DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, DC 20307-5001

REPLY TO
ATTENTION OF:
MCHL-HP

23 June 1997

MEMORANDUM FOR Record

SUBJECT: Decommissioning Survey of Building 149A Forest Glen Annex

1. A decommissioning survey was conducted in building 149A, Forest Glen Annex on 25 April 1997. The building was surveyed with survey meters for detectable contamination. In addition swipes were collected for each square meter of the floor area and up 5 feet on every inside wall for removable contamination.

2. The building was used as a short term package storage location for shipments that arrived after normal duty hours or on weekends. No unsealed radioactive material was used at this location. The packages were stored in a freezer, refrigerator, or at room temperature depending on the package label recommendation. Based on the knowledge of the site history and previous survey information this building was not expected to contain any residual radioactive contamination.

3. A historical review indicated that no spills or unusual occurrences happened at this location.

4. The floor of the building was grided off in 3 foot squares. The grided areas were labeled as indicated in enclosure 1. The inside walls were grided from the floor to 3 feet and labeled as the floor grid coordinate plus a reference direction (N=north, E=east, S=south, W=west) and a number 1. From 3 feet up to 5 feet as the floor coordinate, reference direction and number 2. An example of a wall coordinate is A1N1 for the area on the wall adjacent to the floor coordinate A1, in the north reference direction, and the lower grid coordinate from the floor up to 3 feet.

5. The survey instrumentation was chosen to provide the highest sensitivity for detecting alpha, beta, or gamma radiation. The calibration and sensitivity data for all instrumentation used in this report is included in enclosure 2.

6. Every square yard of the floor of building 149A was grided and directly surveyed for gamma contamination using the Eberline ESP-1, serial number 975. The results of that survey are

included in columns 1 and 4 of enclosure 3. The meter was checked for proper operation and calibrated against a NIST traceable check source. The check source was 1.81 μCi of Cs-137 as of December 1972 source number 475. The decayed source strength at the time of the survey was about 1.03 μCi of Cs-137. The measured activity of this check source was 8.0E4 CPM. The measured background level was 1.45E3 CPM. Eighteen grid locations exceeded 200 DPM above background, and six locations exceeded 2000 DPM above background (enclosure 4). The swipes from these locations indicated no contamination. All areas that had readings in excess of 200 DPM were resurveyed on 24 June 1997 and no measurements exceeding 200 DPM above background were found (enclosure 12).

7. A Ludlum L-3 with an unshielded beta probe was used to directly survey the floor of building 149A for beta or gamma contamination. The results of the survey were recorded in columns 2 and 5 of enclosure 3. The meter was checked for proper operation and calibrated against a NIST traceable check source. The check source was 0.0064 μCi of Am-241 as of February 1970. The decayed source strength at the time of the survey was about 0.0064 μCi of Am-241. The measured activity of this check source was 18E3 CPM. The measured background level was 80 CPM. The results of this survey indicated that no beta contamination was present in building 149A (enclosure 5). Note that C-14 and tritium which emit very low energy beta radiation may not be detectable using this survey meter.

8. The AN/PDR-77, serial number 798A was used to directly survey the floor of building 149A for alpha contamination. The results of the survey were recorded in columns 3 and 6 of enclosure 3. The meter was checked for proper operation and calibrated against a NIST traceable check source. The check source was 0.0064 μCi of Am-241 as of February 1970. The decayed source strength at the time of the survey was about 0.0064 μCi of Am-241. The measured activity of this check source was 10,200 CPM. The measured background level was 140 CPM. The results of this survey indicated that no alpha contamination was present in building 149A (enclosure 6).

9. Swipes were taken in each grid location and on every inside wall for removable contamination. The swipes were put in marked vials and analyzed in a Packard A5530 automatic gamma counter. The background was counted for 10 minutes and the samples were

counted for 2 minutes each. The results are background subtracted and printed in enclosure 7. A diagram of the floor plan of the building with the walls is included as enclosure 8. The results of this survey indicate that no removable gamma contamination was present in building 149A.

10. After the swipes were analyzed in the auto-gamma counter, 10 ml of liquid scintillation fluid was added to each vial and the vials were counted in a Packard 2500LX automatic liquid scintillation counter. The background was counted for 10 minutes and the samples were counted for 2 minutes each. The results are background subtracted and printed in enclosure 9. A diagram of the floor plan of the building with the walls is included as enclosure 10. The results of this survey indicate that no removable alpha or beta contamination was present in building 149A.

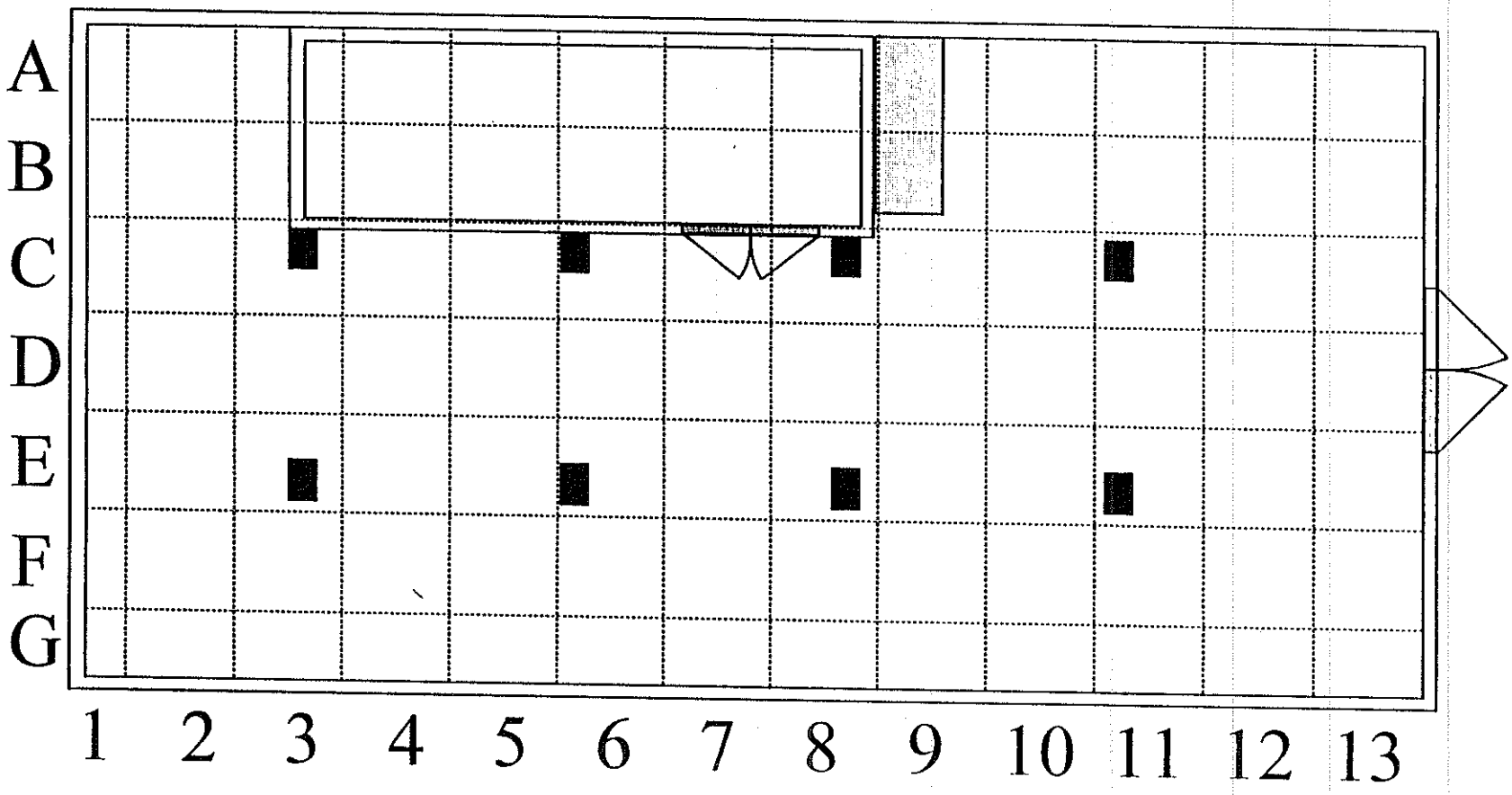
11. A final survey was performed on a refrigerator that was used to temporarily store packages on 25 April 1997. The item was a Pfeifer & Son refrigerator, MMCN B8864. A Ludlum L-3 with an unshielded pancake probe, serial number 18103, as well as swipes were used to check for any radioactive contamination. The survey meter, the auto-gamma counter, and the liquid scintillation counter all indicated no contamination was present on the refrigerator (enclosure 11).

