

MATERIALS LICENSE
SUPPLEMENTARY SHEET

OFFICIAL RECORD COPY

License Number

37-30020-01

Docket or Reference Number

030-33078

Amendment No. 02

Biofor, Inc.
P. O. Box 629
Waverly, PA 18471

In accordance with letter dated June 26, 1996, and attachments, License Number 37-30020-01 is hereby terminated.



For the U.S. Nuclear Regulatory Commission

Original Signed By:

C. Thor Oberg

Date NOV 13 1996

By

Nuclear Materials Safety Branch

Region I

King of Prussia, Pennsylvania 19406

9611210052 961113
PDR ADOCK 03033078
C PDR

ML 10

NOV 13 1996

Gary Ruffcorn
Director of Finance
Scherer Health Care
2859 Paces Ferry Road, Suite 300
Atlanta, GA 30339

Dear Mr. Ruffcorn:

Please find enclosed Amendment No. 02 terminating Biofor, Inc., License No. 37-30020-01 as requested by letter dated June 26, 1996, and attachments. The Biofor, Inc., facilities at Route 632, Olyphant, Pennsylvania, may be released for unrestricted use.

Your cooperation with us is appreciated.

Sincerely,

Original Signed By:

C. Thor Oberg

C. Thor Oberg
Division of Nuclear Materials Safety

License No. 37-30020-01
Docket No. 030-33078
Control No. 123399

Enclosure:
Amendment No. 02

DOCUMENT NAME: R:\WPS\MLTR\L3730020.01

To receive a copy of this document, indicate in the box: "C" = Copy w/o attach/encl "E" = Copy w/ attach/encl "N" = No copy

OFFICE	DNMS/RI	N	DNMS/RI	N			
NAME	COberg/cto		JKinneman				
DATE	10/22/96		10/23/96		10/ /96		10/ /96

OFFICIAL RECORD COPY

ML 10

FAX

Date 11/12/96

030-33078

Number of pages including cover sheet 2

TO: Mr. Thor Oberg
USNRC
Region I

FROM: Todd Mobley
Applied Health Inc.

Phone 610-337-5202

Phone 412.835.9555

Fax Phone 610-337-5324

Fax Phone 412.835.9559

CC: Biofor File

REMARKS: ☐ Urgent ☒ For your review ☐ Reply ASAP ☐ Please Comment

Mr. Oberg,

Included please find the letter of receipt of the Biofor Inc. Liquid Scintillation Counter Cesium-137 check source from Beckman Instruments Inc. (sans spelling). If there are any further questions please call .

TM

OFFICIAL RECORD COPY

ML 10

123399

NOV 12 1996

FAX REC'D

11/12/96

13:14

412 835 9559

APPLIED HEALTH

002

2500 Harbor Boulevard, Box 3100, Fullerton, CA 92834 • (714) 854-8545

BECKMAN

November 5, 1996


Mr. Todd Mobley
Applied Health, Inc.
5409 Enterprise
Bethel Park, PA 15102

Dear Mr. Mobley,

We have received your letter with (1) thirty microcurie Cesium-137 check source housed in a led container.

If you need any further assistance, please feel free to contact me at (714) 773- 6869.

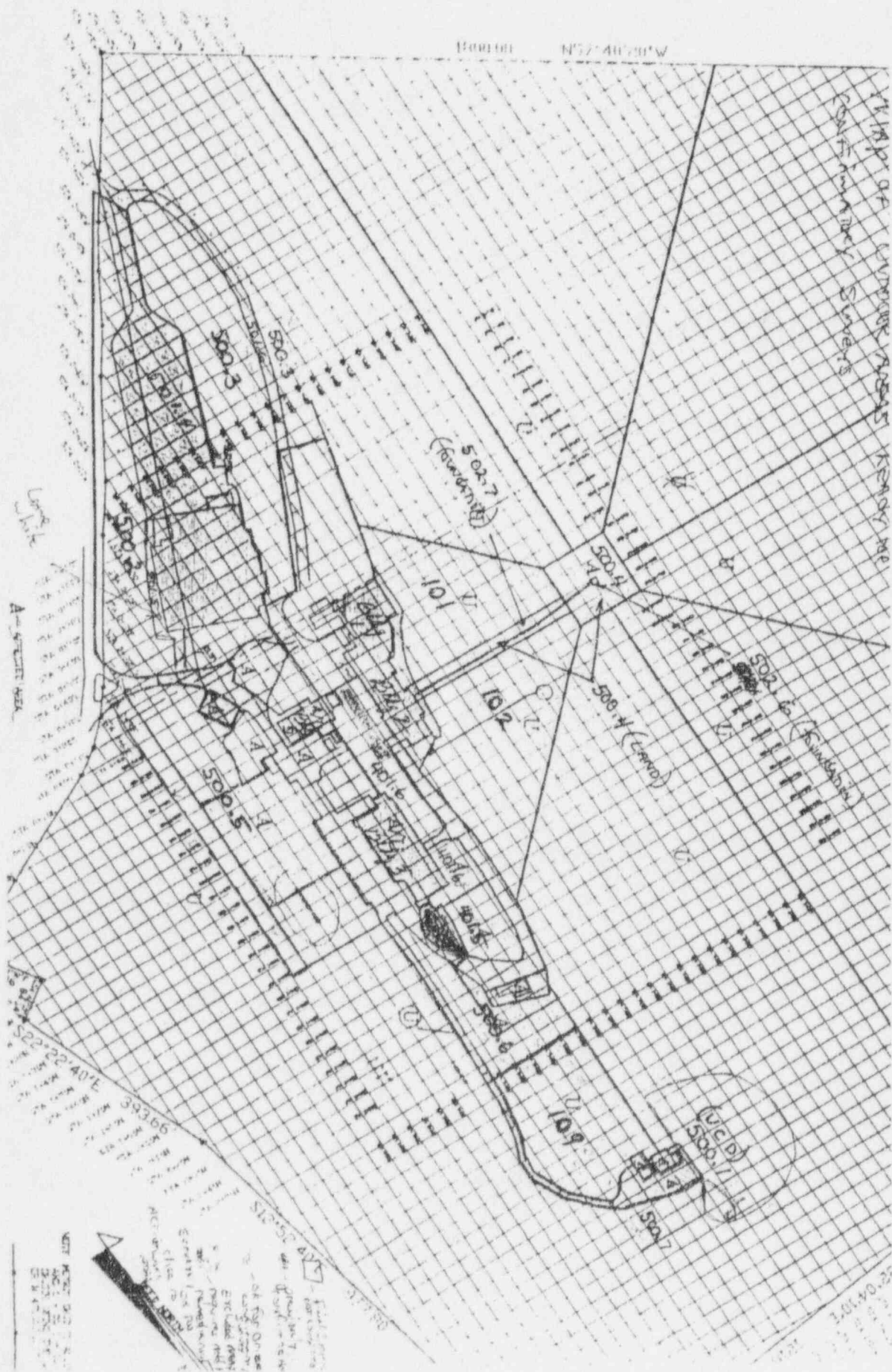
Sincerely,



Ray Freshour
Returned Goods Inspector

Beckman Instruments, Inc.

Executive Offices twx 910-592-1280 telax 98-78413



TELEPHONE CONVERSATION RECORD

LICENSEE * * *: Biofor, Inc. (parent Co., Scherer Health Care,
contact, Gary Ruffcorn, Dir. of Finance, 770-
333-0066, 2859 Paces Ferry Rd, Suite 300,
Atlanta, GA 30339)

DOC-NAME: P:\TEL-BI04.3TO

INDIVIDULE, TITLE, & Phone: Tom Mobley, Tech. Services Super.,
Applied H. P., 412-835-9555, (contracted by
Scherer for decommissioning of Biofor Facilities
for termination of license.)

* DEFICIENCY * : YES (X)
NO ()

LICENSE NO. 37-30020-01
DOCKET NO. 030-33078
MAIL CONTROL NO. 123399

** LER ** : YES ()
NO (X)

INCOMING ()
OUTGOING (X)

TIME: 1:30pm
DATE: 11/12/96

CALLER: CTO

ORGANIZATION & INDIVIDUAL: NRC, RI

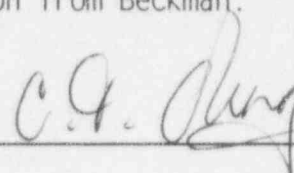
TELEPHONE NO.:

SUBJECT: Termination of License; Additional Info. from Consultant, AHP
SUMMARY:

Consultant has received the responce from Beckman Instruments Co.
stating that they have the 30 μ Ci Cs-137 source shipped to them from the
Biofor, Inc., Liquid Scintillation Counter by AHP. Tom Mobley of AHP
will mail a copy to CTO at RI. This will complete the information
requested from Biofor via the consultant. The license can be terminated
as soon as RI recieves a copy of the documentation from Beckman.

ACTION REQUIRED: Await receipt of the documentation

NAME, SIGNATURE and DATE: C. T. Oberg 11/13/96

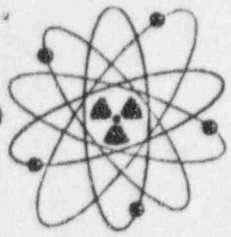


ACTION TAKEN:

NAME, SIGNATURE and DATE: _____

OFFICIAL RECORD COPY,

ML 10



Applied Health, Inc.

5409 Enterprise, Bethel Park, Pa 15102

Phone (412) 833-5555 Fax (412) 851-0662

MS-16
91

November 1, 1996

Mr. Thor Oberg
United States Nuclear Regulatory Commission
Region 1
475 Allendale Road
King of Prussia, PA.

Re: USNRC License Number 37-30020-01
Docket Number 030-33078
Biofor Inc.
Waverly, PA. 18471

As discussed during our telephone conversations of September 1996 and following your inspection of the Biofor Inc. facility in August 1996, Applied Health Inc. wishes to submit this report and enclosures to support the termination of the above referenced license. Applied Health Inc. re-visited the Biofor Inc. site on October 28, 1996 to complete all required assessments.

Extensive reviews of all available documentation concluded the following:

1. No significant radiation exposures were identified on reports supplied by Landauer Inc.
See Appendix A.
2. No significant uptakes of radioactive materials were identified on bioassay printouts as performed by Biofor Inc. personnel.
See Appendix B.
3. No disposal of radioactive materials through the sanitary sewers were performed at Biofor Inc. This was confirmed through conversations with Ms. Banasree Das and site maintenance manager Thomas Griffin.
4. No incineration of radioactive materials was performed at Biofor Inc. This was confirmed by a telephone conversation between Mr. Todd Mobley of Applied Health Inc. and Dr. Joan Chapdelaine of Pharmakon Inc. Pharmakon Inc. is located beside Biofor Inc. and is the owner/operator of the only incinerator in the area.

In addition as requested the following radiological assessments were performed:

1. The exterior exhaust plenum of the NuAire Fume Hood was surveyed for both fixed and removable contamination. No levels in excess of background radiation were detected.
See Appendix C for the survey results.
2. The small section of floor previously remediated and surveyed was rechecked and verified to be clean (no levels in excess of background radiation).
See Appendix C for survey results.
3. All labeling identifying radiation areas or radioactive materials were removed.

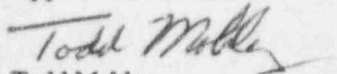
123399
NOV - 4 1996

The 30 microcurie Cesium-137 check source located inside of the Beckman Instruments Model 6000 Liquid Scintillation Counter was removed on October 28, 1996 and returned to the manufacturer. Upon receipt of the acceptance letter from Beckman Instruments, Applied Health Inc. will forward a copy to your attention.

This data contained in this report supports the termination of the Biofor Inc. USNRC license as outlined in Title 10 of the Code of Federal Regulations your expeditious response in this matter would be appreciated. If there are any questions please contact me as soon as possible.

Report completed and submitted by:

Applied Health Inc.



Todd Mobley

Technical Services Supervisor

cc: Mr. Gary Ruffcorn
AHP Files

Scherer Health Care System

APPENDIX A

BIOFOR INC
PO BOX 829
ATTN: S. DAS
MEASUREMENTS PA 18671

ACCOUNT NO.	SERIAL NO.
130937	

PROCESS NO.	REPORT DATE	DISMETER RECEIVED	REPORT TIME OR METER DATE	PAGE NO.
EC310	2/01/88	2/01/88	5	1

QUALITY CONTROL RELEASE
RAH

== ONLY PAGE ==

LANDAUER®

RADIATION DOSIMETRY REPORT

Landauer, Inc. 2 Science Road Glenwood, Illinois 60425-1588
Telephone: (708)755-7000 Facsimile: (708)755-7018

Accredited by the National Institute
of Standards and Technology through

NVLAP®

NAME	PARTICIPANT NUMBER	TYPE OF RECORD	DOSIMETER TYPE OR SOURCE	NOTES	RADIATION QUALITY	DOSE EQUIVALENT (mrem) FOR PERIODS SHOWN BELOW			ACCUMULATED DOSE EQUIVALENT (mrem)			ACCUMULATED DOSE EQUIVALENT (mrem)			INCEPTION DATE MONTH	LAST AMENDMENT	RECORDS FOR YEAR	ID NUMBER	BIRTH DATE MO/DA/YR
						DEEP DOE	EYE LOE	SHALLOW SOE	DEEP DOE	EYE LOE	SHALLOW SOE	DEEP DOE	EYE LOE	SHALLOW SOE					
FOR MONITORING PERIOD:						10/14/88	01/14/89		QTR 4			1988							
CONTROL		CONTROL												4/88		4			
CAG C O PHD	00001	MAL. BODY												4/88		4	074002887	11/10/54	
DAS BANASREE	00002	MAL. BODY												4/88		4	088848130	10/14/57	
WILFON T J	00003	MAL. BODY												4/88		4	008404786	08/18/50	
KRELL ROBERT B	00004	MAL. BODY												7/84		4	084383647	12/02/43	

BIOFOR INC
 PO BOX 620
 ATTN: S. BAS
 MEADESBURY PA 18471

ACCOUNT NO.	SERIAL
136897	0001

PROCESS NO.	REPORT DATE	DOSIMETER RECEIVED	REPORT TIME	PAGE
UN933	11/07/80	10/31/80	8	1

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BAH

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RADIATION DOSIMETRY REPORT

NAME	PARTICIPANT NUMBER	TYPE OF RECORD	DOSIMETER TYPE OR SOURCE	NOTES	RADIATION QUALITY	DOSE EQUIVALENT (mrem) FOR PERIODS SHOWN BELOW			ACCUMULATED DOSE EQUIVALENT (mrem)			ACCUMULATED DOSE EQUIVALENT (mrem)			INCEPTION DATE MO/YR	LAST AMENDMENT	RECORDS FOR YEAR	ID NUMBER	SEX	BIRTH DATE MO/DA/YR
						DEEP DDE	EYE LDE	SHALLOW SDE	DEEP DDE	EYE LDE	SHALLOW SDE	DEEP DDE	EYE LDE	SHALLOW SDE						
FOR MONITORING PERIOD:						07/16/80 - 10/14/80			LTH 3			1980								
CONTROL		CONTROL	X												4/83		3			
CAG, G. P. JR.	00001	WH. BODY	X												4/83		3	274082807	M	11/10/84
DAS, SARASREE	00002	WH. BODY	X												4/83		3	288888130	F	10/14/87
SINGAR, J. C. PHD	00003	WH. BODY	X												4/83		3	686744788	M	12/01/80
BRIPPI, T. J.	00004	WH. BODY	X												4/83		3	208404788	M	08/18/80
KRELL, ROBERT B.	00005	WH. BODY	X												7/84		3	284388047	M	12/02/83

SIGFOR INC
PO BOX 820
ATTN S DAS
MEASLEY PA 18471

ACCOUNT NO.	SERIAL
138537	0001

PRECED. NO.	REPORT DATE	BUSINESS REASON	REPORT TIME	PAGE NO.
04190	5/04/85	4/24/85	8	1

QUALITY CONTROL RELEASE
RAH

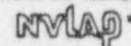
** ONLY PAGE **

LANDAUER®

RADIATION DOSIMETRY REPORT

Landauer, Inc. 2 Science Road Glenwood, Illinois 60425-1586
Telephone (708)755-7000 Facsimile (708)755-7018

