343.40	0.8692	Absent					
	432.80	0.0156	Absent					
	Total	0.9083	ABSENT	(0.0000/	0.9083 =	0.0000 %)		0.000
Xe-133m	233.20	0.1000	Absent					
	Total	0.1000	ABSENT	(0.0000/	0.1000 =	0.0000 %)		0.000
Ce-143	293.26	0.4200	Absent					
	664.55	0.0525	Absent					
	721.96	0.0512	Absent					
	Total	0.5237	ABSENT	(0.0000/	0.5237 =	0.0000 %)		0.000
Ag-113	298.40	0.0900	Absent					
	Total	0.0900	ABSENT	(0.0000/	0.0900 =	0.0000 %)		0.000
Au-196	332.90	0.2300	Absent					
	355.70	0.8760	Absent					
	Total	1.1060	ABSENT	(0.0000/	1.1060 =	0.0000 %)		0.000
In-115m	336.20	0.4590	Absent					
	Total	0.4590	ABSENT	(0.0000/	0.4590 =	0.0000 %)		0.000
Pt-197m	346.50	0.1110	Absent					
	Total	0.1110	ABSENT	(0.0000/	0.1110 =	0.0000 %)		0.000

Bi-211	351.00	0.0001	Absent					
	Total	0.0001	ABSENT	(0.0000/	0.0001 =	0.0000 %		0.000
Tl-208	510.72	0.0001	Unable to Calc					
	583.14	0.0001	Absent					
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)		0.000

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)		Halflife (hrs)	Peaks Found	MPC Fraction
U-238	Average:	1.39e+000	+-8.81e-002	4.12e+013	5 of 5	0.00
	77.11	1.16e+000	+-5.42e-001			
	295.22	1.14e+000	+-2.24e-001			
	351.99	1.40e+000	+-1.45e-001			
	609.32	1.40e+000	+-1.39e-001			
	1764.28	2.23e+000	+-4.00e-001			
TH-232	Average:	1.48e+000	+-7.45e-002	1.24e+014	5 of 6	0.00
	238.63	1.50e+000	+-9.81e-002			
	338.40	1.19e+000	+-2.85e-001			
	583.14	1.58e+000	+-1.80e-001			
	911.07	1.58e+000	+-2.14e-001			
	968.90	1.03e+000	+-3.00e-001			
Ra-226	186.20		BKG	1.00e+012	1 of 1	
Xe-125	Average:	3.49e-001	+-5.72e-002	1.68e+001	2 of 2	0.00
	188.43	2.55e-001	+-6.61e-002			
	243.40	6.27e-001	+-1.14e-001			
Ra-224	241.08		BKG	1.00e+012	1 of 1	
Te-135	247.79	2.04e-001	+-3.71e-002	9.10e+000	1 of 1	
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	6.26e+001	+-1.24e+001	9.39e+004	1 of 1	
Zn-65	1115.52	4.83e-001	+-1.13e-001	5.86e+003	1 of 1	8.05
K-40	1460.81	2.42e+001	+-1.24e+000	1.12e+013	1 of 1	
TOTAL:		9.08e+001	pCi /g		MPC Total:	8.05

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							

Radioactivity Concentrations in Material Samples

Sample ID	Location	Radionuclides	Activity (in pCi/g)
MAT-1	Graphite from Horizontal Beam Port 2 (H-2)	Eu-152	1.19×10^{-1}
		Co-60	3.49×10^{0}
		K-40	1.22×10^{1}
MAT-2	Metal and Cement Stampings from H-12	Sn-126	2.73×10^{1}
		Eu-152	7.13×10^{2}
		Co-60	8.65×10^{3}
		K-40	4.65×10^{1}
MAT-3	Dust and Sediment from H-12	Co-60	1.2×10^{4}
MAT-4	Dust and Sediment from H-1	ND	
MAT-5	Stack Residue	K-40	1.26×10^{3}
MAT-6	Scale from Vertical Beam Port No. 43 (V-43)	Co-60	1.72×10^{3}
MAT-7	Chemical Addition Tank No. 1	K-40	9.94×10^{2}
MAT-8	Chemical Addition Tank No. 2	Co-60	1.69×10^{4}
MAT-9	Oil from MH-3	ND	
MAT-10	Drain Stop in Biomedical Irradiation Room	ND	

ND= Radionuclides in Library Were Not Detected

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GDR_C Version 5.0

Sample ID : MAT-1

Sample Size	5.55e+002 g	Spectrum File	.TEMP.SPC
Sampling Start	.10-22-97 10:03	Counting Start	10-22-97 10:03
Sampling Stop	.10-22-97 10:03	Live Time	3600 Sec
Current Date	.10-22-97 17:35	Real Time	0 Sec

Detector #: 22

Energy(keV) = 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 / 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	122.88	238.35	78	35	62	465	0.72	
2	352.94	716.63	58	22	39	168	1.40	
3	511.46	1046.20	84	20	35	121	1.73	
4	609.73	1250.50	56	16	27	75	1.15	
5	1173.06	2421.66	554	26	20	38	1.73	
6	1332.12	2752.34	506	24	17	26	2.10	
7	1460.33	3018.90	173	15	13	15	1.60	

Neely Nuclear Research Center

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GDR_C Nuclide Activity Summary

Sample ID: MAT-1

Sample Size . . . . . 5.55e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-22-97 10:03	Counting Start. 10-22-97 10:03
Sampling Stop 10-22-97 10:03	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-22-97 17:35	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef ID.	Library File. . .c:\gdr\library\nes.lib IDGeneral Radionuclide Analysis Library
Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001]	12-05-96 10:47
Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	122.88	78	Tl-209	117.00				
1	122.88	78	Se-75	121.12	0.1589	1.04e-002	1.00e+000	6.41e-001
1	122.88	78	EU-152M	121.78	0.0720	1.04e-002	9.64e-001	1.47e+000
1	122.88	78	Eu-152	121.78	0.3068	1.04e-002	1.00e+000	3.32e-001
1	122.88	78	Co-57	122.06	0.8560	1.04e-002	1.00e+000	1.19e-001
1	122.88	78	Eu-154	123.10	0.4047	1.04e-002	1.00e+000	2.52e-001
1	122.88	78	Ba-131	123.73	0.2800	1.04e-002	9.99e-001	3.64e-001
1	122.88	78	Cs-134m	127.50	0.1250	1.04e-002	8.90e-001	9.15e-001
2	352.94	58	Bi-211	351.00				
2	352.94	58	U-235	351.10	0.1200	6.06e-003	1.00e+000	1.08e+000
2	352.94	58	U-238	351.99	0.3710	6.06e-003	1.00e+000	3.48e-001
2	352.94	58	Au-196	355.70	0.8760	6.06e-003	9.98e-001	1.48e-001
2	352.94	58	Ba-133	356.00	0.6200	6.06e-003	1.00e+000	2.09e-001
3	511.46	84	Mo-101	505.88	0.1135	4.43e-003	3.31e-001	6.83e+000
3	511.46	84	Te-121	507.59	0.1767	4.43e-003	9.99e-001	1.45e+000
3	511.46	84	Tl-208	510.72				
3	511.46	84	Kr-79	511.00	0.1500	4.43e-003	9.90e-001	1.73e+000
3	511.46	84	Annihila	511.00	1.0000	4.43e-003	1.00e+000	2.57e-001
3	511.46	84	Zn-71m	511.55	0.2806	4.43e-003	9.17e-001	9.98e-001
3	511.46	84	Rh-106m	511.70	0.8640	4.43e-003	8.56e-001	3.47e-001
3	511.46	84	KR-85	514.00	0.0041	4.43e-003	1.00e+000	6.26e+001
4	609.73	56	Cs-134	604.66	0.9756	3.81e-003	1.00e+000	2.04e-001
4	609.73	56	Kr-79	606.10	0.0810	3.81e-003	9.90e-001	2.48e+000
4	609.73	56	Sb-125	606.82	0.0520	3.81e-003	1.00e+000	3.82e+000
4	609.73	56	Bi-214	609.30				
4	609.73	56	U-238	609.32	0.4609	3.81e-003	1.00e+000	4.30e-001
4	609.73	56	Ir-192	612.45	0.0543	3.81e-003	1.00e+000	3.66e+000
4	609.73	56	Ag-108m	614.37	0.9320	3.81e-003	1.00e+000	2.13e-001
5	1173.06	554	Co-60	1173.22	0.9986	2.17e-003	1.00e+000	3.46e+000
5	1173.06	554	TB-160	1177.95	0.1550	2.17e-003	1.00e+000	2.23e+001
6	1332.12	506	Co-60	1332.49	0.9998	1.94e-003	1.00e+000	3.52e+000
7	1460.33	173	K-40	1460.81	0.1070	1.80e-003	1.00e+000	1.22e+001

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
238	77.11	0.1070	Absent					
	295.22	0.1920	Absent					
	351.99	0.3710	Present					
	609.32	0.4609	Present					
	1764.28	0.1504	Absent					
	Total	1.2813	ABSENT	(	0.8319/	1.2813 =	64.9262 %)	0.000
Ba-133	81.00	0.3429	Absent					
	276.40	0.0709	Absent					
	302.85	0.1816	Absent					
	356.00	0.6200	Present					
	383.85	0.0897	Absent					
	Total	1.3051	ABSENT	(	0.6200/	1.3051 =	47.5059 %)	0.000
U-235	81.07	0.1480	Absent					
	83.78	0.2460	Absent					
	143.76	0.1050	Absent					
	185.72	0.5400	Absent					
	236.00	0.1100	Absent					
	269.60	0.1340	Absent					
	351.10	0.1200	Present					
	Total	1.4030	ABSENT	(	0.1200/	1.4030 =	8.5531 %)	0.000
TB-160	86.80	0.1340	Absent					
	197.04	0.0524	Absent					
	215.65	0.0402	Absent					
	298.57	0.2740	Absent					
	876.37	0.3000	Absent					
	962.36	0.1000	Absent					
	966.17	0.2550	Absent					
	1177.95	0.1550	Present					
	1271.88	0.0760	Absent					
	Total	1.3866	ABSENT	(	0.1550/	1.3866 =	11.1784 %)	0.000
Tl-209	117.00	0.0001	Unable to Calc					
	467.00	0.0001	Absent					
	1566.00	0.0001	Absent					
	Total	0.0003	ABSENT	(	0.0001/	0.0003 =	33.3333 %)	0.000
Se-75	121.12	0.1589	Present					
	136.00	0.5400	Absent					
	264.65	0.5800	Absent					
	279.53	0.2488	Absent					
	400.65	0.1157	Absent					
	Total	1.6434	ABSENT	(	0.1589/	1.6434 =	9.6690 %)	0.000
EU-152M	121.78	0.0720	Present					
	344.20	0.0250	Absent					
	841.60	0.1470	Absent					
	963.50	0.1200	Absent					
	Total	0.3640	ABSENT	(	0.0720/	0.3640 =	19.7802 %)	0.000
Eu-152	121.78	0.3068	Present					
	244.67	0.0772	Absent					
	344.30	0.2720	Absent					
	778.90	0.1272	Absent					
	964.00	0.1433	Absent					
	1085.80	0.1010	Absent					
	1112.07	0.1340	Absent					
	1408.08	0.2073	Absent					
	Total	1.3688	ABSENT	(	0.3068/	1.3688 =	22.4138 %)	0.000
Co-57	122.06	0.8560	Present					

	136.48	0.1110	Absent					
	Total	0.9670	PRESENT	(	0.8560/	0.9670	=	88.5212 %) 0.000
Eu-154	123.10	0.4047	Present					
	248.00	0.0660	Absent					
	723.30	0.1970	Absent					
	873.19	0.1150	Absent					
	996.32	0.1029	Absent					
	1004.76	0.1736	Absent					
	1274.39	0.3550	Absent					
	Total	1.4143	ABSENT	(	0.4047/	1.4143	=	28.6150 %) 0.000
Ba-131	123.73	0.2800	Present					
	216.01	0.2167	Absent					
	373.15	0.1308	Absent					
	496.23	0.4214	Absent					
	Total	1.0489	ABSENT	(	0.2800/	1.0489	=	26.6946 %) 0.000
Cs-134m	127.50	0.1250	Present					
	Total	0.1250	PRESENT	(	0.1250/	0.1250	=	100.0000 %) 0.000
Sb-125	176.29	0.0630	Absent					
	380.51	0.0140	Absent					
	427.95	0.2960	Absent					
	463.51	0.1000	Absent					
	600.77	0.1840	Absent					
	606.82	0.0520	Present					
	636.15	0.1120	Absent					
	671.66	0.0180	Absent					
	Total	0.8390	ABSENT	(	0.0520/	0.8390	=	6.1979 %) 0.000
Mo-101	191.93	0.1810	Absent					
	505.88	0.1135	Present					
	590.82	0.1930	Absent					
	695.53	0.0660	Absent					
	1012.35	0.1135	Absent					
	Total	0.6670	ABSENT	(	0.1135/	0.6670	=	17.0165 %) 0.000
Kr-79	261.30	0.1270	Absent					
	397.50	0.0950	Absent					
	511.00	0.1500	Present					
	606.10	0.0810	Present					
	Total	0.4530	ABSENT	(	0.2310/	0.4530	=	50.9934 %) 0.000
Ir-192	295.96	0.2872	Absent					
	308.46	0.2965	Absent					
	316.51	0.8290	Absent					
	468.06	0.4808	Absent					
	612.45	0.0543	Present					
	Total	1.9478	ABSENT	(	0.0543/	1.9478	=	2.7878 %) 0.000
Au-196	332.90	0.2300	Absent					
	355.70	0.8760	Present					
	Total	1.1060	ABSENT	(	0.8760/	1.1060	=	79.2043 %) 0.000
Bi-211	351.00	0.0001	Unable to Calc					
	Total	0.0001	PRESENT	(	0.0001/	0.0001	=	100.0000 %) 0.000
Zn-71m	386.28	0.9200	Absent					
	487.34	0.6164	Absent					
	511.55	0.2806	Present					
	596.97	0.2760	Absent					
	620.19	0.5612	Absent					
	Total	2.6542	ABSENT	(	0.2806/	2.6542	=	10.5719 %) 0.000
Ag-108m	434.00	0.9050	Absent					
	614.37	0.9320	Present					
	722.95	0.9230	Absent					
	Total	2.7600	ABSENT	(	0.9320/	2.7600	=	33.7681 %) 0.000
Rh-106m	450.80	0.2450	Absent					
	511.70	0.8640	Present					

	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT (	0.8640/	1.8150 =	47.6033 %)	0.000
-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT (	0.1767/	0.9797 =	18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Absent				
	Total	0.0002	ABSENT (	0.0001/	0.0002 =	50.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT (	1.0000/	1.0000 =	100.0000 %)	0.000
KR-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT (	0.0041/	0.0041 =	100.0000 %)	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT (	0.9756/	2.1554 =	45.2631 %)	0.000
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Absent				
	1764.50	0.0001	Absent				
	Total	0.0004	ABSENT (	0.0001/	0.0004 =	25.0000 %)	0.000
Co-60	1173.22	0.9986	Present				
	1332.49	0.9998	Present				
	Total	1.9984	PRESENT (	1.9984/	1.9984 =	100.0000 %)	0.000
K-40	1460.81	0.1070	Present				
	Total	0.1070	PRESENT (	0.1070/	0.1070 =	100.0000 %)	0.000

PEAK CONTRIBUTION CORRECTION

Pk#	Old Area	Nuclide	Reference Energy Line ===>> Energy	cts/dis	Ref Area	Calculated Contribution Energy	cts/dis	New Area
None								

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)	Halflife (hrs)	Peaks Found	MPC Fraction
Co-57	122.06	1.19e-001 +-5.32e-002	6.52e+003	1 of 2	
Cs-134m	127.50	9.15e-001 +-4.10e-001	2.91e+000	1 of 1	
Bi-211	351.00	BKG	1.00e+012	1 of 1	
Annihila	511.00	I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	6.26e+001 +-1.52e+001	9.39e+004	1 of 1	
Co-60	Average:	3.49e+000 +-1.16e-001	4.62e+004	2 of 2	387.63
	1173.22	3.46e+000 +-1.61e-001			
	1332.49	3.52e+000 +-1.68e-001			
K-40	1460.81	1.22e+001 +-1.04e+000	1.12e+013	1 of 1	
TAL:		7.93e+001 pCi /g		MPC Total:	387.63

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
609.73	1250.50	56	16	27	75	1.15	4.084e+000

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : MAT-2

Sample Size . . . . . 4.70e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-22-97 15:24	Counting Start. 10-22-97 15:24
Sampling Stop 10-22-97 15:24	Live Time . . . . . 3600 Sec
Current Date. 10-22-97 17:36	Real Time . . . . . 0 Sec

Detector #: 22

Energy(keV)= 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity 2.00	Search Start / End. . . . . 0 / 4095
Sigma Multiplier. 1.00	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	76.50	141.91	7238	543	919	133466	1.04	
2	86.23	162.14	9087	673	1225	166851	1.39	a
3	88.55	166.96	3583	566	1002	131744	1.49	b
4	123.56	239.75	122221	974	1730	275722	1.47	
5	246.00	494.31	27786	767	1411	193771	1.35	a
6	248.50	499.51	2651	625	1135	149986	2.07	b
7	311.86	631.23	3820	548	984	118835	1.95	
8	345.45	701.06	80844	755	1348	154548	1.50	
9	368.74	749.47	2899	580	1084	118052	1.34	
10	412.25	839.94	5392	512	934	96372	1.63	
11	444.96	907.94	6899	541	1002	100887	1.72	
12	511.32	1045.89	3808	485	891	84766	1.74	a
13	512.98	1049.36	2004	297	489	42268	1.06	b
14	605.52	1241.74	5528	542	1021	96046	1.46	
15	724.12	1488.31	3810	445	811	72688	1.79	
16	779.61	1603.67	19936	537	986	89504	1.91	
17	796.35	1638.47	4281	521	984	89214	1.86	
18	822.13	1692.08	2756	753	1517	141252	2.57	
19	835.41	1719.68	168347	863	1533	144273	1.96	
20	867.96	1787.36	6085	588	1146	98341	1.51	a
21	873.96	1799.84	2151	694	1390	124027	1.52	b
22	964.51	1988.08	19553	584	1079	107260	2.04	
23	1005.37	2073.04	3673	548	1051	93828	2.49	
24	1086.14	2240.95	11466	508	945	82260	1.93	
25	1112.50	2295.75	19483	493	909	71165	2.21	a
26	1115.90	2302.84	6243	391	711	53233	1.85	b
27	1173.40	2422.36	1160992	1280	1428	102505	2.17	
28	1213.20	2505.12	1623	348	688	32653	1.91	
29	1274.57	2632.70	4890	249	467	17213	2.33	
30	1299.32	2684.16	1530	220	418	14855	1.96	

31	1332.44	2753.01	1061778	1126	939	44312	2.27
32	1407.84	2909.78	23349	264	438	11185	2.32
33	1457.16	3012.31	561	143	272	6281	2.76

Neely Nuclear Research Center

Quantum Technology
GDR_C Nuclide Activity Summary

Sample ID: MAT-2

Sample Size . . . . . 4.70e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-22-97 15:24	Counting Start. 10-22-97 15:24
Sampling Stop 10-22-97 15:24	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-22-97 17:36	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001] 12-05-96 10:47

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	76.50	7238	U-238	77.11	0.1070	6.03e-003	1.00e+000	1.79e+002
1	76.50	7238	TH-232	77.11	0.1750	6.03e-003	1.01e+000	1.09e+002
1	76.50	7238	Hg-197	77.35	0.1900	6.03e-003	9.95e-001	1.02e+002
1	76.50	7238	Pt-197	77.35	0.1700	6.03e-003	9.81e-001	1.15e+002
1	76.50	7238	Fr-223	80.00				
1	76.50	7238	Ce-144	80.00	0.0200	6.03e-003	1.00e+000	9.59e+002
1	76.50	7238	Hg-197	80.20	0.0340	6.03e-003	9.95e-001	5.67e+002
1	76.50	7238	Hg-199m	80.20	0.1110	6.03e-003	3.31e-001	5.22e+002
1	76.50	7238	Xe-133	80.99	0.3700	6.03e-003	9.97e-001	5.20e+001
1	76.50	7238	Ba-133	81.00	0.3429	6.03e-003	1.00e+000	5.59e+001
1	76.50	7238	U-235	81.07	0.1480	6.03e-003	1.00e+000	1.30e+002
2	86.23	9087	U-235	83.78	0.2460	7.43e-003	1.00e+000	7.95e+001
2	86.23	9087	Th-228	84.40				
2	86.23	9087	Pb X-ray	84.94	0.0100	7.43e-003	7.21e-001	2.71e+003
2	86.23	9087	TB-160	86.80	0.1340	7.43e-003	1.00e+000	1.46e+002
2	86.23	9087	Sn-126	86.90	0.0890	7.43e-003	1.00e+000	2.20e+002
2	86.23	9087	Eu-155	87.00	0.3441	7.43e-003	1.00e+000	5.68e+001
3	88.55	3583	Sm-156	87.60	0.2400	7.73e-003	9.64e-001	3.20e+001
3	88.55	3583	Sn-126	87.60	0.3700	7.73e-003	1.00e+000	2.00e+001
3	88.55	3583	Lu-176	88.35				
3	88.55	3583	Ra-221	89.00				
3	88.55	3583	HF-175	89.36	0.0235	7.73e-003	1.00e+000	3.15e+002
3	88.55	3583	Th-234	92.80				
3	88.55	3583	Cu-67	93.30	0.1690	7.73e-003	9.94e-001	4.40e+001
3	88.55	3583	Ga-67	93.30	0.3800	7.73e-003	9.96e-001	1.96e+001
4	123.56	122221	Se-75	121.12	0.1589	1.04e-002	1.00e+000	1.18e+003
4	123.56	122221	EU-152M	121.78	0.0720	1.04e-002	9.64e-001	2.71e+003
4	123.56	122221	Eu-152	121.78	0.3068	1.04e-002	1.00e+000	6.13e+002
4	123.56	122221	Co-57	122.06	0.8560	1.04e-002	1.00e+000	2.20e+002
4	123.56	122221	Eu-154	123.10	0.4047	1.04e-002	1.00e+000	4.65e+002
4	123.56	122221	Ba-131	123.73	0.2800	1.04e-002	9.99e-001	6.72e+002
4	123.56	122221	Cs-134m	127.50	0.1250	1.04e-002	8.90e-001	1.69e+003
4	123.56	122221	Os-191	129.50	0.2600	1.04e-002	9.99e-001	7.24e+002