12. Based on the results of this survey, building 149A, Forest Glen Annex, can be removed from the WRAMC NRC license and is considered free from radioactive contamination.

12 Encls
as

ARTHUR R. MORTON
CPT, MS
Chief, Operations Branch, HPO

Building 149A Bunker



BNL 1

TSC-ABERDEEN,APG.MD.

SURVEY INSTRUMENT CALIBRATION REPORT
AN/PDR-77

Serial Number: Ø798A Radionuclide: Cs-137

OUIC: W2DH01

PUIC: W4TGQC

Battery Check: OK

Beta/Gamma Probe Low Range Detector (DT-616/VDR-2)			
Applied	Read		Correction Factor
2 R/hr	1.98	K mR/hr	1.01
200 mR/hr	200	mR/hr	1.00
80 mR/hr	79.8	mR/hr	.997
20 mR/hr	19.6	mR/hr	1.02
8 mR/hr	8.3	mR/hr	.96
0.8 mR/hr	.803	mR/hr	.997
0.08 mR/hr	.078	mR/hr	1.02

Beta/Gamma Probe High Range Detector (DT-616/VDR-2)			
Applied	Read		Correction Factor
200 R/hr	203	K mR/hr	1.02
80 R/hr	83.3	K mR/hr	1.05
20 R/hr	21.8	K mR/hr	1.09
8 R/hr	8.29	K mR/hr	.96

Calibration Report Number: W2DH01Ø12C

Date: 7MAY97

CALIBRATION DUE DATE: 7NOV97

ENCL 2

Radionuclide: Pu-239 SERIAL NUMBER 01798

Alpha Probe (DT-669/PDR-77)		
Applied	Read	Correction Factor
130 K cpm	131 K cpm	.99
10.7 K cpm	11.4 K cpm	.94
.871 K cpm	.860 K cpm	1.01
* Check Source	9.18 K cpm	N/A

* Check source (Th-232) measurement obtained with Alpha side up, centered, and flush against detector.

Radionuclide: Am-241

X-ray Probe (DT-674/PDR-77)				
Energy Window Position	Calibration Position	Applied	Read	Correction Factor
17 KeV	* Center	24.1 K cpm	23.9 K cpm	1.00
17 KeV	**	Check Source	1.15 K cpm	N/A
60 KeV	Center	45.6 K cpm	K cpm	1.01
60 KeV	**	Check Source	2.39 K cpm	N/A

* Center measurements were obtained 12 inches directly above source.

** Check source (Th-232) measurement obtained with X-ray side up, centered, and flush against detector.

Calibration Report Number: WADHOLO12C

Date: 9 MAY 01

CALIBRATION DUE DATE 5 NOV 01

Jackie D. Dean
In Charge of Calibration

Reviewer

AREA NUCLEONICS LABORATORY
REPORT OF CALIBRATION
FOR
RADIAC SET/SURVEY METER

MODEL:ESP-2
SERIAL NO.:975

SUBMITTED BY:

W2DHØ1

The measurements were performed Under ambient conditions of Approximately 22.7 Degrees C and 4Ø Percent relative humidity.

This instrument was calibrated in accordance with TB9-6665-285-15, Army Calibration Program for Radiac Meters.

The reference standard for this calibration is an Atlan-Tech Cesium 137 source,serial number Ø393-1Ø2, Model GC6Ø, Calibrated 9 DEC.1996.

Calibration uncertainty including measuring errors and accuracy of the reference standard is +/-1Ø%.

This calibration is traceable to and compatible with National Institute of Standards and Technology (NIST) measurements.

In charge of Test:

THOMAS KACZOROWSKI

DAVID A. JAMISON
Radiation Protection Officer
US Army DTSC-Aberdeen

Calibration Report No.:W2DHØ1190C
Calibration Date: 22 MAR 97
Calibration Due Date: 2Ø JUL 97

RADIAC INSTRUMENT DATA SHEET

HIGH VOLTAGE=1000V DT= 1.40-05 CC= 1.00+00

INSTRUMENT MAKE: EBERLINE MODEL NO.: ESP-2 SER.NO.:975

PROBE TYPE:HB63K/5 SERIAL NO: LS177R RATE:50KCPM/mR/HR

CALIBRATION GEOMETRY:

SCALE	SOURCE	ATTN	DISTANCE CM	INSTRUMENT METER READING RATE mR/HR	CPM BEFORE	ADJUSTMENT CPM AFTER
DIGITAL	150mci	X2,X10	146.89	1	44.1K	
	150mci	X2,X10	208.58	.5	21.1K	
	150mci	X4,X100	121.66	.1	3.99K	

Background Reading= .278K

CALIBRATION REPORT NO.W2DH01190C DATE 22 MAR 97

1. JOB ORDER NUMBER	2. PRIORITY	3. ID CODE	4. TB	5. TM
97064-6	13	L7827	MFR MANUAL	

6. SCHEDULE UIC	7. OWNER UIC	8. SERIAL NUMBER	9. MODEL NUMBER	10. MFG CODE
W459QC	W2DH01	975	ESP2	04596

11. NATIONAL STOCK NUMBER	12. DUE DATE	13. INT	14. SYS CODE	15. NOMENCLATURE	16. WORK C/T
6665013483931	8 Mar 97	D	505	METR RADIAC	

17. LEV	18. ACT DATE	19. PERFORM UIC	20. TYPE STANDARD	21. ERC	22. UPDATE	23. REPORT
S	97081	W459QC	MW ELEC PHYS IR RAD E		ADD CHAN-GE DE-LETE	