Accredited by the National Institute of Standards and Technology through



NAME	PARTICIPANT NUMBER	TYPE OF RECORD	DOSIMETER TYPE OR SOURCE	NOTES	RADIATION QUALITY	DOSE EQUIVALENT (mrem) FOR PERIODS SHOWN BELOW			ACCUMULATED DOSE EQUIVALENT (mrem)			ACCUMULATED DOSE EQUIVALENT (mrem)			INCEPTION DATE MO/YR	LAST AMENDMENT	RECORDS FOR YEAR	# NUMBER	SEX	BIRTH DATE MO/DA/YR
						DEEP DOE	EYE LDE	SHALLOW SOE	DEEP DOE	EYE LDE	SHALLOW SOE	DEEP DOE	EYE LDE	SHALLOW SOE						
FOR MONITORING PERIOD:						01/15/85 - 04/14/85			STR 1			1985								
CONTROL		CONTROL	K												4/85		1			
CAD C S PHD	00001	MAL BODY	K												4/85		1	37408280	M	11/20/58
DAS SARASNEZ	00002	MAL BODY	K												4/85		1	380988130	F	10/14/57
SINGAR J C PHD	00003	MAL BODY	K												4/85		1	488794780	M	12/21/58
BRIPPIN T J	00005	MAL BODY	K												4/85		1	208404780	M	05/18/50
KRELL ROBERT B	00008	MAL BODY	K												4/85		1	28458280	M	12/28/58

BIOFOR INC
PO BOX 629
ATTN B DAS
MEASUREMENT

PA 16471

RADIATION DOSIMETRY REPORT

Landauer, Inc. 2 Science Road
Fairport, NY 11731-1586
Telephone (708) 755-7000
Fax (708) 755-7016

Accredited by the
National Institute of Standards and Technology
through NIST

136937

50453A	12594	13794	6	1
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RAH

NAME	SOCIAL SECURITY NUMBER	EXPOSURE PERIOD	DOSE	EXPOSURE TO RADIATION (mR)				CUMULATIVE TOTALS (mR)	REMARKS
				DEEP	SHALLOW	DEEP	SHALLOW		
0000 CONTROL		01/14/94							
0001 CAD C O PHD	176062557								
0002 DAS BANASREE	166989130								
0003 SIRCAR J C PHD	139744789								
0004 MISJOWSKI I A	186566718								
0005 CRIFPIN J J	106404768								
994 COSMETER RESULTS ARE BEING MAILED SEPARATELY ON A NEW LANDAUER REPORT FORM									

RECEIVED
FEB - 2 1994
BIOFOR, INC

APPENDIX B

Re: Radioisotope spill

To: Radiation Safety officer, Dr Charles Cao

From: Banasree Das

Date: July 26, 1993.

This is a report of radioisotope spill which occurred in the cell biology lab. On July 16th, I was doing a RIA with Leukotrine B₄ [³H] assay reagent system (code TRK 980) from Amersham. One rack slipped from my hand and the tubes with samples and scintillation fluid in them fell to the ground (the tubes were all capped so no spill occurred on the ground). Dr Charles Cao was there and we found all the tubes except one. I looked everywhere - I even checked the lower pockets of my labcoat but the tube was nowhere to be found. There was a waste container on the ground full of scintillation tubes from previous experiment, I assumed that the missing tube fell into that container. On the morning of July 23, Ms Tamara Miskowski noticed a spill around my upper labcoat pocket and a scintillation vial was found inside the pocket. I promptly notified the incident to Dr Charles Cao, the Radiation Safety Officer at Biofor. He immediately did wipe tests on the spill area of the labcoat, the sides of the tube, the shirt that I was wearing and the chair that the labcoat was on.

All counts came out to be the same as background. But when the liquid remaining in the scintillation vial was counted it gave a count of approx. 300 dpm. From the duplicate of the tube that was missing, I assume the total count in that tube was approx. 3,000 dpm.

I then spoke with the Radiation Safety Officer at Albert Einstein College of Medicine, NY and described the situation to him - He said ³H is very low energy and the spill is too small to be worried about. I then called NRC and spoke with Mr Thompson (x 5303). He said, "³H is a low energy isotope so there is no risk of external exposure". When I asked him whether we should report this to NRC, he said "This is considered to be a very minor spill and I don't think there is any reason to notify NRC". I then told him that we have disposed of the labcoat as radioactive waste and we are doing wipe tests and bioassays just to be sure. He said "this is such a minor spill that I don't think wipe tests and bioassays are necessary but use your judgement".

I did bioassays with urine samples every day from July 23 through July 30 (except sat. and sunday) and the counts came out to be normal.

Procedures for Radioactive Bioassay

1. 1 ml urine sample + 10 ml Ultima Gold XR in a scintillation vial, do in triplicate,
2. 1 ml water or urine from person who does not work with radioactive materials serves as background, also in triplicate,
3. Run auto-calibration on Beckman LS6000SC liquid scintillation counter,
4. Set window for tritium as 0 - 18.6 KeV or carbon-14 as 18.6 - 156 KeV,
5. Count for 5 min,
6. Read results: compare the results from the tested samples to the background

PAGE: 1

22 JUL 1993 10:31

PRESET TIME : 5.00

COUNT BLANK :	YES	IC4 :	NO	REPLICATES :	3	RS232 :	DEF
---------------	-----	-------	----	--------------	---	---------	-----

SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0

Sample #1 County #1

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 RES. SUR: 0

RECEIVED 1964 JAN 14 10 10 AM

BOOKENDS: BOOKEND CORRECTION: 011

[illegible]

SAM NO	POS	TIME MIN	HE	3H		14C		3H DPH	14C DPH	3H		14C		RATIO	LUMEX %	ELAPSED TIME
				CPH	%ERROR	CPH	%ERROR			EFF-1	EFF-2	EFF-1	EFF-2			
B1	88-1	5.00	140.5	33.80	15.38	24.80	17.96	83.21	32.97	33.34	0.73	18.38	73.37	2.523	13.24	5.56
B2	88-2	5.00	140.6	30.60	16.17	22.80	18.73	75.10	30.33	33.32	0.73	18.38	73.37	2.476	12.43	11.21
B3	88-3	5.00	137.9	23.40	18.49	19.00	20.52	35.14	25.31	33.98	0.72	18.43	73.49	2.178	11.88	16.82
B4	88-4	5.00	170.1	21.20	19.43	26.20	17.47	40.95	35.09	35.87	0.71	18.55	73.83	1.167	6.03	22.43
B5	88-5	5.00	126.7	23.20	18.57	23.00	18.65	47.67	30.64	36.72	0.70	18.59	73.98	1.556	4.73	28.04
B6	88-6	5.00	126.7	22.60	18.81	34.60	15.21	38.05	46.41	36.72	0.70	18.59	73.98	0.820	4.29	33.64
Blank Average				DPH for 3H :		36.69 COEF. OF VAR:		32.727								
Blank Average				DPH for 14C :		33.46 COEF. OF VAR:		21.334								

22 JUL 1993 11:46

COMMENT: 1ML URINE 10ML ULTIMA GOLDIR

```
DATA CALC :      DL DPH NO :YES SAMPLE REPEATS: 1      PRINTER      : STD
COUNT BLANK :      YES 1C0 : NO REPLICATES : 3      RS232      : OFF
TWO PHASE :      NO ADC :YES CYCLE REPEATS : 1
SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE RES: 0
LOW LEVEL :      NO HALF LIFE CORRECTION DATE: 0000
```

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0
ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

Sample #8. Counting #2

BACKGROUND BUECH CURVE: 011 COLOR BUECH CORRECTION: 011

Quench Limits Low:10.422 High:335.55

SAM NO	POS	TIME MIN	RH	3H		14C		3H BPH	14C BPH	3H		14C		RATIO	LINEX	ELAPSED TIME
				CPH	ERROR	CPH	ERROR			EFF-1	EFF-2	EFF-1	EFF-2			
B1	81-1	5.00	142.2	15.80	22.50	18.00	21.08	34.50	24.21	32.91	0.73	18.35	73.29	1.425	8.81	5.54
B2	81-2	5.00	143.0	17.40	21.44	24.00	18.24	35.00	32.41	32.74	0.73	18.34	73.26	1.080	7.68	11.16
B3	81-3	5.00	144.1	15.60	22.65	20.40	19.80	32.52	27.94	32.46	0.74	18.32	73.21	1.181	8.00	16.79
B4	81-4	5.00	130.0	18.20	20.97	23.60	18.41	34.35	31.63	35.90	0.71	18.55	73.04	1.086	9.72	22.41
B5	81-5	5.00	129.5	15.20	22.94	21.00	19.52	27.68	28.17	36.03	0.71	18.56	73.06	0.983	6.30	28.01
B6	81-6	5.00	131.1	13.80	24.08	19.00	20.52	25.46	25.50	35.64	0.71	18.54	73.79	0.998	7.71	33.63
Blank Average				BPH for 3H :		31.58 COEF. OF VAR:		12.780								
Blank Average				BPH for 14C :		28.24 COEF. OF VAR:		11.537								

STOFOR INC
PO BOX 839
ATTN S DAS
MEADLEY PA 19471

ACCOUNT NO	SERIES
990837	0001

PROCESS NO	REPORT DATE	DOSIMETER	REPORT TIME	PAGE
77687	11/16/84	REC'D	11/ 7/84	1

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LANDAUER®

RADIATION DOSIMETRY REPORT

Landauer, Inc. 2 Science Road Glenwood, Illinois 60425-1586
Telephone: (708)755-7000 Facsimile: (708)755-7016

Accredited by the National Institute
of Standards and Technology through

NVLAP

NAME	PARTICIPANT NUMBER	TYPE OF RECORD	DOSIMETER TYPE OR SOURCE	NOTES	RADIATION QUALITY	DOSE EQUIVALENT (mREM) FOR PERIODS SHOWN BELOW			ACCUMULATED DOSE EQUIVALENT (mREM)			ACCUMULATED DOSE EQUIVALENT (mREM)			RECEPTION DATE MO/YR	LAST AMENDMENT	RECORDS FOR YEAR	ID NUMBER	BIRTH DATE MO/DA/YR
						DEEP SDX	EYE LDE	SHALLOW SDX	DEEP SDX	EYE LDE	SHALLOW SDX	DEEP SDX	EYE LDE	SHALLOW SDX					
FOR MONITORING PERIOD:						07/16/84 - 10/14/84			STR 2			1984							
CONTROL		CONTROL												4/83					
SAD E D PHD	00001	MHL BODY	X											4/83			257402887	11/26/84	
DAS BANAGREE	00002	MHL BODY	X											4/83			500085130	10/14/87	
STENCAR J C PHD	00003	MHL BODY	X											4/83			1235714704	12/17/86	
KILKOWSKI S A	00004	MHL BODY	X											4/83			189566713	03/18/84	
BRIPPER T J	00006	MHL BODY	X											4/83			008404788	08/18/80	
FOR MONITORING PERIOD:						07/16/84 - 10/14/84			STR 2			1984							
CONTROL		CONTROL																	

BIDFOR INC
PO BOX 829
ATTH 8 DAS
WILMERTON PA 19471

ACCOUNT NO.	SERIES CODE
138827	

PROCESS NO.	REPORT DATE	DOSIMETER RECEIVED	REPORT TIME IN WORK DAYS	PAGE NO.
U1707	2/ 3/85	1/27/85	5	1

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== ONLY PAGE ==

LANDAUER®

RADIATION DOSIMETRY REPORT

Landauer, Inc. 2 Science Road, Greenwood, Illinois 60425-1586
Telephone: (708)755-7000 Facsimile: (708)755-7016

Accredited by the National Institute of Standards and Technology through

NVLAP

NAME	PARTICIPANT NUMBER	TYPE OF RECORD	DOSIMETER TYPE OR SOURCE	NOTES	RADIATION QUALITY	DOSE EQUIVALENT IN REMS FOR PERIODS SHOWN BELOW			ACCUMULATED DOSE EQUIVALENT IN REMS			ACCUMULATED DOSE EQUIVALENT IN REMS			RECEPTION DATE MO/YR	LAST AMENDMENT	RECORDS FOR YEAR	ID NUMBER	SEX	BIRTH DATE MO/DA/YR
						DEEP DDE	EYE LDE	SHALLOW SDE	DEEP DDE	EYE LDE	SHALLOW SDE	DEEP DDE	EYE LDE	SHALLOW SDE						
FOR MONITORING PERIOD:						95/01/01	01/01/85		STB 4			1000								
CONTROL		CONTROL													4/80		5			
DAS BANASREE	00002	NHL BODY													4/80		4	305888130	F	10/14/57
GRIFFA T J	00008	NHL BODY													4/80		4	206404788	M	05/18/50

BIOFOR INC
PO BOX 838
ATTN: S. DAS
MEADOWS PA 18471

ACCOUNT NO.	SERIAL
138837	CSM

PROCESS NO.	REPORT DATE	DOSEMETER	REPORT TIME	PAGE
T4384	7/27/94	DECLIVED	IN WORK DATE	NO.
		7/18/94	7	1

QUALITY CONTROL RELEASE
RAH

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LANDAUER®

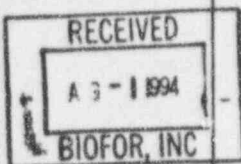
RADIATION DOSIMETRY REPORT

Landauer, Inc. 2 Science Road Glenwood, Illinois 60425-1586
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NVLAP

NAME	PARTICIPANT NUMBER	TYPE OF RECORD	DOSEMETER TYPE OR SOURCE	NOTES	RADIATION QUALITY	DOSE EQUIVALENT (SREM) FOR PERIODS SHOWN BELOW			ACCUMULATED DOSE EQUIVALENT (SREM)			ACCUMULATED DOSE EQUIVALENT (SREM)			INCEPTION DATE MO/YR	LAST AMENDMENT	RECORDS FOR YEAR	ID NUMBER	SEX	BIRTH DATE MO/DA/YR
						DEEP DOE	EYE LOE	SHALLOW SOE	DEEP DOE	EYE LOE	SHALLOW SOE	DEEP DOE	EYE LOE	SHALLOW SOE						
FOR MONITORING PERIOD:						04/18/94	07/14/94		07/94			1994								
CONTROL		CONTROL	X			N	N	N							4/93	2				
CAG C B PHD	00001	MHL BODY	X			N	N	N							4/93	2		974082992	M	11/16/54
DAS BANASREZ	00002	MHL BODY	X			N	N	N							4/93	2		98888130	F	10/14/57
SINCAR J C PHD	00003	MHL BODY	X			N	N	N							4/93	2		439744788	M	12/01/56
MISAKOWSKI I A	00004	MHL BODY	X			N	N	N							4/93	2		188508718	F	03/18/64
BRUFFIN T	00005	MHL BODY	X			N	N	N							4/93	2		108401788	M	08/18/66



Accredited by the National Institute of Standards and Technology

LANDAUER

DATE	10/10/77
TIME	10:00 AM

[illegible]

QUALITY CONTROL RELEASE

00 00000000 00

PARTICIPANT NUMBER	TYPE OF RECORD	SUSPECTED TYPE OR SOURCE	NOTES	RADIATION QUALITY		DOSE EQUIVALENT PERIOD FOR PERIODS SHOWN BELOW		DOSE EQUIVALENT PERIOD FOR PERIODS SHOWN BELOW		DOSE EQUIVALENT PERIOD FOR PERIODS SHOWN BELOW		ACCESSION DATE MONTH	LAST ASSIGNMENT FOR YEAR	ID NUMBER	BIRTH DATE MO/DA/YR
				DEEP DOSE	SHALLOW DOSE	DEEP DOSE	SHALLOW DOSE	DEEP DOSE	SHALLOW DOSE	DEEP DOSE	SHALLOW DOSE				
00001	HL BODY	CONTROL										4/80	1		
00002	HL BODY											4/80	1		
00003	HL BODY											4/80	1		
00004	HL BODY											4/80	1		
00005	HL BODY											4/80	1		
00006	HL BODY											4/80	1		