5	246.00	27786	Te-131m	240.93	0.0755	8.07e-003	9.89e-001	7.37e-00
5	246.00	27786	Ra-224	241.08				
5	246.00	27786	Xe-125	243.40	0.2871	8.07e-003	9.80e-001	1.96e+00
5	246.00	27786	IN-116M	244.59	0.0038	8.07e-003	6.99e-001	2.07e+00
5	246.00	27786	Eu-152	244.67	0.0772	8.07e-003	1.00e+000	7.13e+00
5	246.00	27786	Sm-155	245.73	0.0373	8.07e-003	4.51e-001	3.27e+00
6	248.50	2651	Xe-135	247.79	0.9000	8.01e-003	9.63e-001	6.10e+00
6	248.50	2651	Eu-154	248.00	0.0660	8.01e-003	1.00e+000	8.01e+001
6	248.50	2651	Cl-39	250.30	0.4700	8.01e-003	7.07e-001	1.59e+001
6	248.50	2651	Ta-184	252.90	0.4480	8.01e-003	9.61e-001	1.23e+001
6	248.50	2651	Ce-137m	254.29	0.1091	8.01e-003	9.90e-001	4.90e+001
7	311.86	3820	Tc-101	306.86	0.8800	6.70e-003	3.23e-001	3.20e+001
7	311.86	3820	Lu-176	306.90				
7	311.86	3820	Yb-169	307.68	0.1110	6.70e-003	1.00e+000	8.20e+001
7	311.86	3820	Ir-192	308.46	0.2965	6.70e-003	1.00e+000	3.07e+001
7	311.86	3820	Pa-233	311.90	0.3700	6.70e-003	9.99e-001	2.46e+001
7	311.86	3820	Sb-128	314.10	0.6100	6.70e-003	9.63e-001	1.55e+001
7	311.86	3820	In-117m	315.30	0.1690	6.70e-003	8.40e-001	6.41e+001
7	311.86	3820	Np-239	315.90	0.0150	6.70e-003	9.94e-001	6.11e+002
7	311.86	3820	Ir-192	316.51	0.8290	6.70e-003	1.00e+000	1.10e+001
8	345.45	80844	Cs-136	340.60	0.4890	6.16e-003	9.99e-001	4.29e+002
8	345.45	80844	Cs-136	340.60	0.4676	6.16e-003	9.99e-001	4.48e+002
8	345.45	80844	HF-175	343.40	0.8692	6.16e-003	1.00e+000	2.41e+002
8	345.45	80844	EU-152M	344.20	0.0250	6.16e-003	9.64e-001	8.70e+003
8	345.45	80844	Eu-152	344.30	0.2720	6.16e-003	1.00e+000	7.70e+002
8	345.45	80844	Cd-117	344.46	0.1769	6.16e-003	8.70e-001	1.36e+003
8	345.45	80844	HF-181	345.95	0.1400	6.16e-003	1.00e+000	1.50e+003
8	345.45	80844	Ho-167	346.50	0.5700	6.16e-003	8.96e-001	4.10e+002
8	345.45	80844	Pt-197m	346.50	0.1110	6.16e-003	8.09e-001	2.33e+003
8	345.45	80844	Na-24	346.55	0.0100	6.16e-003	9.77e-001	2.14e+004
8	345.45	80844	Bi-211	351.00				
8	345.45	80844	U-235	351.10	0.1200	6.16e-003	1.00e+000	1.75e+003
9	368.74	2899	Gd-159	363.30	0.1000	5.84e-003	9.82e-001	8.08e+001
9	368.74	2899	I-131	364.48	0.8100	5.84e-003	9.98e-001	9.81e+000
9	368.74	2899	Ge-77	367.40	0.1272	5.84e-003	9.70e-001	6.43e+001
9	368.74	2899	Ba-131	373.15	0.1308	5.84e-003	9.99e-001	6.07e+001
9	368.74	2899	Hg-199m	374.10	0.1380	5.84e-003	3.31e-001	1.74e+002
10	412.25	5392	Pt-191	409.44	0.0600	5.32e-003	9.95e-001	2.71e+002
10	412.25	5392	Au-198	411.80	0.9550	5.32e-003	9.95e-001	1.71e+001
10	412.25	5392	Ta-184	414.00	0.7400	5.32e-003	9.61e-001	2.28e+001
10	412.25	5392	Sb-126	414.80	0.8770	5.32e-003	9.99e-001	1.85e+001
10	412.25	5392	Ge-77	416.30	0.2173	5.32e-003	9.70e-001	7.68e+001
10	412.25	5392	IN-116M	416.88	0.2937	5.32e-003	6.99e-001	7.89e+001
11	444.96	6899	Bi-213	439.50				
11	444.96	6899	Rh-106m	450.80	0.2450	4.98e-003	8.56e-001	1.05e+002
12	511.32	3808	Mo-101	505.88	0.1135	4.43e-003	3.31e-001	3.65e+002
12	511.32	3808	Te-121	507.59	0.1767	4.43e-003	9.99e-001	7.78e+001
12	511.32	3808	Tl-208	510.72				
12	511.32	3808	Kr-79	511.00	0.1500	4.43e-003	9.90e-001	9.25e+001
12	511.32	3808	Annihila	511.00	1.0000	4.43e-003	1.00e+000	1.37e+001
12	511.32	3808	Zn-71m	511.55	0.2806	4.43e-003	9.17e-001	5.34e+001
12	511.32	3808	Rh-106m	511.70	0.8640	4.43e-003	8.56e-001	1.86e+001
13	512.98	2004	KR-85	514.00	0.0041	4.42e-003	1.00e+000	1.77e+003
14	605.52	5528	Sb-125	600.77	0.1840	3.83e-003	1.00e+000	1.25e+002
14	605.52	5528	Sb-124	602.72	0.9830	3.83e-003	1.00e+000	2.34e+001
14	605.52	5528	Cs-134	604.66	0.9756	3.83e-003	1.00e+000	2.36e+001
14	605.52	5528	Kr-79	606.10	0.0810	3.83e-003	9.90e-001	2.87e+002
14	605.52	5528	Sb-125	606.82	0.0520	3.83e-003	1.00e+000	4.43e+002
14	605.52	5528	Bi-214	609.30				
14	605.52	5528	U-238	609.32	0.4609	3.83e-003	1.00e+000	4.99e+001

15	724.12	3810	Sb-126	720.50	0.5780	3.29e-003	9.99e-001	3.31e-00
15	724.12	3810	Ce-143	721.96	0.0512	3.29e-003	9.90e-001	3.66e-00
15	724.12	3810	Sb-124	722.78	0.1130	3.29e-003	1.00e+000	1.64e-00
15	724.12	3810	Ag-108m	722.95	0.9230	3.29e-003	1.00e+000	2.01e-00
15	724.12	3810	Eu-154	723.30	0.1970	3.29e-003	1.00e+000	9.40e+00
15	724.12	3810	Zr-95	724.18	0.3399	3.29e-003	1.00e+000	5.45e+00
15	724.12	3810	In-114m	725.24	0.2810	3.29e-003	1.00e+000	6.59e+00
15	724.12	3810	Bi-212	727.30				
16	779.61	19936	Te-131m	773.67	0.3800	3.08e-003	9.89e-001	2.75e+00
16	779.61	19936	Br-82	776.49	0.8340	3.08e-003	9.90e-001	1.25e+00
16	779.61	19936	Eu-152	778.90	0.1272	3.08e-003	1.00e+000	8.12e+00
16	779.61	19936	Te-131m	782.49	0.0775	3.08e-003	9.89e-001	1.35e+00
16	779.61	19936	Sb-127	783.70	0.1480	3.08e-003	9.96e-001	7.00e+00
16	779.61	19936	Bi-212	785.50				
17	796.35	4281	Ac-228	790.50				
17	796.35	4281	Te-131m	793.75	0.1380	3.03e-003	9.89e-001	1.66e+00
17	796.35	4281	Tl-210	795.00				
17	796.35	4281	Cs-134	795.76	0.8544	3.03e-003	1.00e+000	2.64e+00
17	796.35	4281	Cs-134	801.84	0.0873	3.03e-003	1.00e+000	2.59e+00
18	822.13	2756	Cs-136	818.50	0.9970	2.95e-003	9.99e-001	1.50e+00
18	822.13	2756	Cs-136	818.50	0.9970	2.95e-003	9.99e-001	1.50e+00
18	822.13	2756	IN-116M	818.65	0.1372	2.95e-003	6.99e-001	1.56e+00
18	822.13	2756	Ni-56	818.90	0.7410	2.95e-003	9.98e-001	2.02e+00
18	822.13	2756	Te-131m	822.78	0.0609	2.95e-003	9.89e-001	2.48e+00
18	822.13	2756	Sn-127	823.10	0.1060	2.95e-003	8.55e-001	1.65e+00
18	822.13	2756	Br-82	827.81	0.2394	2.95e-003	9.90e-001	6.30e+00
19	835.41	168347	Ga-66	833.70	0.0610	2.91e-003	9.64e-001	1.57e+00
19	835.41	168347	Ga-72	833.95	0.9560	2.91e-003	9.76e-001	9.92e+00
19	835.41	168347	Kr-88	834.80	0.1300	2.91e-003	8.88e-001	8.02e+00
20	867.96	6085	LA-140	867.86	0.0536	2.81e-003	9.91e-001	6.50e+00
1	873.96	2151	Eu-154	873.19	0.1150	2.80e-003	1.00e+000	1.07e+00
21	873.96	2151	Os-185	874.81	0.0670	2.80e-003	1.00e+000	1.83e+00
21	873.96	2151	TB-160	876.37	0.3000	2.80e-003	1.00e+000	4.10e+00
22	964.51	19553	TB-160	962.36	0.1000	2.57e-003	1.00e+000	1.22e+00
22	964.51	19553	EU-152M	963.50	0.1200	2.57e-003	9.64e-001	1.05e+00
22	964.51	19553	Eu-152	964.00	0.1433	2.57e-003	1.00e+000	8.49e+00
22	964.51	19553	Ac-228	964.40				
22	964.51	19553	TB-160	966.17	0.2550	2.57e-003	1.00e+000	4.77e+00
22	964.51	19553	Ac-228	968.80				
22	964.51	19553	TH-232	968.90	0.1746	2.57e-003	1.01e+000	6.90e+00
23	1005.37	3673	Eu-154	1004.76	0.1736	2.48e-003	1.00e+000	1.36e+00
24	1086.14	11466	Ge-77	1085.10	0.0688	2.32e-003	9.70e-001	1.18e+00
24	1086.14	11466	Eu-152	1085.80	0.1010	2.32e-003	1.00e+000	7.82e+00
25	1112.50	19483	Eu-152	1112.07	0.1340	2.27e-003	1.00e+000	1.02e+00
26	1115.90	6243	Sn-127	1114.30	0.3800	2.26e-003	8.55e-001	1.35e+00
26	1115.90	6243	Zn-65	1115.52	0.5075	2.26e-003	1.00e+000	8.68e+00
26	1115.90	6243	Ni-65	1115.53	0.1513	2.26e-003	8.76e-001	3.32e+00
26	1115.90	6243	Bi-214	1120.30				
26	1115.90	6243	Sc-46	1120.51	1.0000	2.26e-003	1.00e+000	4.40e+00
26	1115.90	6243	Ta-182	1121.28	0.3510	2.26e-003	1.00e+000	1.25e+00
27	1173.40	1160992	Co-60	1173.22	0.9986	2.17e-003	1.00e+000	8.56e+00
27	1173.40	1160992	TB-160	1177.95	0.1550	2.17e-003	1.00e+000	5.52e+00
28	1213.20	1623	Tl-210	1210.00				
29	1274.57	4890	TB-160	1271.88	0.0760	2.02e-003	1.00e+000	5.09e+00
29	1274.57	4890	Eu-154	1274.39	0.3550	2.02e-003	1.00e+000	1.09e+00
30	1299.32	1530	IN-116M	1293.49	1.0000	1.99e-003	6.99e-001	1.76e+00
30	1299.32	1530	Ar-41	1293.60	0.9916	1.99e-003	8.32e-001	1.49e+00
30	1299.32	1530	Ca-47	1296.80	0.7700	1.99e-003	9.97e-001	1.60e+00
30	1299.32	1530	In-114m	1299.83	0.0012	1.99e-003	1.00e+000	1.03e+00
30	1299.32	1530	Cd-117	1303.34	0.1827	1.99e-003	8.70e-001	7.74e+00

31	1332.44	1061778	Co-60	1332.49	0.9998	1.94e-003	1.00e-000	8.73e-001
32	1407.84	23349	Eu-152	1408.08	0.2073	1.85e-003	1.00e-000	9.70e-001
32	1407.84	23349	Co-55	1408.70	0.1650	1.85e-003	9.81e-001	1.24e+001
33	1457.16	561	K-40	1460.81	0.1070	1.80e-003	1.00e+000	4.65e+001

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
U-238	77.11	0.1070	Present					
	295.22	0.1920	Absent					
	351.99	0.3710	Absent					
	609.32	0.4609	Present					
	1764.28	0.1504	Absent					
	Total	1.2813	ABSENT	(0.5679/	1.2813 =	44.3222 %)		0.000
TH-232	77.11	0.1750	Present					
	238.63	0.4310	Absent					
	338.40	0.1201	Absent					
	583.14	0.3090	Absent					
	911.07	0.2900	Absent					
	968.90	0.1746	Present					
	Total	1.4997	ABSENT	(0.3496/	1.4997 =	23.3113 %)		0.000
Hg-197	77.35	0.1900	Present					
	80.20	0.0340	Present					
	191.38	0.0057	Absent					
	268.73	0.0005	Absent					
	Total	0.2302	PRESENT	(0.2240/	0.2302 =	97.3067 %)		0.000
Pt-197	77.35	0.1700	Present					
	191.31	0.0350	Absent					
	Total	0.2050	PRESENT	(0.1700/	0.2050 =	82.9268 %)		0.000
[illegible]-223	80.00	0.0001	Unable to Calc					
	234.60	0.0001	Absent					
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)		0.000
Ce-144	80.00	0.0200	Present					
	133.54	0.1110	Absent					
	Total	0.1310	ABSENT	(0.0200/	0.1310 =	15.2672 %)		0.000
Hg-199m	80.20	0.1110	Present					
	158.37	0.5840	Absent					
	374.10	0.1380	Present					
	Total	0.8330	ABSENT	(0.2490/	0.8330 =	29.8920 %)		0.000
Xe-133	80.99	0.3700	Present					
	Total	0.3700	PRESENT	(0.3700/	0.3700 =	100.0000 %)		0.000
Ba-133	81.00	0.3429	Present					
	276.40	0.0709	Absent					
	302.85	0.1816	Absent					
	356.00	0.6200	Absent					
	383.85	0.0897	Absent					
	Total	1.3051	ABSENT	(0.3429/	1.3051 =	26.2739 %)		0.000
U-235	81.07	0.1480	Present					
	83.78	0.2460	Present					
	143.76	0.1050	Absent					
	185.72	0.5400	Absent					
	236.00	0.1100	Absent					
	269.60	0.1340	Absent					
	351.10	0.1200	Present					
	Total	1.4030	ABSENT	(0.5140/	1.4030 =	36.6358 %)		0.000
[illegible]n-228	84.40	0.0001	Unable to Calc					
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)		0.000
Pb X-ray	84.94	0.0100	Unable to Calc					

	Total	0.0100	PRESENT	(	0.0100/	0.0100 =	100.0000 %)	0.000
TB-160	86.80	0.1340	Present					
	197.04	0.0524	Absent					
	215.65	0.0402	Absent					
	298.57	0.2740	Absent					
	876.37	0.3000	Present					
	962.36	0.1000	Present					
	966.17	0.2550	Present					
	1177.95	0.1550	Present					
	1271.88	0.0760	Present					
	Total	1.3866	ABSENT	(	1.0200/	1.3866 =	73.5612 %)	0.000
Sn-126	86.90	0.0890	Present					
	87.60	0.3700	Present					
	Total	0.4590	PRESENT	(	0.4590/	0.4590 =	100.0000 %)	0.000
Eu-155	87.00	0.3441	Present					
	105.00	0.2300	Absent					
	Total	0.5741	ABSENT	(	0.3441/	0.5741 =	59.9373 %)	0.000
Sm-156	87.60	0.2400	Present					
	165.80	0.1100	Absent					
	204.00	0.2100	Absent					
	Total	0.5600	ABSENT	(	0.2400/	0.5600 =	42.8571 %)	0.000
Lu-176	88.35	0.0001	Unable to Calc					
	201.80	0.0001	Absent					
	306.90	0.0001	Unable to Calc					
	Total	0.0003	ABSENT	(	0.0002/	0.0003 =	66.6667 %)	0.000
Ra-221	89.00	0.0001	Unable to Calc					
	152.00	0.0001	Absent					
	176.00	0.0001	Absent					
	Total	0.0003	ABSENT	(	0.0001/	0.0003 =	33.3333 %)	0.000
HF-175	89.36	0.0235	Present					
	343.40	0.8692	Present					
	432.80	0.0156	Absent					
	Total	0.9083	PRESENT	(	0.8927/	0.9083 =	98.2825 %)	0.000
Th-234	92.80	0.0001	Unable to Calc					
	Total	0.0001	PRESENT	(	0.0001/	0.0001 =	100.0000 %)	0.000
Cu-67	93.30	0.1690	Present					
	184.50	0.4700	Absent					
	Total	0.6390	ABSENT	(	0.1690/	0.6390 =	26.4476 %)	0.000
Ga-67	93.30	0.3800	Present					
	184.60	0.2360	Absent					
	300.20	0.1900	Absent					
	Total	0.8060	ABSENT	(	0.3800/	0.8060 =	47.1464 %)	0.000
Ta-182	100.10	0.1411	Absent					
	152.43	0.0720	Absent					
	222.10	0.0758	Absent					
	1121.28	0.3510	Present					
	1189.04	0.1636	Absent					
	1221.42	0.2713	Absent					
	1230.97	0.1155	Absent					
	Total	1.1903	ABSENT	(	0.3510/	1.1903 =	29.4884 %)	0.000
Te-131m	102.06	0.0790	Absent					
	149.71	0.2054	Absent					
	200.63	0.0752	Absent					
	240.93	0.0755	Present					
	334.27	0.0952	Absent					
	452.30	0.0567	Absent					
	773.67	0.3800	Present					
	782.49	0.0775	Present					
	793.75	0.1380	Present					
	822.78	0.0609	Present					

	852.21	0.2093	Absent					
	1125.46	0.1137	Absent					
	1206.60	0.0971	Absent					
	Total	1.6635	ABSENT	(	0.7319/	1.6635 =	43.9976 %)	0.00
m-155	104.30	0.7464	Absent					
	141.41	0.0202	Absent					
	245.73	0.0373	Present					
	Total	0.8039	ABSENT	(	0.0373/	0.8039 =	4.6425 %)	0.00(
Np-239	106.10	0.2320	Absent					
	209.80	0.0410	Absent					
	228.10	0.1270	Absent					
	277.60	0.1420	Absent					
	315.90	0.0150	Present					
	334.30	0.0200	Absent					
	Total	0.5770	ABSENT	(	0.0150/	0.5770 =	2.5997 %)	0.00(
Yb-169	109.78	0.1744	Absent					
	130.52	0.1139	Absent					
	177.21	0.1139	Absent					
	197.95	0.3560	Absent					
	307.68	0.1110	Present					
	Total	0.8692	ABSENT	(	0.1110/	0.8692 =	12.7704 %)	0.000
Ta-184	111.20	0.2430	Absent					
	252.90	0.4480	Present					
	318.00	0.2350	Absent					
	414.00	0.7400	Present					
	920.90	0.3290	Absent					
	Total	1.9950	ABSENT	(	1.1880/	1.9950 =	59.5489 %)	0.000
Se-75	121.12	0.1589	Present					
	136.00	0.5400	Absent					
	264.65	0.5800	Absent					
	279.53	0.2488	Absent					
	400.65	0.1157	Absent					
	Total	1.6434	ABSENT	(	0.1589/	1.6434 =	9.6690 %)	0.000
EU-152M	121.78	0.0720	Present					
	344.20	0.0250	Present					
	841.60	0.1470	Absent					
	963.50	0.1200	Present					
	Total	0.3640	ABSENT	(	0.2170/	0.3640 =	59.6154 %)	0.000
Eu-152	121.78	0.3068	Present					
	244.67	0.0772	Present					
	344.30	0.2720	Present					
	778.90	0.1272	Present					
	964.00	0.1433	Present					
	1085.80	0.1010	Present					
	1112.07	0.1340	Present					
	1408.08	0.2073	Present					
	Total	1.3688	PRESENT	(	1.3688/	1.3688 =	100.0000 %)	0.000
Co-57	122.06	0.8560	Present					
	136.48	0.1110	Absent					
	Total	0.9670	PRESENT	(	0.8560/	0.9670 =	88.5212 %)	0.000
Eu-154	123.10	0.4047	Present					
	248.00	0.0660	Present					
	723.30	0.1970	Present					
	873.19	0.1150	Present					
	996.32	0.1029	Absent					
	1004.76	0.1736	Present					
	1274.39	0.3550	Present					
	Total	1.4143	PRESENT	(	1.3113/	1.4143 =	92.7208 %)	0.000
Ba-131	123.73	0.2800	Present					
	216.01	0.2167	Absent					