24. CHANGE DATA

25. DEFICIENCIES/SYMPTOMS

FUND CODE: D PEC: 7R1001

26. STATUS

PUIC	CODE	DATE	INIT
QC	N	97081	TR

27. CALIBRATION CONDITION

- A [X] WITHIN TOLERANCE
- B [ ] OUT OF TOLERANCE

28. REPAIR/ADJUSTMENT

- A [ ] BY TEAM/LAB
- B [ ] DEFERRED MAINT
- C [ ] NRTS/ CODE OUT

29. REPAIR TECH CODE	29. REPAIR HOURS	30. CALIBRATION TECH CODE	30. CALIBRATION HOURS
		TR	02.5

31. PARTS ADJUSTED*

32. PARTS REPLACED/

33. REMARKS @

34. PARTS REQUISITIONED

REF DESIG	NOMENCLATURE	MFG CODE	NSN/PN	QTY	UNIT ISSUE	UNIT COST	DOCUMENT NUMBER	RECEIVED

35. SUBMITTED	36. RECEIVED UNDER LIMITED TECHNICAL INSPECTION	37. ACCEPTED
BY: [signature] DATE: 5/3/97	BY: [signature] DATE: 97064	BY: DATE:

AMXTM FORM 34A, 1 DEC 87 Previous Edition May Be Used

DEPARTMENT OF THE ARMY

US ARMY TMDE/SUPPORT CENTER-ABERDEEN
ABERDEED PROVING GROUNDS,MD.

AREA NUCLEONICS LABORATORY
REPORT OF CALIBRATION
FOR
RADIAC SET/SURVEY METER

MODEL:ANALYST
SERIAL NO.:A948P

SUBMITTED BY:

W2DHØ1

The measurements were performed under ambient conditions of approximately 22.7 Degrees C and 40 percent relative humidity.

This instrument was calibrated In accordance with TB9-6665-285-15, Army Calibration Program for Radiac Meters.

The reference standard for this Calibration in a model 500-2 LUDLUM Pulser, serial number 129168, Calibrated 5 MAR. 1997.

Calibration uncertainty including measuring errors and the accuracy of the reference standard is +/- 10%.

This calibration is traceable to and compatible with National Institute of standards and technology (NIST) measurements.

In charge of test:

ATLAN-TECH,Model GC66,Cs-137, Used to check BETA/GAMMA probes only.

SCALE	SOURCE	ATTN	DISTANCE CM
X1K	7.150mCi	X2.X10	146.95

AN/UDM-6,PU-239,used to check ALPHA probe only.

X1K	7.1	AN/UDM6	15.2K

DAVID A.JAMISON

mR/HR
1

DAVID A. JAMISON
Radiation Protection Officer
US. ARMY DTSC-Aberdeen

Calibration Report No.:DW2DHØ1124C
Calibration Date: 29 MAY 97
Calibration Due Date: 25 NOV.97
Page 1 of 2 pages

RADIAC INSTRUMENT DATA SHEET

INSTRUMENT MAKE: BICRON MODEL NO.: ANALYST SER.NO.: A948P

PROBE TYPE: G5 SERIAL NO.: A3760 RATE: 200KCPM/mR/HR

CALIBRATION GEOMETRY: 

SCALE	SOURCE	ATTN	DISTANCE CM	INSTRUMENT METER READING RATE CPM	BEFORE	ADJUSTMENT AFTER
X1K				400K	400K	
				100K	100K	
X100				40K	39K	
				10K	10K	
X10				4K	3.9K	
				1K	1K	
X1				400	398	
				100	100	

ATLAN-TECH, Model GC60, Cs-137, Used to check GAMMA probe only.

SCALE	SOURCE	ATTN	DISTANCE CM	mR/HR	+/- 20%	CPM
X1K	150mci	X2, X10	146.89	1		125K

AN/UDM-6, PU-239, used to check ALPHA probe only.

			CPM	
X100	P-1647	AN/UDM6	16.5K	NOT USED

SENSITIVITY: 100 mV

HIGH VOLTAGE: 1200 V

CALIBRATION REPORT NO.: W2DH01124C DATE: 29 MAY 97

1. JOB ORDER NUMBER	2. PRIORITY	3. ID CODE	4. TB	5. TM
DC127-24		A516Q		

6. SCHEDULE UIC	7. OWNER UIC	8. SERIAL NUMBER	9. MODEL NUMBER	10. MFG CODE
W4590C	W2DH01	0948F	ANALYST	1061?

11. NATIONAL STOCK NUMBER	12. DUE DATE	13. INT	14. SYS CODE	15. NOMENCLATURE	16. WORK C/T
6665000000000	15 Feb 97	F	U82	METR RADIAC	

17. LEV	18. ACT DATE	19. PERFORM UIC	20. TYPE STANDARD					21. ERC	22. UPDATE			23. REPORT
F	6 JAN 97	W4590C	MW	ELEC	PHYS	IR	RAD E		ADD	CHANGE	DELETE	

24. CHANGE DATA

25. DEFICIENCIES/SYMPTOMS

A3760-7004

1246

FUND CODE: D PBCT PR1001

26. STATUS				27. CALIBRATION CONDITION	28. REPAIR/ADJUSTMENT	29. REPAIR		30. CALIBRATION	
PUIC	CODE	DATE	INIT			TECH CODE	HOURS	TECH CODE	HOURS
				A X WITHIN TOLERANCE	A BY TEAM/LAB			2	4.3
				B OUT OF TOLERANCE	B DEFERRED MAINT				
C	M	7 JAN 97	AT		C NRTS/ CODE OUT				

31. PARTS ADJUSTED*

32. PARTS REPLACED/

33. REMARKS @

34. PARTS REQUISITIONED

REF DESIG	NOMENCLATURE	MFG CODE	NSN/PN	QTY	UNIT ISSUE	UNIT COST	DOCUMENT NUMBER	RECEIVED

35. SUBMITTED	36. RECEIVED UNDER LIMITED TECHNICAL INSPECTION	37. ACCEPTED
BY: DATE:	BY: DATE:	BY: DATE:

*XTM FORM 34A, 1 DEC 87 Previous Edition May Be Used

US ARMY TMDE SUPPORT CENTER-ABERDEEN
ABERDEED PROVING GROUNDS,MD.

AREA NUCLEONICS LABORATORY
REPORT OF CALIBRATION
FOR
RADIAC SET/SURVEY METER

MODEL:3
SERIAL NO.:18103

SUBMITTED BY:

W2DH01

The measurements were performed under ambient conditions of approximately 22.7 Degrees C and 40% percent relative humidity.

This instrument was calibrated In accordance with TB9-6665-285-15, Army Calibration Program for Radiac Meters.

The reference standard for this Calibration in a model 500-2 LUDLUM Pulser, serial number 129168, Calibrated 30 JAN. 1996.

Calibration uncertainty including measuring errors and the accuracy Of the reference standard is +/- 10%.

This calibration is traceable to and compatible with National Institute of standards and technology (NIST) measurements.