1 - PR 5587 - NP101 - 001

[illegible]

ID: BIOASSAY

23 JUL 1993 12:32

USER: 9

COMMENT: 1ML URINE 10ML ULTIMA GOLDXR

PRESET TIME : 5.00

DATA CALC : DL DPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : YES IC# : NO REPLICATES : 3 RS232 : OFF

TWO PHASE : NO ADC : YES CYCLE REPEATS : 1

SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

Sample # 1, Count # 1

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 10.422 High: 335.55

SAM NO	POS	TIME MIN	H#	3H		14C		3H DPM	14C DPM	3H		14C		RATIO	LUMEX	ELAPSED TIME
				CPH	ZERROR	CPH	ZERROR			EFF-1	EFF-2	EFF-1	EFF-2			
B1	#1-1	5.00	110.0	18.60	20.74	21.40	19.33	32.50	28.37	40.86	0.67	18.75	74.66	1.146	17.20	5.55
B2	#1-2	5.00	109.2	28.40	16.78	29.20	16.55	51.52	38.63	41.06	0.67	18.76	74.69	1.334	9.44	11.16
B3	#1-3	5.00	111.2	31.40	15.96	31.00	16.06	58.46	41.02	40.56	0.67	18.74	74.61	1.425	11.23	16.79
B4	#1-4	5.00	130.8	22.60	18.81	28.80	16.67	43.25	38.61	35.71	0.71	18.54	73.80	1.120	10.50	22.42
B5	#1-5	5.00	128.3	24.80	17.96	25.00	17.89	51.22	33.34	36.33	0.70	18.57	73.91	1.537	12.01	28.04
B6	#1-6	5.00	127.2	17.80	21.20	19.20	20.41	35.64	25.62	36.58	0.70	18.59	73.96	1.391	9.37	33.68
Blank Average				DPM for	3H :	45.43	COEF. OF VAR:	22.192								
Blank Average				DPM for	14C :	34.26	COEF. OF VAR:	18.171								

ID: BIOASSAY

22 JUL 1993 15:02

USER: 9

COMMENT: 1ML URINE 10ML ULTIMA GOLDXR

PRESET TIME : 5.00

DATA CALC : DL DPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : YES IC# : NO REPLICATES : 3 RS232 : OFF

TWO PHASE : NO AQC : YES CYCLE REPEATS : 1

SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

Sample #2, Counting #1

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 10.422 High: 335.55

SAM NO	POS	TIME MIN	H#	3H		14C		3H DPM	14C DPM	3H		14C		RATIO	LUMEX %	ELAPSED TIME	
				CPM	ZERROR	CPM	ZERROR			EFF-1	EFF-2	EFF-1	EFF-2				
Smp.	B1	11-1	5.00	141.1	19.60	20.20	17.80	21.20	45.86	23.81	33.20	0.73	18.37	73.35	1.926	17.57	5.57
	B2	11-2	5.00	136.2	20.80	19.61	20.20	19.90	79	27.01	34.39	0.72	18.46	73.57	1.703	17.05	11.22
	B3	11-3	5.00	141.5	18.80	20.63	20.60	19.71	41.43	27.68	33.10	0.73	18.37	73.33	1.497	14.90	16.84
	B4	11-4	5.00	131.5	14.80	23.25	21.20	19.43	26.79	28.48	35.55	0.71	18.53	73.78	0.941	5.38	22.44
Ref.	B5	11-5	5.00	130.6	13.80	24.08	16.80	21.82	26.93	22.30	35.76	0.71	18.54	73.81	1.197	5.46	28.04
	B6	11-6	5.00	131.6	10.60	27.47	20.40	19.80	15.50	27.50	35.52	0.71	18.53	73.77	0.563	4.94	33.63
Blank Average				DPM for	3H :	33.75	COEF. OF VAR:	37.094									
Blank Average				DPM for	14C :	26.16	COEF. OF VAR:	9.221									

of BD. by BD

ID: BIOASSAY

27 JUL 1993 16:37

USER: 9 COMMENT: 1ML URINE 10ML ULTIMA GOLDXR
 PRESET TIME : 5.00
 DATA CALC : DL DPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD
 COUNT BLANK : YES IC# : NO REPLICATES : 3 RS232 : OFF
 TWO PHASE : NO AQC : YES CYCLE REPEATS : 1
 SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0
 LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0
 ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 10.422 High: 335.55

SAM NO	POS	TIME MIN	H#	3H		14C		3H DPM	14C DPM	3H		14C		RATIO	LUMEX %	ELAPSED TIME
				CPM	ZERROR	CPM	ZERROR			EFF-1	EFF-2	EFF-1	EFF-2			
B1	88-1	5.00	155.3	21.00	19.52	17.40	21.44	56.35	23.36	29.78	0.76	18.07	72.66	2.412	14.57	5.56
B2	88-2	5.00	153.6	17.00	21.69	17.60	21.32	42.06	23.76	30.19	0.76	18.11	72.74	1.771	10.85	11.17
B3	88-3	5.00	153.3	15.40	22.79	23.80	18.33	31.50	32.38	30.26	0.76	18.12	72.76	0.973	9.73	16.81
B4	88-4	5.00	113.9	13.80	24.08	16.00	22.36	24.63	21.25	39.88	0.68	18.72	74.50	1.159	5.19	22.39
B5	88-5	5.00	112.9	14.60	23.41	21.80	19.16	22.83	29.04	40.13	0.68	18.73	74.55	0.786	4.17	27.99
B6	88-6	5.00	114.5	14.60	23.41	22.00	19.07	22.92	29.33	39.74	0.68	18.72	74.48	0.782	3.55	33.57
Blank Average				DPM for	3H :	33.38	COEF. OF VAR:	40.272								
Blank Average				DPM for	14C :	26.52	COEF. OF VAR:	16.350								

ID: BIOASSAY

28 JUL 1993 16:45

of BD. by BD

USER: 9

COMMENT: 1ML URINE 10ML ULTIMA GOLDXR

PRESET TIME : 5.00

DATA CALC : DL DPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : YES IC# : NO REPLICATES : 3 RS232 : OFF

TWO PHASE : NO AGC : YES CYCLE REPEATS : 1

SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BK6. SUB: 0

ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BK6. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 10.422 High: 335.55

SAM NO	POS	TIME MIN	H#	3H		14C		3H DPM	14C DPM	3H		14C		RATIO	LUMEX %	ELAPSED TIME
				CPM	ZERROR	CPM	ZERROR			EFF-1	EFF-2	EFF-1	EFF-2			
B1	#1-1	5.00	111.8	32.20	15.76	24.60	18.03	64.66	32.40	40.41	0.66	18.74	74.59	1.996	16.86	5.57
B2	#1-2	5.00	113.4	24.00	18.26	23.80	18.33	45.22	31.52	40.02	0.68	18.73	74.53	1.434	5.36	11.17
B3	#1-3	5.00	112.3	23.60	18.41	28.00	16.90	41.29	37.17	40.29	0.68	18.74	74.57	1.111	3.47	16.76
B4	#1-4	5.00	141.1	12.00	25.82	18.20	20.97	22.53	24.59	33.20	0.73	18.37	73.35	0.916	7.51	22.36
B5	#1-5	5.00	142.6	12.00	25.82	19.80	20.10	21.58	26.81	32.82	0.73	18.34	73.27	0.805	5.56	27.96
B6	#1-6	5.00	141.1	15.40	22.79	17.60	21.32	33.29	23.66	33.20	0.73	18.37	73.35	1.407	6.34	33.56
Blank Average				DPM for	3H :	38.10	COEF. OF VAR:	42.399								
Blank Average				DPM for	14C :	29.36	COEF. OF VAR:	17.809								

123399

cf BD. by BD

ID: BIOASSAY

26 JUL 1993 17:39

USER: 9

COMMENT: 1ML URINE 10ML ULTIMA GOLDXR

PRESET TIME : 5.00

DATA CALC : DL DPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : YES IC# : NO REPLICATES : 3 RS232 : OFF

TWO PHASE : NO AQC : YES CYCLE REPEATS : 1

SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

Sample 1, Count 1

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 10.422 High: 335.55

SAM NO	POS	TIME MIN	H#	3H		14C		3H DPM	14C DPM	3H		14C		RATIO	LUMEX %	ELAPSED TIME
				CPM	ZERROR	CPM	ZERROR			EFF-1	EFF-2	EFF-1	EFF-2			
B1	11-1	5.00	114.5	18.40	20.85	22.60	18.81	32.15	30.05	39.73	0.68	18.72	74.48	1.070	5.52	5.52
B2	11-2	5.00	150.8	16.80	21.82	24.40	18.11	34.95	33.12	30.85	0.75	18.17	72.88	1.055	8.62	11.14
B3	11-3	5.00	152.4	17.60	21.32	21.40	19.33	40.53	28.97	30.46	0.76	18.14	72.80	1.399	7.18	16.74
B4	11-4	5.00	152.8	11.80	26.04	20.60	19.71	22.10	28.07	30.37	0.76	18.13	72.78	0.787	7.91	22.36
B5	11-5	5.00	114.9	23.00	18.65	22.20	18.98	44.15	29.41	39.63	0.68	18.71	74.46	1.501	3.72	27.97
B6	11-6	5.00	113.5	14.40	23.57	18.40	20.85	24.56	24.47	39.98	0.68	18.73	74.52	1.004	3.99	33.57
Blank Average				DPM for 3H :		33.07		COEF. OF VAR:		26.208						
Blank Average				DPM for 14C :		29.02		COEF. OF VAR:		9.703						

ID: SURVEY

22 JUL 1993 09:59

USER: 10

COMMENT: TRITIUM AND CARBON-14

PRESET TIME : 1.00

DATA CALC : DL DPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 : OFF

TWO PHASE : NO ADC : YES CYCLE REPEATS : 1

SCINTILLATOR: LIQUID LUMEX: YES LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

*Survey Results After the Discovery
of the Radioactive Spill*

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

By CXC & BD

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 10.422 High: 335.55

SAM NO	POS	TIME MIN	H#	3H		14C		3H BPH	14C BPH	3H		14C		RATIO	LUMEX	ELAPSED TIME
				CPM	ZERROR	CPM	ZERROR			EFF-1	EFF-2	EFF-1	EFF-2			
1	88-1	1.00	56.6	211.00	13.77	19.00	45.88	383.30	21.63	53.99	0.63	18.79	76.72	17.719	0.67	1.57
2	88-2	1.00	57.0	192.00	14.43	14.00	53.45	350.91	15.38	53.89	0.63	18.79	76.70	22.813	0.56	3.20
3	88-3	1.00	60.8	24.00	41.67	14.00	53.45	38.93	17.97	52.97	0.63	18.80	76.55	2.167	4.13	4.86
4	88-4	1.00	61.0	22.00	42.64	17.00	48.51	33.78	21.93	52.92	0.63	18.80	76.54	1.540	2.11	6.49
5	88-5	1.00	62.2	14.00	53.45	8.00	70.71	22.93	10.27	52.64	0.63	18.80	76.49	2.232	2.54	8.14
6	88-6	1.00	59.1	15.00	51.64	11.00	60.30	23.11	14.17	53.39	0.63	18.80	76.61	1.631	2.30	9.75
7	88-7	1.00	59.0	13.00	55.47	11.00	60.30	19.35	14.20	53.40	0.63	18.79	76.62	1.363	2.72	11.42
8	88-8	1.00	56.3	17.00	48.51	10.00	63.25	26.99	12.81	54.07	0.63	18.79	76.73	2.106	2.13	13.04
9	88-9	1.00	56.7	9.00	66.67	11.00	60.30	11.72	14.24	53.98	0.63	18.79	76.71	0.823	2.73	14.57
10	88-10	1.00	59.9	8.00	70.71	21.00	43.64	5.37	27.38	53.19	0.63	18.80	76.58	0.196	1.61	16.22
11	88-11	1.00	54.3	15.00	51.64	15.00	51.64	20.83	19.36	54.55	0.63	18.78	76.81	1.076	1.96	17.76
12	88-12	1.00	56.2	18.00	47.14	10.00	63.25	28.84	12.80	54.08	0.63	18.79	76.73	2.253	2.18	19.39
13	88-13	1.00	55.4	9.00	66.67	10.00	63.25	12.11	12.93	54.29	0.63	18.78	76.77	0.936	2.23	20.94
14	88-14	1.00	60.7	18.00	47.14	5.00	89.44	31.74	6.27	52.99	0.63	18.80	76.55	5.062	2.36	22.57
15	88-15	1.00	55.7	8.00	70.71	9.00	66.67	10.73	11.64	54.20	0.63	18.79	76.75	0.922	2.85	24.24
16	88-16	1.00	62.0	13.00	55.47	13.00	55.47	18.67	16.84	52.68	0.63	18.80	76.50	1.108	2.58	25.87

INSTRUMENT CALIBRATION: Maxi 22 JUL 1993 10:30
Calibration successful

ID: BIOASSAY

10 MAY 1993 10:11

CXC

USER: 9

COMMENT: 1ML URINE 10ML ULTIMA GOLDIR

PRESET TIME : 5.00
 DATA CALC : DL DPM H0 : YES SAMPLE REPEATS: 1 PRINTER : STD
 COUNT BLANK : YES IC0 : NO REPLICATES : 3 RS232 : OFF
 TSD PHASE : NO ADC : YES CYCLE REPEATS : 1
 SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0
 LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0
 ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 10.422 High: 335.55

SAM NO	POS	TIME MIN	H0	3H		14C		3H BPH	14C BPH	3H		14C		RATIO	LUMEX %	ELAPSED TIME	
				CPH	ZERROR	CPH	ZERROR			EFF-1	EFF-2	EFF-1	EFF-2				
BKED	B1	88-1	5.00	-2.9	21.80	19.16	12.60	25.20	27.78	15.98	67.98	0.67	18.72	79.68	1.783	1.40	5.59
WARNING: QUENCH VALUE IS OUTSIDE QUENCH LIMIT																	
BLK	B2	88-2	5.00	94.5	22.80	18.73	17.40	21.44	41.42	22.76	44.71	0.65	18.82	75.26	1.820	1.29	11.19
	B3	88-3	5.00	93.7	29.00	16.61	18.80	20.63	54.32	24.90	44.90	0.65	18.82	75.29	2.217	1.02	16.79
	B4	88-4	5.00	93.3	24.40	18.11	17.20	21.57	44.83	22.43	45.00	0.65	18.82	75.30	1.997	1.02	22.38
	B5	88-5	5.00	123.2	21.00	19.52	20.00	20.00	42.69	26.98	37.58	0.69	18.64	74.13	1.606	1.40	27.99
SMP	B6	88-6	5.00	122.6	19.00	20.52	18.20	20.97	38.40	24.18	37.74	0.69	18.64	74.15	1.588	1.40	33.58
	B7	88-7	5.00	122.1	23.00	18.65	18.60	20.74	48.64	24.62	37.84	0.69	18.65	74.17	1.976	1.30	39.19
Blank Average					BPH for	3H :	42.98	COEF. OF VAR:	19.991								
Blank Average					BPH for	14C :	22.95	COEF. OF VAR:	15.355								

ID: SURVEY

22 JUL 1993 17:06

USER:10

COMMENT:TRITIUM AND CARBON-14

PRESET TIME : 1.00

DATA CALC : DL DPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 : OFF

TWO PHASE : NO AQC :YES CYCLE REPEATS : 1

SCINTILLATOR: LIQ/ID LUMEX:YES LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