	373.15	0.1308	Present					
	496.23	0.4214	Absent					
	Total	1.0489	ABSENT	(	0.4108/	1.0489 =	39.1648 %)	0.000
Cs-134m	127.50	0.1250	Present					
	Total	0.1250	PRESENT	(	0.1250/	0.1250 =	100.0000 %)	0.000
-191	129.50	0.2600	Present					
	Total	0.2600	PRESENT	(	0.2600/	0.2600 =	100.0000 %)	0.000
HF-181	133.05	0.4300	Absent					
	136.25	0.0610	Absent					
	345.95	0.1400	Present					
	482.16	0.8600	Absent					
	Total	1.4910	ABSENT	(	0.1400/	1.4910 =	9.3897 %)	0.000
IN-116M	137.92	0.0350	Absent					
	244.59	0.0038	Present					
	416.88	0.2937	Present					
	463.13	0.0083	Absent					
	818.65	0.1372	Present					
	1097.23	0.6791	Absent					
	1293.49	1.0000	Present					
	1507.50	0.1186	Absent					
	1601.12	0.0107	Absent					
	1752.42	0.0289	Absent					
	2212.21	0.1858	Absent					
	Total	2.5011	ABSENT	(	1.4347/	2.5011 =	57.3628 %)	0.000
Ni-56	158.40	0.9880	Absent					
	269.50	0.3400	Absent					
	480.40	0.3180	Absent					
	750.00	0.4780	Absent					
	818.90	0.7410	Present					
	Total	2.8650	ABSENT	(	0.7410/	2.8650 =	25.8639 %)	0.000
-117m	158.60	0.1400	Absent					
	315.30	0.1690	Present					
	Total	0.3090	ABSENT	(	0.1690/	0.3090 =	54.6926 %)	0.000
Sb-125	176.29	0.0630	Absent					
	380.51	0.0140	Absent					
	427.95	0.2960	Absent					
	463.51	0.1000	Absent					
	600.77	0.1840	Present					
	606.82	0.0520	Present					
	636.15	0.1120	Absent					
	671.66	0.0180	Absent					
	Total	0.8390	ABSENT	(	0.2360/	0.8390 =	28.1287 %)	0.000
Xe-125	188.43	0.5500	Absent					
	243.40	0.2871	Present					
	Total	0.8371	ABSENT	(	0.2871/	0.8371 =	34.2970 %)	0.000
In-114m	190.24	0.1564	Absent					
	558.43	0.2850	Absent					
	725.24	0.2810	Present					
	1283.67	0.0003	Absent					
	1299.83	0.0012	Unable to Calc					
	Total	0.7239	ABSENT	(	0.2822/	0.7239 =	38.9833 %)	0.000
Mo-101	191.93	0.1810	Absent					
	505.88	0.1135	Present					
	590.82	0.1930	Absent					
	695.53	0.0660	Absent					
	1012.35	0.1135	Absent					
	Total	0.6670	ABSENT	(	0.1135/	0.6670 =	17.0165 %)	0.000
.c-228	209.50	0.0001	Absent					
	338.70	0.0001	Absent					
	790.50	0.0001	Unable to Calc					

	911.20	0.0001	Absent				
	964.40	0.0001	Unable to Calc				
	968.80	0.0001	Unable to Calc				
	Total	0.0006	ABSENT (	0.0003/	0.0006 =	50.0000 %)	0.00
e-77	211.00	0.2806	Absent				
	215.60	0.2756	Absent				
	264.50	0.5300	Absent				
	367.40	0.1272	Present				
	416.30	0.2173	Present				
	419.60	0.0127	Absent				
	557.90	0.1643	Absent				
	631.60	0.0794	Absent				
	634.10	0.0228	Absent				
	714.10	0.0794	Absent				
	810.01	0.0238	Absent				
	1085.10	0.0688	Present				
	Total	1.8820	ABSENT (	0.4133/	1.8820 =	21.9625 %)	0.000
Ra-224	241.08	0.0001	Unable to Calc				
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %)	0.000
Xe-135	247.79	0.9000	Present				
	Total	0.9000	PRESENT (	0.9000/	0.9000 =	100.0000 %)	0.000
Cl-39	250.30	0.4700	Present				
	1267.20	0.5430	Absent				
	1517.40	0.3860	Absent				
	Total	1.3990	ABSENT (	0.4700/	1.3990 =	33.5954 %)	0.000
Ce-137m	254.29	0.1091	Present				
	Total	0.1091	PRESENT (	0.1091/	0.1091 =	100.0000 %)	0.000
Kr-79	261.30	0.1270	Absent				
	397.50	0.0950	Absent				
	511.00	0.1500	Present				
	606.10	0.0810	Present				
	Total	0.4530	ABSENT (	0.2310/	0.4530 =	50.9934 %)	0.000
Cd-117	273.28	0.2900	Absent				
	344.46	0.1769	Present				
	434.22	0.1047	Absent				
	1303.34	0.1827	Present				
	1576.80	0.1119	Absent				
	Total	0.8662	ABSENT (	0.3596/	0.8662 =	41.5147 %)	0.000
I-131	284.30	0.0604	Absent				
	364.48	0.8100	Present				
	636.97	0.0720	Absent				
	Total	0.9424	PRESENT (	0.8100/	0.9424 =	85.9508 %)	0.000
Ce-143	293.26	0.4200	Absent				
	664.55	0.0525	Absent				
	721.96	0.0512	Present				
	Total	0.5237	ABSENT (	0.0512/	0.5237 =	9.7766 %)	0.000
Ir-192	295.96	0.2872	Absent				
	308.46	0.2965	Present				
	316.51	0.8290	Present				
	468.06	0.4808	Absent				
	612.45	0.0543	Absent				
	Total	1.9478	ABSENT (	1.1255/	1.9478 =	57.7831 %)	0.000
Tl-210	296.00	0.0001	Absent				
	795.00	0.0001	Unable to Calc				
	1060.00	0.0001	Absent				
	1210.00	0.0001	Unable to Calc				
	1310.00	0.0001	Absent				
	Total	0.0005	ABSENT (	0.0002/	0.0005 =	40.0000 %)	0.000
Pa-233	300.10	0.0633	Absent				
	311.90	0.3700	Present				

	Total	0.4333	PRESENT (	0.3700/	0.4333 =	85.3912 %	0.000
Te-131	306.86	0.8800	Present				
	Total	0.8800	PRESENT (	0.8800/	0.8800 =	100.0000 %)	0.000
Sb-128	314.10	0.6100	Present				
	628.70	0.3100	Absent				
	636.20	0.3600	Absent				
	743.30	1.0000	Absent				
	754.00	1.0000	Absent				
	Total	3.2800	ABSENT (	0.6100/	3.2800 =	18.5976 %)	0.000
Ho-167	321.30	0.2390	Absent				
	346.50	0.5700	Present				
	Total	0.8090	ABSENT (	0.5700/	0.8090 =	70.4574 %)	0.000
Cs-136	340.60	0.4890	Present				
	340.60	0.4676	Present				
	818.50	0.9970	Present				
	818.50	0.9970	Present				
	1048.07	0.7976	Absent				
	1048.10	0.7980	Absent				
	1235.34	0.1974	Absent				
	Total	4.7436	ABSENT (	2.9506/	4.7436 =	62.2017 %)	0.000
Pt-197m	346.50	0.1110	Present				
	Total	0.1110	PRESENT (	0.1110/	0.1110 =	100.0000 %)	0.000
Na-24	346.55	0.0100	Unable to Calc				
	857.55	0.0100	Absent				
	1368.53	1.0000	Absent				
	1732.10	0.0100	Absent				
	Total	1.0300	ABSENT (	0.0100/	1.0300 =	0.9709 %)	0.000
Bi-211	351.00	0.0001	Unable to Calc				
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %)	0.000
Gd-159	363.30	0.1000	Present				
	Total	0.1000	PRESENT (	0.1000/	0.1000 =	100.0000 %)	0.000
In-71m	386.28	0.9200	Absent				
	487.34	0.6164	Absent				
	511.55	0.2806	Present				
	596.97	0.2760	Absent				
	620.19	0.5612	Absent				
	Total	2.6542	ABSENT (	0.2806/	2.6542 =	10.5719 %)	0.000
Pt-191	409.44	0.0600	Present				
	538.87	0.1026	Absent				
	Total	0.1626	ABSENT (	0.0600/	0.1626 =	36.9004 %)	0.000
Au-198	411.80	0.9550	Present				
	675.87	0.0608	Absent				
	Total	1.0158	PRESENT (	0.9550/	1.0158 =	94.0146 %)	0.000
Sb-126	414.80	0.8770	Present				
	666.30	0.9970	Absent				
	695.00	0.9970	Absent				
	697.00	0.3190	Absent				
	720.50	0.5780	Present				
	Total	3.7680	ABSENT (	1.4550/	3.7680 =	38.6146 %)	0.000
LA-140	432.55	0.0298	Absent				
	487.03	0.4300	Absent				
	751.79	0.0419	Absent				
	815.80	0.2232	Absent				
	867.86	0.0536	Present				
	925.25	0.0692	Absent				
	1596.20	0.9547	Absent				
	Total	1.8024	ABSENT (	0.0536/	1.8024 =	2.9738 %)	0.000
Ag-108m	434.00	0.9050	Absent				
	614.37	0.9320	Absent				
	722.95	0.9230	Present				

	Total	2.7600	ABSENT (	0.9230/	2.7600 =	33.4420 %	0.00
Bi-213	439.50	0.0001	Unable to Calc				
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %)	0.00
Rh-106m	450.80	0.2450	Present				
	511.70	0.8640	Present				
	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT (	1.1090/	1.8150 =	61.1019 %)	0.000
Sb-127	473.00	0.2520	Absent				
	685.70	0.3600	Absent				
	783.70	0.1480	Present				
	Total	0.7600	ABSENT (	0.1480/	0.7600 =	19.4737 %)	0.000
Co-55	477.20	0.2030	Absent				
	931.30	0.7500	Absent				
	1408.70	0.1650	Present				
	Total	1.1180	ABSENT (	0.1650/	1.1180 =	14.7585 %)	0.000
Ca-47	488.90	0.0678	Absent				
	807.90	0.0678	Absent				
	1296.80	0.7700	Present				
	Total	0.9056	PRESENT (	0.7700/	0.9056 =	85.0265 %)	0.000
Te-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT (	0.1767/	0.9797 =	18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Absent				
	Total	0.0002	ABSENT (	0.0001/	0.0002 =	50.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT (	1.0000/	1.0000 =	100.0000 %)	0.000
KR-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT (	0.0041/	0.0041 =	100.0000 %)	0.000
Sr-82	554.32	0.7022	Absent				
	619.05	0.4303	Absent				
	698.32	0.2861	Absent				
	776.49	0.8340	Present				
	827.81	0.2394	Present				
	1043.98	0.2736	Absent				
	1317.47	0.2685	Absent				
	1474.82	0.1660	Absent				
	Total	3.2001	ABSENT (	1.0734/	3.2001 =	33.5427 %)	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Present				
	801.84	0.0873	Present				
	Total	2.1554	PRESENT (	1.9173/	2.1554 =	88.9533 %)	0.000
Sb-124	602.72	0.9830	Present				
	645.82	0.0723	Absent				
	722.78	0.1130	Present				
	1691.02	0.4900	Absent				
	Total	1.6583	ABSENT (	1.0960/	1.6583 =	66.0918 %)	0.00
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Unable to Calc				
	1764.50	0.0001	Absent				
	Total	0.0004	ABSENT (	0.0002/	0.0004 =	50.0000 %)	0.000
Ga-72	629.90	0.2438	Absent				
	833.95	0.9560	Present				
	894.20	0.0985	Absent				
	Total	1.2983	ABSENT (	0.9560/	1.2983 =	73.6347 %)	0.000

Cs-135	646.11	0.8100	Absent					
	874.31	0.0670	Present					
	880.27	0.0547	Absent					
	Total	0.9317	ABSENT	(	0.0670/	0.9317 =	7.1912 %)	0.000
Nb-95	724.18	0.3399	Present					
	756.72	0.5460	Absent					
	Total	0.8859	ABSENT	(	0.3399/	0.8859 =	38.3678 %)	0.000
Bi-212	727.30	0.0001	Unable to Calc					
	785.50	0.0001	Unable to Calc					
	1620.60	0.0001	Absent					
	Total	0.0003	ABSENT	(	0.0002/	0.0003 =	66.6667 %)	0.000
Sn-127	823.10	0.1060	Present					
	1095.60	0.1940	Absent					
	1114.30	0.3800	Present					
	Total	0.6800	ABSENT	(	0.4860/	0.6800 =	71.4706 %)	0.000
Ga-66	833.70	0.0610	Present					
	1039.40	0.3800	Absent					
	Total	0.4410	ABSENT	(	0.0610/	0.4410 =	13.8322 %)	0.000
Kr-88	834.80	0.1300	Present					
	Total	0.1300	PRESENT	(	0.1300/	0.1300 =	100.0000 %)	0.000
Sc-46	889.25	1.0000	Absent					
	1120.51	1.0000	Present					
	2009.76	0.1000	Absent					
	Total	2.1000	ABSENT	(	1.0000/	2.1000 =	47.6190 %)	0.000
Zn-65	1115.52	0.5075	Present					
	Total	0.5075	PRESENT	(	0.5075/	0.5075 =	100.0000 %)	0.000
Ni-65	1115.53	0.1513	Present					
	1481.84	0.2350	Absent					
	Total	0.3863	ABSENT	(	0.1513/	0.3863 =	39.1665 %)	0.000
Co-60	1173.22	0.9986	Present					
	1332.49	0.9998	Present					
	Total	1.9984	PRESENT	(	1.9984/	1.9984 =	100.0000 %)	0.000
Ar-41	1293.60	0.9916	Present					
	Total	0.9916	PRESENT	(	0.9916/	0.9916 =	100.0000 %)	0.000
K-40	1460.81	0.1070	Present					
	Total	0.1070	PRESENT	(	0.1070/	0.1070 =	100.0000 %)	0.000

PEAK CONTRIBUTION CORRECTION

Pk#	Old Area	Nuclide	Reference Energy Line ===>> Energy	cts/dis	Ref Area	Calculated Contribution Energy	cts/dis	New Area
4	122221	Eu-152	1408.08	3.84e-004	23349	121.78	3.18e-003	122221
4	0	Eu-154	1274.39	7.17e-004	4890	123.10	4.20e-003	0
5	27786	Eu-152	1408.08	3.84e-004	23349	244.67	6.23e-004	27786
6	2651	Eu-154	1274.39	7.17e-004	4890	248.00	5.28e-004	2651
8	80844	Eu-152	1408.08	3.84e-004	23349	344.30	1.68e-003	80844
17	4281	Cs-134	604.66	3.74e-003	5528	795.76	2.59e-003	3826
17	455	Cs-134	604.66	3.74e-003	5528	801.84	2.64e-004	391

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
4	0	Co-57	122.06	Deleted [Net < Critical Level]
4	0	Cs-134m	127.50	Deleted [Net < Critical Level]
4	0	Os-191	129.50	Deleted [Net < Critical Level]
5	0	Ra-224	241.08	Deleted [Net < Critical Level]

6	0	Xe-135	247.79	Deleted	[Net < Critical Level]
6	0	Ce-137m	254.29	Deleted	[Net < Critical Level]
8	0	HF-175	343.40	Deleted	[Net < Critical Level]
8	0	Pt-197m	346.50	Deleted	[Net < Critical Level]
8	0	Bi-211	351.00	Deleted	[Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
HF-175	89.36	0.0235	Present					
	343.40	0.8692	Absent					
	432.80	0.0156	Absent					
	Total	0.9083	ABSENT	(0.0235/	0.9083 =	2.5873 %)		0.00C
Co-57	122.06	0.8560	Absent					
	136.48	0.1110	Absent					
	Total	0.9670	ABSENT	(0.0000/	0.9670 =	0.0000 %)		0.00C
Eu-154	123.10	0.4047	Absent					
	248.00	0.0660	Present					
	723.30	0.1970	Present					
	873.19	0.1150	Present					
	996.32	0.1029	Absent					
	1004.76	0.1736	Present					
	1274.39	0.3550	Present					
	Total	1.4143	ABSENT	(0.9066/	1.4143 =	64.1058 %)		0.00C
Cs-134m	127.50	0.1250	Absent					
	Total	0.1250	ABSENT	(0.0000/	0.1250 =	0.0000 %)		0.00C
Os-191	129.50	0.2600	Absent					
	Total	0.2600	ABSENT	(0.0000/	0.2600 =	0.0000 %)		0.00C
-224	241.08	0.0001	Absent					
	Total	0.0001	ABSENT	(0.0000/	0.0001 =	0.0000 %)		0.000
Xe-135	247.79	0.9000	Absent					
	Total	0.9000	ABSENT	(0.0000/	0.9000 =	0.0000 %)		0.000
Ce-137m	254.29	0.1091	Absent					
	Total	0.1091	ABSENT	(0.0000/	0.1091 =	0.0000 %)		0.000
Pt-197m	346.50	0.1110	Absent					
	Total	0.1110	ABSENT	(0.0000/	0.1110 =	0.0000 %)		0.000
Bi-211	351.00	0.0001	Absent					
	Total	0.0001	ABSENT	(0.0000/	0.0001 =	0.0000 %)		0.000

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)		Halflife (hrs)	Peaks Found	MPC Fraction
Hg-197	Average:	1.16e+002	+-7.49e+000	6.41e+001	2 of 4	0.00
	77.35	1.02e+002	+-7.61e+000			
	80.20	5.67e+002	+-4.25e+001			
Pt-197	77.35	1.15e+002	+-8.62e+000	1.83e+001	1 of 2	
Xe-133	80.99	5.20e+001	+-3.90e+000	1.26e+002	1 of 1	
Th-228	84.40		BKG	1.00e+012	1 of 1	
Pb X-ray	84.94		I.D.Only	1.00e+000	1 of 1	
Sn-126	Average:	2.73e+001	+-3.10e+000	8.76e+008	2 of 2	0.00
	86.90	2.20e+002	+-1.63e+001			
	87.60	2.00e+001	+-3.16e+000			
:h-234	92.80		BKG	1.00e+012	1 of 1	
Eu-152	Average:	7.13e+002	+-3.58e+000	1.16e+005	8 of 8	0.00
	121.78	6.13e+002	+-4.88e+000			

	244.67	7.13e+002	+-1.97e+001			
	344.30	7.70e+002	+-7.19e+000			
	778.90	8.12e+002	+-2.19e+001			
	964.00	8.49e+002	+-2.54e+001			
	1085.80	7.82e+002	+-3.47e+001			
	1112.07	1.02e+003	+-2.59e+001			
	1408.08	9.70e+002	+-1.10e+001			
I-131	364.48	9.81e+000	+-1.96e+000	1.93e+002	1 of 3	
Pa-233	311.90	2.46e+001	+-3.53e+000	6.47e+002	1 of 2	
Tc-101	306.86	3.20e+001	+-4.59e+000	2.37e-001	1 of 1	
Gd-159	363.30	8.08e+001	+-1.62e+001	1.86e+001	1 of 1	
Au-198	411.80	1.71e+001	+-1.62e+000	6.48e+001	1 of 2	
Bi-213	439.50		BKG	1.00e+012	1 of 1	
Ca-47	1296.80	1.60e+001	+-2.31e+000	1.09e+002	1 of 3	
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	1.77e+003	+-2.62e+002	9.39e+004	1 of 1	
Cs-134	Average:	2.36e+001	+-1.88e+000	1.80e+004	3 of 5	2362.14
	604.66	2.36e+001	+-2.31e+000			
	795.76	2.36e+001	+-3.22e+000			
	801.84	2.36e+001	+-3.15e+001			
Kr-88	834.80	8.02e+003	+-4.11e+001	2.86e+000	1 of 1	
Zn-65	1115.52	8.68e+001	+-5.43e+000	5.86e+003	1 of 1	1446.06
Co-60	Average:	8.65e+003	+-6.61e+000	4.62e+004	2 of 2	960650.44
	1173.22	8.56e+003	+-9.44e+000			
	1332.49	8.73e+003	+-9.26e+000			
Ar-41	1293.60	1.49e+001	+-2.15e+000	1.83e+000	1 of 1	
K-40	1460.81	4.65e+001	+-1.18e+001	1.12e+013	1 of 1	
TOTAL:		1.98e+004 pCi /g			MPC Total:	965548.38

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
248.50	499.51	2651	625	1135	149986	2.07	9.198e+001
724.12	1488.31	3810	445	811	72688	1.79	3.221e+002
822.13	1692.08	2756	753	1517	141252	2.57	2.598e+002
867.96	1787.36	6085	588	1146	98341	1.51	6.011e+002
873.96	1799.84	2151	694	1390	124027	1.52	2.138e+002
1005.37	2073.04	3673	548	1051	93828	2.49	4.118e+002
1213.20	2505.12	1623	348	688	32653	1.91	2.139e+002
1274.57	2632.70	4890	249	467	17213	2.33	6.725e+002

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : MAT-3

Sample Size	1.00e+000 gm	Spectrum File	.TEMP.SPC
Sampling Start	.10-23-97 09:03	Counting Start	10-23-97 09:03
Sampling Stop	.10-23-97 09:03	Live Time	600 Sec
Current Date	.10-23-97 09:31	Real Time	0 Sec

Detector #: 21

Energy(keV) = 8.08 + 0.482*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-04-96 10:52

FWHM(keV) = 1.14 + -0.004*En + 8.21e-004*En^2 + 0.00e+000*En^3 12-04-96 10:52
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 / 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	1117.80	2302.01	109	28	50	232	1.87	
2	1175.51	2421.72	4189	69	44	167	1.86	
3	1334.95	2752.47	3840	63	24	44	2.01	

Neely Nuclear Research Center

Quantum Technology
GDR_C Nuclide Activity Summary

Sample ID: MAT-3

Sample Size . . . . . 1.00e+000 gm	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-23-97 09:03	Counting Start. 10-23-97 09:03
Sampling Stop 10-23-97 09:03	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-23-97 09:31	Decay Time. . . . . 0.00e+000 Hrs
Efficiency File. c:\gdr\eff\point.eff	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[8.35e-003*En^-2.72e+000 + 5.18e+001*En^1.10e+000] 12-04-96 10:52