In charge of test:

JONG K. PARK

DAVID A. JAMESON
Radiation Protection Officer
US. ARMY DTSC-Aberdeen

Calibration Report No.: W2DH01059C
Calibration Date: 29 OCT 1996
Calibration Due Date: 24 OCT 1997

RADIAC INSTRUMENT DATA SHEET

INSTRUMENT MAKE: LUDLUM MODEL NO. 3 SER.NO.18103

PROBE TYPE: 44-9 SERIAL NO.: 18103-1 RATE:3300CPM/mR/HR

CALIBRATION GEOMETRY:

Check Source Reading at surface Level =18K

SCALE	SOURCE MODE	DISTANCE CM	INSTRUMENT METER READING RATE CPM	BEFORE	ADJUSTMENT AFTER
X100			400K 100K		400K 100K
X10			40K 10K		40K 10K
X1			4K 1K		4K 1K
X.1			400 100		400 100

Probe checked with= Americium-241

Activity: (2.65 kbq) 71.6 nci +/-10%.
Count rate in the alpha-plateau at 5 mm distance from the Surface of the source= 79,524 CPM.

	CPM	BEFORE	AFTER
X10	79,524	26K	

PROBE EFFICIENCY= 32.7%

CALIBRATION REPORT NO.W2DH01059C DATE 29 OCT 1996

Instrument Detection Sensitivity

For an integrated measurement over a preset time, the minimum detectable activity (MDA) for surface activity can be approximated by:

$$MDA = \frac{2.71 + 4.65\sqrt{B_r * t}}{t * E * \frac{A}{100}}$$

where,

MDA = activity level in DPM/100 cm^2
B_r = measured background rate in CPM
t = counting time in minutes
E = detector efficiency in counts/disintegrations
A = active area of the probe in cm^2

Meter	SN	B_r (CPM)	t (min)	E	A (cm^2)	MDA (DPM)
L-3	18,103	80	1	0.327	20.27	668.0
AN/PDR-77	798A	14	1	0.990	129.00	15.7
Bicron	A948P	550	1	0.600	506.70	37.0
Eberline	975	1,450	1	0.600	506.70	59.1

Coordinate	Alpha	Beta	Gamma	Coordinate	Alpha	Beta	Gamma
A1	~~42.4~~	100	1.69 E3	D12	~~40~~ 23.7	150	6.43 E3
A2	39.1	110	1.43 E3	D13	~~40~~ 24.2	110	7. E3
A3	32.4	110	1.49 "	E1	12.8	160	1.35 "
A4	12.6	80	1.3 "	E2	11.1	160	1.55 "
A5	14.3	100	1.25 "	E3	13.8	180	1.25 "
A6	16.7	90	1.2 "	E4	25.1	220	1.35 "
A7	17.8	40	1.3 "	E5	28	120	1.40 "
A8	23	40	1.2 "	E6	20.6	150	1.51 "
A9	22.4	85	1.26 "	E7	24.3	120	1.33 "
A10	16.3	95	1.35 "	E8	17.9	120	1.27 "
A11	19.2	50	1.5 "	E9	16.8	160	1.42 "
A12	22.9	70	1.9 "	E10	10.6	130	1.43 "
A13	19.3	95	1.7 "	E11	19.2	150	1.5 "
B1	25.4	105	1.76 E3	E12	25	180	1.4 "
B2	30.7	90	1.35 E3	E13	32.7	130	8.6 "
B3	32.9	100	1.59 "	F1	19.9	80	1.22 "
B4	15.7	105	1.2 "	F2	25.5	115	1.26 "
B5	11.4	120	1.3 "	F3	20.4	90	1.40 "
B6	19.5	140	1.3 "	F4	22.3	105	1.47 "
B7	23	120	~~1.2~~ "	F5	22.2	100	1.51 E3
B8	23	120	~~1.9~~ "	F6	27.4	70	1.36 E3
B9	19.3	105	1.3 "	F7	20.8	75	1.41 "
B10	12.4	200	1.5 "	F8	10.4	100	1.44 "
B11	22.6	130	1.75 "	F9	19.2	110	1.32 "
B12	19.6	70	1.71 "	F10	11.9	100	1.10 "
B13	22.3	160	1.58 "	F11	21	120	1.~~95~~ "
C1	26.2	70	1.65 E3	F12	11.8	80	1.24 "
C2	27.8	60	1.25 E3	F13	13.5	80	1.21 "
C3	21.5	100	1.37 "	G1	23.4	120	1.4 "
C4	20.5	100	1.32 "	G2	20.6	110	1.4 "
C5	20.6	200	1.42 "	G3	28	105	1.3 "
C6	11.4	160	1.50 "	G4	26.9	120	1.45 "
C7	28.5	95	1.55 "	G5	20.9	100	1.4 E3
C8	17.6	140	1.72 "	G6	29.8	110	1.35 E3
C9	16.8	80	1.85 "	G7	17.2	90	1.42 "
C10	10.6	70	2.15 "	G8	14.0	90	1.53 "
C11	10.5	120	2.1 "	G9	16.4	110	1.68 "
C12	16.9	110	1.6 "	G10	14.4	70	1.62 "
C13	19.8	100	8.1 E3	G11	17.9	70	1.32 "
D1	21	120	4.4 E3	G12	13.5	90	1.20 "
D2	13.8	160	4.45 "	G13	12.3	110	1.43 "
D3	20.9	110	1.45 "				
D4	25.5	140	1.45 "				
D5	27.6	150	4.6 "				
D6	15.1	240	1.5 "				
D7	25.6	200	1.50 "				
D8	~~30~~.5	150	1.4 "				
D9	19.1	110	1.6 "				
D10	12.2	110	1.5 "				
D11	21.3	130	1.6 "				

Gamma Meter: Eberline datalogger Chk Source: ~~Cs-137~~ Msr: ~~8.0 E4~~ Bkgd: ~~1.45 E3~~

Beta Meter: L3 Ludlum Chk Source: Am 241 Msr: ~~18k~~ Bkgd: 80

Alpha Meter: AMPDR 77 Chk Source: ~~Cs-137~~ Am241 Msr: ~~56000 cpm~~ 10,200 cpm Bkgd: ~~80 90~~ 140 cpm

Am-241 0.0064 μCi 2/70 616-3

Cs-137 1.81 μCi 12/72 475

ENCL 3

ENCL 4

Building 149A Forest Glen Section (Bunker)

Gamma Meter	Source	Activity uCi	Date	Source CPM	Bkgd CPM
Eberline Dat	Cs-137	1.81	Dec 1972	80,000	1.45E+03