*Survey After the Discovery
of the Radioactive Spill*

By CXC

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low:10.422 High:335.55

SAM NO	POS	TIME MIN	H#	3H		14C		3H DPM	14C DPM	3H		14C		RATIO	LUMEX %	ELAPSED TIME
				CPM	ZERROR	CPM	ZERROR			EFF-1	EFF-2	EFF-1	EFF-2			
1	4-1	1.00	58.9	17.00	51.28	12.00	57.74	26.38	15.44	53.44	0.63	18.79	76.62	1.708	5.69	1.58 <i>slave</i>
2	4-2	1.00	59.1	15.00	54.98	18.00	47.14	19.88	23.33	53.38	0.63	18.80	76.61	0.852	6.61	3.21 <i>water</i>
3	4-3	1.00	74.4	10.00	63.25	12.00	57.74	14.20	15.67	51.66	0.63	18.83	76.02	0.906	5.30	4.88 <i>L. shoe</i>
4	4-4	1.00	78.3	20.00	44.72	8.00	70.71	37.10	10.23	48.71	0.64	18.83	75.87	3.626	4.95	6.51 <i>R. shoe</i>
5	4-5	1.00	134.2	11.00	65.56	12.00	57.74	23.02	16.07	34.88	0.72	18.49	73.66	1.432	8.40	8.16 <i>shoes</i>
6	4-6	1.00	92.3	8.00	70.71	8.00	70.71	13.31	10.50	45.25	0.65	18.82	75.34	1.267	5.40	9.79 <i>R. shoe</i>
7	4-7	1.00	82.9	16.00	50.00	10.00	63.25	28.50	12.97	47.57	0.64	18.83	75.69	2.198	2.64	11.45 <i>L. shoe</i>
8	4-8	1.00	62.1	14.00	53.45	11.00	60.30	21.51	14.20	52.67	0.63	18.80	76.50	1.515	2.53	13.08 <i>shoes</i>
9	4-9	1.00	116.9	9.00	70.28	12.00	57.74	15.36	15.99	39.13	0.68	18.70	74.38	0.960	7.96	14.74 <i>shoes</i>
10	4-10	1.00	70.4	7.00	75.59	14.00	53.45	7.01	18.32	50.64	0.63	18.82	76.17	0.383	4.23	16.36 <i>shoes</i>
11	4-11	1.00	62.7	14.00	53.45	11.00	60.30	21.57	14.21	52.51	0.63	18.80	76.47	1.518	2.16	17.91 <i>badge</i>
12	4-12	1.00	61.3	19.00	45.88	7.00	75.59	32.79	8.88	52.85	0.63	18.80	76.53	3.694	2.08	19.44 <i>touch</i>
MISSING SAMPLE																
19	1-1	1.00	73.4	19.00	45.88	14.00	53.45	31.22	18.15	49.91	0.63	18.83	76.06	1.721	2.62	21.25
20	1-2	1.00	64.3	8.00	70.71	7.00	75.59	12.08	9.06	52.13	0.63	18.81	76.41	1.333	4.43	22.88
21	1-3	1.00	76.6	14.00	53.45	8.00	70.71	24.53	10.33	49.13	0.64	18.83	75.94	2.375	4.85	24.55
22	1-4	1.00	86.7	10.00	63.25	14.00	53.45	14.01	18.41	46.63	0.64	18.83	75.55	0.761	4.94	26.18
23	1-5	1.00	63.1	16.00	50.00	9.00	66.67	26.37	11.95	52.43	0.63	18.81	76.46	2.283	4.55	27.83
24	1-6	1.00	77.2	16.00	50.00	11.00	60.30	27.18	14.26	48.99	0.64	18.83	75.91	1.906	2.78	29.47
25	1-7	1.00	65.5	18.00	47.14	7.00	75.59	31.50	8.91	51.83	0.63	18.81	76.36	3.536	3.91	31.14
26	1-8	1.00	83.0	13.00	55.47	20.00	44.72	16.94	26.28	47.54	0.64	18.83	75.69	0.644	3.21	32.77
27	1-9	1.00	80.6	12.00	57.74	12.00	57.74	18.79	15.68	48.15	0.64	18.83	75.78	1.199	6.35	34.44
28	1-10	1.00	62.7	11.00	60.30	8.00	70.71	17.25	10.32	52.52	0.63	18.80	76.47	1.672	3.61	36.07
29	1-11	1.00	75.9	17.00	48.51	19.00	45.88	25.01	24.80	49.30	0.64	18.83	75.96	1.008	2.67	37.74
30	1-12	1.00	79.7	14.00	53.45	19.00	45.88	19.26	24.90	48.35	0.64	18.83	75.81	0.773	2.98	39.26
31	1-13	1.00	72.9	10.00	63.25	13.00	55.47	13.60	16.97	50.03	0.63	18.83	76.08	0.801	3.34	40.92
32	1-14	1.00	72.8	10.00	63.25	15.00	51.64	12.60	19.61	50.05	0.63	18.82	76.08	0.643	3.65	42.58
33	1-15	1.00	72.9	12.00	57.74	16.00	50.00	16.12	20.90	50.04	0.63	18.82	76.08	0.771	3.97	44.23
34	1-16	1.00	71.3	9.00	66.67	12.00	57.74	12.00	15.66	50.42	0.63	18.82	76.14	0.766	6.61	45.87
35	1-17	1.00	62.9	7.00	75.59	16.00	50.00	9.86	20.88	52.47	0.63	18.80	76.46	0.281	2.52	47.47
36	1-18	1.00	64.1	10.00	63.25	10.00	63.25	14.49	12.97	52.18	0.63	18.81	76.42	1.118	2.03	49.07
37	2-1	1.00	67.9	15.00	51.64	17.00	48.51	21.15	22.11	51.25	0.63	18.82	76.27	0.956	1.81	50.82
38	2-2	1.00	75.5	13.00	55.47	19.00	45.88	16.84	24.87	49.39	0.64	18.83	75.97	0.677	2.23	52.46
39	2-3	1.00	69.3	12.00	57.74	8.00	70.71	19.75	10.33	50.92	0.63	18.82	76.21	1.911	1.76	54.12
40	2-4	1.00	60.4	12.00	57.74	11.00	60.30	17.57	14.22	53.08	0.63	18.80	76.56	1.235	1.57	55.76
41	2-5	1.00	72.8	11.00	60.30	11.00	60.30	16.99	14.32	50.06	0.63	18.82	76.08	1.158	2.36	57.42
42	2-6	1.00	65.6	12.00	57.74	14.00	53.45	16.56	18.20	51.81	0.63	18.81	76.36	0.910	2.09	59.05
43	2-7	1.00	80.1	14.00	53.45	12.00	57.74	22.90	15.64	48.27	0.64	18.83	75.80	1.464	2.48	60.71
44	2-8	1.00	90.0	14.00	53.45	13.00	55.47	23.55	17.03	45.82	0.65	18.83	75.43	1.383	2.86	62.35
45	2-9	1.00	87.2	11.00	60.30	17.00	48.51	14.59	22.38	46.50	0.64	18.83	75.53	0.652	4.23	64.03
46	2-10	1.00	96.1	5.00	126.56	8.00	70.71	6.79	10.58	44.32	0.65	18.82	75.20	0.642	17.97	65.66

AM MO	POS	TIME MIN	H#	3H		14C		3H DPH	14C DPH	3H		14C		RATIO	LUMEX %	ELAPSED TIME	
				CPH	%ERROR	CPH	%ERROR			EFF-1	EFF-2	EFF-1	EFF-2				
47	2-11	1.00	71.2	20.00	45.83	9.00	66.67	29	35.33	11.93	50.44	0.63	18.82	76.14	3.067	5.64	67.34
48	2-12	1.00	82.0	15.00	51.64	12.00	57.74	20	25.22	15.63	47.80	0.64	18.83	75.73	1.613	3.20	68.99
49	2-13	1.00	90.7	16.00	50.00	12.00	57.74	21	28.59	15.67	45.64	0.65	18.83	75.40	1.825	5.42	70.66
50	2-14	1.00	77.1	12.00	62.37	10.00	63.25	22	19.49	13.01	48.99	0.64	18.83	75.91	1.498	10.75	72.30
51	2-15	1.00	92.5	18.00	47.14	13.00	55.47	23	31.76	16.97	45.19	0.65	18.82	75.33	1.930	5.24	73.97
52	2-16	1.00	63.2	15.00	51.64	9.00	66.67	24	21.48	11.57	52.39	0.63	18.81	76.45	2.116	2.52	75.61
53	2-17	1.00	127.3	12.00	70.74	14.00	53.45	25	23.30	18.71	36.58	0.70	18.59	73.96	1.245	14.77	77.39
54	2-18	1.00	74.1	11.00	60.30	16.00	50.00	26	14.19	20.93	49.74	0.63	18.83	76.03	0.678	3.09	79.02

ID: BIOASSAY

23 JUL 1993 08:36

cf CXC. by CXC

USER: 9
 PRESET TIME : 5.00
 DATA CALC : DL DPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD
 COUNT BLANK : YES IC# : NO REPLICATES : 3 RS232 : OFF
 TWO PHASE : NO ADC : YES CYCLE REPEATS : 1
 SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0
 LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

Sample # 1, Count # 1

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0
 ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 10.422 High: 335.55

SAM NO	POS	TIME MIN	H#	3H		14C		3H DPM	14C DPM	3H		14C		RATIO	LUMEX %	ELAPSED TIME
				CPM	ZERROR	CPM	ZERROR			EFF-1	EFF-2	EFF-1	EFF-2			
B1	88-1	5.00	132.0	37.40	14.63	28.00	16.90	86.20	37.13	35.41	0.71	18.52	73.75	2.321	4.19	5.53
B2	88-2	5.00	128.8	26.80	17.28	24.20	18.18	57.51	32.20	36.21	0.70	18.57	73.89	1.786	4.64	11.14
B3	88-3	5.00	127.9	19.40	20.31	22.00	19.07	38.26	29.39	36.43	0.70	18.58	73.93	1.302	4.68	16.73
B4	88-4	5.00	149.0	16.20	22.22	19.20	20.41	36.69	25.94	31.28	0.75	16.21	72.97	1.415	5.90	22.34
B5	88-5	5.00	151.6	15.80	22.50	21.20	19.43	34.52	28.75	30.65	0.75	18.15	72.84	1.201	4.77	27.96
B6	88-6	5.00	150.9	13.00	24.81	19.80	20.10	26.31	26.90	30.83	0.75	18.17	72.88	0.978	5.39	33.58
Blank Average				DPM for 3H :		46.58		COEF. OF VAR:		47.154						
Blank Average				DPM for 14C :		30.05		COEF. OF VAR:		13.624						

INSTRUMENT CALIBRATION: Maxi 23 JUL 1993 09:11
 Calibration successful

ID: BIOASSAY

USER: 9

23 JUL 1993 09:23

of CXC, by CXC

PAGE: 1

PRESET TIME : 5.00
 DATA CALC : DL DPM H0 : YES SAMPLE REPEATS: 1 PRINTER : STD
 COUNT BLANK : YES IC# : NO REPLICATES : 3 RS232 : OFF
 TWO PHASE : NO AQC : YES CYCLE REPEATS : 1
 SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0
 LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

Sample #1, Count #2

ISOTOPE 1: 3H ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0
 ISOTOPE 2: 14C ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 10.422 High: 335.55

SAM NO	POS	TIME MIN	H0	3H		14C		3H DPM	14C DPM	3H		14C		RATIO	LUMEX %	ELAPSED TIME
				CPM	ERROR	CPM	ERROR			EFF-1	EFF-2	EFF-1	EFF-2			
B1	#1-1	5.00	131.6	26.80	17.28	31.40	15.96	33.92	42.05	35.52	0.71	18.53	73.77	1.273	3.53	9.52
B2	#1-2	5.00	129.1	19.80	20.10	20.20	19.90	40.95	26.95	36.13	0.71	18.56	73.88	1.519	5.13	11.14
B3	#1-3	5.00	128.9	18.40	20.85	21.60	19.25	36.03	28.89	36.18	0.70	18.57	73.89	1.247	5.33	16.72
B4	#1-4	5.00	150.1	16.80	21.82	16.60	21.95	41.06	22.34	31.02	0.75	18.19	72.92	1.838	5.73	22.32
B5	#1-5	5.00	151.9	11.40	26.49	22.40	18.90	19.13	30.56	30.60	0.75	18.15	72.83	0.626	4.82	27.94
B6	#1-6	5.00	150.8	13.40	24.43	14.20	23.74	32.16	19.15	30.85	0.75	18.17	72.88	1.679	5.89	33.53
Blank Average				CPM for	3H :	37.14	COEF. OF VAR:	30.661								
Blank Average				CPM for	14C :	28.32	COEF. OF VAR:	28.044								

INSTRUMENT CALIBRATION:
 Calibration successful

Maxi 23 JUL 1993 09:59

D: BIOASSAY

25 MAR 1993 11:51

for BD, by BD

USER: 9 COMMENT: 1ML URINE 10ML ULTIMA GOLDXR
 PRESET TIME : 5.00
 DATA CALC : DL DPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD
 COUNT BLANK : YES IC# : NO REPLICATES : 3 RS232 : OFF
 TWO PHASE : NO ADC : YES CYCLE REPEATS : 1
 SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0
 LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0
 ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 10.422 High: 335.55

SAM NO	POS	TIME MIN	H#	3H		14C		3H DPM	14C DPM	3H		14C		RATIO	LUMEX	ELAPSED TIME	
				CPM	ZERROR	CPM	ZERROR			EFF-1	EFF-2	EFF-1	EFF-2				
Bkg (Beckman)	B1	01-1	5.00	-2.3	23.80	18.33	9.80	28.57	31.77	12.04	67.82	0.67	18.72	79.64	2.639	1.93	5.61
WARNING: QUENCH VALUE IS OUTSIDE QUENCH LIMIT																	
Ref.	B2	01-2	5.00	114.7	21.20	19.43	15.60	22.65	43.74	20.55	39.68	0.68	18.72	74.47	2.129	1.57	11.20
	B3	01-3	5.00	114.4	19.20	20.41	17.60	21.32	37.33	23.29	39.76	0.68	18.72	74.49	1.603	1.59	16.78
	B4	01-4	5.00	115.7	21.00	19.52	19.20	20.41	41.18	25.42	39.45	0.68	18.71	74.44	1.620	1.46	22.39
	B5	01-5	5.00	160.3	22.00	19.07	21.20	19.43	58.94	26.65	28.61	0.78	17.94	72.40	2.057	5.25	26.01
Sample	B6	01-6	5.00	164.2	18.80	20.63	18.00	21.08	52.19	24.37	27.70	0.79	17.83	72.19	2.142	5.11	33.64
	B7	01-7	5.00	162.7	14.40	23.57	20.00	20.00	33.95	27.31	28.05	0.78	17.87	72.27	1.243	5.52	39.25
Blank Average				DPM for	3H :	42.73	COEF. OF VAR:	23.054									
Blank Average				DPM for	14C :	23.09	COEF. OF VAR:	24.012									

ID: BIOASSAY

23 MAR 1993 16:03

for Charles Lee
by CXC

USER: 9 COMMENT: WIND1-TRITIUM, WIND2-14C
 PRESET TIME : 5.00
 DATA CALC : DL DPM H0 : YES SAMPLE REPEATS: 1 PRINTER : STD
 COUNT BLANK : YES IC0 : NO REPLICATES : 3 RS232 : OFF
 TWO PHASE : NO ADC : YES CYCLE REPEATS : 1
 SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0
 LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0
 ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 10.422 High: 335.55

BKG	PDS	TIME	H0	3H		14C		3H	14C	3H		14C		RATIO	LUMEX	ELAPSED	
				CPM	ZERROR	CPM	ZERROR			BPM	DPH	EFF-1	EFF-2				EFF-1
BKG	B1	88-1	5.00	-2.3	26.20	17.47	12.00	25.82	34.55	14.78	67.83	0.67	18.72	79.64	2.338	1.72	5.61
WARNING: QUENCH VALUE IS OUTSIDE QUENCH LIMIT																	
Ref.	B2	88-2	5.00	112.4	31.80	15.86	20.60	19.71	66.42	27.02	40.25	0.68	18.73	74.56	2.458	10.89	11.25
	B3	88-3	5.00	111.5	29.20	16.55	19.20	20.41	60.47	25.19	40.48	0.67	18.74	74.60	2.400	10.67	16.91
	B4	88-4	5.00	112.0	35.80	14.95	22.80	18.73	74.82	29.89	40.36	0.68	18.74	74.58	2.503	10.21	22.55
	B5	88-5	5.00	147.5	22.20	18.98	15.80	22.50	58.03	21.04	31.64	0.74	18.25	73.04	2.758	7.10	28.19
Sample	B6	88-6	5.00	148.9	26.00	17.54	20.40	19.80	67.16	27.27	31.32	0.75	18.22	72.98	2.463	6.09	33.84
	B7	88-7	5.00	123.0	28.40	16.78	15.80	22.50	65.22	20.70	37.63	0.69	18.64	74.14	3.150	16.75	39.51
Blank Average				BPM for	3H :	60.95 COEF. OF VAR: 21.021											
Blank Average				BPM for	14C :	23.70 COEF. OF VAR: 21.794											

APPENDIX C

Radiological Survey Data Sheet

Client: BIOFOR INC.