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /gm)		Halflife (hrs)	Peaks Found	MPC Fraction
Zn-65	1115.52	5.67e+002	+-1.46e+002	5.86e+003	1 of 1	9443.17
Co-60	Average:	1.20e+004	+-1.39e+002	4.62e+004	2 of 2	1331597.75
	1173.22	1.17e+004	+-1.92e+002			
	1332.49	1.23e+004	+-2.02e+002			
TOTAL:		1.26e+004 pCi /gm			MPC Total:	1341040.88

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : MAT-4

Sample Size	1.00e+000 gm	Spectrum File	.TEMP.SPC
Sampling Start	.10-23-97 09:31	Counting Start	10-23-97 09:31
Sampling Stop	.10-23-97 09:31	Live Time	600 Sec
Current Date	.10-23-97 09:46	Real Time	0 Sec

Detector #: 21

Energy(keV) = 8.08 + 0.482*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-04-96 10:52

FWHM(keV) = 1.14 + -0.004*En + 8.21e-004*En^2 + 0.00e+000*En^3 12-04-96 10:52
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 / 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG

No Peaks Detected

Neely Nuclear Research Center

Quantum Technology
GDR_C Nuclide Activity Summary

Sample ID: MAT-4

Sample Size . . . . . 1.00e+000 gm	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-23-97 09:31	Counting Start. 10-23-97 09:31
Sampling Stop 10-23-97 09:31	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-23-97 09:46	Decay Time. . . . . 0.00e+000 Hrs
Efficiency File. c:\gdr\eff\point.eff	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[8.35e-003*En^-2.72e+000 + 5.18e+001*En^1.10e+000] 12-04-96 10:52

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /gm)	Halflife (hrs)	Peaks Found	MPC Fraction
)TAL:		0.00e+000 pCi /gm		MPC Total:	0.00

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							
None							

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : MAT-5

Sample Size	1.00e+000 gm	Spectrum File	.TEMP.SPC
Sampling Start	.10-23-97 09:45	Counting Start	10-23-97 09:45
Sampling Stop	.10-23-97 09:45	Live Time	600 Sec
Current Date	.10-23-97 09:59	Real Time	0 Sec

Detector #: 21

Energy(keV) = 8.08 + 0.482*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-04-96 10:52

FWHM(keV) = 1.14 + -0.004*En + 8.21e-004*En^2 + 0.00e+000*En^3 12-04-96 10:52
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 / 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
	353.33	716.20	36	9	14	20	1.38	
	1463.26	3018.64	38	7	5	2	1.90	

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Quantum Technology
GDR_C Nuclide Activity Summary

Sample ID: MAT-5

Sample Size . . . . . 1.00e+000 gm	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-23-97 09:45	Counting Start. 10-23-97 09:45
Sampling Stop 10-23-97 09:45	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-23-97 09:59	Decay Time. . . . . 0.00e+000 Hrs
Efficiency File. c:\gdr\eff\point.eff	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[8.35e-003*En^-2.72e+000 + 5.18e+001*En^1.10e+000] 12-04-96 10:52

Gamma Fraction Limit >= . . . 80.00 % | Decay Limit <=. . . . 8.000 Halflives

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /gm)	Halflife (hrs)	Peaks Found	MPC Fraction
Bi 211	351.00	BKG	1.00e+012	1 of 1	
K-40	1460.81	1.26e+003 +-2.21e+002	1.12e+013	1 of 1	
TOTAL:		1.26e+003 pCi /gm		MPC Total:	0.00

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec

None

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GDR_C Version 5.0

Sample ID : MAT-6

Sample Size . . . . . 1.00e+000 gm	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-23-97 09:59	Counting Start. 10-23-97 09:59
Sampling Stop 10-23-97 09:59	Live Time . . . . . 600 Sec
Current Date. 10-23-97 10:15	Real Time . . . . . 0 Sec

Detector #: 21

Energy(keV)= 8.08 + 0.482*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-04-96 10:52

FWHM(keV) = 1.14 + -0.004*En + 8.21e-004*En^2 + 0.00e+000*En^3 12-04-96 10:52
Where En = Sqrt(Energy in keV)

Sensitivity 2.00	Search Start / End. . . . . 0 / 4095
Sigma Multiplier. 1.00	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	1175.51	2421.72	603	26	19	28	1.76	
2	1334.94	2752.45	548	24	13	14	2.07	

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Quantum Technology
GDR_C Nuclide Activity Summary

Sample ID: MAT-6

Sample Size . . . . . 1.00e+000 gm	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-23-97 09:59	Counting Start. 10-23-97 09:59
Sampling Stop 10-23-97 09:59	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-23-97 10:16	Decay Time. . . . . 0.00e+000 Hrs
Efficiency File. c:\gdr\eff\point.eff	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[8.35e-003*En^-2.72e+000 + 5.18e+001*En^1.10e+000] 12-04-96 10:52

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /gm)	Halflife (hrs)	Peaks Found	MPC Fraction
Co-60	Average:	1.72e+003 +-5.35e+001	4.62e+004	2 of 2	190858.97
	1173.22	1.68e+003 +-7.36e+001			
	1332.49	1.76e+003 +-7.80e+001			
TOTAL:		1.72e+003 pCi /gm		MPC Total:	190858.97

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : MAT-7

Sample Size	1.00e+000 gm	Spectrum File	.TEMP.SPC
Sampling Start	.10-23-97 11:18	Counting Start	10-23-97 11:18
Sampling Stop	.10-23-97 11:18	Live Time	600 Sec
Current Date	.10-23-97 11:35	Real Time	0 Sec

Detector #: 21

Energy(keV) = 8.08 + 0.482*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-04-96 10:52

FWHM(keV) = 1.14 + -0.004*En + 8.21e-004*En^2 + 0.00e+000*En^3 12-04-96 10:52
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 / 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	1463.61	3019.35	30	6	5	2	2.33	

Neely Nuclear Research Center

Quantum Technology
GDR_C Nuclide Activity Summary

Sample ID: MAT-7

Sample Size . . . . . 1.00e+000 gm	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-23-97 11:18	Counting Start. 10-23-97 11:18
Sampling Stop 10-23-97 11:18	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-23-97 11:35	Decay Time. . . . . 0.00e+000 Hrs
Efficiency File. c:\gdr\eff\point.eff	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library
Eff.= 1/[8.35e-003*En^-2.72e+000 + 5.18e+001*En^1.10e+000]	12-04-96 10:52
Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /gm)	Halflife (hrs)	Peaks Found	MPC Fraction
K-40	1460.81	9.94e+002 +-1.98e+002	1.12e+013	1 of 1	
OTAL:		9.94e+002 pCi /gm		MPC Total:	0.00

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : MAT-8

Sample Size	1.00e+000 gm	Spectrum File	.TEMP.SPC
Sampling Start	.10-23-97 10:15	Counting Start	10-23-97 10:15
Sampling Stop	.10-23-97 10:15	Live Time	600 Sec
Current Date	.10-23-97 10:32	Real Time	0 Sec

Detector #: 21

Energy(keV) = 8.08 + 0.482*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-04-96 10:52

FWHM(keV) = 1.14 + -0.004*En + 8.21e-004*En^2 + 0.00e+000*En^3 12-04-96 10:52
Where En = Sqrt(Energy in keV)

Sensitivity	2.00	Search Start / End	0 / 4095
Sigma Multiplier	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	1175.53	2421.76	5965	82	51	208	1.89	
2	1334.97	2752.51	5327	75	30	72	2.08	

Neely Nuclear Research Center

Quantum Technology
GDR_C Nuclide Activity Summary

Sample ID: MAT-8

Sample Size . . . . . 1.00e+000 gm	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-23-97 10:15	Counting Start. 10-23-97 10:15
Sampling Stop 10-23-97 10:15	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-23-97 10:33	Decay Time. . . . . 0.00e+000 Hrs
Efficiency File. c:\gdr\eff\point.eff	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[8.35e-003*En^-2.72e+000 + 5.18e+001*En^1.10e+000] 12-04-96 10:52

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /gm)	Halflife (hrs)	Peaks Found	MPC Fraction
Co-60	Average:	1.69e+004 +-1.65e+002	4.62e+004	2 of 2	1872547.00
	1173.22	1.67e+004 +-2.28e+002			
	1332.49	1.71e+004 +-2.39e+002			
TOTAL:		1.69e+004 pCi /gm		MPC Total:	1872547.00

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : MAT-9

Sample Size . . . . . 1.00e+000 gm	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-23-97 10:32	Counting Start. 10-23-97 10:32
Sampling Stop 10-23-97 10:32	Live Time . . . . . 600 Sec
Current Date. 10-23-97 10:46	Real Time . . . . . 0 Sec

Detector #: 21

Energy(keV)= 8.08 + 0.482*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-04-96 10:52

FWHM(keV) = 1.14 + -0.004*En + 8.21e-004*En^2 + 0.00e+000*En^3 12-04-96 10:52
Where En = Sqrt(Energy in keV)

Sensitivity 2.00	Search Start / End. . . . . 0 / 4095
Sigma Multiplier. 1.00	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	353.07	715.65	31	9	14	23	0.75	

Neely Nuclear Research Center

Quantum Technology
GDR_C Nuclide Activity Summary

Sample ID: MAT-9

Sample Size . . . . . 1.00e+000 gm	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-23-97 10:32	Counting Start. 10-23-97 10:32
Sampling Stop 10-23-97 10:32	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-23-97 10:46	Decay Time. . . . . 0.00e+000 Hrs
Efficiency File. c:\gdr\eff\point.eff	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[8.35e-003*En^-2.72e+000 + 5.18e+001*En^1.10e+000] 12-04-96 10:52

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /gm)	Halflife (hrs)	Peaks Found	MPC Fraction
Bi-211	351.00	BKG	1.00e+012	1 of 1	
TOTAL:		0.00e+000 pCi /gm		MPC Total:	0.00

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
None							

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : MAT-10

Sample Size . . . . . 1.00e+000 gm	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-23-97 10:45	Counting Start. 10-23-97 10:4
Sampling Stop 10-23-97 10:45	Live Time . . . . . 600 Sec
Current Date. 10-23-97 11:07	Real Time . . . . . 0 Sec

Detector #: 21

Energy(keV)= 8.08 + 0.482*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-04-96 10:52

FWHM(keV) = 1.14 + -0.004*En + 8.21e-004*En^2 + 0.00e+000*En^3 12-04-96 10:52
Where En = Sqrt(Energy in keV)

Sensitivity 2.00	Search Start / End. . . . . 0 / 4095
Sigma Multiplier. 1.00	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG

› Peaks Detected

Neely Nuclear Research Center

Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: MAT-10

Sample Size . . . . . 1.00e+000 gm	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-23-97 10:45	Counting Start. 10-23-97 10:45
Sampling Stop 10-23-97 10:45	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-23-97 11:07	Decay Time. . . . . 0.00e+000 Hrs
Efficiency File. c:\gdr\eff\point.eff	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[8.35e-003*En^-2.72e+000 + 5.18e+001*En^1.10e+000] 12-04-96 10:52

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /gm)	Halflife (hrs)	Peaks Found	MPC Fraction

`TAL: 0.00e+000 pCi /gm MPC Total: 0.00

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec

None
None

Radioactivity Concentrations in Outdoor Soil Samples

Sample ID	Location	Radionuclides	Activity (in pCi/g)
Run-off 1	Facility Yard	Th-232	1.18×10^{0}
		Cs-137	2.08×10^{-1}
		K-40	2.16×10^{1}
		U-238	<BKG
Run-off 2	Facility Yard	K-40	2.77×10^{1}
		U-238	<BKG
		Th-232	<BKG
SC-1	Facility Yard	Th-232	9.79×10^{-1}
		U-238	<BKG
SC-2	Facility Yard	Th-232	1.03×10^{0}
		K-40	2.33×10^{1}
		U-238	<BKG
SC-3	Facility Yard	K-40	1.81×10^{1}
		U-238	<BKG
		Th-232	<BKG
SC-4	Facility Yard	Th-232	1.29×10^{0}
		K-40	2.61×10^{1}
		Cs-137	2.43×10^{-1}
		U-238	<BKG
SC-5	Facility Yard	K-40	2.76×10^{1}
		U-238	<BKG
		Th-232	<BKG
SC-6	Facility Yard	U-238	1.09×10^{0}
		Th-232	1.15×10^{0}
		Cs-137	2.0×10^{-1}
		K-40	1.89×10^{1}
SC-7	Facility Yard	U-238	1.88×10^{0}
		Th-232	1.81×10^{0}
		K-40	2.26×10^{1}
SC-8	Facility Yard	Th-232	1.33×10^{0}
		K-40	2.48×10^{1}
		U-238	<BKG
SC-9	Facility Yard	U-238	2.92×10^{0}
		Th-232	1.82×10^{0}
		K-40	2.83×10^{1}

Radioactivity Concentrations in Outdoor Soil Samples (continued)

Sample ID	Location	Radionuclides	Activity (in pCi/g)
SC-10	Facility Yard	Th-232	$1.2x10^{0}$
		K-40	$2.34x10^{1}$
		U-238	<BKG
SC-11	Facility Yard	U-238	<BKG
		Th-232	<BKG
		Cs-137	$4.72x10^{-1}$
		K-40	$1.51x10^{1}$
SC-12	Facility Yard	Th-232	$1.69x10^{0}$
		Cs-137	$1.74x10^{-1}$
		U-238	<BKG
SC-13	Facility Yard	Th-232	$1.46x10^{0}$
		K-40	$2.87x10^{1}$
		U-238	<BKG
SC-14	Facility Yard	U-238	$7.17x10^{-1}$
		K-40	$3.14x10^{1}$
		Th-232	$1.91x10^{0}$
SC-15	Facility Yard	Th-232	$1.91x10^{0}$
		K-40	$2.57x10^{1}$
		U-238	<BKG
SC-16	Facility Yard	U-238	$1.64x10^{0}$
		Th-232	$1.33x10^{0}$
		K-40	$2.62x10^{1}$

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Quantum Technology
GDR_C Version 5.0

Sample ID : SITE RUN-OFF # 1

Sample Size . . . . . 6.20e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-09-97 10:28	Counting Start. 10-09-97 10:28
Sampling Stop 10-09-97 10:28	Live Time . . . . . 3600 Sec
Current Date. 10-13-97 14:53	Real Time . . . . . 0 Sec

Detector #: 22

Energy(keV)= 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity 2.00	Search Start / End. . . . . 0 / 4095
Sigma Multiplier. 1.00	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	93.73	177.73	52	39	72	573	0.99	NET < CL
2	186.06	369.68	96	35	62	427	0.98	
3	238.68	479.08	301	32	48	323	1.06	
4	295.26	596.70	91	24	41	203	1.14	
5	337.87	685.29	83	21	35	153	1.85	
6	351.81	714.28	196	28	46	196	1.19	
7	510.24	1043.65	123	20	32	94	1.24	
8	582.18	1193.23	136	20	31	88	1.66	
9	608.15	1247.22	146	18	26	66	1.57	
10	660.36	1355.77	52	15	24	57	1.42	
11	909.22	1873.14	94	15	21	44	1.67	
12	967.24	1993.77	60	12	19	32	1.70	
13	1457.30	3012.61	344	20	17	24	1.67	

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Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: SITE RUN-OFF #

Sample Size . . . . . 6.20e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-09-97 10:28	Counting Start. 10-09-97 10:28
Sampling Stop 10-09-97 10:28	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-13-97 14:53	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001] 12-05-96 10:47

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
2	186.06	96	Mo-99	181.07	0.0629	9.67e-003	9.95e-001	1.92e+000
2	186.06	96	Cu-67	184.50	0.4700	9.67e-003	9.94e-001	2.57e-001
2	186.06	96	Ga-67	184.60	0.2360	9.67e-003	9.96e-001	5.11e-001
2	186.06	96	U-235	185.72	0.5400	9.67e-003	1.00e+000	2.23e-001
2	186.06	96	Ra-226	186.20				
2	186.06	96	Xe-125	188.43	0.5500	9.67e-003	9.80e-001	2.23e-001
2	186.06	96	In-114m	190.24	0.1564	9.67e-003	1.00e+000	7.69e-001
2	186.06	96	Pt-197	191.31	0.0350	9.67e-003	9.81e-001	3.50e+000
2	186.06	96	Hg-197	191.38	0.0057	9.67e-003	9.95e-001	2.12e+001
2	186.06	96	Zn-72	191.50	0.0940	9.67e-003	9.93e-001	1.29e+000
2	186.06	96	Mo-101	191.93	0.1810	9.67e-003	3.31e-001	2.01e+000
3	238.68	301	Xe-133m	233.20	0.1000	8.25e-003	9.94e-001	4.45e+000
3	238.68	301	Fr-223	234.60				
3	238.68	301	Th-227	236.00				
3	238.68	301	U-235	236.00	0.1100	8.25e-003	1.00e+000	4.02e+000
3	238.68	301	TH-232	238.63	0.4310	8.25e-003	1.01e+000	1.02e+000
3	238.68	301	Te-131m	240.93	0.0755	8.25e-003	9.89e-001	5.92e+000
3	238.68	301	Ra-224	241.08				
3	238.68	301	Xe-125	243.40	0.2871	8.25e-003	9.80e-001	1.57e+000
3	238.68	301	IN-116M	244.59	0.0038	8.25e-003	6.99e-001	1.66e+002
3	238.68	301	Eu-152	244.67	0.0772	8.25e-003	1.00e+000	5.72e+000
4	295.26	91	Ce-143	293.26	0.4200	7.01e-003	9.90e-001	3.78e-001
4	295.26	91	U-238	295.22	0.1920	7.01e-003	1.00e+000	8.17e-001
4	295.26	91	Ir-192	295.96	0.2872	7.01e-003	1.00e+000	5.48e-001
4	295.26	91	Tl-210	296.00				
4	295.26	91	Ag-113	298.40	0.0900	7.01e-003	9.38e-001	1.86e+000
4	295.26	91	TB-160	298.57	0.2740	7.01e-003	1.00e+000	5.74e-001
4	295.26	91	Pa-231	299.90				
4	295.26	91	Pa-233	300.10	0.0633	7.01e-003	9.99e-001	2.49e+000
4	295.26	91	Ga-67	300.20	0.1900	7.01e-003	9.96e-001	8.32e-001
5	337.87	83	Mg-27	332.73	0.0100	6.28e-003	2.25e-001	7.12e+001
5	337.87	83	Au-196	332.90	0.2300	6.28e-003	9.98e-001	6.98e-001
5	337.87	83	Te-131m	334.27	0.0952	6.28e-003	9.89e-001	1.70e+000

5	337.87	83	Np-239	334.30	0.0200	6.28e-003	9.94e-001	3.05e-001
5	337.87	83	In-115m	336.20	0.4590	6.28e-003	9.27e-001	3.76e-001
5	337.87	83	Ru-95	336.40	0.7100	6.28e-003	8.17e-001	2.76e-001
5	337.87	83	TH-232	338.40	0.1201	6.28e-003	1.01e+000	1.32e+000
5	337.87	83	Ra-223	338.60				
5	337.87	83	Ac-228	338.70				
5	337.87	83	Cs-136	340.60	0.4890	6.28e-003	9.99e-001	3.28e-001
5	337.87	83	Cs-136	340.60	0.4676	6.28e-003	9.99e-001	3.43e-001
5	337.87	83	HF-175	343.40	0.8692	6.28e-003	1.00e+000	1.84e-001
6	351.81	196	HF-181	345.95	0.1400	6.07e-003	1.00e+000	2.79e+000
6	351.81	196	Ho-167	346.50	0.5700	6.07e-003	8.96e-001	7.65e-001
6	351.81	196	Pt-197m	346.50	0.1110	6.07e-003	8.09e-001	4.35e+000
6	351.81	196	Na-24	346.55	0.0100	6.07e-003	9.77e-001	4.00e+001
6	351.81	196	Bi-211	351.00				
6	351.81	196	U-235	351.10	0.1200	6.07e-003	1.00e+000	3.26e+000
6	351.81	196	U-238	351.99	0.3710	6.07e-003	1.00e+000	1.05e+000
6	351.81	196	Au-196	355.70	0.8760	6.07e-003	9.98e-001	4.47e-001
6	351.81	196	Ba-133	356.00	0.6200	6.07e-003	1.00e+000	6.30e-001
7	510.24	123	Mo-101	505.88	0.1135	4.44e-003	3.31e-001	8.93e+000
7	510.24	123	Te-121	507.59	0.1767	4.44e-003	9.99e-001	1.90e+000
7	510.24	123	Tl-208	510.72				
7	510.24	123	Kr-79	511.00	0.1500	4.44e-003	9.90e-001	2.26e+000
7	510.24	123	Annihila	511.00	1.0000	4.44e-003	1.00e+000	3.36e-001
7	510.24	123	Zn-71m	511.55	0.2806	4.44e-003	9.17e-001	1.31e+000
7	510.24	123	Rh-106m	511.70	0.8640	4.44e-003	8.56e-001	4.54e-001
7	510.24	123	KR-85	514.00	0.0041	4.44e-003	1.00e+000	8.19e+001
8	582.18	136	Tl-208	583.14				
8	582.18	136	TH-232	583.14	0.3090	3.96e-003	1.01e+000	1.33e+000
9	608.15	146	Sb-124	602.72	0.9830	3.82e-003	1.00e+000	4.71e-001
9	608.15	146	Cs-134	604.66	0.9756	3.82e-003	1.00e+000	4.75e-001
9	608.15	146	Kr-79	606.10	0.0810	3.82e-003	9.90e-001	5.77e+000
9	608.15	146	Sb-125	606.82	0.0520	3.82e-003	1.00e+000	8.91e+000
9	608.15	146	Bi-214	609.30				
9	608.15	146	U-238	609.32	0.4609	3.82e-003	1.00e+000	1.00e+000
9	608.15	146	Ir-192	612.45	0.0543	3.82e-003	1.00e+000	8.53e+000
10	660.36	52	Cu-61	656.00	0.1170	3.56e-003	9.05e-001	1.67e+000
10	660.36	52	As-76	657.03	0.0608	3.56e-003	9.87e-001	2.95e+000
10	660.36	52	Ag-110m	657.75	0.9440	3.56e-003	1.00e+000	1.88e-001
10	660.36	52	Cs-137	661.65	0.8500	3.56e-003	1.00e+000	2.08e-001
10	660.36	52	Ce-143	664.55	0.0525	3.56e-003	9.90e-001	3.41e+000
10	660.36	52	Sb-126	666.30	0.9970	3.56e-003	9.99e-001	1.78e-001
11	909.22	94	TH-232	911.07	0.2900	2.70e-003	1.01e+000	1.44e+000
11	909.22	94	Ac-228	911.20				
11	909.22	94	Sb-129	914.60	0.2140	2.70e-003	9.25e-001	2.13e+000
12	967.24	60	TB-160	962.36	0.1000	2.56e-003	1.00e+000	2.84e+000
12	967.24	60	EU-152M	963.50	0.1200	2.56e-003	9.64e-001	2.45e+000
12	967.24	60	Eu-152	964.00	0.1433	2.56e-003	1.00e+000	1.98e+000
12	967.24	60	Ac-228	964.40				
12	967.24	60	TB-160	966.17	0.2550	2.56e-003	1.00e+000	1.11e+000
12	967.24	60	Ac-228	968.80				
12	967.24	60	TH-232	968.90	0.1746	2.56e-003	1.01e+000	1.61e+000
13	1457.30	344	K-40	1460.81	0.1070	1.80e-003	1.00e+000	2.16e+001