Gamma Meter Readings (CPM) - Not Background Subtracted

	1	2	3	4	5	6	7	8	9	10	11	12	13
A	1.89E+03	1.43E+03	1.49E+03	1.3E+03	1.25E+03	1.2E+03	1.3E+03	1.2E+03	1.26E+03	1.35E+03	1.50E+03	1.8E+03	1.7E+03
B	1.76E+03	1.35E+03	1.6E+03	1.2E+03	1.3E+03	1.3E+03	1.2E+03	1.9E+03	1.3E+03	1.5E+03	1.75E+03	1.71E+03	1.58E+03
C	1.65E+03	1.25E+03	1.37E+03	1.32E+03	1.42E+03	1.5E+03	1.55E+03	1.72E+03	1.85E+03	2.15E+03	2.1E+03	1.6E+03	8.1E+03
D	4.4E+03	4.45E+03	1.45E+03	1.45E+03	4.6E+03	1.5E+03	1.5E+03	1.4E+03	1.6E+03	1.5E+03	1.6E+03	1.43E+03	7E+03
E	1.35E+03	1.55E+03	1.25E+03	1.35E+03	1.4E+03	1.51E+03	1.33E+03	1.27E+03	1.42E+03	1.43E+03	1.5E+03	1.4E+03	8.6E+03
F	1.22E+03	1.26E+03	1.4E+03	1.47E+03	1.51E+03	1.36E+03	1.41E+03	1.44E+03	1.32E+03	1.1E+03	1.05E+03	1.24E+03	1.21E+03
G	1.4E+03	1.4E+03	1.3E+03	1.45E+03	1.40E+03	1.35E+03	1.42E+03	1.53E+03	1.6E+03	1.62E+03	1.32E+03	1.2E+03	1.43E+03

Gamma Meter Readings (CPM) - Background Subtracted

	1	2	3	4	5	6	7	8	9	10	11	12	13
A	440	0	40	0	0	0	0	0	0	0	50	350	250
B	310	0	140	0	0	0	0	450	0	50	300	260	130
C	200	0	0	0	0	50	100	270	400	700	650	150	6650
D	2950	3000	0	0	3150	50	50	0	150	50	150	0	5550
E	0	100	0	0	0	60	0	0	0	0	50	0	7150
F	0	0	0	20	60	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	80	150	170	0	0	0

Building 149A Forest Glen Section (Bunker)

ENCLS

Beta Meter	Source	Activity uCi	Date	Source CPM	Bkgd CPM
Ludlum L-3	Am-241	0.0064	Feb 1970	18,000	80

Beta Meter Readings (CPM) - Not Background Subtracted

	1	2	3	4	5	6	7	8	9	10	11	12	13	
A	100	110	110	80	100	90	40	40	85	95	50	70	95	A
B	105	90	100	105	120	140	120	120	105	200	130	70	160	B
C	70	60	100	100	200	160	95	140	80	70	120	110	100	C
D	120	160	110	140	150	240	200	150	110	110	130	150	110	D
E	160	160	180	220	120	150	120	120	160	130	150	180	130	E
F	80	115	90	105	100	70	75	100	110	100	120	80	80	F
G	120	110	105	120	100	110	90	90	110	70	70	90	110	G
	1	2	3	4	5	6	7	8	9	10	11	12	13	

Beta Meter Readings (CPM) - Background Subtracted

	1	2	3	4	5	6	7	8	9	10	11	12	13	
A	20	30	30	0	20	10	0	0	5	15	0	0	15	A
B	25	10	20	25	40	60	40	40	25	120	50	0	80	B
C	0	0	20	20	120	80	15	60	0	0	40	30	20	C
D	40	80	30	60	70	160	120	70	30	30	50	70	30	D
E	80	80	100	140	40	70	40	40	80	50	70	100	50	E
F	0	35	10	25	20	0	0	20	30	20	40	0	0	F
G	40	30	25	40	20	30	10	10	30	0	0	10	30	G
	1	2	3	4	5	6	7	8	9	10	11	12	13	

Building 149A Forest Glen Section (Bunker)

Alpha Meter	Source	Activity uCi	Date	Source CPM	Bkgd CPM
ANPDR-77	Am-241	0.0064	Feb 1970	10,200	14

EN116

Alpha Meter Readings (CPM) - Not Background Subtracted

	1	2	3	4	5	6	7	8	9	10	11	12	13	
A	42.4	39.1	32.4	12.6	14.3	16.7	17.8	23	22.4	16.3	19.2	22.9	19.3	A
B	25.4	30.7	32.9	15.7	11.4	19.5	23	23	19.3	12.4	22.6	19.6	22.3	B
C	26.2	27.8	21.5	20.5	20.6	11.4	28.5	17.6	16.8	10.6	10.5	16.9	19.8	C
D	21	13.8	20.9	25.5	27.6	15.1	25.6	20.5	19.1	12.2	21.3	23.7	24.2	D
E	12.8	11.1	13.8	25.1	28	20.6	24.3	17.9	16.8	10.6	19.2	25	32.7	E
F	19.9	25.5	20.4	22.3	22.2	27.4	20.8	10.9	19.2	11.9	21	11.8	13.5	F
G	23.4	20.6	28	26.9	20.9	29.8	17.2	14	16.4	14.4	17.9	13.5	12.3	G
	1	2	3	4	5	6	7	8	9	10	11	12	13	

Alpha Meter Readings (CPM) - Background Subtracted

	1	2	3	4	5	6	7	8	9	10	11	12	13	
A	28.4	25.1	18.4	0	0.3	2.7	3.8	9	8.4	2.3	5.2	8.9	5.3	A
B	11.4	16.7	18.9	1.7	0	5.5	9	9	5.3	0	8.6	5.6	8.3	B
C	12.2	13.8	7.5	6.5	6.6	0	14.5	3.6	2.8	0	0	2.9	5.8	C
D	7	0	6.9	11.5	13.6	1.1	11.6	6.5	5.1	0	7.3	9.7	10.2	D
E	0	0	0	11.1	14	6.6	10.3	3.9	2.8	0	5.2	11	18.7	E
F	5.9	11.5	6.4	8.3	8.2	13.4	6.8	0	5.2	0	7	0	0	F
G	9.4	6.6	14	12.9	6.9	15.8	3.2	0	2.4	0.4	3.9	0	0	G
	1	2	3	4	5	6	7	8	9	10	11	12	13	

PROGRAM #: 3 04/28/97 17:02

REGION A: LL= 15 UL= 85 BKG= 0 %SIGMA= .00
REGION B: LL= 85 UL= 150 BKG= 0 %SIGMA= .00
REGION C: LL= 150 UL= 275 BKG= 0 %SIGMA= .00
REGION D: LL= 275 UL= 400
REGION E: LL= 400 UL= 900
REGION F: LL= 900 UL= 1400
TIME= 2.00 SCREENING LIMITS= 0 0