Date: 10-28-96

Site: Waverly, PA

Surveyor(s): T. Mobley

J. Sidora

CELL BIOLOGY LABORATORY

The section of floor in the Cell Biology previously remediated was re-surveyed on 10-28-96 and results indicated no levels of fixed contamination in excess of the background.

The smears of the same area were counted on Beckman Liquid Scintillation Counter Model LS5000TA. Results indicated levels well below the release limits for unrestricted use.

The NuAire Fume Hood Exhaust Plenum was also surveyed using the Ludlum Survey Meter/PGM with no results above background. Smears were counted on the LSCounter with the same results.

Counter Serial # LSA-01
Calibration date: 6-3-96
Calibration due: 12-3-96

Instrument Model: Ludlum Model 3

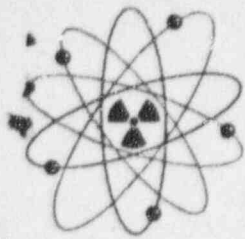
Background: 50 cpm

Serial Number: 54573 PGM

Eff. Alpha: 35%

Cal. Due Date: 1-11-97

Eff. Beta: 31%



Applied Health, Inc.

5409 Enterprise, Bethel Park, Pa 15102

Phone (412) 833-5555 Fax (412) 851-0662

Biofor Inc.
Waverly, PA.

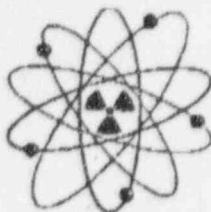
October 30, 1996

Liquid Scintillation Counter Data

Sample #	^3H (dpm)	^{14}C (dpm)	^3H Eff.	^{14}C Eff.
1	40	4	22%	97%
2	52	0	22%	97%
3	54	0	23%	97%
4	44	0	23%	97%
Baseline	43	0	22%	97%

Background ^3H 96 dpm
 ^{14}C 53 dpm

123399



Applied Health, Inc.

5409 Enterprise, Bethel Park, Pa. 15102

Phone (412) 833-5555 Fax (412) 851-0662

MS-16

Q1

Beckman Instruments
2550 Harbor Boulevard
Fullerton, CA. 92634-3100
Attn: Technical Service Representatives

October 30, 1996

To Whom It May Concern:

Enclosed please find (1) thirty microcurie Cesium-137 check source housed in a lead container purchased from your company. This source was removed from a Beckman Model LS6000SC counter. This counter is located at the Biofor Inc. facility in Waverly, PA. Applied Health Inc. is assisting Biofor in terminating their USNRC Materials License No. 37-30020-01. In order for the commission to grant the termination it is necessary to send a copy of documentation from Beckman Instruments that verifies receipt of this sealed source.

If you have any questions please do not hesitate to contact me at (412)-835-9555. Otherwise please forward the documentation by facsimile to (412)-835-9559 as soon as possible.

Thank you for your assistance.

Sincerely,

Todd Mobley

Applied Health Inc.
Todd Mobley
Technical Services Supervisor

cc: Mr. Gary Ruffborn of Scherer Health Care
Mr. Thor Oberg of USNRC Region I

Post-It® Fax Note	7671	Date	10-30	# of pages	1
To	MR. THOR OBERG	From	T. MOBLEY		
Co./Dept	USNRC	Co.	AH		
Phone #		Phone #			
Fax #	412-337-5324	Fax #			

TELEPHONE CONVERSATION RECORD

LICENSEE * * *: Biofor, Inc. (parent Co., Scherer Health Care,
contact, Gary Ruffcorn, Dir. of Finance, 770-
333-0066, 2859 Paces Ferry Rd, Suite 300,
Atlanta, GA 30339)

DOC-NAME: P:\TEL-BIO4.3TO

OCT 10 1996

INDIVIDULE, TITLE, & Phone: Tom Mobley, Tech. Services Super.,
Applied H. P., 412-835-9555, (contracted by
Scherer for decommissioning of Biofor Facilities
for termination of license.)

* DEFICIENCY * : YES (X)
NO ()

LICENSE NO. 37-30020-01
DOCKET NO. 030-33078
MAIL CONTROL NO. 123399

** LER ** : YES ()
NO (X)

INCOMING ()
OUTGOING (X)

TIME: 11:30am
DATE: 10/9/96

CALLER: CTO

ORGANIZATION & INDIVIDUAL: NRC, RI

TELEPHONE NO.:

SUBJECT: Biofor, Inc., Term. of Lic., Confirmatory Survey, & Other Info.

SUMMARY: Wipe samples from confirmatory survey look good. Presently working
on report.

What is the status of the Beckman LSC & integral 30 μ Ci Cs-137 source?

Contacted Beckman for info on return. AHP license allows removal &
shipping of such sources. Will take care of it this month. ✓

Need to know if we have all the records pertaining to the decommissioning of
the facility per 10 CFR 30.35(g), I don't believe we have the specifics on the
remediation of the floor contamination in the Cell Biology Lab.

Will check w/ Part 20.35 to be sure and will submit the specifics on the
spill clean up. ✓

Are there survey records available from the operational period from which
doses to the public can be determined?

Survey records are wipes, no air samples, will check hood plenum & stack
with wipes. ✓

Need waste disposal records for effluent releases (sewer &/or stack),
incinerations, RAM spills, or site burials. (Floor spill and earlier spill
that contaminates a lab coat.)

No liquid waste to san. sew., not authorized. HEPA hood filters had no
contam., will check plenum and stack w/ wipes. No incineration or site
burials, waste taken care of by AHP during operations. Will check files
for spill data.

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ML 10

BIOFOR, Inc.
P:\TEL-BIO4.3TO

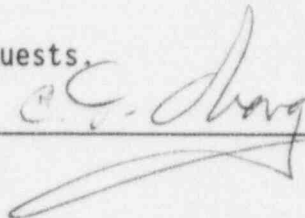
-2-

Film badge records? Other personnel monitoring for intake / uptake?
Personnel dosimetry was not required but the licensee did have
individuals badged. Will check records to see what may be available.
Will also check for bioassay records.

Todd Mobley will submit the obtainable info requested by end of month of
Oct. '96.

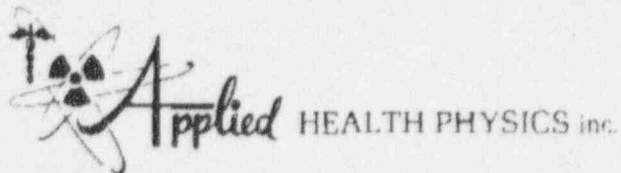
ACTION REQUIRED: Await additional info per above requests.

NAME, DATE and SIGNATURE: C. T. Oberg 10/10/96



ACTION TAKEN:

NAME, SIGNATURE and DATE: _____



2986 Industrial Blvd. -- Bethel Park, PA 15102 -- Phone 412 -- 835-9555 -- Fax No. 412 -- 835-9559

Applied Health Physics, Inc.
Ronald E. Hand Jr.
2986 Industrial Blvd.
Bethel Park, PA 15102
Phone: 412-835-9555
FAX: 412-835-9559

FAX

Attn.: Phill Oberg
NRC Region I
Phone: (610) 337-5202
FAX: (610) 337-5393

Dear Phill,

This is the corrected Biofor spreadsheet, if you have any questions or corrections
please feel free to contact me.

Sincerely,

Ronald E. Hand Jr.

No. Pages 12

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CONSULTATION . SERVICES . PRODUCTS . RADIATION APPLICATIONS

Pharmacology Lab

Grid Location	High Beta (cpm)	Beta Ave. (cpm)	Beta Eff.	Beta Bkg cpm	High Beta (dpm/100 cm ²)	Ave. Beta (dpm/100 cm ²)	Dose Rate uR/hr	Sample Number	Tritium (dpm/100 cm ²)	C 14 (dpm/100 cm ²)	Gross (dpm/100 cm ²)
A-1	1040	1040	24.9%	1174	-127	-127	24.28				
A-2	1049	1049	24.9%	1174	-118	-118	24.28				
A-3	1185	1185	24.9%	1174	10	10	24.28				
A-4	1169	1169	24.9%	1174	-5	-5	24.28	191	< 1000	< 1000	< 1000
A-5	1180	1180	24.9%	1174	6	6	24.28	193	< 1000	< 1000	< 1000
A-6	1169	1169	24.9%	1174	-5	-5	24.28				
A-7	1390	1390	24.9%	1174	204	204	24.28	194	< 1000	< 1000	< 1000
A-8	1336	1336	24.9%	1174	153	153	24.28				
A-9	1353	1353	24.9%	1174	169	169	24.28	195	< 1000	< 1000	< 1000
A-10	1251	1251	24.9%	1174	73	73	24.28				
A-11	N/A	N/A	N/A	N/A	N/A	N/A	24.28				
B-1	1115	1115	24.9%	1174	-56	-56	24.28				
B-2	1094	1094	24.9%	1174	-76	-76	24.28	137	< 1000	< 1000	< 1000
B-3	1290	1290	24.9%	1174	110	110	24.28				
B-4	1112	1112	24.9%	1174	-59	-59	24.28	190	< 1000	< 1000	< 1000
B-5	1147	1147	24.9%	1174	-26	-26	24.28	189	< 1000	< 1000	< 1000
B-6	1217	1217	24.9%	1174	41	41	24.28	188	< 1000	< 1000	< 1000
B-7	1021	1021	24.9%	1174	-145	-145	24.28	187,192	< 1000	< 1000	< 1000
B-8	1098	1098	24.9%	1174	-72	-72	24.28	146,186	< 1000	< 1000	< 1000
B-9	1062	1062	24.9%	1174	-106	-106	24.28	147	< 1000	< 1000	< 1000
B-10	1111	1111	24.9%	1174	-60	-60	24.28	148-152,180	< 1000	< 1000	< 1000
B-11	1148	1148	24.9%	1174	-25	-25	24.28	153-155,179	< 1000	< 1000	< 1000
C-1	1151	1151	24.9%	1174	-22	-22	24.28				
C-2	1212	1212	24.9%	1174	36	36	24.28				
C-3	1207	1207	24.9%	1174	31	31	24.28				
C-4	1207	1207	24.9%	1174	31	31	24.28	185	< 1000	< 1000	< 1000
C-5	1279	1279	24.9%	1174	99	99	24.28				
C-6	1234	1234	24.9%	1174	57	57	24.28	184	< 1000	< 1000	< 1000
C-7	1124	1124	24.9%	1174	-47	-47	24.28	183	< 1000	< 1000	< 1000
C-8	1191	1191	24.9%	1174	16	16	24.28	182	< 1000	< 1000	< 1000
C-9	1062	1062	24.9%	1174	-106	-106	24.28	181	< 1000	< 1000	< 1000
C-10	1151	1151	24.9%	1174	-22	-22	24.28	178	< 1000	< 1000	< 1000
C-11	1265	1265	24.9%	1174	86	86	24.28	177	< 1000	< 1000	< 1000
D-1	1035	1035	24.9%	1174	-131	-131	24.28				
D-2	1072	1072	24.9%	1174	-96	-96	24.28				
D-3	1080	1080	24.9%	1174	-89	-89	24.28				
D-4	1145	1145	24.9%	1174	-27	-27	24.28	174,173	< 1000	< 1000	< 1000
D-5	1248	1248	24.9%	1174	70	70	24.28	144	< 1000	< 1000	< 1000
D-6	1214	1214	24.9%	1174	38	38	24.28				
D-7	1167	1167	24.9%	1174	-7	-7	24.28	143	< 1000	< 1000	< 1000
D-8	1232	1232	24.9%	1174	55	55	24.28				
D-9	1284	1284	24.9%	1174	104	104	24.28	142	< 1000	< 1000	< 1000
D-10	1273	1273	24.9%	1174	94	94	24.28	175	< 1000	< 1000	< 1000
D-11	1166	1166	24.9%	1174	-8	-8	24.28	176	< 1000	< 1000	< 1000
E-1	1098	1098	24.9%	1174	-72	-72	24.28				
E-2	1112	1112	24.9%	1174	-59	-59	24.28	138	< 1000	< 1000	< 1000
E-3	1282	1282	24.9%	1174	102	102	24.28				
E-4	1200	1200	24.9%	1174	25	25	24.28	172	< 1000	< 1000	< 1000
E-5	1168	1168	24.9%	1174	-6	-6	24.28	171	< 1000	< 1000	< 1000
E-6	1051	1051	24.9%	1174	-116	-116	24.28	170	< 1000	< 1000	< 1000
E-7	1116	1116	24.9%	1174	-55	-55	24.28	169	< 1000	< 1000	< 1000
E-8	1060	1060	24.9%	1174	-108	-108	24.28	168	< 1000	< 1000	< 1000

Pharmacology Lab

Grid Location	High Beta (cpm)	Beta Ave. (cpm)	Beta Eff	Beta Bkg cpm	High Beta cm ²	Ave. Beta cm ²	Dose Rate uR/hr	Sample Number	Tritium cm ²	C-14 cm ²	Gross cm ²
E-9	1190	1190	24.9%	1174	23	23	24.28	167	< 1000	< 1000	< 1000
E-10	1261	1261	24.9%	1174	82	82	24.28	166	< 1000	< 1000	< 1000
E-11	1205	1205	24.9%	1174	29	29	24.28	165	< 1000	< 1000	< 1000
F-1	N/A	N/A	N/A	N/A	N/A	N/A	24.28				
F-2	N/A	N/A	N/A	N/A	N/A	N/A	24.28				
F-3	N/A	N/A	N/A	N/A	N/A	N/A	24.28				
F-4	1219	1210	24.9%	1174	43	34	24.28	157	< 1000	< 1000	< 1000
F-5	1275	1153	24.9%	1174	95	-20	24.28	158	< 1000	< 1000	< 1000
F-6	1173	1123	24.9%	1174	-1	-48	24.28	159, 141	< 1000	< 1000	< 1000
F-7	1150	1143	24.9%	1174	-23	-30	24.28	160, 156, 140	< 1000	< 1000	< 1000
F-8	1145	1134	24.9%	1174	-27	-38	24.28	161, 133	< 1000	< 1000	< 1000
F-9	1152	1130	24.9%	1174	-21	-42	24.28	162	< 1000	< 1000	< 1000
F-10	1147	1119	24.9%	1174	-26	-52	24.28	163	< 1000	< 1000	< 1000
F-11	1215	1215	24.9%	1174	39	39	24.28	164	< 1000	< 1000	< 1000
G-10	1130	1093	24.9%	1174	-42	-77	24.28	117, 125, 126	< 1000	< 1000	< 1000
G-11	1024	1024	24.9%	1174	-142	-142	24.28	124	< 1000	< 1000	< 1000
H-10	1078	1078	24.9%	1174	-91	-91	24.28	118, 127	< 1000	< 1000	< 1000
H-11	1065	1065	24.9%	1174	-103	-103	24.28	123, 135	< 1000	< 1000	< 1000
I-10	1175	1122	24.9%	1174	1	-50	24.28	128, 119	< 1000	< 1000	< 1000
I-11	1213	1213	24.9%	1174	37	37	24.28	122, 134	< 1000	< 1000	< 1000
J-10	1203	1203	24.9%	1174	27	27	24.28				
J-11	1195	1195	24.9%	1174	20	20	24.28	121, 133	< 1000	< 1000	< 1000
K-10	1068	1073	24.9%	1174	-81	96	24.28	129, 130, 120	< 1000	< 1000	< 1000
K-11	1062	1062	24.9%	1174	-106	-106	24.28	136, 131, 132	< 1000	< 1000	< 1000