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status	Halflives
U-238	77.11	0.1070	Absent	
	295.22	0.1920	Present	

	351.99	0.3710	Present				
	609.32	0.4609	Present				
	1764.28	0.1504	Absent				
	Total	1.2813	ABSENT	(1.0239/	1.2813 =	79.9110 %)	0.000
-232	77.11	0.1750	Absent				
	238.63	0.4310	Present				
	338.40	0.1201	Present				
	583.14	0.3090	Present				
	911.07	0.2900	Present				
	968.90	0.1746	Present				
	Total	1.4997	PRESENT	(1.3247/	1.4997 =	88.3310 %)	0.000
Hg-197	77.35	0.1900	Absent				
	80.20	0.0340	Absent				
	191.38	0.0057	Present				
	268.73	0.0005	Absent				
	Total	0.2302	ABSENT	(0.0057/	0.2302 =	2.4761 %)	0.000
Pt-197	77.35	0.1700	Absent				
	191.31	0.0350	Present				
	Total	0.2050	ABSENT	(0.0350/	0.2050 =	17.0732 %)	0.000
Fr-223	80.00	0.0001	Absent				
	234.60	0.0001	Unable to Calc				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
Ba-133	81.00	0.3429	Absent				
	276.40	0.0709	Absent				
	302.85	0.1816	Absent				
	356.00	0.6200	Present				
	383.85	0.0897	Absent				
	Total	1.3051	ABSENT	(0.6200/	1.3051 =	47.5059 %)	0.000
U-235	81.07	0.1480	Absent				
	83.78	0.2460	Absent				
	143.76	0.1050	Absent				
	185.72	0.5400	Present				
	236.00	0.1100	Present				
	269.60	0.1340	Absent				
	351.10	0.1200	Present				
	Total	1.4030	ABSENT	(0.7700/	1.4030 =	54.8824 %)	0.000
TB-160	86.80	0.1340	Absent				
	197.04	0.0524	Absent				
	215.65	0.0402	Absent				
	298.57	0.2740	Present				
	876.37	0.3000	Absent				
	962.36	0.1000	Present				
	966.17	0.2550	Present				
	1177.95	0.1550	Absent				
	1271.88	0.0760	Absent				
	Total	1.3866	ABSENT	(0.6290/	1.3866 =	45.3628 %)	0.000
HF-175	89.36	0.0235	Absent				
	343.40	0.8692	Present				
	432.80	0.0156	Absent				
	Total	0.9083	PRESENT	(0.8692/	0.9083 =	95.6952 %)	0.000
Cu-67	93.30	0.1690	Absent				
	184.50	0.4700	Present				
	Total	0.6390	ABSENT	(0.4700/	0.6390 =	73.5524 %)	0.000
Ga-67	93.30	0.3800	Absent				
	184.60	0.2360	Present				
	300.20	0.1900	Present				
	Total	0.8060	ABSENT	(0.4260/	0.8060 =	52.8536 %)	0.000
Te-131m	102.06	0.0790	Absent				
	149.71	0.2054	Absent				
	200.63	0.0752	Absent				

	240.93	0.0755	Present					
	334.27	0.0952	Present					
	452.30	0.0567	Absent					
	773.67	0.3800	Absent					
	782.49	0.0775	Absent					
	793.75	0.1380	Absent					
	822.78	0.0609	Absent					
	852.21	0.2093	Absent					
	1125.46	0.1137	Absent					
	1206.60	0.0971	Absent					
	Total	1.6635	ABSENT	(	0.1707/	1.6635 =	10.2615 %)	0.000
Np-239	106.10	0.2320	Absent					
	209.80	0.0410	Absent					
	228.10	0.1270	Absent					
	277.60	0.1420	Absent					
	315.90	0.0150	Absent					
	334.30	0.0200	Present					
	Total	0.5770	ABSENT	(	0.0200/	0.5770 =	3.4662 %)	0.000
EU-152M	121.78	0.0720	Absent					
	344.20	0.0250	Absent					
	841.60	0.1470	Absent					
	963.50	0.1200	Present					
	Total	0.3640	ABSENT	(	0.1200/	0.3640 =	32.9670 %)	0.000
Eu-152	121.78	0.3068	Absent					
	244.67	0.0772	Present					
	344.30	0.2720	Absent					
	778.90	0.1272	Absent					
	964.00	0.1433	Present					
	1085.80	0.1010	Absent					
	1112.07	0.1340	Absent					
	1408.08	0.2073	Absent					
	Total	1.3688	ABSENT	(	0.2205/	1.3688 =	16.1090 %)	0.000
[illegible]-181	133.05	0.4300	Absent					
	136.25	0.0610	Absent					
	345.95	0.1400	Present					
	482.16	0.8600	Absent					
	Total	1.4910	ABSENT	(	0.1400/	1.4910 =	9.3897 %)	0.000
IN-116M	137.92	0.0350	Absent					
	244.59	0.0038	Present					
	416.88	0.2937	Absent					
	463.13	0.0083	Absent					
	818.65	0.1372	Absent					
	1097.23	0.6791	Absent					
	1293.49	1.0000	Absent					
	1507.50	0.1186	Absent					
	1601.12	0.0107	Absent					
	1752.42	0.0289	Absent					
	2212.21	0.1858	Absent					
	Total	2.5011	ABSENT	(	0.0038/	2.5011 =	0.1519 %)	0.000
Mo-99	140.51	0.0379	Absent					
	181.07	0.0629	Present					
	739.40	0.1260	Absent					
	Total	0.2268	ABSENT	(	0.0629/	0.2268 =	27.7266 %)	0.000
Ra-223	144.30	0.0001	Absent					
	154.30	0.0001	Absent					
	269.60	0.0001	Absent					
	338.60	0.0001	Unable to Calc					
	Total	0.0004	ABSENT	(	0.0001/	0.0004 =	25.0000 %)	0.000
[illegible]n-72	144.70	0.8300	Absent					
	191.50	0.0940	Present					

	Total	0.9240	ABSENT	(0.0940/	0.9240 =	10.1732 %	0.000
Mg-27	170.82	0.0070	Absent				
	332.73	0.0100	Unable to Calc				
	843.80	0.7140	Absent				
	1014.50	0.2860	Absent				
	Total	1.0170	ABSENT	(0.0100/	1.0170 =	0.9833 %)	0.000
Sb-125	176.29	0.0630	Absent				
	380.51	0.0140	Absent				
	427.95	0.2960	Absent				
	463.51	0.1000	Absent				
	600.77	0.1840	Absent				
	606.82	0.0520	Present				
	636.15	0.1120	Absent				
	671.66	0.0180	Absent				
	Total	0.8390	ABSENT	(0.0520/	0.8390 =	6.1979 %)	0.000
Ra-226	186.20	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Xe-125	188.43	0.5500	Present				
	243.40	0.2871	Present				
	Total	0.8371	PRESENT	(0.8371/	0.8371 =	100.0000 %)	0.000
In-114m	190.24	0.1564	Present				
	558.43	0.2850	Absent				
	725.24	0.2810	Absent				
	1283.67	0.0003	Absent				
	1299.83	0.0012	Absent				
	Total	0.7239	ABSENT	(0.1564/	0.7239 =	21.6052 %)	0.000
Mo-101	191.93	0.1810	Present				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				
	1012.35	0.1135	Absent				
	Total	0.6670	ABSENT	(0.2945/	0.6670 =	44.1529 %)	0.000
Ac-228	209.50	0.0001	Absent				
	338.70	0.0001	Unable to Calc				
	790.50	0.0001	Absent				
	911.20	0.0001	Unable to Calc				
	964.40	0.0001	Unable to Calc				
	968.80	0.0001	Unable to Calc				
	Total	0.0006	ABSENT	(0.0004/	0.0006 =	66.6667 %)	0.000
Xe-133m	233.20	0.1000	Present				
	Total	0.1000	PRESENT	(0.1000/	0.1000 =	100.0000 %)	0.000
Th-227	236.00	0.0001	Unable to Calc				
	329.90	0.0001	Absent				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
Ra-224	241.08	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Kr-79	261.30	0.1270	Absent				
	397.50	0.0950	Absent				
	511.00	0.1500	Present				
	606.10	0.0810	Present				
	Total	0.4530	ABSENT	(0.2310/	0.4530 =	50.9934 %)	0.000
Pa-231	283.60	0.0001	Absent				
	299.90	0.0001	Unable to Calc				
	302.50	0.0001	Absent				
	Total	0.0003	ABSENT	(0.0001/	0.0003 =	33.3333 %)	0.000
Cu-61	283.70	0.1320	Absent				
	656.00	0.1170	Present				
	Total	0.2490	ABSENT	(0.1170/	0.2490 =	46.9880 %)	0.000
Ce-143	293.26	0.4200	Present				
	664.55	0.0525	Present				

	721.96	0.0512	Absent				
	Total	0.5237	PRESENT (	0.4725/	0.5237 =	90.2234 %)	0.000
Ir-192	295.96	0.2872	Present				
	308.46	0.2965	Absent				
	316.51	0.8290	Absent				
	468.06	0.4808	Absent				
	612.45	0.0543	Present				
	Total	1.9478	ABSENT (	0.3415/	1.9478 =	17.5326 %)	0.000
Tl-210	296.00	0.0001	Unable to Calc				
	795.00	0.0001	Absent				
	1060.00	0.0001	Absent				
	1210.00	0.0001	Absent				
	1310.00	0.0001	Absent				
	Total	0.0005	ABSENT (	0.0001/	0.0005 =	20.0000 %)	0.000
Ag-113	298.40	0.0900	Present				
	Total	0.0900	PRESENT (	0.0900/	0.0900 =	100.0000 %)	0.000
Pa-233	300.10	0.0633	Present				
	311.90	0.3700	Absent				
	Total	0.4333	ABSENT (	0.0633/	0.4333 =	14.6088 %)	0.000
Ho-167	321.30	0.2390	Absent				
	346.50	0.5700	Present				
	Total	0.8090	ABSENT (	0.5700/	0.8090 =	70.4574 %)	0.000
Au-196	332.90	0.2300	Present				
	355.70	0.8760	Present				
	Total	1.1060	PRESENT (	1.1060/	1.1060 =	100.0000 %)	0.000
In-115m	336.20	0.4590	Present				
	Total	0.4590	PRESENT (	0.4590/	0.4590 =	100.0000 %)	0.000
Ru-95	336.40	0.7100	Present				
	1096.80	0.2100	Absent				
	Total	0.9200	ABSENT (	0.7100/	0.9200 =	77.1739 %)	0.000
-136	340.60	0.4890	Present				
	340.60	0.4676	Present				
	818.50	0.9970	Absent				
	818.50	0.9970	Absent				
	1048.07	0.7976	Absent				
	1048.10	0.7980	Absent				
	1235.34	0.1974	Absent				
	Total	4.7436	ABSENT (	0.9566/	4.7436 =	20.1661 %)	0.000
Pt-197m	346.50	0.1110	Present				
	Total	0.1110	PRESENT (	0.1110/	0.1110 =	100.0000 %)	0.000
Na-24	346.55	0.0100	Unable to Calc				
	857.55	0.0100	Absent				
	1368.53	1.0000	Absent				
	1732.10	0.0100	Absent				
	Total	1.0300	ABSENT (	0.0100/	1.0300 =	0.9709 %)	0.000
Bi-211	351.00	0.0001	Unable to Calc				
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %)	0.000
Zn-71m	386.28	0.9200	Absent				
	487.34	0.6164	Absent				
	511.55	0.2806	Present				
	596.97	0.2760	Absent				
	620.19	0.5612	Absent				
	Total	2.6542	ABSENT (	0.2806/	2.6542 =	10.5719 %)	0.000
Sb-126	414.80	0.8770	Absent				
	666.30	0.9970	Present				
	695.00	0.9970	Absent				
	697.00	0.3190	Absent				
	720.50	0.5780	Absent				
	Total	3.7680	ABSENT (	0.9970/	3.7680 =	26.4597 %)	0.000
Rh-106m	450.80	0.2450	Absent				

	511.70	0.8640	Present					
	616.10	0.2040	Absent					
	748.50	0.1950	Absent					
	1046.70	0.3070	Absent					
	Total	1.8150	ABSENT	(	0.8640/	1.8150 =	47.6033 %)	0.00
e-121	507.59	0.1767	Present					
	573.14	0.8030	Absent					
	Total	0.9797	ABSENT	(	0.1767/	0.9797 =	18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc					
	583.14	0.0001	Unable to Calc					
	Total	0.0002	PRESENT	(	0.0002/	0.0002 =	100.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc					
	Total	1.0000	PRESENT	(	1.0000/	1.0000 =	100.0000 %)	0.000
KR-85	514.00	0.0041	Present					
	Total	0.0041	PRESENT	(	0.0041/	0.0041 =	100.0000 %)	0.000
Sb-129	544.70	0.1920	Absent					
	812.80	0.4600	Absent					
	914.60	0.2140	Present					
	1030.10	0.1350	Absent					
	Total	1.0010	ABSENT	(	0.2140/	1.0010 =	21.3786 %)	0.000
As-76	559.10	0.4500	Absent					
	657.03	0.0608	Present					
	Total	0.5108	ABSENT	(	0.0608/	0.5108 =	11.9029 %)	0.000
Cs-134	563.26	0.0838	Absent					
	569.29	0.1543	Absent					
	604.66	0.9756	Present					
	795.76	0.8544	Absent					
	801.84	0.0873	Absent					
	Total	2.1554	ABSENT	(	0.9756/	2.1554 =	45.2631 %)	0.000
Sb-124	602.72	0.9830	Present					
	645.82	0.0723	Absent					
	722.78	0.1130	Absent					
	1691.02	0.4900	Absent					
	Total	1.6583	ABSENT	(	0.9830/	1.6583 =	59.2776 %)	0.000
Bi-214	609.30	0.0001	Unable to Calc					
	768.40	0.0001	Absent					
	1120.30	0.0001	Absent					
	1764.50	0.0001	Absent					
	Total	0.0004	ABSENT	(	0.0001/	0.0004 =	25.0000 %)	0.000
Ag-110m	657.75	0.9440	Present					
	677.60	0.1057	Absent					
	706.67	0.1631	Absent					
	763.93	0.2226	Absent					
	884.67	0.7278	Absent					
	937.48	0.3427	Absent					
	1384.27	0.2164	Absent					
	1505.00	0.1323	Absent					
	Total	2.8546	ABSENT	(	0.9440/	2.8546 =	33.0694 %)	0.000
Cs-137	661.65	0.8500	Present					
	Total	0.8500	PRESENT	(	0.8500/	0.8500 =	100.0000 %)	0.000
K-40	1460.81	0.1070	Present					
	Total	0.1070	PRESENT	(	0.1070/	0.1070 =	100.0000 %)	0.000

PEAK CONTRIBUTION CORRECTION

			Reference Energy Line			===>> Calculated Contribution		
Pk#	Old Area	Nuclide	Energy	cts/dis	Ref Area	Energy	cts/dis	New Area
3	301	TH-232	911.07	7.84e-004	94	238.63	3.55e-003	301

5	83	TH-232	911.07	7.84e-004	94	338.40	7.54e-004	83
8	136	TH-232	911.07	7.84e-004	94	583.14	1.22e-003	136

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
3	0	Xe-133m	233.20	Deleted [Net < Critical Level]
3	0	Ra-224	241.08	Deleted [Net < Critical Level]
3	0	Xe-125	243.40	Deleted [Net < Critical Level]
5	0	Au-196	332.90	Deleted [Net < Critical Level]
5	0	In-115m	336.20	Deleted [Net < Critical Level]
5	0	HF-175	343.40	Deleted [Net < Critical Level]
8	0	Tl-208	583.14	Deleted [Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
HF-175	89.36	0.0235	Absent					
	343.40	0.8692	Absent					
	432.80	0.0156	Absent					
	Total	0.9083	ABSENT	(0.0000/	0.9083 =	0.0000 %)		0.000
Xe-125	188.43	0.5500	Present					
	243.40	0.2871	Absent					
	Total	0.8371	ABSENT	(0.5500/	0.8371 =	65.7030 %)		0.000
Xe-133m	233.20	0.1000	Absent					
	Total	0.1000	ABSENT	(0.0000/	0.1000 =	0.0000 %)		0.000
.-224	241.08	0.0001	Absent					
	Total	0.0001	ABSENT	(0.0000/	0.0001 =	0.0000 %)		0.000
Au-196	332.90	0.2300	Absent					
	355.70	0.8760	Present					
	Total	1.1060	ABSENT	(0.8760/	1.1060 =	79.2043 %)		0.000
In-115m	336.20	0.4590	Absent					
	Total	0.4590	ABSENT	(0.0000/	0.4590 =	0.0000 %)		0.000
Tl-208	510.72	0.0001	Unable to Calc					
	583.14	0.0001	Absent					
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)		0.000

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)	Halflife (hrs)	Peaks Found	MPC Fraction
TH-232	Average:	1.18e+000 +-8.20e-002	1.24e+014	5 of 6	0.00
	238.63	1.02e+000 +-1.09e-001			
	338.40	1.32e+000 +-3.40e-001			
	583.14	1.33e+000 +-1.94e-001			
	911.07	1.44e+000 +-2.24e-001			
	968.90	1.61e+000 +-3.33e-001			
Ra-226	186.20	BKG	1.00e+012	1 of 1	
Ce-143	Average:	4.12e-001 +-1.00e-001	3.30e+001	2 of 3	2.06
	293.26	3.78e-001 +-1.01e-001			
	664.55	3.41e+000 +-9.52e-001			
Ag-113	298.40	1.86e+000 +-4.96e-001	5.37e+000	1 of 1	
Pt-197m	346.50	4.35e+000 +-6.14e-001	1.57e+000	1 of 1	
Bi-211	351.00	BKG	1.00e+012	1 of 1	

Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	8.19e+001	+-1.34e+001	9.39e+004	1 of 1	
Cs-137	661.65	2.08e-001	+-5.82e-002	2.64e+005	1 of 1	
K-40	1460.81	2.16e+001	+-1.29e+000	1.12e+013	1 of 1	20.83
OTAL:		1.12e+002	pCi /g		MPC Total:	22.89

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
608.15	1247.22	146	18	26	66	1.57	1.062e+001

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Quantum Technology
GDR_C Version 5.0

Sample ID : SITE RUN-OFF # 2

Sample Size . . . . . 4.95e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-09-97 11:44	Counting Start. 10-09-97 11:44
Sampling Stop 10-09-97 11:44	Live Time . . . . . 3600 Sec
Current Date. 10-13-97 14:54	Real Time . . . . . 0 Sec

Detector #: 22

Energy(keV)= 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity 2.00	Search Start / End. . . . . 0 / 4095
Sigma Multiplier. 1.00	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	186.62	370.85	142	34	59	380	1.25	
2	238.71	479.14	326	34	51	326	1.09	
3	295.28	596.76	84	25	43	205	1.19	
4	337.81	685.17	76	19	31	133	0.64	
5	351.58	713.81	171	25	39	170	1.35	
6	509.89	1042.93	129	22	37	126	1.91	
7	582.02	1192.89	154	19	27	80	1.52	
8	608.04	1246.99	145	19	27	80	1.43	
9	908.54	1871.73	98	15	22	41	2.02	
10	1117.16	2305.45	42	12	21	37	1.64	
11	1456.23	3010.38	352	21	17	23	2.16	

Neely Nuclear Research Center

Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: SITE RUN-OFF #

Sample Size . . . . . 4.95e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-09-97 11:44	Counting Start. 10-09-97 11:44
Sampling Stop 10-09-97 11:44	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-13-97 14:54	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001] 12-05-96 10:47