P#	S#	TIME	CPMA	CPMB	CPMC	CPMD	CPME	CPMF	FLAGS	MIN
5	0	10.00	32	25	55	34	67	30	B	10
5	1	2.00	0	0	0	1	0	0		13
5	2	2.00	0	0	0	5	0	0		15
5	3	2.00	0	1	0	2	2	0		17
5	4	2.00	2	0	0	3	0	0		19
5	5	2.00	0	0	0	5	0	0		21
5	6	2.00	0	0	0	0	0	0		23
5	7	2.00	1	4	0	2	0	0		25
5	8	2.00	0	5	0	7	5	0		28
5	9	2.00	0	3	0	9	0	1		30
5	10	2.00	0	2	3	0	0	0		32
5	11	2.00	4	0	0	1	0	0		34
5	12	2.00	0	5	0	0	0	3		36
5	13	2.00	1	10	0	0	0	1		38
5	14	2.00	0	0	0	0	0	0		41
5	15	2.00	2	1	0	0	4	3		43
5	16	2.00	1	0	0	0	0	0		45
5	17	2.00	0	0	0	4	0	0		47
5	18	2.00	0	1	0	0	2	2		49
5	19	2.00	1	5	0	2	0	0		51
5	20	2.00	0	0	0	0	0	0		53
5	21	2.00	0	0	0	6	0	0		56
5	22	2.00	5	3	0	0	1	4		58
5	23	2.00	0	6	0	0	0	0		60
5	24	2.00	0	1	0	5	0	1		62
5	25	2.00	2	0	4	0	0	0		64
5	26	2.00	0	0	0	0	0	0		66
5	27	2.00	6	0	8	0	0	0		68
5	28	2.00	0	0	0	3	0	0		71
5	29	2.00	0	0	0	0	0	0		73
5	30	2.00	1	1	0	4	0	0		75
5	31	2.00	0	0	0	0	0	0		77
5	32	2.00	8	4	0	3	0	0		79
5	33	2.00	0	4	0	1	2	0		81
5	34	2.00	1	0	0	4	0	0		84
5	35	2.00	0	2	0	0	0	0		86
5	36	2.00	6	0	0	0	0	0		88
5	37	2.00	0	2	0	0	0	0		90
5	38	2.00	0	0	0	0	0	0		92
5	39	2.00	0	3	0	0	0	0		94
5	40	2.00	0	3	0	1	0	1		96
5	41	2.00	0	3	0	0	0	0		99
5	42	2.00	0	3	0	3	0	0		101

ENCL 7

F#	S#	TIME	CPMA	CPMB	CPMC	CPMD	CPME	CPMF FLAGS	MIN
5	43	2.00	0	0	0	2	2	0 A11 E2	103
5	44	2.00	0	0	0	4	0	0 A12	105
5	45	2.00	3	3	0	0	0	0 E1	107
5	46	2.00	0	0	0	0	0	0 E2	109
5	47	2.00	5	6	1	1	0	0 A13	112
5	48	2.00	3	0	0	0	0	0 E1	114
5	49	2.00	6	9	0	0	0	0 E2	116
5	50	2.00	0	2	0	0	0	8	118
5	51	2.00	1	0	0	3	0	0	120
5	52	2.00	5	0	0	0	2	0 E1	122
5	53	2.00	0	2	0	0	4	0 N1	125
5	54	2.00	5	2	0	0	2	0 N2	127
5	55	2.00	0	4	0	0	3	0	129
5	56	2.00	1	4	0	2	0	0	131
5	57	2.00	0	0	0	0	3	4	133
5	58	2.00	1	6	0	0	0	0	135
5	59	2.00	0	5	0	6	0	0	137
5	60	2.00	0	0	0	0	0	0 W1	139
5	61	2.00	1	0	4	2	1	0	142
5	62	2.00	0	4	0	0	0	0	144
5	63	2.00	0	4	0	2	0	2	146
5	64	2.00	0	0	0	7	0	1	148
5	65	2.00	0	0	0	0	0	0	150
5	66	2.00	0	1	0	0	0	0	152
5	67	2.00	0	0	0	0	0	0	155
5	68	2.00	1	0	0	0	0	3	157
5	69	2.00	0	0	0	0	0	0	159
5	70	2.00	2	2	0	0	2	1	161
5	71	2.00	0	1	0	1	0	0 W1	163
5	72	2.00	3	1	0	5	0	0 W2	165
5	73	2.00	0	2	0	0	0	0	168
5	74	2.00	0	5	0	0	4	0 S1	170
5	75	2.00	1	0	0	0	0	0 S2	172
5	76	2.00	1	0	0	5	0	0 W1	174
5	77	2.00	1	4	0	0	4	0 W2	176
5	78	2.00	0	1	0	3	0	0	178
5	79	2.00	0	4	0	6	4	0 N1	180
5	80	2.00	0	0	0	0	0	0 N2	182
5	81	2.00	0	0	0	0	0	0	185
5	82	2.00	2	6	0	0	0	0	187
5	83	2.00	0	0	0	6	12	5	189
5	84	2.00	2	1	0	0	5	0	191
5	85	2.00	0	0	0	0	0	0 S1	193
5	86	2.00	0	3	4	4	0	4 S2	195
5	87	2.00	0	0	0	2	0	0 C1	198
5	88	2.00	0	4	0	0	0	0 N1	200
5	89	2.00	2	0	0	3	0	0 N2	202
5	90	2.00	1	3	0	0	0	0 C2	204
5	91	2.00	0	1	0	2	0	0 C3	206
5	92	2.00	0	0	0	0	1	0 E1	208
5	93	2.00	0	1	0	0	0	0 E2	211

F#	S#	Time	CFMA	CFMB	CFMC	CFMD	CFME	CFMF FLAGS	MIN
5	94	2.00	0	0	0	0	0	1 C4	213
5	95	2.00	3	0	0	3	4	0 E1	215
5	96	2.00	2	0	4	0	2	0 E2	217
5	97	2.00	0	4	0	0	0	0 C5	219
5	98	2.00	4	0	1	0	0	0 E1	221
5	99	2.00	0	4	0	0	0	0 E2	223
5	100	2.00	0	8	0	1	3	5 C6	226
5	101	2.00	2	3	0	2	1	4 E1	228
5	102	2.00	0	3	0	0	3	0 E2	230
5	103	2.00	0	0	0	0	0	0 C7	232
5	104	2.00	0	1	0	0	0	0 E1	234
5	105	2.00	0	7	0	2	0	0 E2	236
5	106	2.00	0	4	0	2	1	0 C8	238
5	107	2.00	0	3	0	0	16	4 E1	241
5	108	2.00	0	0	0	1	0	0 E2	243
5	109	2.00	1	4	0	0	0	0 C9	245
5	110	2.00	0	1	0	12	7	0 C10	247
5	111	2.00	1	0	0	5	3	0 C11	249
5	112	2.00	0	1	0	0	2	0 C12	251
5	113	2.00	0	0	0	0	3	0 C13	254
5	114	2.00	7	0	0	0	0	0 S1	256
5	115	2.00	3	1	0	0	1	0 S2	258
5	116	2.00	0	6	0	3	0	0 D1	260
5	117	2.00	2	3	0	0	0	0 N1	262
5	118	2.00	1	6	0	0	0	0 N2	264
5	119	2.00	0	10	0	3	0	0 D2	266
5	120	2.00	0	4	0	4	0	1 D3	269
5	121	2.00	0	0	0	0	0	0 D4	271
5	122	2.00	1	7	0	3	19	0 D5	273
5	123	2.00	0	0	6	0	0	0 D6	275
5	124	2.00	0	0	0	0	0	2 D7	277
5	125	2.00	0	0	6	4	0	3 D8	279
5	126	2.00	0	0	0	7	6	3 D9	282
5	127	2.00	2	2	0	2	0	0 D10	284
5	128	2.00	0	1	0	2	0	0 D11	286
5	129	2.00	0	4	1	0	0	0 D12	288
5	130	2.00	0	2	7	0	2	0 D13	290
5	131	2.00	2	0	0	0	0	0 S1	292
5	132	2.00	6	0	0	3	0	0 S2	295
5	133	2.00	4	2	0	0	3	0 E1	297
5	134	2.00	4	0	0	0	2	0 N1	299
5	135	2.00	0	0	0	0	0	0 N2	301
5	136	2.00	4	6	0	4	0	4 E2	303
5	137	2.00	5	3	0	0	7	0 E3	305
5	138	2.00	3	2	3	1	0	0 E4	307
5	139	2.00	7	0	0	2	6	3 E5	309
5	140	2.00	1	3	2	4	3	0 E6	312
5	141	2.00	6	8	0	6	1	0 E7	314
5	142	2.00	0	0	0	1	0	0 E8	316
5	143	2.00	2	1	0	0	0	0 E9	318
5	144	2.00	0	2	12	2	0	3 E10	320