Cell Biology Lab

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg.	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	1070	1070	24.7%	967	98	98	15-25				
A-2	957	957	24.7%	967	-10	-10	15-25				
A-3	1103	1103	24.7%	967	130	130	15-25				
A-4	996	996	24.7%	967	28	28	15-25	226, 293-295	< 1000	< 1000	< 1000
A-5	1078	1078	24.7%	967	106	106	15-25	202, 297, 225	< 1000	< 1000	< 1000
A-6	1011	1011	24.7%	967	42	42	15-25	234	< 1000	< 1000	< 1000
A-7	1003	1003	24.7%	967	34	34	15-25	233	< 1000	< 1000	< 1000
A-8	N/A	N/A	N/A	N/A	N/A	N/A	15-25				
A-9	N/A	N/A	N/A	N/A	N/A	N/A	15-25	257-258	< 1000	< 1000	< 1000
A-10	N/A	N/A	N/A	N/A	N/A	N/A	15-25	259-260	< 1000	< 1000	< 1000
A-11	N/A	N/A	N/A	N/A	N/A	N/A	15-25	261-262	< 1000	< 1000	< 1000
B-1	1046	1046	24.7%	967	75	75	15-25				
B-2	884	884	24.7%	967	-79	-79	15-25	196	< 1000	< 1000	< 1000
B-3	1031	1031	24.7%	967	61	61	15-25				
B-4	1031	1031	24.7%	967	61	61	15-25	289-292, 223	< 1000	< 1000	< 1000
B-5	1068	1068	24.7%	967	96	96	15-25	224, 201, 296, 298	< 1000	< 1000	< 1000
B-6	986	986	24.7%	967	18	18	15-25	232, 299	< 1000	< 1000	< 1000
B-7	980	980	24.7%	967	12	12	15-25	231, 255-256	< 1000	< 1000	< 1000
B-8	894	894	24.7%	967	70	70	15-25	239	< 1000	< 1000	< 1000
B-9	1074	1074	24.7%	967	102	102	15-25	240	< 1000	< 1000	< 1000
B-10	978	978	24.7%	967	10	10	15-25	241, 266	< 1000	< 1000	< 1000
B-11	1055	1055	24.7%	967	84	84	15-25	242, 263-265	< 1000	< 1000	< 1000
C-1	1050	1050	24.7%	967	79	79	15-25				
C-2	1023	1023	24.7%	967	53	53	15-25				
C-3	1033	1033	24.7%	967	63	63	15-25	197	< 1000	< 1000	< 1000
C-4	1111	1111	24.7%	967	137	137	15-25	217	< 1000	< 1000	< 1000
C-5	1102	1102	24.7%	967	129	129	15-25	215, 301	< 1000	< 1000	< 1000
C-6	1107	1107	24.7%	967	133	133	15-25	213	< 1000	< 1000	< 1000
C-7	953	953	24.7%	967	-13	-13	15-25	211	< 1000	< 1000	< 1000
C-8	1009	1009	24.7%	967	40	40	15-25	209	< 1000	< 1000	< 1000
C-9	993	993	24.7%	967	25	25	15-25	207, 249-250	< 1000	< 1000	< 1000
C-10	1044	1044	24.7%	967	73	73	15-25	206, 251-252	< 1000	< 1000	< 1000
C-11	1078	1078	24.7%	967	106	106	15-25	203, 253-254	< 1000	< 1000	< 1000
D-1	1052	1052	24.7%	967	61	61	15-25	198	< 1000	< 1000	< 1000
D-2	999	999	24.7%	967	30	30	15-25	218, 287-288	< 1000	< 1000	< 1000
D-3	1082	1082	24.7%	967	110	110	15-25				
D-4	1089	1089	24.7%	967	116	116	15-25	218, 287-288	< 1000	< 1000	< 1000
D-5	1003	1003	24.7%	967	34	34	15-25	216	< 1000	< 1000	< 1000
D-6	1103	1103	24.7%	967	130	130	15-25	214	< 1000	< 1000	< 1000
D-7	963	963	24.7%	967	-4	-4	15-25	212	< 1000	< 1000	< 1000
D-8	1068	1068	24.7%	967	96	96	15-25	210	< 1000	< 1000	< 1000
D-9	1019	1019	24.7%	967	50	50	15-25	208, 247-248	< 1000	< 1000	< 1000
D-10	1024	1024	24.7%	967	54	54	15-25	206, 245-246	< 1000	< 1000	< 1000
D-11	1033	1033	24.7%	967	63	63	15-25	204, 243-244	< 1000	< 1000	< 1000
E-1	976	976	24.7%	967	9	9	15-25				
E-2	1109	1109	24.7%	967	135	135	15-25	199	< 1000	< 1000	< 1000
E-3	1043	1043	24.7%	967	72	72	15-25				
E-4	977	977	24.7%	967	10	10	15-25	220, 285-286	< 1000	< 1000	< 1000

Cell Biology Lab

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg.	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
E-5	1063	1063	24.7%	967	91	91	15-25	219, 200	< 1000	< 1000	< 1000
E-6	948	948	24.7%	967	-18	-18	15-25	228	< 1000	< 1000	< 1000
E-7	928	928	24.7%	967	-37	-37	15-25	227, 279-280	< 1000	< 1000	< 1000
E-8	1126	1126	24.7%	967	151	151	15-25	235	< 1000	< 1000	< 1000
E-9	1067	1067	24.7%	967	95	95	15-25	236, 267-268	< 1000	< 1000	< 1000
F-10	1127	1127	24.7%	967	152	152	15-25	237, 269-270	< 1000	< 1000	< 1000
F-11	1082	1082	24.7%	967	110	110	15-25	238, 271-274	< 1000	< 1000	< 1000
F-1	1052	1052	24.7%	967	81	81	15-25				
F-2	1022	1022	24.7%	967	52	52	15-25				
F-3	1069	1069	24.7%	967	97	97	15-25				
F-4	982	982	24.7%	967	24	24	15-25	221-222, 281-282	< 1000	< 1000	< 1000
F-5	1453	1453	24.7%	967	463	463	15-25				
F-6	1007	1007	24.7%	967	38	38	15-25	230	< 1000	< 1000	< 1000
F-7	998	998	24.7%	967	30	30	15-25	229, 283-284, 277-278	< 1000	< 1000	< 1000
F-8	1092	1092	24.7%	967	112	112	15-25	275-276	< 1000	< 1000	< 1000
F-9	N/A	N/A	N/A	N/A	N/A	N/A	15-25				
F-10	N/A	N/A	N/A	N/A	N/A	N/A	15-25				
F-11	N/A	N/A	N/A	N/A	N/A	N/A	15-25				

Chemical Waste Storage Room

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg.	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	1340	1340	25.4%	1044	274	274	23-25	94	< 1000	< 1000	< 1000
A-2	1262	1262	25.4%	1044	202	202	23-25				
A-3	1270	1270	25.4%	1044	209	209	23-25				
A-4	1202	1202	25.4%	1044	146	146	23-25	96	< 1000	< 1000	< 1000
A-5	1210	1210	25.4%	1044	154	154	23-25				
A-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
A-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
B-1	1092	1092	25.4%	1044	44	44	23-25				
B-2	1198	1198	25.4%	1044	143	143	23-25	83	< 1000	< 1000	< 1000
B-3	1215	1215	25.4%	1044	158	158	23-25				
B-4	1213	1213	25.4%	1044	157	157	23-25	85	< 1000	< 1000	< 1000
B-5	1187	1187	25.4%	1044	132	125	23-25				
B-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
B-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
C-1	1202	1202	25.4%	1044	146	146	23-25	89	< 1000	< 1000	< 1000
C-2	1195	1195	25.4%	1044	140	140	23-25	88	< 1000	< 1000	< 1000
C-3	1217	1217	25.4%	1044	160	160	23-25	97-102, 92	< 1000	< 1000	< 1000
C-4	1239	1239	25.4%	1044	181	181	23-25	91, 103-104	< 1000	< 1000	< 1000
C-5	1198	1198	25.4%	1044	143	143	23-25	105-110, 90	< 1000	< 1000	< 1000
C-6	1243	1243	25.4%	1044	184	184	23-25	76	< 1000	< 1000	< 1000
C-7	1301	1301	25.4%	1044	238	238	23-25	74	< 1000	< 1000	< 1000
D-1	1290	1290	25.4%	1044	228	228	23-25	86	< 1000	< 1000	< 1000
D-2	1231	1231	25.4%	1044	173	173	23-25	84	< 1000	< 1000	< 1000
D-3	1111	1111	25.4%	1044	62	62	23-25	82	< 1000	< 1000	< 1000
D-4	1092	1092	25.4%	1044	44	44	23-25	80	< 1000	< 1000	< 1000
D-5	1104	1104	25.4%	1044	56	56	23-25	78	< 1000	< 1000	< 1000
D-6	1227	1227	25.4%	1044	170	170	23-25	77	< 1000	< 1000	< 1000
D-7	1212	1212	25.4%	1044	156	156	23-25	75	< 1000	< 1000	< 1000
E-1	1254	1254	25.4%	1044	195	195	23-25	87	< 1000	< 1000	< 1000
E-2	1279	1279	25.4%	1044	218	218	23-25	85	< 1000	< 1000	< 1000
E-3	1309	1309	25.4%	1044	245	245	23-25	83	< 1000	< 1000	< 1000
E-4	1267	1267	25.4%	1044	207	207	23-25	81	< 1000	< 1000	< 1000
E-5	1140	1140	25.4%	1044	89	89	23-25	79	< 1000	< 1000	< 1000
E-6	1232	1232	25.4%	1044	174	174	23-25				
E-7	1240	1240	25.4%	1044	182	182	23-25				

KiloLab-Adjacent Area

Grid Location	High Beta (cpm)	Beta Ave. (cpm)	Beta Eff. (cpm)	Beta Bkg (cpm)	High Beta (dpm/100 cm ²)	Ave. Beta (dpm/100 cm ²)	Dose Rate uR/hr	Sample Number	Tritium (dpm/100 cm ²)	C-14 (dpm/100 cm ²)	Gross (dpm/100 cm ²)
A-1	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
A-2	1137	1137	24.9%	1174	-35	-35	23-25				
A-3	1034	1034	24.9%	1174	-132	-132	23-25				
A-4	1197	1197	24.9%	1174	22	22	23-25				
A-5	1111	1111	24.9%	1174	-60	-60	23-25				
A-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
A-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
B-1	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
B-2	1002	1002	24.9%	1174	163	163	23-25				
B-3	1120	1120	24.9%	1174	-51	-51	23-25				
B-4	1209	1209	24.9%	1174	33	33	23-25				
B-5	1146	1146	24.9%	1174	-26	-26	23-25				
B-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
B-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
C-1	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
C-2	1132	1132	24.9%	1174	-40	-40	23-25				
C-3	1113	1113	24.9%	1174	-58	-58	23-25				
C-4	1130	1136	24.9%	1174	-34	-34	23-25				
C-5	1143	1143	24.9%	1174	-29	-29	23-25				
C-6	1135	1135	24.9%	1174	-37	-37	23-25				
C-7	1129	1129	24.9%	1174	-43	-43	23-25				
D-1	1130	1130	24.9%	1174	-42	-42	23-25				
D-2	1058	1058	24.9%	1174	-110	-110	23-25				
D-3	1140	1148	24.9%	1174	-25	-25	23-25				
D-4	1114	1114	24.9%	1174	-57	-57	23-25				
D-5	1062	1062	24.9%	1174	-106	-106	23-25				
D-6	1252	1252	24.9%	1174	74	74	23-25				
D-7	1258	1258	24.9%	1174	79	79	23-25				
E-1	1056	1056	24.9%	1174	-112	-112	23-25				
E-2	1170	1170	24.9%	1174	-4	-4	23-25				
E-3	990	990	24.9%	1174	-174	-174	23-25				
E-4	1006	1006	24.9%	1174	-159	-159	23-25				
E-5	1103	1103	24.9%	1174	-67	-67	23-25				
E-6	1097	1097	24.9%	1174	-73	-73	23-25				
E-7	1334	1334	24.9%	1174	151	151	23-25				
F-1	1056	1056	24.9%	1174	-112	-112	23-25				
F-2	1034	1034	24.9%	1174	-132	-132	23-25				
F-3	1131	1131	24.9%	1174	-41	-41	23-25				
F-4	1181	1181	24.9%	1174	7	7	23-25				
F-5	1159	1159	24.9%	1174	-14	-14	23-25				
F-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
F-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
G-1	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
G-2	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
G-3	1098	1098	24.9%	1174	-72	-72	23-25				
G-4	1059	1059	24.9%	1174	-109	-109	23-25				
G-5	1054	1054	24.9%	1174	-113	-113	23-25				
G-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
G-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				

Kilo-Lab Adjacent Area Distillery Room

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg.	High Beta	Ave. Beta	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	N/A	N/A	N/A	N/A	N/A	N/A				
A-2	N/A	N/A	N/A	N/A	N/A	N/A				
A-3	N/A	N/A	N/A	N/A	N/A	N/A				
A-4	1010	1010	24.9%	1174	-155	-155				
A-5	N/A	N/A	N/A	N/A	N/A	N/A				
A-6	N/A	N/A	N/A	N/A	N/A	N/A				
B-1	N/A	N/A	N/A	N/A	N/A	N/A				
B-2	N/A	N/A	N/A	N/A	N/A	N/A				
B-3	N/A	N/A	N/A	N/A	N/A	N/A				
B-4	980	980	24.9%	1174	-183	-183				
B-5	N/A	N/A	N/A	N/A	N/A	N/A				
B-6	N/A	N/A	N/A	N/A	N/A	N/A				
C-1	N/A	N/A	N/A	N/A	N/A	N/A				
C-2	1210	1210	24.9%	1174	34	34				
C-3	1070	1070	24.9%	1174	-98	-98				
C-4	1143	1143	24.9%	1174	-29	-29				
C-5	1070	1070	24.9%	1174	-98	-98				
C-6	1035	1035	24.9%	1174	-131	-131				
D-1	N/A	N/A	N/A	N/A	N/A	N/A				
D-2	1080	1080	24.9%	1174	-89	-89				
D-3	1050	1050	24.9%	1174	-117	-117				
D-4	1137	1137	24.9%	1174	-35	-35				
D-5	1170	1170	24.9%	1174	-4	-4				
D-6	1075	1075	24.9%	1174	-94	-94				
E-1	N/A	N/A	N/A	N/A	N/A	N/A				
E-2	980	980	24.9%	1174	-183	-183				
E-3	1021	1021	24.9%	1174	-145	-145				
E-4	1056	1056	24.9%	1174	-112	-112				
E-5	1130	1130	24.9%	1174	-42	-42				
E-6	1046	1046	24.9%	1174	-121	-121				
F-1	N/A	N/A	N/A	N/A	N/A	N/A				
F-2	N/A	N/A	N/A	N/A	N/A	N/A				
F-3	N/A	N/A	N/A	N/A	N/A	N/A				
F-4	1058	1058	24.9%	1174	-112	-112				
F-5	N/A	N/A	N/A	N/A	N/A	N/A				
F-6	N/A	N/A	N/A	N/A	N/A	N/A				
G-1	N/A	N/A	N/A	N/A	N/A	N/A				
G-2	N/A	N/A	N/A	N/A	N/A	N/A				
G-3	N/A	N/A	N/A	N/A	N/A	N/A				
G-4	1024	1024	24.9%	1174	-142	-142				
G-5	N/A	N/A	N/A	N/A	N/A	N/A				
G-6	N/A	N/A	N/A	N/A	N/A	N/A				