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	186.62	142	Mo-99	181.07	0.0629	9.66e-003	9.95e-001	3.57e+000
1	186.62	142	Cu-67	184.50	0.4700	9.66e-003	9.94e-001	4.77e-001
1	186.62	142	Ga-67	184.60	0.2360	9.66e-003	9.96e-001	9.49e-001
1	186.62	142	U-235	185.72	0.5400	9.66e-003	1.00e+000	4.13e-001
1	186.62	142	Ra-226	186.20				
1	186.62	142	Xe-125	188.43	0.5500	9.66e-003	9.80e-001	4.14e-001
1	186.62	142	In-114m	190.24	0.1564	9.66e-003	1.00e+000	1.43e+000
1	186.62	142	Pt-197	191.31	0.0350	9.66e-003	9.81e-001	6.49e+000
1	186.62	142	Hg-197	191.38	0.0057	9.66e-003	9.95e-001	3.93e+001
1	186.62	142	Zn-72	191.50	0.0940	9.66e-003	9.93e-001	2.39e+000
1	186.62	142	Mo-101	191.93	0.1810	9.66e-003	3.31e-001	3.72e+000
1	186.62	142	Fe-59	192.34	0.0311	9.66e-003	1.00e+000	7.17e+000
2	238.71	326	Xe-133m	233.20	0.1000	8.25e-003	9.94e-001	6.03e+000
2	238.71	326	Fr-223	234.60				
2	238.71	326	Th-227	236.00				
2	238.71	326	U-235	236.00	0.1100	8.25e-003	1.00e+000	5.45e+000
2	238.71	326	TH-232	238.63	0.4310	8.25e-003	1.01e+000	1.38e+000
2	238.71	326	Te-131m	240.93	0.0755	8.25e-003	9.89e-001	8.03e+000
2	238.71	326	Ra-224	241.08				
2	238.71	326	Xe-125	243.40	0.2871	8.25e-003	9.80e-001	2.13e+000
2	238.71	326	IN-116M	244.59	0.0038	8.25e-003	6.99e-001	2.26e+002
2	238.71	326	Eu-152	244.67	0.0772	8.25e-003	1.00e+000	7.77e+000
3	295.28	84	Ce-143	293.26	0.4200	7.01e-003	9.90e-001	4.38e-001
3	295.28	84	U-238	295.22	0.1920	7.01e-003	1.00e+000	9.45e-001
3	295.28	84	Ir-192	295.96	0.2872	7.01e-003	1.00e+000	6.33e-001
3	295.28	84	Tl-210	296.00				
3	295.28	84	Ag-113	298.40	0.0900	7.01e-003	9.38e-001	2.15e+000
3	295.28	84	TB-160	298.57	0.2740	7.01e-003	1.00e+000	6.64e-001
3	295.28	84	Pa-231	299.90				
3	295.28	84	Pa-233	300.10	0.0633	7.01e-003	9.99e-001	2.87e+000
3	295.28	84	Ga-67	300.20	0.1900	7.01e-003	9.96e-001	9.61e-001
4	337.81	76	Mg-27	332.73	0.0100	6.28e-003	2.25e-001	8.17e+001
4	337.81	76	Au-196	332.90	0.2300	6.28e-003	9.98e-001	8.00e-001

4	337.81	76	Te-131m	334.27	0.0952	6.28e-003	9.89e-001	1.95e-00
4	337.81	76	Np-239	334.30	0.0200	6.28e-003	9.94e-001	9.23e-00
4	337.81	76	In-115m	336.20	0.4590	6.28e-003	9.27e-001	4.32e-001
4	337.81	76	Ru-95	336.40	0.7100	6.28e-003	8.17e-001	3.17e-001
4	337.81	76	TH-232	338.40	0.1201	6.28e-003	1.01e+000	1.51e+000
4	337.81	76	Ra-223	338.60				
4	337.81	76	Ac-228	338.70				
4	337.81	76	Cs-136	340.60	0.4890	6.28e-003	9.99e-001	3.76e-001
4	337.81	76	Cs-136	340.60	0.4676	6.28e-003	9.99e-001	3.93e-001
4	337.81	76	HF-175	343.40	0.8692	6.28e-003	1.00e+000	2.11e-001
5	351.58	171	HF-181	345.95	0.1400	6.08e-003	1.00e+000	3.05e+000
5	351.58	171	Ho-167	346.50	0.5700	6.08e-003	8.96e-001	8.36e-001
5	351.58	171	Pt-197m	346.50	0.1110	6.08e-003	8.09e-001	4.75e+000
5	351.58	171	Na-24	346.55	0.0100	6.08e-003	9.77e-001	4.37e+001
5	351.58	171	Bi-211	351.00				
5	351.58	171	U-235	351.10	0.1200	6.08e-003	1.00e+000	3.56e+000
5	351.58	171	U-238	351.99	0.3710	6.08e-003	1.00e+000	1.15e+000
5	351.58	171	Au-196	355.70	0.8760	6.08e-003	9.98e-001	4.88e-001
5	351.58	171	Ba-133	356.00	0.6200	6.08e-003	1.00e+000	6.89e-001
6	509.89	129	Mo-101	505.88	0.1135	4.44e-003	3.31e-001	1.17e+001
6	509.89	129	Te-121	507.59	0.1767	4.44e-003	9.99e-001	2.50e+000
6	509.89	129	Tl-208	510.72				
6	509.89	129	Kr-79	511.00	0.1500	4.44e-003	9.90e-001	2.97e+000
6	509.89	129	Annihila	511.00	1.0000	4.44e-003	1.00e+000	4.41e-001
6	509.89	129	Zn-71m	511.55	0.2806	4.44e-003	9.17e-001	1.71e+000
6	509.89	129	Rh-106m	511.70	0.8640	4.44e-003	8.56e-001	5.96e-001
6	509.89	129	KR-85	514.00	0.0041	4.44e-003	1.00e+000	1.08e+002
7	582.02	154	Tl-208	583.14				
7	582.02	154	TH-232	583.14	0.3090	3.96e-003	1.01e+000	1.89e+000
8	608.04	145	Sb-124	602.72	0.9830	3.82e-003	1.00e+000	5.86e-001
8	608.04	145	Cs-134	604.66	0.9756	3.82e-003	1.00e+000	5.90e-001
8	608.04	145	Kr-79	606.10	0.0810	3.82e-003	9.90e-001	7.18e+000
8	608.04	145	Sb-125	606.82	0.0520	3.82e-003	1.00e+000	1.11e+001
8	608.04	145	Bi-214	609.30				
8	608.04	145	U-238	609.32	0.4609	3.82e-003	1.00e+000	1.25e+000
8	608.04	145	Ir-192	612.45	0.0543	3.82e-003	1.00e+000	1.06e+001
9	908.54	98	TH-232	911.07	0.2900	2.70e-003	1.01e+000	1.88e+000
9	908.54	98	Ac-228	911.20				
10	1117.16	42	Eu-152	1112.07	0.1340	2.26e-003	1.00e+000	2.10e+000
10	1117.16	42	Sn-127	1114.30	0.3800	2.26e-003	8.55e-001	8.66e-001
10	1117.16	42	Zn-65	1115.52	0.5075	2.26e-003	1.00e+000	5.55e-001
10	1117.16	42	Ni-65	1115.53	0.1513	2.26e-003	8.76e-001	2.12e+000
10	1117.16	42	Bi-214	1120.30				
10	1117.16	42	Sc-46	1120.51	1.0000	2.26e-003	1.00e+000	2.82e-001
10	1117.16	42	Ta-182	1121.28	0.3510	2.26e-003	1.00e+000	8.02e-001
11	1456.23	352	K-40	1460.81	0.1070	1.80e-003	1.00e+000	2.77e+001

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status				Halflives
U-238	77.11	0.1070	Absent				
	295.22	0.1920	Present				
	351.99	0.3710	Present				
	609.32	0.4609	Present				
	1764.28	0.1504	Absent				
	Total	1.2813	ABSENT	(1.0239/	1.2813 =	79.9110 %)	0.000
TH-232	77.11	0.1750	Absent				
	238.63	0.4310	Present				

	338.40	0.1201	Present				
	583.14	0.3090	Present				
	911.07	0.2900	Present				
	968.90	0.1746	Absent				
	Total	1.4997	ABSENT	(1.1501/	1.4997 =	76.6887 %)	0.000
Ag-197	77.35	0.1900	Absent				
	80.20	0.0340	Absent				
	191.38	0.0057	Present				
	268.73	0.0005	Absent				
	Total	0.2302	ABSENT	(0.0057/	0.2302 =	2.4761 %)	0.000
Pt-197	77.35	0.1700	Absent				
	191.31	0.0350	Present				
	Total	0.2050	ABSENT	(0.0350/	0.2050 =	17.0732 %)	0.000
Fr-223	80.00	0.0001	Absent				
	234.60	0.0001	Unable to Calc				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
Ba-133	81.00	0.3429	Absent				
	276.40	0.0709	Absent				
	302.85	0.1816	Absent				
	356.00	0.6200	Present				
	383.85	0.0897	Absent				
	Total	1.3051	ABSENT	(0.6200/	1.3051 =	47.5059 %)	0.000
U-235	81.07	0.1480	Absent				
	83.78	0.2460	Absent				
	143.76	0.1050	Absent				
	185.72	0.5400	Present				
	236.00	0.1100	Present				
	269.60	0.1340	Absent				
	351.10	0.1200	Present				
	Total	1.4030	ABSENT	(0.7700/	1.4030 =	54.8824 %)	0.000
Eu-160	86.80	0.1340	Absent				
	197.04	0.0524	Absent				
	215.65	0.0402	Absent				
	298.57	0.2740	Present				
	876.37	0.3000	Absent				
	962.36	0.1000	Absent				
	966.17	0.2550	Absent				
	1177.95	0.1550	Absent				
	1271.88	0.0760	Absent				
	Total	1.3866	ABSENT	(0.2740/	1.3866 =	19.7606 %)	0.000
HF-175	89.36	0.0235	Absent				
	343.40	0.8692	Present				
	432.80	0.0156	Absent				
	Total	0.9083	PRESENT	(0.8692/	0.9083 =	95.6952 %)	0.000
Cu-67	93.30	0.1690	Absent				
	184.50	0.4700	Present				
	Total	0.6390	ABSENT	(0.4700/	0.6390 =	73.5524 %)	0.000
Ga-67	93.30	0.3800	Absent				
	184.60	0.2360	Present				
	300.20	0.1900	Present				
	Total	0.8060	ABSENT	(0.4260/	0.8060 =	52.8536 %)	0.000
Ta-182	100.10	0.1411	Absent				
	152.43	0.0720	Absent				
	222.10	0.0758	Absent				
	1121.28	0.3510	Present				
	1189.04	0.1636	Absent				
	1221.42	0.2713	Absent				
	1230.97	0.1155	Absent				
	Total	1.1903	ABSENT	(0.3510/	1.1903 =	29.4884 %)	0.000
Te-131m	102.06	0.0790	Absent				

	149.71	0.2054	Absent					
	200.63	0.0752	Absent					
	240.93	0.0755	Present					
	334.27	0.0952	Present					
	452.30	0.0567	Absent					
	773.67	0.3800	Absent					
	782.49	0.0775	Absent					
	793.75	0.1380	Absent					
	822.78	0.0609	Absent					
	852.21	0.2093	Absent					
	1125.46	0.1137	Absent					
	1206.60	0.0971	Absent					
	Total	1.6635	ABSENT	(	0.1707/	1.6635 =	10.2615 %)	0.000
Np-239	106.10	0.2320	Absent					
	209.80	0.0410	Absent					
	228.10	0.1270	Absent					
	277.60	0.1420	Absent					
	315.90	0.0150	Absent					
	334.30	0.0200	Present					
	Total	0.5770	ABSENT	(	0.0200/	0.5770 =	3.4662 %)	0.000
Eu-152	121.78	0.3068	Absent					
	244.67	0.0772	Present					
	344.30	0.2720	Absent					
	778.90	0.1272	Absent					
	964.00	0.1433	Absent					
	1085.80	0.1010	Absent					
	1112.07	0.1340	Present					
	1408.08	0.2073	Absent					
	Total	1.3688	ABSENT	(	0.2112/	1.3688 =	15.4296 %)	0.000
HF-181	133.05	0.4300	Absent					
	136.25	0.0610	Absent					
	345.95	0.1400	Present					
	482.16	0.8600	Absent					
	Total	1.4910	ABSENT	(	0.1400/	1.4910 =	9.3897 %)	0.000
IN-116M	137.92	0.0350	Absent					
	244.59	0.0038	Present					
	416.88	0.2937	Absent					
	463.13	0.0083	Absent					
	818.65	0.1372	Absent					
	1097.23	0.6791	Absent					
	1293.49	1.0000	Absent					
	1507.50	0.1186	Absent					
	1601.12	0.0107	Absent					
	1752.42	0.0289	Absent					
	2212.21	0.1858	Absent					
	Total	2.5011	ABSENT	(	0.0038/	2.5011 =	0.1519 %)	0.000
Mo-99	140.51	0.0379	Absent					
	181.07	0.0629	Present					
	739.40	0.1260	Absent					
	Total	0.2268	ABSENT	(	0.0629/	0.2268 =	27.7266 %)	0.000
Fe-59	142.65	0.0103	Absent					
	192.34	0.0311	Present					
	1099.22	0.5680	Absent					
	1291.56	0.4320	Absent					
	Total	1.0414	ABSENT	(	0.0311/	1.0414 =	2.9864 %)	0.000
Pa-223	144.30	0.0001	Absent					
	154.30	0.0001	Absent					
	269.60	0.0001	Absent					
	338.60	0.0001	Unable to Calc					
	Total	0.0004	ABSENT	(	0.0001/	0.0004 =	25.0000 %)	0.000

Zn-72	144.70	0.8300	Absent				
	191.80	0.0940	Present				
	Total	0.9240	ABSENT	(0.0940/	0.9240 =	10.1732 %)	0.000
Mg-27	170.82	0.0070	Absent				
	332.73	0.0100	Unable to Calc				
	843.80	0.7140	Absent				
	1014.50	0.2860	Absent				
	Total	1.0170	ABSENT	(0.0100/	1.0170 =	0.9833 %)	0.000
Sb-125	176.29	0.0630	Absent				
	380.51	0.0140	Absent				
	427.95	0.2960	Absent				
	463.51	0.1000	Absent				
	600.77	0.1840	Absent				
	606.82	0.0520	Present				
	636.15	0.1120	Absent				
	671.66	0.0180	Absent				
	Total	0.8390	ABSENT	(0.0520/	0.8390 =	6.1979 %)	0.000
Ra-226	186.20	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Xe-125	188.43	0.5500	Present				
	243.40	0.2871	Present				
	Total	0.8371	PRESENT	(0.8371/	0.8371 =	100.0000 %)	0.000
In-114m	190.24	0.1564	Present				
	558.43	0.2850	Absent				
	725.24	0.2810	Absent				
	1283.67	0.0003	Absent				
	1299.83	0.0012	Absent				
	Total	0.7239	ABSENT	(0.1564/	0.7239 =	21.6052 %)	0.000
Mo-101	191.93	0.1810	Present				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				
	1012.35	0.1135	Absent				
	Total	0.6670	ABSENT	(0.2945/	0.6670 =	44.1529 %)	0.000
Ac-228	209.50	0.0001	Absent				
	338.70	0.0001	Unable to Calc				
	790.50	0.0001	Absent				
	911.20	0.0001	Unable to Calc				
	964.40	0.0001	Absent				
	968.80	0.0001	Absent				
	Total	0.0006	ABSENT	(0.0002/	0.0006 =	33.3333 %)	0.000
Xe-133m	233.20	0.1000	Present				
	Total	0.1000	PRESENT	(0.1000/	0.1000 =	100.0000 %)	0.000
Th-227	236.00	0.0001	Unable to Calc				
	329.90	0.0001	Absent				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
Ra-224	241.08	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Kr-79	261.30	0.1270	Absent				
	397.50	0.0950	Absent				
	511.00	0.1500	Present				
	606.10	0.0810	Present				
	Total	0.4530	ABSENT	(0.2310/	0.4530 =	50.9934 %)	0.000
Pa-231	283.60	0.0001	Absent				
	299.90	0.0001	Unable to Calc				
	302.50	0.0001	Absent				
	Total	0.0003	ABSENT	(0.0001/	0.0003 =	33.3333 %)	0.000
Ce-143	293.26	0.4200	Present				
	664.55	0.0525	Absent				
	721.96	0.0512	Absent				

	Total	0.5237	PRESENT (	0.4200/	0.5237 =	80.1986 %) 0.000
Ir-192	295.96	0.2872	Present			
	308.46	0.2965	Absent			
	316.51	0.8290	Absent			
	468.06	0.4808	Absent			
	612.45	0.0543	Present			
	Total	1.9478	ABSENT (	0.3415/	1.9478 =	17.5326 %) 0.000
Tl-210	296.00	0.0001	Unable to Calc			
	795.00	0.0001	Absent			
	1060.00	0.0001	Absent			
	1210.00	0.0001	Absent			
	1310.00	0.0001	Absent			
	Total	0.0005	ABSENT (	0.0001/	0.0005 =	20.0000 %) 0.000
Ag-113	298.40	0.0900	Present			
	Total	0.0900	PRESENT (	0.0900/	0.0900 =	100.0000 %) 0.000
Pa-233	300.10	0.0633	Present			
	311.90	0.3700	Absent			
	Total	0.4333	ABSENT (	0.0633/	0.4333 =	14.6088 %) 0.000
Ho-167	321.30	0.2390	Absent			
	346.50	0.5700	Present			
	Total	0.8090	ABSENT (	0.5700/	0.8090 =	70.4574 %) 0.000
Au-196	332.90	0.2300	Present			
	355.70	0.8760	Present			
	Total	1.1060	PRESENT (	1.1060/	1.1060 =	100.0000 %) 0.000
In-115m	336.20	0.4590	Present			
	Total	0.4590	PRESENT (	0.4590/	0.4590 =	100.0000 %) 0.000
Ru-95	336.40	0.7100	Present			
	1096.80	0.2100	Absent			
	Total	0.9200	ABSENT (	0.7100/	0.9200 =	77.1739 %) 0.000
[illegible]-136	340.60	0.4890	Present			
	340.60	0.4676	Present			
	818.50	0.9970	Absent			
	818.50	0.9970	Absent			
	1048.07	0.7976	Absent			
	1048.10	0.7980	Absent			
	1235.34	0.1974	Absent			
	Total	4.7436	ABSENT (	0.9566/	4.7436 =	20.1661 %) 0.000
Pt-197m	346.50	0.1110	Present			
	Total	0.1110	PRESENT (	0.1110/	0.1110 =	100.0000 %) 0.000
Na-24	346.55	0.0100	Unable to Calc			
	857.55	0.0100	Absent			
	1368.53	1.0000	Absent			
	1732.10	0.0100	Absent			
	Total	1.0300	ABSENT (	0.0100/	1.0300 =	0.9709 %) 0.000
Bi-211	351.00	0.0001	Unable to Calc			
	Total	0.0001	PRESENT (	0.0001/	0.0001 =	100.0000 %) 0.000
Zn-71m	386.28	0.9200	Absent			
	487.34	0.6164	Absent			
	511.55	0.2806	Present			
	596.97	0.2760	Absent			
	620.19	0.5612	Absent			
	Total	2.6542	ABSENT (	0.2806/	2.6542 =	10.5719 %) 0.000
Rh-106m	450.80	0.2450	Absent			
	511.70	0.8640	Present			
	616.10	0.2040	Absent			
	748.50	0.1950	Absent			
	1046.70	0.3070	Absent			
	Total	1.8150	ABSENT (	0.8640/	1.8150 =	47.6033 %) 0.000
Te-121	507.59	0.1767	Present			
	573.14	0.8030	Absent			

	Total	0.9797	ABSENT (	0.1767/	0.9797 =	18.0361 %) 0.00
Tl-208	510.72	0.0001	Unable to Calc			
	583.14	0.0001	Unable to Calc			
	Total	0.0002	PRESENT (	0.0002/	0.0002 =	100.0000 %) 0.00
nihila	511.00	1.0000	Unable to Calc			
	Total	1.0000	PRESENT (	1.0000/	1.0000 =	100.0000 %) 0.00
KR-85	514.00	0.0041	Present			
	Total	0.0041	PRESENT (	0.0041/	0.0041 =	100.0000 %) 0.00
Cs-134	563.26	0.0838	Absent			
	569.29	0.1543	Absent			
	604.66	0.9756	Present			
	795.76	0.8544	Absent			
	801.84	0.0873	Absent			
	Total	2.1554	ABSENT (	0.9756/	2.1554 =	45.2631 %) 0.00
Sb-124	602.72	0.9830	Present			
	645.82	0.0723	Absent			
	722.78	0.1130	Absent			
	1691.02	0.4900	Absent			
	Total	1.6583	ABSENT (	0.9830/	1.6583 =	59.2776 %) 0.00
Bi-214	609.30	0.0001	Unable to Calc			
	768.40	0.0001	Absent			
	1120.30	0.0001	Unable to Calc			
	1764.50	0.0001	Absent			
	Total	0.0004	ABSENT (	0.0002/	0.0004 =	50.0000 %) 0.00
Sn-127	823.10	0.1060	Absent			
	1095.60	0.1940	Absent			
	1114.30	0.3800	Present			
	Total	0.6800	ABSENT (	0.3800/	0.6800 =	55.8824 %) 0.00
Sc-46	889.25	1.0000	Absent			
	1120.51	1.0000	Present			
	2009.76	0.1000	Absent			
	Total	2.1000	ABSENT (	1.0000/	2.1000 =	47.6190 %) 0.00
Zn-65	1115.52	0.5075	Present			
	Total	0.5075	PRESENT (	0.5075/	0.5075 =	100.0000 %) 0.00
Ni-65	1115.53	0.1513	Present			
	1481.84	0.2350	Absent			
	Total	0.3863	ABSENT (	0.1513/	0.3863 =	39.1665 %) 0.00
K-40	1460.81	0.1070	Present			
	Total	0.1070	PRESENT (	0.1070/	0.1070 =	100.0000 %) 0.00

PEAK CONTRIBUTION CORRECTION

Pk#	Old Area	Nuclide	Reference Energy Line ===>> Energy	cts/dis	Ref Area	Calculated Contribution Energy	cts/dis	New Area
None								

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)	Halflife (hrs)	Peaks Found	MPC Fraction
Yb-175	343.40	2.11e-001 +-5.39e-002	1.68e+003	1 of 3	
Ra-226	186.20	BKG	1.00e+012	1 of 1	
Xe-125	Average:	7.04e-001 +-9.03e-002	1.68e+001	2 of 2	0.00
	188.43	4.14e-001 +-9.91e-002			
	243.40	2.13e+000 +-2.20e-001			