F#	S#	TIME	CPMA	CPMB	CPMC	CPMD	CPME	CPMF	FLAGS	MIN
5	145	2.00	0	0	0	0	0	0	E/1	322
5	146	2.00	0	8	0	4	0	0	E/2	325
5	147	2.00	4	0	0	6	13	0	E/3	327
5	148	2.00	4	0	0	0	0	0	S1	329
5	149	2.00	0	4	0	2	0	0	S2	331
5	150	2.00	5	1	0	0	8	0	F1	333
5	151	2.00	0	0	0	1	0	0	N1	335
5	152	2.00	4	0	0	0	2	0	N2	338
5	153	2.00	0	9	0	0	6	0	F2	340
5	154	2.00	0	2	0	6	0	0	F3	342
5	155	2.00	1	1	0	2	4	0	F4	344
5	156	2.00	0	0	3	3	0	0	F5	346
5	157	2.00	8	5	2	0	0	4	F6	348
5	158	2.00	0	5	0	0	3	0	F7	350
5	159	2.00	5	5	1	0	0	0	F8	352
5	160	2.00	2	7	0	2	0	0	F9	355
5	161	2.00	0	6	0	0	0	0	F10	357
5	162	2.00	0	0	0	7	0	0	F11	359
5	163	2.00	0	1	0	0	0	0	F12	361
5	164	2.00	0	1	0	2	1	0	F13	363
5	165	2.00	3	4	0	1	0	1	S1	365
5	166	2.00	0	0	5	0	1	0	S2	368
5	167	2.00	0	12	0	1	8	1	G1	370
5	168	2.00	0	3	0	6	0	0	W1	372
5	169	2.00	5	5	0	2	0	0	N1	374
5	170	2.00	0	0	2	0	0	0	N2	376
5	171	2.00	4	1	0	0	8	0	W2	378
5	172	2.00	1	8	0	8	0	0	G2	381
5	173	2.00	0	8	0	2	8	2	W1	383
5	174	2.00	1	0	0	0	0	0	W2	385
5	175	2.00	0	2	0	4	0	0	G3	387
5	176	2.00	0	4	1	0	0	0	W1	389
5	177	2.00	6	6	1	0	0	0	W2	391
5	178	2.00	0	0	5	0	0	0	G4	393
5	179	2.00	0	0	3	7	0	0	W1	396
5	180	2.00	0	2	0	0	9	0	W2	398
5	181	2.00	0	0	0	1	5	1	G5	400
5	182	2.00	1	0	0	4	0	1	W1	402
5	183	2.00	0	3	0	9	1	0	W2	404
5	184	2.00	5	6	0	4	3	0	G6	406
5	185	2.00	0	1	0	1	1	12	W1	408
5	186	2.00	0	0	0	3	0	0	W2	411
5	187	2.00	6	0	0	0	0	0	G7	413
5	188	2.00	4	5	0	0	0	0	W1	415
5	189	2.00	6	3	0	6	2	0	W2	417
5	190	2.00	3	0	0	1	0	0	G8	419
5	191	2.00	0	1	0	0	0	0	W1	421
5	192	2.00	1	0	0	4	10	0	W2	424
5	193	2.00	0	2	0	11	0	4	G9	426
5	194	2.00	2	0	0	5	2	0	W1	428
5	195	2.00	0	7	0	3	11	0	W2	430

5	196	2.00	0	6	2	0	0	5	G10	432
5	197	2.00	0	0	0	2	5	0	W1	434
5	198	2.00	0	1	0	0	0	0	W2	436
5	199	2.00	0	2	0	0	2	0	G11	439
5	200	2.00	1	0	0	6	0	0	W1	441
5	201	2.00	2	3	0	7	0	0	W2	443
5	202	2.00	1	3	0	7	1	0	G12	445
5	203	2.00	2	10	0	12	0	0	W1	447
5	204	2.00	1	13	11	0	0	0	W2	449
5	205	2.00	6	2	0	5	1	0	G13	452
5	206	2.00	0	5	0	0	0	2	S1	454
5	207	2.00	0	0	0	3	3	0	S2	456
5	208	2.00	1	0	10	1	3	0	W1	458
5	209	2.00	1	3	0	0	1	0	W2	460

Time: 2.00
Data Mode: Dual DPM Nuclides: 3H-14C-UG Quench Sets
Low Energy: 3H-UG
Background Subtract: 1st Vial High Energy: 14C-U

	LL	UL	LCR	2S%	BKG
Region A:	0.0 -	12.0	0	0.0	12.70
Region B:	12.0 -	156	0	0.0	14.80
Region C:	156 -	2000	0	0.0	13.20

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal

S#	TIME	CPMA	A:2S%	CPMB	B:2S%	CPMC	DPM1	DPM2	tSIE	FLAG B
1	10.00	12.70	17.75	14.80	16.44	13.20			693.81	
2	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	598.56	A1
3	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	615.89	N1
4	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	597.20	N2
5	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	606.70	E1
6	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	620.66	E2
7	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	568.76	A2
8	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	579.04	E1
9	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	587.37	E2
10	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	592.88	A3
11	2.00	0.00	0.00	0.04	16696	0.00	0.00	0.04	594.32	E1
12	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	581.84	E2
13	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	531.13	S1
14	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	577.77	S2
15	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	614.45	A4
16	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	599.50	N1
17	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	602.22	N2
18	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	616.67	E1
19	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	578.91	E2
20	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	613.17	A5
21	2.00	13.48	56.23	0.00	0.00	0.00	30.86	0.00	603.28	E1
22	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	607.34	E2
23	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	591.49	A6
24	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	625.81	E1
25	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	606.82	E2
26	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	613.79	A7
27	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	633.70	E1
28	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	600.31	E2
29	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	606.09	A8
30	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	630.42	E1
31	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	620.49	E2
32	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	593.63	S2
33	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	627.84	S1
34	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	588.34	A9
35	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	553.26	N1
36	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	570.85	N2
37	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	603.68	E1
38	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	602.13	E2
39	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	541.85	A10
40	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	566.86	E1