First Floor Hallway

Grid Location	High Beta (cpm)	Beta Ave. (cpm)	Beta Eff. (cpm)	Beta Bkg (cpm)	High Beta (dpm/100 cm ²)	Ave. Beta (dpm/100 cm ²)	Dose Rate (uR/hr)	Sample Number	Tritium (dpm/100 cm ²)	C-14 (dpm/100 cm ²)	Gross (dpm/100 cm ²)
A-1	927	927	25.4%	1054	-118	-118	20-30	11	< 1000	< 1000	< 1000
A-2	987	987	25.4%	1054	-62	-62	20-30	13	< 1000	< 1000	< 1000
A-3	1107	1107	25.4%	1054	49	49	20-30	15	< 1000	< 1000	< 1000
A-4	1177	1177	25.4%	1054	114	114	20-30	17	< 1000	< 1000	< 1000
A-5	1000	1000	25.4%	1054	-50	-50	20-30	19	< 1000	< 1000	< 1000
A-6	1128	1128	25.4%	1054	69	69	20-30	21	< 1000	< 1000	< 1000
A-7	1088	1088	25.4%	1054	31	31	20-30	23	< 1000	< 1000	< 1000
A-8	1080	1080	25.4%	1054	24	24	20-30	25	< 1000	< 1000	< 1000
A-9	1027	1027	25.4%	1054	-25	-25	20-30	27	< 1000	< 1000	< 1000
A-10	1010	1010	25.4%	1054	-41	-41	20-30	29	< 1000	< 1000	< 1000
A-11	1066	1066	25.4%	1054	11	11	20-30	31	< 1000	< 1000	< 1000
A-12	1073	1073	25.4%	1054	18	18	20-30	33	< 1000	< 1000	< 1000
A-13	987	987	25.4%	1054	-62	-62	20-30	35	< 1000	< 1000	< 1000
A-14	1002	1002	25.4%	1054	-48	-48	20-30	37	< 1000	< 1000	< 1000
A-15	1001	1001	25.4%	1054	-49	-49	20-30	39	< 1000	< 1000	< 1000
A-16	1042	1042	25.4%	1054	-11	-11	20-30	41	< 1000	< 1000	< 1000
A-17	1057	1057	25.4%	1054	3	3	20-30	43	< 1000	< 1000	< 1000
A-18	997	997	25.4%	1054	-53	-53	20-30	45	< 1000	< 1000	< 1000
A-19	1109	1109	25.4%	1054	51	51	20-30	47	< 1000	< 1000	< 1000
A-20	1027	1027	25.4%	1054	-25	-25	20-30	49	< 1000	< 1000	< 1000
A-21	1037	1037	25.4%	1054	-16	-16	20-30	51	< 1000	< 1000	< 1000
A-22	1083	1083	25.4%	1054	27	27	20-30	53	< 1000	< 1000	< 1000
A-23	1079	1079	25.4%	1054	23	23	20-30	55	< 1000	< 1000	< 1000
A-24	1025	1025	25.4%	1054	-27	-27	20-30	57	< 1000	< 1000	< 1000
A-25	1057	1057	25.4%	1054	3	3	20-30	59	< 1000	< 1000	< 1000
A-26	997	997	25.4%	1054	-53	-53	20-30	61	< 1000	< 1000	< 1000
A-27	1089	1089	25.4%	1054	32	32	20-30	63	< 1000	< 1000	< 1000
A-28	1011	1011	25.4%	1054	-40	-40	20-30	65	< 1000	< 1000	< 1000
A-29	986	986	25.4%	1054	-63	-63	20-30	67	< 1000	< 1000	< 1000
A-30	1045	1045	25.4%	1054	-8	-8	20-30	69	< 1000	< 1000	< 1000
B-1	1031	1031	25.4%	1054	-21	-21	20-30	12	< 1000	< 1000	< 1000
B-2	944	944	25.4%	1054	-102	-102	20-30	14	< 1000	< 1000	< 1000
B-3	908	908	25.4%	1054	-135	-135	20-30	16	< 1000	< 1000	< 1000
B-4	984	984	25.4%	1054	-65	-65	20-30	18	< 1000	< 1000	< 1000
B-5	988	988	25.4%	1054	-61	-61	20-30	20	< 1000	< 1000	< 1000
B-6	1095	1095	25.4%	1054	38	38	20-30	22	< 1000	< 1000	< 1000
B-7	1106	1106	25.4%	1054	48	48	20-30	24	< 1000	< 1000	< 1000
B-8	1060	1060	25.4%	1054	6	6	20-30	26	< 1000	< 1000	< 1000
B-9	1055	1055	25.4%	1054	1	1	20-30	28	< 1000	< 1000	< 1000
B-10	1027	1027	25.4%	1054	-25	-25	20-30	30	< 1000	< 1000	< 1000
B-11	1188	1188	25.4%	1054	124	124	20-30	32	< 1000	< 1000	< 1000
B-12	1090	1090	25.4%	1054	33	33	20-30	34	< 1000	< 1000	< 1000
B-13	990	990	25.4%	1054	-59	-59	20-30	36	< 1000	< 1000	< 1000
B-14	1021	1021	25.4%	1054	-31	-31	20-30	38	< 1000	< 1000	< 1000
B-15	1032	1032	25.4%	1054	-20	-20	20-30	40	< 1000	< 1000	< 1000
B-16	1076	1076	25.4%	1054	20	20	20-30	42	< 1000	< 1000	< 1000
B-17	1142	1142	25.4%	1054	82	82	20-30	44	< 1000	< 1000	< 1000
B-18	1091	1091	25.4%	1054	34	34	20-30	46	< 1000	< 1000	< 1000

First Floor Hallway

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg	High Beta	Ave. Beta	Dose Rate	Sample	Tridium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	μR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	927	927	25.4%	1054	118	118	20.30	11	< 1000	< 1000	< 1000
A-2	967	967	25.4%	1054	62	62	20.30	13	< 1000	< 1000	< 1000
A-3	1107	1107	25.4%	1054	49	49	20.30	15	< 1000	< 1000	< 1000
A-4	1177	1177	25.4%	1054	114	114	20.30	17	< 1000	< 1000	< 1000
A-5	1000	1000	25.4%	1054	50	50	20.30	19	< 1000	< 1000	< 1000

First Floor Hallway

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg.	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	927	927	25.4%	1054	-118	-118	20-30	11	< 1000	< 1000	< 1000
A-2	987	987	25.4%	1054	-62	-62	20-30	13	< 1000	< 1000	< 1000
A-3	1107	1107	25.4%	1054	49	49	20-30	15	< 1000	< 1000	< 1000
A-4	1177	1177	25.4%	1054	114	114	20-30	17	< 1000	< 1000	< 1000
A-5	1000	1000	25.4%	1054	-50	-50	20-30	19	< 1000	< 1000	< 1000
A-6	1128	1128	25.4%	1054	69	69	20-30	21	< 1000	< 1000	< 1000
A-7	1088	1088	25.4%	1054	31	31	20-30	23	< 1000	< 1000	< 1000
A-8	1080	1080	25.4%	1054	24	24	20-30	25	< 1000	< 1000	< 1000
A-9	1027	1027	25.4%	1054	-25	-25	20-30	27	< 1000	< 1000	< 1000
A-10	1010	1010	25.4%	1054	-41	-41	20-30	29	< 1000	< 1000	< 1000
A-11	1066	1066	25.4%	1054	11	11	20-30	31	< 1000	< 1000	< 1000
A-12	1073	1073	25.4%	1054	18	18	20-30	33	< 1000	< 1000	< 1000
A-13	987	987	25.4%	1054	-62	-62	20-30	35	< 1000	< 1000	< 1000
A-14	1002	1002	25.4%	1054	-48	-48	20-30	37	< 1000	< 1000	< 1000
A-15	1001	1001	25.4%	1054	-49	-49	20-30	39	< 1000	< 1000	< 1000
A-16	1042	1042	25.4%	1054	-11	-11	20-30	41	< 1000	< 1000	< 1000
A-17	1057	1057	25.4%	1054	3	3	20-30	43	< 1000	< 1000	< 1000
A-18	997	997	25.4%	1054	-53	-53	20-30	45	< 1000	< 1000	< 1000
A-19	1109	1109	25.4%	1054	51	51	20-30	47	< 1000	< 1000	< 1000
A-20	1027	1027	25.4%	1054	-25	-25	20-30	49	< 1000	< 1000	< 1000
A-21	1037	1037	25.4%	1054	-16	-16	20-30	51	< 1000	< 1000	< 1000
A-22	1083	1083	25.4%	1054	27	27	20-30	53	< 1000	< 1000	< 1000
A-23	1079	1079	25.4%	1054	23	23	20-30	55	< 1000	< 1000	< 1000
A-24	1025	1025	25.4%	1054	-27	-27	20-30	57	< 1000	< 1000	< 1000
A-25	1057	1057	25.4%	1054	3	3	20-30	59	< 1000	< 1000	< 1000
A-26	997	997	25.4%	1054	-53	-53	20-30	61	< 1000	< 1000	< 1000
A-27	1089	1089	25.4%	1054	32	32	20-30	63	< 1000	< 1000	< 1000
A-28	1011	1011	25.4%	1054	-40	-40	20-30	65	< 1000	< 1000	< 1000
A-29	986	986	25.4%	1054	-63	-63	20-30	67	< 1000	< 1000	< 1000
A-30	1045	1045	25.4%	1054	-8	-8	20-30	69	< 1000	< 1000	< 1000
B-1	1031	1031	25.4%	1054	-21	-21	20-30	12	< 1000	< 1000	< 1000
B-2	944	944	25.4%	1054	-102	-102	20-30	14	< 1000	< 1000	< 1000
B-3	908	908	25.4%	1054	-135	-135	20-30	16	< 1000	< 1000	< 1000
B-4	984	984	25.4%	1054	-65	-65	20-30	18	< 1000	< 1000	< 1000
B-5	988	988	25.4%	1054	-61	-61	20-30	20	< 1000	< 1000	< 1000
B-6	1095	1095	25.4%	1054	36	36	20-30	22	< 1000	< 1000	< 1000
B-7	1105	1105	25.4%	1054	48	48	20-30	24	< 1000	< 1000	< 1000
B-8	1060	1060	25.4%	1054	6	6	20-30	26	< 1000	< 1000	< 1000
B-9	1055	1055	25.4%	1054	1	1	20-30	28	< 1000	< 1000	< 1000
B-10	1027	1027	25.4%	1054	-25	-25	20-30	30	< 1000	< 1000	< 1000
B-11	1188	1188	25.4%	1054	124	124	20-30	32	< 1000	< 1000	< 1000
B-12	1090	1090	25.4%	1054	33	33	20-30	34	< 1000	< 1000	< 1000
B-13	990	990	25.4%	1054	-59	-59	20-30	36	< 1000	< 1000	< 1000
B-14	1021	1021	25.4%	1054	-31	-31	20-30	38	< 1000	< 1000	< 1000
B-15	1032	1032	25.4%	1054	-20	-20	20-30	40	< 1000	< 1000	< 1000
B-16	1076	1076	25.4%	1054	20	20	20-30	42	< 1000	< 1000	< 1000
B-17	1142	1142	25.4%	1054	82	82	20-30	44	< 1000	< 1000	< 1000
B-18	1091	1091	25.4%	1054	34	34	20-30	46	< 1000	< 1000	< 1000

First Floor Hallway

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
B-19	1077	1077	25.4%	1054	21	21	20-30	48	< 1000	< 1000	< 1000
B-20	1067	1067	25.4%	1054	12	12	20-30	50	< 1000	< 1000	< 1000
B-21	1081	1081	25.4%	1054	25	25	20-30	52	< 1000	< 1000	< 1000
B-22	1111	1111	25.4%	1054	53	53	20-30	54	< 1000	< 1000	< 1000
B-23	1104	1104	25.4%	1054	46	46	20-30	56	< 1000	< 1000	< 1000
B-24	1202	1202	25.4%	1054	137	137	20-30	58	< 1000	< 1000	< 1000
B-25	1063	1063	25.4%	1054	8	8	20-30	60	< 1000	< 1000	< 1000
B-26	1005	1005	25.4%	1054	-45	-45	20-30	62	< 1000	< 1000	< 1000
B-27	1021	1021	25.4%	1054	-31	-31	20-30	64	< 1000	< 1000	< 1000
B-28	1017	1017	25.4%	1054	34	-34	20-30	66	< 1000	< 1000	< 1000
B-29	1113	1113	25.4%	1054	55	55	20-30	68	< 1000	< 1000	< 1000
B-30	1033	1033	25.4%	1054	-19	-19	20-30	70	< 1000	< 1000	< 1000

2nd Floor Lab - Non Rad

Grid Location	High Beta (cpm)	Beta Ave. (cpm)	Beta Eff. (cpm)	Beta Bkg. (cpm)	High Beta (dpm/100 cm ²)	Ave. Beta (dpm/100 cm ²)	Dose Rate uR/hr	Sample Number	Tritium (dpm/100 cm ²)	C-14 (dpm/100 cm ²)	Gross (dpm/100 cm ²)
A-1	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
A-2	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
A-3	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
A-4	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
A-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
A-6	700	700	25.4%	1054	-328	-328	20-25	3	< 1000	< 1000	< 1000
A-7	891	891	25.4%	1054	-336	-336	20-25				
A-8	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-1	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-2	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-3	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-4	N/A	N/A	25.4%	1054	N/A	N/A	20-25	10	< 1000	< 1000	< 1000
B-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-6	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-7	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-8	891	881.5	25.4%	1054	-306	-345	20-25				
C-1	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
C-2	738	738	25.4%	1054	-293	-293	20-25	6	< 1000	< 1000	< 1000
C-3	733	731.5	25.4%	1054	-297	-299	20-25	5	< 1000	< 1000	< 1000
C-4	722	699.5	25.4%	1054	-308	-328	20-25				
C-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
C-6	N/A	N/A	25.4%	1054	N/A	N/A	20-25	9	< 1000	< 1000	< 1000
C-7	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
C-8	643	643	25.4%	1054	-381	-381	20-25				
D-1	682	682	25.4%	1054	-345	-345	20-25				
D-2	784	784	25.4%	1054	-250	-250	20-25	7	< 1000	< 1000	< 1000
D-3	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
D-4	741	713.5	25.4%	1054	-290	-315	20-25	4	< 1000	< 1000	< 1000
D-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
D-6	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
D-7	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
D-8	712	684	25.4%	1054	-317	-343	20-25				
E-1	706	706	25.4%	1054	-322	-322	20-25				
E-2	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
E-3	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
E-4	N/A	N/A	25.4%	1054	N/A	N/A	20-25	8	< 1000	< 1000	< 1000
E-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
E-6	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
E-7	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
E-8	668	669	25.4%	1054	-357	-357	20-25	2	< 1000	< 1000	< 1000
F-1	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
F-2	707	707	25.4%	1054	-321	-321	20-25	1	< 1000	< 1000	< 1000
F-3	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
F-4	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
F-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
F-6	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
F-7	677	645	25.4%	1054	-349	-379	20-25				
F-8	N/A	N/A	25.4%	1054	N/A	N/A	20-25				

2nd Floor Lab - Non Rad

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	1424	1424	25.4%	1054	343	343	20-30				
A-2	1234	1234	25.4%	1054	167	167	20-30				
A-3	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
A-4	1279	1279	25.4%	1054	208	208	20-30				
A-5	1259	1259	25.4%	1054	190	190	20-30				
A-6	1279	1279	25.4%	1054	208	208	20-30				
B-1	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
B-2	1443	1443	25.4%	1054	360	360	20-30				
B-3	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
B-4	1373	1373	25.4%	1054	296	296	20-30				
B-5	1251	1251	25.4%	1054	182	182	20-30				
B-6	1268	1268	25.4%	1054	198	198	20-30				
C-1	1399	1399	25.4%	1054	320	320	20-30				
C-2	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
C-3	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
C-4	1390	1390	25.4%	1054	311	311	20-30				
C-5	1320	1320	25.4%	1054	246	246	20-30				
C-6	1391	1391	25.4%	1054	312	312	20-30				
D-1	1427	1427	25.4%	1054	346	346	20-30				
D-2	1431	1431	25.4%	1054	348	348	20-30				
D-3	1354	1354	25.4%	1054	278	278	20-30				
D-4	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
D-5	1325	1325	25.4%	1054	251	251	20-30				
D-6	N/A	N/A	25.4%	1054	N/A	N/A	20-30				

TELEPHONE CONVERSATION RECORD

LICENSEE * * *: Biofor, Inc. (parent Co., Scherer Health Care,
contact, Gary Ruffcorn, Dir. of Finance, 770-
333-0065, 2859 Paces Ferry Rd, Suite 300,
Atlanta, GA 30339)

DOC-NAME: P:\TEL-BIO4.2TO

INDIVIDULE, TITLE, & Phone: Tom Mobley, Tech. Services Super.,
Applied H. P., 412-835-9555, (contracted by
Scherer for decommissioning of Biofor Facilities
for termination of license.)