Xe-133m	233.20	6.03e+000	+-6.22e-001	5.42e-001	1 of 1	
Ra-224	241.08		BKG	1.00e+012	1 of 1	
Ce-143	293.26	4.38e-001	+-1.30e-001	3.30e+001	1 of 3	2.19
Ag-113	298.40	2.15e+000	+-6.39e-001	5.37e+000	1 of 1	
-196	Average:	5.22e-001	+-6.70e-002	1.48e+002	2 of 2	0.00
	332.90	8.00e-001	+-2.04e-001			
	355.70	4.88e-001	+-7.09e-002			
In-115m	336.20	4.32e-001	+-1.10e-001	4.49e+000	1 of 1	
Pt-197m	346.50	4.75e+000	+-6.90e-001	1.57e+000	1 of 1	
Bi-211	351.00		BKG	1.00e+012	1 of 1	
Tl-208	510.72		BKG	1.00e+012	2 of 2	
	583.14		BKG			
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	1.08e+002	+-1.86e+001	9.39e+004	1 of 1	
Zn-65	1115.52	5.55e-001	+-1.63e-001	5.86e+003	1 of 1	9.25
K-40	1460.81	2.77e+001	+-1.63e+000	1.12e+013	1 of 1	
TOTAL:		1.51e+002 pCi	/g		MPC Total:	11.43

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
608.04	1246.99	145	19	27	80	1.43	1.055e+001
908.54	1871.73	98	15	22	41	2.02	1.007e+001

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : SC-1

Sample Size . . . . . 7.25e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-09-97 13:19	Counting Start. 10-09-97 13:19
Sampling Stop 10-09-97 13:19	Live Time . . . . . 3600 Sec
Current Date. 10-14-97 10:00	Real Time . . . . . 0 Sec

Detector #: 22

Energy(keV)= 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity 2.00	Search Start / End. . . . . 0 / 4095
Sigma Multiplier. 1.00	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	78.07	145.18	59	41	75	686	0.62	NET < CL
2	186.10	369.77	97	36	64	448	1.07	
3	238.43	478.57	273	37	60	447	1.35	
4	294.82	595.80	115	27	45	228	1.39	
5	337.25	684.02	61	24	41	190	1.11	
6	351.29	713.21	341	30	45	190	1.42	
7	509.09	1041.27	118	21	34	114	2.11	
8	581.10	1190.98	133	18	27	78	1.46	
9	607.22	1245.27	149	19	26	81	1.43	
10	907.58	1869.73	111	15	22	44	1.60	
11	965.16	1989.44	47	12	20	39	1.43	
12	1454.69	3007.18	358	20	12	13	2.55	
13	1756.16	3633.93	42	8	10	7	2.04	

Neely Nuclear Research Center

Quantum Technology
GDR_C Nuclide Activity Summary

Sample ID: SC-1

Sample Size . . . . . 7.25e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-09-97 13:19	Counting Start. 10-09-97 13:19
Sampling Stop 10-09-97 13:19	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-14-97 10:01	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550ml1iq.ef	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library
Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001]	12-05-96 10:47
Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
2	186.10	97	Mo-99	181.07	0.0629	9.67e-003	9.95e-001	1.66e+000
2	186.10	97	Cu-67	184.50	0.4700	9.67e-003	9.94e-001	2.22e-001
2	186.10	97	Ga-67	184.60	0.2360	9.67e-003	9.96e-001	4.42e-001
2	186.10	97	U-235	185.72	0.5400	9.67e-003	1.00e+000	1.92e-001
2	186.10	97	Ra-226	186.20				
2	186.10	97	Xe-125	188.43	0.5500	9.67e-003	9.80e-001	1.93e-001
2	186.10	97	In-114m	190.24	0.1564	9.67e-003	1.00e+000	6.64e-001
2	186.10	97	Pt-197	191.31	0.0350	9.67e-003	9.81e-001	3.02e+000
2	186.10	97	Hg-197	191.38	0.0057	9.67e-003	9.95e-001	1.83e+001
2	186.10	97	Zn-72	191.50	0.0940	9.67e-003	9.93e-001	1.11e+000
2	186.10	97	Mo-101	191.93	0.1810	9.67e-003	3.31e-001	1.73e+000
3	238.43	273	Xe-133m	233.20	0.1000	8.25e-003	9.94e-001	3.45e+000
3	238.43	273	Fr-223	234.60				
3	238.43	273	Th-227	236.00				
3	238.43	273	U-235	236.00	0.1100	8.25e-003	1.00e+000	3.11e+000
3	238.43	273	TH-232	238.63	0.4310	8.25e-003	1.01e+000	7.88e-001
3	238.43	273	Te-131m	240.93	0.0755	8.25e-003	9.89e-001	4.59e+000
3	238.43	273	Ra-224	241.08				
3	238.43	273	Xe-125	243.40	0.2871	8.25e-003	9.80e-001	1.22e+000
4	294.82	115	Ce-143	293.26	0.4200	7.01e-003	9.90e-001	4.09e-001
4	294.82	115	U-238	295.22	0.1920	7.01e-003	1.00e+000	8.82e-001
4	294.82	115	Ir-192	295.96	0.2872	7.01e-003	1.00e+000	5.91e-001
4	294.82	115	Tl-210	296.00				
4	294.82	115	Ag-113	298.40	0.0900	7.01e-003	9.38e-001	2.01e+000
4	294.82	115	TB-160	298.57	0.2740	7.01e-003	1.00e+000	6.20e-001
4	294.82	115	Pa-231	299.90				
4	294.82	115	Pa-233	300.10	0.0633	7.01e-003	9.99e-001	2.68e+000
4	294.82	115	Ga-67	300.20	0.1900	7.01e-003	9.96e-001	8.98e-001
5	337.25	61	Mg-27	332.73	0.0100	6.29e-003	2.25e-001	4.47e+001
5	337.25	61	Au-196	332.90	0.2300	6.29e-003	9.98e-001	4.38e-001
5	337.25	61	Te-131m	334.27	0.0952	6.29e-003	9.89e-001	1.07e+000
5	337.25	61	Np-239	334.30	0.0200	6.29e-003	9.94e-001	5.05e+000
5	337.25	61	In-115m	336.20	0.4590	6.29e-003	9.27e-001	2.36e-001

5	337.25	61	Ru-95	336.40	0.7100	6.29e-003	8.17e-001	1.73e-001
5	337.25	61	TH-232	338.40	0.1201	6.29e-003	1.01e+000	8.29e-001
5	337.25	61	Ra-223	338.60				
5	337.25	61	Ac-228	338.70				
5	337.25	61	Cs-136	340.60	0.4890	6.29e-003	9.99e-001	2.06e-001
5	337.25	61	Cs-136	340.60	0.4676	6.29e-003	9.99e-001	2.15e-001
6	351.29	341	HF-181	345.95	0.1400	6.08e-003	1.00e+000	4.15e+000
6	351.29	341	Ho-167	346.50	0.5700	6.08e-003	8.96e-001	1.14e+000
6	351.29	341	Pt-197m	346.50	0.1110	6.08e-003	8.09e-001	6.47e+000
6	351.29	341	Na-24	346.55	0.0100	6.08e-003	9.77e-001	5.94e+001
6	351.29	341	Bi-211	351.00				
6	351.29	341	U-235	351.10	0.1200	6.08e-003	1.00e+000	4.84e+000
6	351.29	341	U-238	351.99	0.3710	6.08e-003	1.00e+000	1.56e+000
6	351.29	341	Au-196	355.70	0.8760	6.08e-003	9.98e-001	6.65e-001
6	351.29	341	Ba-133	356.00	0.6200	6.08e-003	1.00e+000	9.37e-001
7	509.09	118	Mo-101	505.88	0.1135	4.44e-003	3.31e-001	7.31e+000
7	509.09	118	Te-121	507.59	0.1767	4.44e-003	9.99e-001	1.56e+000
7	509.09	118	Tl-208	510.72				
7	509.09	118	Kr-79	511.00	0.1500	4.44e-003	9.90e-001	1.85e+000
7	509.09	118	Annihila	511.00	1.0000	4.44e-003	1.00e+000	2.75e-001
7	509.09	118	Zn-71m	511.55	0.2806	4.44e-003	9.17e-001	1.07e+000
7	509.09	118	Rh-106m	511.70	0.8640	4.44e-003	8.56e-001	3.72e-001
7	509.09	118	KR-85	514.00	0.0041	4.44e-003	1.00e+000	6.70e+001
8	581.10	133	Tl-208	583.14				
8	581.10	133	TH-232	583.14	0.3090	3.97e-003	1.01e+000	1.11e+000
9	607.22	149	Sb-124	602.72	0.9830	3.82e-003	1.00e+000	4.11e-001
9	607.22	149	Cs-134	604.66	0.9756	3.82e-003	1.00e+000	4.14e-001
9	607.22	149	Kr-79	606.10	0.0810	3.82e-003	9.90e-001	5.03e+000
9	607.22	149	Sb-125	606.82	0.0520	3.82e-003	1.00e+000	7.76e+000
9	607.22	149	Bi-214	609.30				
9	607.22	149	U-238	609.32	0.4609	3.82e-003	1.00e+000	8.73e-001
9	607.22	149	Ir-192	612.45	0.0543	3.82e-003	1.00e+000	7.43e+000
10	907.58	111	TH-232	911.07	0.2900	2.71e-003	1.01e+000	1.45e+000
10	907.58	111	Ac-228	911.20				
11	965.16	47	TB-160	962.36	0.1000	2.57e-003	1.00e+000	1.90e+000
11	965.16	47	EU-152M	963.50	0.1200	2.57e-003	9.64e-001	1.64e+000
11	965.16	47	Eu-152	964.00	0.1433	2.57e-003	1.00e+000	1.32e+000
11	965.16	47	Ac-228	964.40				
11	965.16	47	TB-160	966.17	0.2550	2.57e-003	1.00e+000	7.44e-001
11	965.16	47	Ac-228	968.80				
11	965.16	47	TH-232	968.90	0.1746	2.57e-003	1.01e+000	1.08e+000
13	1756.16	42	IN-116M	1752.42	0.0289	1.53e-003	6.99e-001	1.41e+001

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status				Halflives
U-238	77.11	0.1070	Absent				
	295.22	0.1920	Present				
	351.99	0.3710	Present				
	609.32	0.4609	Present				
	1764.28	0.1504	Absent				
	Total	1.2813	ABSENT	(1.0239/	1.2813 =	79.9110 %)	0.000
TH-232	77.11	0.1750	Absent				
	238.63	0.4310	Present				
	338.40	0.1201	Present				
	583.14	0.3090	Present				
	911.07	0.2900	Present				
	968.90	0.1746	Present				

	Total	1.4997	PRESENT	(1.3247/	1.4997 =	88.3311 %	0.00
Hg-197	77.35	0.1900	Absent				
	80.20	0.0340	Absent				
	191.38	0.0057	Present				
	268.73	0.0005	Absent				
	Total	0.2302	ABSENT	(0.0057/	0.2302 =	2.4761 %)	0.00
Pt-197	77.35	0.1700	Absent				
	191.31	0.0350	Present				
	Total	0.2050	ABSENT	(0.0350/	0.2050 =	17.0732 %)	0.000
Fr-223	80.00	0.0001	Absent				
	234.60	0.0001	Unable to Calc				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
Ba-133	81.00	0.3429	Absent				
	276.40	0.0709	Absent				
	302.85	0.1816	Absent				
	356.00	0.6200	Present				
	383.85	0.0897	Absent				
	Total	1.3051	ABSENT	(0.6200/	1.3051 =	47.5059 %)	0.000
U-235	81.07	0.1480	Absent				
	83.78	0.2460	Absent				
	143.76	0.1050	Absent				
	185.72	0.5400	Present				
	236.00	0.1100	Present				
	269.60	0.1340	Absent				
	351.10	0.1200	Present				
	Total	1.4030	ABSENT	(0.7700/	1.4030 =	54.8824 %)	0.000
TB-160	86.80	0.1340	Absent				
	197.04	0.0524	Absent				
	215.65	0.0402	Absent				
	298.57	0.2740	Present				
	876.37	0.3000	Absent				
	962.36	0.1000	Present				
	966.17	0.2550	Present				
	1177.95	0.1550	Absent				
	1271.88	0.0760	Absent				
	Total	1.3866	ABSENT	(0.6290/	1.3866 =	45.3628 %)	0.000
Cu-67	93.30	0.1690	Absent				
	184.50	0.4700	Present				
	Total	0.6390	ABSENT	(0.4700/	0.6390 =	73.5524 %)	0.000
Ga-67	93.30	0.3800	Absent				
	184.60	0.2360	Present				
	300.20	0.1900	Present				
	Total	0.8060	ABSENT	(0.4260/	0.8060 =	52.8536 %)	0.000
Te-131m	102.06	0.0790	Absent				
	149.71	0.2054	Absent				
	200.63	0.0752	Absent				
	240.93	0.0755	Present				
	334.27	0.0952	Present				
	452.30	0.0567	Absent				
	773.67	0.3800	Absent				
	782.49	0.0775	Absent				
	793.75	0.1380	Absent				
	822.78	0.0609	Absent				
	852.21	0.2093	Absent				
	1125.46	0.1137	Absent				
	1206.60	0.0971	Absent				
	Total	1.6635	ABSENT	(0.1707/	1.6635 =	10.2615 %)	0.000
Np-239	106.10	0.2320	Absent				
	209.80	0.0410	Absent				
	228.10	0.1270	Absent				

	311.90	0.3700	Absent				
	Total	0.4333	ABSENT	(0.0633/	0.4333 =	14.6088 %)	0.000
Ho-167	321.30	0.2390	Absent				
	346.50	0.5700	Present				
	Total	0.8090	ABSENT	(0.5700/	0.8090 =	70.4574 %)	0.000
.u-196	332.90	0.2300	Present				
	355.70	0.8760	Present				
	Total	1.1060	PRESENT	(1.1060/	1.1060 =	100.0000 %)	0.000
In-115m	336.20	0.4590	Present				
	Total	0.4590	PRESENT	(0.4590/	0.4590 =	100.0000 %)	0.000
Ru-95	336.40	0.7100	Present				
	1096.80	0.2100	Absent				
	Total	0.9200	ABSENT	(0.7100/	0.9200 =	77.1739 %)	0.000
Cs-136	340.60	0.4890	Present				
	340.60	0.4676	Present				
	818.50	0.9970	Absent				
	818.50	0.9970	Absent				
	1048.07	0.7976	Absent				
	1048.10	0.7980	Absent				
	1235.34	0.1974	Absent				
	Total	4.7436	ABSENT	(0.9566/	4.7436 =	20.1661 %)	0.000
Pt-197m	346.50	0.1110	Present				
	Total	0.1110	PRESENT	(0.1110/	0.1110 =	100.0000 %)	0.000
Na-24	346.55	0.0100	Unable to Calc				
	857.55	0.0100	Absent				
	1368.53	1.0000	Absent				
	1732.10	0.0100	Absent				
	Total	1.0300	ABSENT	(0.0100/	1.0300 =	0.9709 %)	0.000
Bi-211	351.00	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
-71m	386.28	0.9200	Absent				
	487.34	0.6164	Absent				
	511.55	0.2806	Present				
	596.97	0.2760	Absent				
	620.19	0.5612	Absent				
	Total	2.6542	ABSENT	(0.2806/	2.6542 =	10.5719 %)	0.000
Rh-106m	450.80	0.2450	Absent				
	511.70	0.8640	Present				
	616.10	0.2040	Absent				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT	(0.8640/	1.8150 =	47.6033 %)	0.000
Te-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT	(0.1767/	0.9797 =	18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	(0.0002/	0.0002 =	100.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT	(1.0000/	1.0000 =	100.0000 %)	0.000
KR-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT	(0.0041/	0.0041 =	100.0000 %)	0.000
Cs-134	563.26	0.0838	Absent				
	569.29	0.1543	Absent				
	604.66	0.9756	Present				
	795.76	0.8544	Absent				
	801.84	0.0873	Absent				
	Total	2.1554	ABSENT	(0.9756/	2.1554 =	45.2631 %)	0.000
Sb-124	602.72	0.9830	Present				
	645.82	0.0723	Absent				

	Total	0.8390	ABSENT	(0.0520/	0.8390 =	6.1979 %)	0.000
Ra-226	186.20	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Xe-125	188.43	0.5500	Present				
	243.40	0.2871	Present				
	Total	0.8371	PRESENT	(0.8371/	0.8371 =	100.0000 %)	0.000
In-114m	190.24	0.1564	Present				
	558.43	0.2850	Absent				
	725.24	0.2810	Absent				
	1283.67	0.0003	Absent				
	1299.83	0.0012	Absent				
	Total	0.7239	ABSENT	(0.1564/	0.7239 =	21.6052 %)	0.000
Mo-101	191.93	0.1810	Present				
	505.88	0.1135	Present				
	590.82	0.1930	Absent				
	695.53	0.0660	Absent				
	1012.35	0.1135	Absent				
	Total	0.6670	ABSENT	(0.2945/	0.6670 =	44.1529 %)	0.000
Ac-228	209.50	0.0001	Absent				
	338.70	0.0001	Unable to Calc				
	790.50	0.0001	Absent				
	911.20	0.0001	Unable to Calc				
	964.40	0.0001	Unable to Calc				
	968.80	0.0001	Unable to Calc				
	Total	0.0006	ABSENT	(0.0004/	0.0006 =	66.6667 %)	0.000
Xe-133m	233.20	0.1000	Present				
	Total	0.1000	PRESENT	(0.1000/	0.1000 =	100.0000 %)	0.000
Th-227	236.00	0.0001	Unable to Calc				
	329.90	0.0001	Absent				
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)	0.000
.-224	241.08	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Kr-79	261.30	0.1270	Absent				
	397.50	0.0950	Absent				
	511.00	0.1500	Present				
	606.10	0.0810	Present				
	Total	0.4530	ABSENT	(0.2310/	0.4530 =	50.9934 %)	0.000
Pa-231	283.60	0.0001	Absent				
	299.90	0.0001	Unable to Calc				
	302.50	0.0001	Absent				
	Total	0.0003	ABSENT	(0.0001/	0.0003 =	33.3333 %)	0.000
Ce-143	293.26	0.4200	Present				
	664.55	0.0525	Absent				
	721.96	0.0512	Absent				
	Total	0.5237	PRESENT	(0.4200/	0.5237 =	80.1986 %)	0.000
Ir-192	295.96	0.2872	Present				
	308.46	0.2965	Absent				
	316.51	0.8290	Absent				
	468.06	0.4808	Absent				
	612.45	0.0543	Present				
	Total	1.9478	ABSENT	(0.3415/	1.9478 =	17.5326 %)	0.000
Tl-210	296.00	0.0001	Unable to Calc				
	795.00	0.0001	Absent				
	1060.00	0.0001	Absent				
	1210.00	0.0001	Absent				
	1310.00	0.0001	Absent				
	Total	0.0005	ABSENT	(0.0001/	0.0005 =	20.0000 %)	0.000
Ag-113	298.40	0.0900	Present				
	Total	0.0900	PRESENT	(0.0900/	0.0900 =	100.0000 %)	0.000
Pa-233	300.10	0.0633	Present				

	277.60	0.1420	Absent					
	315.90	0.0150	Absent					
	334.30	0.0200	Present					
	Total	0.5770	ABSENT	(	0.0200/	0.5770 =	3.4662 %)	0.000
-152M	121.78	0.0720	Absent					
	344.20	0.0250	Absent					
	841.60	0.1470	Absent					
	963.50	0.1200	Present					
	Total	0.3640	ABSENT	(	0.1200/	0.3640 =	32.9670 %)	0.000
Eu-152	121.78	0.3068	Absent					
	244.67	0.0772	Absent					
	344.30	0.2720	Absent					
	778.90	0.1272	Absent					
	964.00	0.1433	Present					
	1085.80	0.1010	Absent					
	1112.07	0.1340	Absent					
	1408.08	0.2073	Absent					
	Total	1.3688	ABSENT	(	0.1433/	1.3688 =	10.4690 %)	0.000
HF-181	133.05	0.4300	Absent					
	136.25	0.0610	Absent					
	345.95	0.1400	Present					
	482.16	0.8600	Absent					
	Total	1.4910	ABSENT	(	0.1400/	1.4910 =	9.3897 %)	0.000
IN-116M	137.92	0.0350	Absent					
	244.59	0.0038	Absent					
	416.88	0.2937	Absent					
	463.13	0.0083	Absent					
	818.65	0.1372	Absent					
	1097.23	0.6791	Absent					
	1293.49	1.0000	Absent					
	1507.50	0.1186	Absent					
	1601.12	0.0107	Absent					
	1752.42	0.0289	Present					
	2212.21	0.1858	Absent					
	Total	2.5011	ABSENT	(	0.0289/	2.5011 =	1.1555 %)	0.000
Mo-99	140.51	0.0379	Absent					
	181.07	0.0629	Present					
	739.40	0.1260	Absent					
	Total	0.2268	ABSENT	(	0.0629/	0.2268 =	27.7266 %)	0.000
Ra-223	144.30	0.0001	Absent					
	154.30	0.0001	Absent					
	269.60	0.0001	Absent					
	338.60	0.0001	Unable to Calc					
	Total	0.0004	ABSENT	(	0.0001/	0.0004 =	25.0000 %)	0.000
Zn-72	144.70	0.8300	Absent					
	191.50	0.0940	Present					
	Total	0.9240	ABSENT	(	0.0940/	0.9240 =	10.1732 %)	0.000
Mg-27	170.82	0.0070	Absent					
	332.73	0.0100	Unable to Calc					
	843.80	0.7140	Absent					
	1014.50	0.2860	Absent					
	Total	1.0170	ABSENT	(	0.0100/	1.0170 =	0.9833 %)	0.000
Sb-125	176.29	0.0630	Absent					
	380.51	0.0140	Absent					
	427.95	0.2960	Absent					
	463.51	0.1000	Absent					
	600.77	0.1840	Absent					
	606.82	0.0520	Present					
	636.15	0.1120	Absent					
	671.66	0.0180	Absent					

	722.78	0.1130	Absent					
	1691.02	0.4900	Absent					
	Total	1.6583	ABSENT	(	0.9830/	1.6583 =	59.2776 %)	0.00
Bi-214	609.30	0.0001	Unable to Calc					
	768.40	0.0001	Absent					
	1120.30	0.0001	Absent					
	1764.50	0.0001	Absent					
	Total	0.0004	ABSENT	(	0.0001/	0.0004 =	25.0000 %)	0.00