ENCL

S#	TIME	CPMA	A:2S%	CPMB	B:2S%	CPMC	DPM1	DPM2	tSIE	FLAG
41	2.00	0.00	0.00	2.20	287.1	0.00	0.00	2.72	577.67	A10 E2
42	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	561.37	A11
43	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	582.34	E1
44	2.00	0.00	0.00	6.61	105.7	0.00	0.00	8.16	595.40	E2
45	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	557.10	A12
46	2.00	0.80	708.9	0.00	0.00	0.00	1.83	0.00	602.73	E1
47	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	616.02	E2
48	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	557.33	A13
49	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	559.99	E1
50	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	631.21	E2
51	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	575.11	S1
52	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	598.51	S2
53	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	600.48	B1
54	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	606.88	N1
55	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	595.23	N2
56	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	562.56	B2
57	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	549.72	B3
58	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	535.59	S1
59	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	563.26	S2
60	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	599.95	B4
61	2.00	0.00	0.00	0.20	2981	0.00	0.00	0.25	588.41	N1
62	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	584.17	N2
63	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	585.88	W1
64	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	586.61	W2
65	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	602.64	B5
66	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	600.97	W1
67	2.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	602.68	W2
68	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	584.86	B6
69	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	619.14	W1
70	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	611.58	W2
71	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	622.30	B7
72	2.00	0.00	0.00	1.49	416.3	0.00	0.00	1.84	606.10	W1
73	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	593.75	W2
74	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	603.60	B8
75	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	589.28	S1
76	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	609.58	S2
77	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	601.58	W1
78	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	607.97	W2
79	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	528.48	B9
80	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	576.21	N1
81	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	593.02	N2
82	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	565.15	B10
83	2.00	16.36	48.60	0.00	0.00	0.00	39.54	0.00	545.81	B11
84	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	558.76	B12
85	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	572.03	B13
86	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	565.08	S1
87	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	607.02	S2
88	2.00	3.30	184.6	0.00	0.00	0.00	7.75	0.00	575.75	C1
89	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	557.28	N1
90	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	603.73	N2
91	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	555.81	C2
92	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	566.75	C3
93	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	576.75	E1
94	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	621.18	E2
95	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	559.93	C4
96	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	554.90	E1

S#	TIME	CPMA	A:2S%	CPMB	B:2S%	CPMC	DPM1	DPM2	tSIE	FLAG
97	2.00	0.00	0.00	0.00	0.00	1.30	0.00	0.00	554.38	C4 E2
98	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	555.84	C5
99	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	559.61	E1
100	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	574.65	E2
101	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	551.00	C6
102	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	561.53	E1
103	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	577.65	E2
104	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	582.84	C7
105	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	576.42	E1
106	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	550.74	E2
107	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	584.75	C8
108	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	556.08	E1
109	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	571.29	E2
110	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	545.07	C9
111	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	572.61	C10
112	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	465.74	C11
113	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	506.04	C12
114	2.00	0.00	0.00	1.24	496.6	0.00	0.00	1.53	582.94	C13
115	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	566.56	S1
116	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	578.11	S2
117	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	566.42	D1
118	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	589.62	N1
119	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	578.92	N2
120	2.00	0.00	0.00	1.52	408.1	0.00	0.00	1.88	557.00	D2
121	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	560.96	D3
122	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	583.90	D4
123	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	558.31	D5
124	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	540.92	D6
125	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	585.50	D7
126	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	617.73	D8
127	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	573.75	D9
128	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	545.57	D10
129	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	564.93	D11
130	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	556.86	D12
131	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	584.51	D13 S1
132	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	558.41	S2
133	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	593.92	
134	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	540.84	E1
135	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	596.32	N1
136	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	609.24	N2
137	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	555.59	E2
138	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	512.72	E3
139	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	568.19	E4
140	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	540.64	E5
141	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	537.40	E6
142	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	567.94	E7
143	2.00	0.00	0.00	4.13	160.0	0.00	0.00	5.12	546.49	E8
144	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	541.40	E9
145	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	502.76	E10
146	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	465.15	E11
147	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	569.60	E12
148	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	588.69	E13
149	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	576.27	S1
150	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	604.00	S2
151	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	554.77	F1
152	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	596.81	N1

S#	TIME	CPMA	A:2S%	CPMB	B:2S%	CPMC	DPM1	DPM2	tSIE	FLAG
153	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	580.36	F1 N2
154	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	549.70	F2
155	2.00	0.00	0.00	1.16	531.7	0.00	0.00	1.43	552.62	F3
156	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	537.70	F4
157	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	563.33	F5
158	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	537.18	F6
159	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	551.73	F7
160	2.00	0.00	0.00	0.20	2981	0.00	0.00	0.25	552.90	F8
161	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	563.57	F9
162	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	556.53	F10
163	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	547.94	F11
164	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	576.59	F12
165	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	561.05	F13
166	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	614.93	S1
167	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	626.63	S2
168	2.00	0.00	0.00	0.20	2981	0.00	0.00	0.25	588.28	G1
169	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	585.45	W1
170	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	589.53	N1
171	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	594.11	N2
172	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	583.88	W2
173	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	544.49	G2
174	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	572.30	W1
175	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	586.18	W2
176	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	565.51	G3
177	2.00	0.00	0.00	2.20	287.1	0.00	0.00	2.72	564.77	U1
178	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	587.63	W2
179	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	559.70	G4
180	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	574.85	W1
181	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	602.69	W2
182	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	547.81	G5
183	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	580.13	W1
184	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	601.46	W2
185	2.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	568.00	G6
186	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	581.20	W1
187	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	592.69	W2
188	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	570.14	G7
189	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	596.82	W1
190	2.00	20.80	40.82	0.00	0.00	0.00	47.13	0.00	614.57	W2
191	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	529.68	G8
192	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	583.95	U1
193	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	587.38	W2
194	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	522.71	G9
195	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	592.88	W1
196	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	590.79	W2
197	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	585.13	G10
198	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	604.26	W1
199	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	570.26	W2
200	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	601.84	G11
201	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	589.08	W1
202	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	601.52	W2
203	2.00	0.00	0.00	1.20	512.7	0.00	0.00	1.49	557.11	G12
204	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	586.85	W1
205	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	603.39	W2
206	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	604.32	G13
207	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	632.77	S1
208	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	639.53	S2

Protocol #: 5

S#	TIME	CPMA	A:2S%	CPMB	B:2S%	CPMC	DPM1	DPM2	tSIE	FLAG
209	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	605.72	613 W1
210	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	597.27	W2

SYSTEM NORMALIZED

C14 IPA DATA PROCESSED - 28-Apr-97 08:08
C14 Eff (0-156 keV) = 96.39 %
H3 IPA DATA PROCESSED - 28-Apr-97 08:09
H3 Eff (0-18.6 keV) = 64.00 %

WARNING: Questionable H3 Efficiency value - Please rerun quench curves & view historic data