PEAK CONTRIBUTION CORRECTION

Pk#	Old Area	Nuclide	Reference Energy Line ===>> Energy	cts/dis	Ref Area	Calculated Contribution Energy	cts/dis	New Area
3	273	TH-232	911.07	7.85e-004	111	238.63	3.56e-003	273
5	61	TH-232	911.07	7.85e-004	111	338.40	7.55e-004	61
8	133	TH-232	911.07	7.85e-004	111	583.14	1.23e-003	133

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
3	0	Xe-133m	233.20	Deleted [Net < Critical Level]
3	0	Ra-224	241.08	Deleted [Net < Critical Level]
3	0	Xe-125	243.40	Deleted [Net < Critical Level]
5	0	Au-196	332.90	Deleted [Net < Critical Level]
5	0	In-115m	336.20	Deleted [Net < Critical Level]
8	0	Tl-208	583.14	Deleted [Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
Xe-125	188.43	0.5500	Present					
	243.40	0.2871	Absent					
	Total	0.8371	ABSENT	(	0.5500/	0.8371 =	65.7030 %)	0.000
Xe-133m	233.20	0.1000	Absent					
	Total	0.1000	ABSENT	(	0.0000/	0.1000 =	0.0000 %)	0.000
Ra-224	241.08	0.0001	Absent					
	Total	0.0001	ABSENT	(	0.0000/	0.0001 =	0.0000 %)	0.000
Au-196	332.90	0.2300	Absent					
	355.70	0.8760	Present					
	Total	1.1060	ABSENT	(	0.8760/	1.1060 =	79.2043 %)	0.000
In-115m	336.20	0.4590	Absent					
	Total	0.4590	ABSENT	(	0.0000/	0.4590 =	0.0000 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc					
	583.14	0.0001	Absent					
	Total	0.0002	ABSENT	(	0.0001/	0.0002 =	50.0000 %)	0.000

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)	Halflife (hrs)	Peaks Found	MPC Fraction
TH-232	Average:	9.79e-001 +-7.51e-002	1.24e+014	5 of 6	0.00
	238.63	7.88e-001 +-1.06e-001			

	338.40	8.29e-001	+-3.21e-001			
	583.14	1.11e+000	+-1.55e-001			
	911.07	1.45e+000	+-2.02e-001			
	968.90	1.08e+000	+-2.82e-001			
-226	186.20		BKG	1.00e+012	1 of 1	
e-143	293.26	4.09e-001	+-9.46e-002	3.30e+001	1 of 3	2.04
Ag-113	298.40	2.01e+000	+-4.66e-001	5.37e+000	1 of 1	
Pt-197m	346.50	6.47e+000	+-5.72e-001	1.57e+000	1 of 1	
Bi-211	351.00		BKG	1.00e+012	1 of 1	
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	6.70e+001	+-1.19e+001	9.39e+004	1 of 1	
TOTAL:		7.69e+001 pCi	/g		MPC Total:	2.04

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
607.22	1245.27	149	19	26	81	1.43	1.083e+001
1454.69	3007.18	358	20	12	13	2.55	5.517e+001
1756.16	3633.93	42	8	10	7	2.04	7.613e+000

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GDR_C Version 5.0

Sample ID : SC-2

Sample Size . . . . . 6.10e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-09-97 14:32	Counting Start. 10-09-97 14:32
Sampling Stop 10-09-97 14:32	Live Time . . . . . 3600 Sec
Current Date. 10-14-97 10:02	Real Time . . . . . 0 Sec

Detector #: 22

Energy(keV)= 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity 2.00	Search Start / End. . . . . 0 / 4095
Sigma Multiplier. 1.00	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	238.07	477.81	119	20	26	156	1.04	a
2	240.01	481.86	291	31	46	304	1.08	b
3	350.79	712.16	34	20	34	147	1.00	a NET < CL
4	353.51	717.81	74	27	48	219	1.21	b
5	512.46	1048.28	65	20	34	127	1.26	
6	585.17	1199.44	138	18	25	68	1.32	
7	606.47	1243.72	56	19	33	94	1.55	a
8	611.43	1254.04	88	20	34	97	1.38	b
9	913.74	1882.54	70	14	23	42	1.14	
10	1452.70	3003.03	105	14	20	30	2.57	
11	1464.21	3026.97	282	18	14	17	1.93	

Neely Nuclear Research Center

Quantum Technology

GDR_C Nuclide Activity Summary

Sample ID: SC-2

Sample Size . . . . . 6.10e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-09-97 14:32	Counting Start. 10-09-97 14:32
Sampling Stop 10-09-97 14:32	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 10-14-97 10:02	Decay Time. . . . . 0.00e+000 Hrs
Efficiency Filec:\gdr\eff\550mlliq.ef	Library File. . .c:\gdr\library\nes.lib
ID.	IDGeneral Radionuclide Analysis Library

Eff.= 1/[6.66e-002*En^-2.92e+000 + 4.02e+002*En^8.62e-001] 12-05-96 10:47

Gamma Fraction Limit >= . . . 80.00 %	Decay Limit <=. . . . 8.000 Halflives

INITIAL NUCLIDE IDENTIFICATION

Pk#	Energy	Counts	Nuclide	Energy	Fraction	Eff	Decay	Conc
1	238.07	119	Xe-133m	233.20	0.1000	8.26e-003	9.94e-001	1.78e+000
1	238.07	119	Fr-223	234.60				
1	238.07	119	Th-227	236.00				
1	238.07	119	U-235	236.00	0.1100	8.26e-003	1.00e+000	1.61e+000
1	238.07	119	TH-232	238.63	0.4310	8.26e-003	1.01e+000	4.08e-001
2	240.01	291	Te-131m	240.93	0.0755	8.21e-003	9.89e-001	5.84e+000
2	240.01	291	Ra-224	241.08				
2	240.01	291	Xe-125	243.40	0.2871	8.21e-003	9.80e-001	1.55e+000
2	240.01	291	IN-116M	244.59	0.0038	8.21e-003	6.99e-001	1.64e+002
2	240.01	291	Eu-152	244.67	0.0772	8.21e-003	1.00e+000	5.65e+000
2	240.01	291	Sm-155	245.73	0.0373	8.21e-003	4.51e-001	2.59e+001
4	353.51	74	Bi-211	351.00				
4	353.51	74	U-235	351.10	0.1200	6.05e-003	1.00e+000	1.26e+000
4	353.51	74	U-238	351.99	0.3710	6.05e-003	1.00e+000	4.05e-001
4	353.51	74	Au-196	355.70	0.8760	6.05e-003	9.98e-001	1.72e-001
4	353.51	74	Ba-133	356.00	0.6200	6.05e-003	1.00e+000	2.43e-001
5	512.46	65	Te-121	507.59	0.1767	4.42e-003	9.99e-001	1.03e+000
5	512.46	65	Tl-208	510.72				
5	512.46	65	Kr-79	511.00	0.1500	4.42e-003	9.90e-001	1.22e+000
5	512.46	65	Annihila	511.00	1.0000	4.42e-003	1.00e+000	1.81e-001
5	512.46	65	Zn-71m	511.55	0.2806	4.42e-003	9.17e-001	7.04e-001
5	512.46	65	Rh-106m	511.70	0.8640	4.42e-003	8.56e-001	2.45e-001
5	512.46	65	KR-85	514.00	0.0041	4.42e-003	1.00e+000	4.41e+001
6	585.17	138	Tl-208	583.14				
6	585.17	138	TH-232	583.14	0.3090	3.95e-003	1.01e+000	1.38e+000
6	585.17	138	Mo-101	590.82	0.1930	3.95e-003	3.31e-001	6.73e+000
7	606.47	56	Sb-125	600.77	0.1840	3.83e-003	1.00e+000	9.79e-001
7	606.47	56	Sb-124	602.72	0.9830	3.83e-003	1.00e+000	1.83e-001
7	606.47	56	Cs-134	604.66	0.9756	3.83e-003	1.00e+000	1.85e-001
7	606.47	56	Kr-79	606.10	0.0810	3.83e-003	9.90e-001	2.25e+000
7	606.47	56	Sb-125	606.82	0.0520	3.83e-003	1.00e+000	3.46e+000
8	611.43	88	Bi-214	609.30				
8	611.43	88	U-238	609.32	0.4609	3.80e-003	1.00e+000	6.17e-001

8	611.43	88	Ir-192	612.45	0.0543	3.80e-003	1.00e+000	3.25e-00
8	611.43	88	Ag-108m	614.37	0.9320	3.80e-003	1.00e+000	3.06e-00
8	611.43	88	Rh-106m	616.10	0.2040	3.80e-003	8.56e-001	1.63e+00
8	611.43	88	Ag-112	617.40	0.4200	3.80e-003	8.97e-001	7.56e-00
9	913.74	70	TH-232	911.07	0.2900	2.69e-003	1.01e+000	1.09e+00
9	913.74	70	Ac-228	911.20				
9	913.74	70	Sb-129	914.60	0.2140	2.69e-003	9.25e-001	1.62e+00
11	1464.21	282	K-40	1460.81	0.1070	1.79e-003	1.00e+000	1.81e+00

INITIAL NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
U-238	77.11	0.1070	Absent					
	295.22	0.1920	Absent					
	351.99	0.3710	Present					
	609.32	0.4609	Present					
	1764.28	0.1504	Absent					
	Total	1.2813	ABSENT	(0.8319/	1.2813 =	64.9262 %)		0.000
TH-232	77.11	0.1750	Absent					
	238.63	0.4310	Present					
	338.40	0.1201	Absent					
	583.14	0.3090	Present					
	911.07	0.2900	Present					
	968.90	0.1746	Absent					
	Total	1.4997	ABSENT	(1.0300/	1.4997 =	68.6804 %)		0.000
Fr-223	80.00	0.0001	Absent					
	234.60	0.0001	Unable to Calc					
	Total	0.0002	ABSENT	(0.0001/	0.0002 =	50.0000 %)		0.000
-133	81.00	0.3429	Absent					
	276.40	0.0709	Absent					
	302.85	0.1816	Absent					
	356.00	0.6200	Present					
	383.85	0.0897	Absent					
	Total	1.3051	ABSENT	(0.6200/	1.3051 =	47.5059 %)		0.000
U-235	81.07	0.1480	Absent					
	83.78	0.2460	Absent					
	143.76	0.1050	Absent					
	185.72	0.5400	Absent					
	236.00	0.1100	Present					
	269.60	0.1340	Absent					
	351.10	0.1200	Present					
	Total	1.4030	ABSENT	(0.2300/	1.4030 =	16.3934 %)		0.000
Te-131m	102.06	0.0790	Absent					
	149.71	0.2054	Absent					
	200.63	0.0752	Absent					
	240.93	0.0755	Present					
	334.27	0.0952	Absent					
	452.30	0.0567	Absent					
	773.67	0.3800	Absent					
	782.49	0.0775	Absent					
	793.75	0.1380	Absent					
	822.78	0.0609	Absent					
	852.21	0.2093	Absent					
	1125.46	0.1137	Absent					
	1206.60	0.0971	Absent					
	Total	1.6635	ABSENT	(0.0755/	1.6635 =	4.5386 %)		0.000
Sm-155	104.30	0.7464	Absent					
	141.41	0.0202	Absent					

	141.41	0.0202	Absent					
	245.73	0.0373	Present					
	Total	0.8039	ABSENT	(	0.0373/	0.8039 =	4.6425 %)	0.000
Np-239	106.10	0.2320	Absent					
	209.80	0.0410	Absent					
	228.10	0.1270	Absent					
	277.60	0.1420	Absent					
	315.90	0.0150	Absent					
	334.30	0.0200	Present					
	Total	0.5770	ABSENT	(	0.0200/	0.5770 =	3.4662 %)	0.000
EU-152M	121.78	0.0720	Absent					
	344.20	0.0250	Present					
	841.60	0.1470	Absent					
	963.50	0.1200	Absent					
	Total	0.3640	ABSENT	(	0.0250/	0.3640 =	6.8681 %)	0.000
Eu-152	121.78	0.3068	Absent					
	244.67	0.0772	Present					
	344.30	0.2720	Present					
	778.90	0.1272	Absent					
	964.00	0.1433	Absent					
	1085.80	0.1010	Absent					
	1112.07	0.1340	Absent					
	1408.08	0.2073	Absent					
	Total	1.3688	ABSENT	(	0.3492/	1.3688 =	25.5114 %)	0.000
IN-116M	137.92	0.0350	Absent					
	244.59	0.0038	Present					
	416.88	0.2937	Absent					
	463.13	0.0083	Absent					
	818.65	0.1372	Absent					
	1097.23	0.6791	Absent					
	1293.49	1.0000	Absent					
	1507.50	0.1186	Absent					
	1601.12	0.0107	Absent					
	1752.42	0.0289	Absent					
	2212.21	0.1858	Absent					
	Total	2.5011	ABSENT	(	0.0038/	2.5011 =	0.1519 %)	0.000
Fe-59	142.65	0.0103	Absent					
	192.34	0.0311	Present					
	1099.22	0.5680	Absent					
	1291.56	0.4320	Absent					
	Total	1.0414	ABSENT	(	0.0311/	1.0414 =	2.9864 %)	0.000
Ra-223	144.30	0.0001	Absent					
	154.30	0.0001	Absent					
	269.60	0.0001	Absent					
	338.60	0.0001	Unable to Calc					
	Total	0.0004	ABSENT	(	0.0001/	0.0004 =	25.0000 %)	0.000
Zn-72	144.70	0.8300	Absent					
	191.50	0.0940	Present					
	Total	0.9240	ABSENT	(	0.0940/	0.9240 =	10.1732 %)	0.000
Sb-125	176.29	0.0630	Absent					
	380.51	0.0140	Absent					
	427.95	0.2960	Absent					
	463.51	0.1000	Absent					
	600.77	0.1840	Absent					
	606.82	0.0520	Present					
	636.15	0.1120	Absent					
	671.66	0.0180	Absent					
	Total	0.8390	ABSENT	(	0.0520/	0.8390 =	6.1979 %)	0.000
Ra-226	186.20	0.0001	Unable to Calc					
	Total	0.0001	PRESENT	(	0.0001/	0.0001 =	100.0000 %)	0.000

Pa-233	300.10	0.0633	Present				
	311.90	0.3700	Absent				
	Total	0.4333	ABSENT	(0.0633/	0.4333 =	14.6088 %)	0.000
Au-196	332.90	0.2300	Absent				
	355.70	0.8760	Present				
	Total	1.1060	ABSENT	(0.8760/	1.1060 =	79.2043 %)	0.000
In-115m	336.20	0.4590	Present				
	Total	0.4590	PRESENT	(0.4590/	0.4590 =	100.0000 %)	0.000
Ru-95	336.40	0.7100	Present				
	1096.80	0.2100	Absent				
	Total	0.9200	ABSENT	(0.7100/	0.9200 =	77.1739 %)	0.000
Cs-136	340.60	0.4890	Present				
	340.60	0.4676	Present				
	818.50	0.9970	Absent				
	818.50	0.9970	Absent				
	1048.07	0.7976	Absent				
	1048.10	0.7980	Absent				
	1235.34	0.1974	Absent				
	Total	4.7436	ABSENT	(0.9566/	4.7436 =	20.1661 %)	0.000
Bi-211	351.00	0.0001	Unable to Calc				
	Total	0.0001	PRESENT	(0.0001/	0.0001 =	100.0000 %)	0.000
Zn-71m	386.28	0.9200	Absent				
	487.34	0.6164	Absent				
	511.55	0.2806	Present				
	596.97	0.2760	Absent				
	620.19	0.5612	Absent				
	Total	2.6542	ABSENT	(0.2806/	2.6542 =	10.5719 %)	0.000
Ag-108m	434.00	0.9050	Absent				
	614.37	0.9320	Present				
	722.95	0.9230	Absent				
	Total	2.7600	ABSENT	(0.9320/	2.7600 =	33.7681 %)	0.000
[illegible]-106m	450.80	0.2450	Absent				
	511.70	0.8640	Present				
	616.10	0.2040	Present				
	748.50	0.1950	Absent				
	1046.70	0.3070	Absent				
	Total	1.8150	ABSENT	(1.0680/	1.8150 =	58.8430 %)	0.000
Te-121	507.59	0.1767	Present				
	573.14	0.8030	Absent				
	Total	0.9797	ABSENT	(0.1767/	0.9797 =	18.0361 %)	0.000
Tl-208	510.72	0.0001	Unable to Calc				
	583.14	0.0001	Unable to Calc				
	Total	0.0002	PRESENT	(0.0002/	0.0002 =	100.0000 %)	0.000
Annihila	511.00	1.0000	Unable to Calc				
	Total	1.0000	PRESENT	(1.0000/	1.0000 =	100.0000 %)	0.000
KR-85	514.00	0.0041	Present				
	Total	0.0041	PRESENT	(0.0041/	0.0041 =	100.0000 %)	0.000
Sb-129	544.70	0.1920	Absent				
	812.80	0.4600	Absent				
	914.60	0.2140	Present				
	1030.10	0.1350	Absent				
	Total	1.0010	ABSENT	(0.2140/	1.0010 =	21.3786 %)	0.000
Bi-214	609.30	0.0001	Unable to Calc				
	768.40	0.0001	Absent				
	1120.30	0.0001	Absent				
	1764.50	0.0001	Absent				
	Total	0.0004	ABSENT	(0.0001/	0.0004 =	25.0000 %)	0.000
[illegible]-40	1460.81	0.1070	Present				
	Total	0.1070	PRESENT	(0.1070/	0.1070 =	100.0000 %)	0.000

PEAK CONTRIBUTION CORRECTION

:#	Old Area	Nuclide	Reference Energy Line Energy	cts/dis	Ref Area	===>> Calculated Contribution Energy	cts/dis	New Area
3	305	TH-232	911.07	7.80e-004	82	238.63	3.54e-003	305
5	123	TH-232	911.07	7.80e-004	82	338.40	7.51e-004	79
8	125	TH-232	911.07	7.80e-004	82	583.14	1.22e-003	125

PEAK INTERFERENCE CORRECTION

Pk#	New Area	Nuclide	Energy	Status
3	0	Ra-224	241.08	Deleted [Net < Critical Level]
3	0	Xe-125	243.40	Deleted [Net < Critical Level]
5	44	In-115m	336.20	Net Counts Corrected
5	44	HF-175	343.40	Net Counts Corrected
8	0	Tl-208	583.14	Deleted [Net < Critical Level]

SECONDARY NUCLIDE EVALUATION

Nuclide	Energy	Fraction	Status					Halflives
Xe-125	188.43	0.5500	Present					
	243.40	0.2871	Absent					
	Total	0.8371	ABSENT	(	0.5500/	0.8371 =	65.7030 %)	0.000
Ra-224	241.08	0.0001	Absent					
	Total	0.0001	ABSENT	(	0.0000/	0.0001 =	0.0000 %)	0.000
.l-208	510.72	0.0001	Unable to Calc					
	583.14	0.0001	Absent					
	Total	0.0002	ABSENT	(	0.0001/	0.0002 =	50.0000 %)	0.000

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (pCi /g)		Halflife (hrs)	Peaks Found	MPC Fraction
TH-232	Average:	1.03e+000	+-7.71e-002	1.24e+014	5 of 6	0.00
	238.63	9.43e-001	+-1.04e-001			
	338.40	1.15e+000	+-3.29e-001			
	583.14	1.12e+000	+-1.66e-001			
	911.07	1.15e+000	+-2.22e-001			
	968.90	1.10e+000	+-3.14e-001			
HF-175	343.40	8.94e-002	+-4.59e-002	1.68e+003	1 of 3	
Ra-226	186.20		BKG	1.00e+012	1 of 1	
Ce-143	293.26	3.58e-001	+-1.03e-001	3.30e+001	1 of 3	1.79
Ag-113	298.40	1.76e+000	+-5.05e-001	5.37e+000	1 of 1	
In-115m	336.20	1.83e-001	+-9.38e-002	4.49e+000	1 of 1	
Bi-211	351.00		BKG	1.00e+012	1 of 1	
Annihila	511.00		I.D.Only	1.00e+003	1 of 1	
KR-85	514.00	7.93e+001	+-1.23e+001	9.39e+004	1 of 1	
"-40	1460.81	2.33e+001	+-1.24e+000	1.12e+013	1 of 1	
TOTAL:		1.06e+002 pCi /g			MPC Total:	1.79

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
511.38	1253.93	163	21	30	100	1.66	1.191e+001

Neely Nuclear Research Center

Quantum Technology
GDR_C Version 5.0

Sample ID : SC-3

Sample Size . . . . . 6.80e+002 g	Spectrum File . . . . . .TEMP.SPC
Sampling Start. 10-09-97 15:59	Counting Start. 10-09-97 15:59
Sampling Stop 10-09-97 15:59	Live Time . . . . . 3600 Sec
Current Date. 10-14-97 10:03	Real Time . . . . . 0 Sec

Detector #: 22

Energy(keV)= 8.24 + 0.481*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 12-05-96 10:47

FWHM(keV) = 0.98 + 0.006*En + 6.22e-004*En^2 + 0.00e+000*En^3 12-05-96 10:47
Where En = Sqrt(Energy in keV)

Sensitivity 2.00	Search Start / End. . . . . 0 / 4095
Sigma Multiplier. 1.00	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	78.65	146.38	56	38	67	620	0.71	NET < CL
2	187.21	372.07	88	34	59	428	0.64	
3	240.02	481.88	305	34	52	367	1.11	
4	296.83	599.98	94	27	47	247	1.16	
5	339.61	688.92	123	23	36	159	1.32	
6	353.46	717.71	177	28	48	229	1.02	
7	513.07	1049.54	130	20	31	99	1.50	
8	585.27	1199.65	125	19	27	83	1.18	
9	611.38	1253.93	163	21	30	100	1.66	
10	914.09	1883.26	82	16	25	58	1.44	
11	971.52	2002.67	45	13	21	47	1.66	
12	1464.29	3027.13	405	22	15	20	2.18	