* DEFICIENCY * : YES (X)
NO ()

LICENSE NO. 37-30020-01
DOCKET NO. 030-33078
MAIL CONTROL NO. 123399

** LER ** : YES ()
NO (X)

INCOMING ()
OUTGOING (X)

TIME: 1:35pm
DATE: 7/16/96

CALLER: CTO

ORGANIZATION & INDIVIDUAL: NRC, RI

TELEPHONE NO.:

SUBJECT: Termination of License; Decommissioning Surveys and Info. by
Consultant, AHP

SUMMARY: 1. Fixed survey results; Location A-2, (-)235 dpm/100 cm², way
outside other values for ~the same cpm rate. Also G-10 should be 1130cpm, not
1030.

Response: Computer must have had a problem.

2. Data for remediation of contam. in Cell Biology Lab., 3H activity can
appear gone but shows up again.

Response: F-5 on grid, don't have initial #, presumed will have to go
back for a confirmatory survey & will check again then.

3. Submit the MDA values calc. for floor & hand held detectors.

Response: MDA not calc., used 425cm² floor mon. & 100cm² detector for
hand, both used on same meter. Dpm/100cm² values calc. based on 425cm²
for floor monitor as recommended by Mfg.

4. List of licensee's equip. includes a Beckman LSC (LS6000SC) counter that
includes a 30μCi 137Cs ss for calib. What's the status? licensee shouldn't
sell it w/o Mfg. removing the source or send unit back to Mfg. w/ source in.
It appears to be a generally licensed item.

Response: Unit still stored on Site. Will advise licensee.

OFFICIAL RECORD COPY

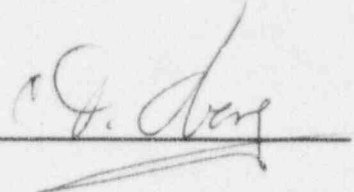
ML 10

BIOFOR, Inc.

-2-

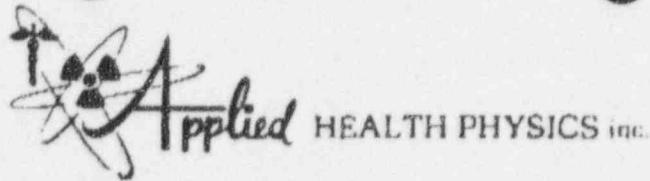
ACTION REQUIRED: Confirmatory closeout survey required

NAME, SIGNATURE and DATE: C. T. Oberg 7/16/96

A handwritten signature in dark ink, appearing to read "C. T. Oberg", is written over a horizontal line.

ACTION TAKEN:

NAME, SIGNATURE and DATE:



2986 Industrial Blvd. - Bethel Park, PA 15102 -- Phone 412 -- 835-9555 -- Fax No. 412 -- 835-9559

Mr. Thor Oberg
Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA. 19406-1415

June 26, 1996

Re: Biofor Inc.
License No: 37-30020 - *CS*
Docket No: 030-33078 *mmf*

Dear Mr. Oberg;

Biofor Inc. was licensed by the Nuclear Regulatory Commission to perform research and development at their facility in Waverly, PA., using Hydrogen-3 and Carbon-14. The use of this material as determined by personnel interviews, documentation review and characterization surveys was limited to (2) two laboratories and the waste materials storage area.

Applied Health Physics Inc. had been contracted to provide radioactive waste disposal services to Biofor Inc. for several years. Upon notification that Biofor Inc. intended to discontinue the use of radioactive materials, arrangements were made to begin USNRC license termination procedures. Included in this process were:

- Notification to the USNRC Region I Office.
- Packaging of the remainder of radioactive materials at the facility for disposal.
- Decontamination of one laboratory floor previously identified and the packaging of all affected materials.
- Characterization surveys of laboratories with documented use, the designated storage area, adjacent pathways, and an adjacent laboratory.
- Background data was established from a second floor laboratory in which radioisotopes were never present.

Included in the radioactive materials packaged by Applied Health Physics Inc. were all of the remaining radioisotopes, vials labeled as containing either Hydrogen-3 or Carbon-14 and equipment labeled as or identified as radioactive during the characterization surveys performed by Applied Health Physics Inc. technicians.

OFFICIAL RECORD COPY

ML 10 123399



HEALTH PHYSICS inc.

2986 Industrial Blvd. -- Bethel Park, PA 15102 -- Phone 412 -- 835-9555 -- Fax No. 412 -- 835-9559

The radioactive materials were packaged into (2) two fifty-five gallon drums and are temporarily stored in the designated storage area at the Biofor Inc. facility. These drums will be transferred to either Applied Health Physics Inc. (USNRC License No. 37-14600) in Bethel Park, Pa. or directly to the disposal site in Barnwell, South Carolina within the next couple of months.

Applied Health Physics Inc. has provided radioactive waste brokering for Biofor Inc. since 1993. Included in this service was the disposal of liquid scintillation vials and dry laboratory waste. The vials were shipped to Permafix of Gainesville, Fla. (formerly Quadrex Inc.) and the dry waste was shipped to Barnwell, South Carolina for shallow land burial.

If you have any questions concerning this material, please contact me at (412)-835-9555.

Regards,

Todd Mobley
Applied Health Physics Inc.
Technical Services Supervisor

cc: Gary Ruffcorn
AHP Files

030-33078

NRC FORM 314

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0028
EXPIRES: 05/31/95

5-731
10 CFR 20.38(a)(1)(iv)
10 CFR 40.42(c)(1)(iv)
10 CFR 70.38(a)(1)(iv)

CERTIFICATE OF DISPOSITION OF MATERIALS

INSTRUCTIONS: ALL ITEMS MUST BE COMPLETED - PRINT OR TYPE
SEND THE COMPLETED CERTIFICATE TO THE NRC OFFICE SPECIFIED ON THE REVERSE

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION
COLLECTION REQUEST: 30 MINUTES. THIS MANDATORY SUBMITTAL IS USED BY
NRC AS PART OF THE BASIS FOR ITS DETERMINATION THAT THE FACILITY HAS
BEEN CLEARED OF RADIOACTIVE MATERIAL BEFORE THE FACILITY IS RELEASED
FOR UNRESTRICTED USE. FORWARD COMMENTS REGARDING BURDEN ESTIMATE
TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714, U.S.
NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001), AND TO
THE PAPERWORK REDUCTION PROJECT (150-0028), OFFICE OF MANAGEMENT
AND BUDGET, WASHINGTON, DC 20503.

LICENSEE NAME AND ADDRESS

Location

LICENSE NUMBER

Biofor Inc.

37-30020-01

Post Office Box 629

RD #1 Route 632

Waverly, PA 18471

Olyphant, PA

LICENSE EXPIRATION DATE

March 31, 1998

A. MATERIALS DATA (Check one and complete as necessary)

THE LICENSEE OR ANY INDIVIDUAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE LICENSEE CERTIFIES THAT:
(Check and/or complete the appropriate item(s) below.)

- ☐ 1. NO MATERIALS HAVE EVER BEEN PROCURED OR POSSESSED BY THE LICENSEE UNDER THIS LICENSE.
- OR
- ☒ 2. ALL MATERIALS PROCURED AND/OR POSSESSED BY THE LICENSEE UNDER THE LICENSE NUMBER CITED ABOVE HAVE BEEN
DISPOSED OF IN THE FOLLOWING MANNER. (If additional space is needed, use the reverse side or provide attachments.)

Describe specific material transfer actions and, if there were radioactive wastes generated in terminating this license, the disposal
actions including the disposition of low-level radioactive waste, mixed waste, Greater-than-Class-C waste, and sealed sources, if
applicable.

See attachment.

For transfers, specify the date of the transfer, the name of the licensed recipient, and the recipient's NRC license number or Agreement
State name and license number.

If materials were disposed of directly by the licensee rather than transferred to another licensee, licensed disposal site or waste
contractor, describe the specific disposal procedures (e.g., decay in storage).

B. OTHER DATA

- ☒ 1. OUR LICENSE HAS NOT YET EXPIRED; PLEASE TERMINATE IT.
- ☐ 2. A RADIATION SURVEY WAS CONDUCTED BY THE LICENSEE TO CONFIRM THE ABSENCE OF LICENSED RADIOACTIVE MATERIALS
AND TO DETERMINE WHETHER ANY CONTAMINATION REMAINS ON THE PREMISES COVERED BY THE LICENSE. (Check one)

- ☐ NO (Attach explanation)
- ☒ YES, THE RESULTS (Check one)
- ☒ ARE ATTACHED, or
- ☐ WERE FORWARDED TO NRC ON (Date)

3. THE PERSON TO BE CONTACTED
REGARDING THE INFORMATION
PROVIDED ON THIS FORM

NAME

Gary Ruffcorn Scherer Health Care
Todd Mobley Applied Health Physics

TELEPHONE NUMBER

(770) 333-0066
(412) 835-9555

4. MAIL ALL FUTURE CORRESPONDENCE REGARDING THIS LICENSE TO

Scherer Health Care
2859 Paces Ferry Road Suite 300
Atlanta, GA 30339

Applied Health Physics Inc.
2986 Industrial Blvd
Bethel Park, PA 15102

CERTIFYING OFFICIAL

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT

PRINTED NAME AND TITLE

Gary Ruffcorn Dir. of Finance
Todd Mobley Tech. Serv. Supv.

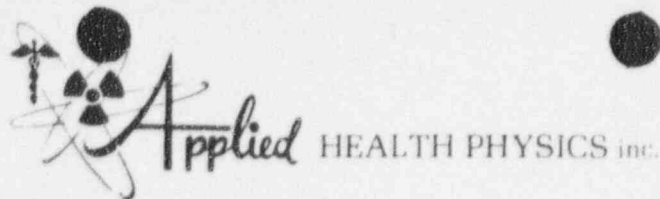
SIGNATURE

Gary Ruffcorn
Todd Mobley

DATE

6/26/96
6-25-96

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS
REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES
IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE
UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.



2986 Industrial Blvd. -- Bethel Park, PA 15102 -- Phone 412 -- 835-9555 -- Fax No. 412 -- 835-9559

RADIOLOGICAL REPORT

Scherer Health Care
2859 Paces Ferry Road
Atlanta, Ga. 30339
Attn: Gary Ruffcorn

June 17, 1996

INTRODUCTION

Biofor Inc. operated a research facility under USNRC License Number 37-30020 from 1993 until early 1996 in Waverly, PA. The usage of radioisotopes terminated at this time. Applied Health Physics Inc. (AHP) was initially contacted by the Radiation Safety Officer (RSO), Ms. Banasree Das, for the purpose of radioactive waste disposal. Upon being informed that the facility was being shutdown, preparations were made to notify the USNRC and to perform characterization surveys in support of eventual license termination.

RADIOACTIVE MATERIALS USE

Biofor Inc. is licensed by the United States Nuclear Regulatory Commission to use Hydrogen-3 and Carbon-14 for research and development. No other isotopes were identified as being used by the licensee except for a sealed Cesium-147 calibration check source located within the liquid scintillation counter. The licensee, as represented at the time by Banasree Das, Dr. Robert Krell, and maintenance man Thomas Griffin, stated that radioisotopes were used only in two laboratories (Cell Biology and Pharmacology). In addition, the used material was stored in the Chemical Storage Area prior to disposal. Characterization surveys and the identification of stored radioisotopes verified this data. In order to confirm that usage was in fact limited to these three areas, AHP reviewed available documentation and performed adjacent area surveys.

REVIEW OF AVAILABLE ON-SITE DATA

In order to further confirm the areas of usage and to verify the limited number of radioisotopes used, the AHP Project Manager reviewed available data at the Biofor Inc. site. Included in the available documents were USNRC License Number 37-30020 and applicable amendments, Radiation Safety Manual, Material Handling Procedures and routine surveys.

The documentation did not identify specific restrictions on areas of material use in particular. However, the combination of interviews with former employees and the consistency of areas included in the routine surveys strongly indicate that use was limited to the three previously identified areas. Reference the *Employees Statements* Section for details.

PROJECT STAFFING

The Project Manager and on-site supervisor for AHP was Todd Mobley. Mr. Mobley has over 16 years of experience in the nuclear industry, including laboratory characterizations and license decommissioning. The support staff for AHP included the following:

- (2) Health Physics Technicians with a combined 28 years in radiation protection
- (2) Laboratory and Calibration Technicians for instrument calibration and lab analysis
- (1) Health Physicist assigned to survey data quality assurance and "chain of custody"
- (2) Clerical and administrative support personnel

TRAINING

Applied Health Physics Inc. employs only experienced and qualified technical support personnel. Prior to the commencement of a project of this nature, AHP provides specific radiation safety training to all field employees. The required training includes current USNRC survey requirements, applicable NRC and state regulations and guidelines, AHP procedures and client safety requirements.

GUIDELINES FOR UNRESTRICTED USE

Biofor Inc. survey results were compared to the *Guidelines For Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use* as documented by the USNRC. The licensee was permitted to perform research using only Hydrogen-3 and Carbon-14 radioisotopes. As identified in the *Acceptable Surface Contamination Levels Table*, average concentrations of up to 5000 dpm/100cm² and maximum concentrations of up to 15,000 dpm/100cm² were used for comparison. The maximum concentration of removable contamination for these isotopes is 1000 dpm/100 cm².

RADIOLOGICAL ASSESSMENT STRATEGY

Due to the limited use of radioisotopes at the Biofor Inc. facility, the Applied Health Physics Inc. Project Manager designed the radiological assessment to address specific areas for the purpose of determining residual contamination, removal/disposal of any remaining radioactive materials and background data. This strategy was based upon AHP's review of the USNRC's guidance for site characterization. The assessment included the following areas:

- (2) Laboratories in which the radioactive materials were used.
- (1) Designated storage area.
- (1) Adjacent laboratory.
- (1) Unaffected laboratory
- Adjacent traffic areas.
- Laboratory equipment

SURVEY METHODOLOGY

The radioisotopes of concern at the Biofor Inc. facility included hydrogen-3 and carbon-14, with primary emissions of beta radiation. In order to document the entire spectrum of survey data, the floors, and walls in the identified survey areas were separated into one square meter grids. Survey methods included determination of fixed contamination, removable contamination and ambient radiation levels.

In addition, laboratory equipment was surveyed individually. This included a fume hood, liquid scintillation counter, refrigerators, freezer, sinks, gas chromatograph, and centrifuges and several smaller items. A complete listing of the surveyed equipment is provided in the appendices.

Fixed Contamination

Levels of fixed contamination were determined by surveying each grid area with a calibrated gas proportional detection system. A floor monitoring system in conjunction with hand held detectors were utilized. The grids were surveyed to determine the highest fixed reading via the instruments ratemeter, then a one minute count was performed using the scaler. This reading was then documented on the spread sheets found in Appendix A.

The results of the fixed contamination surveys were compared to the USNRC "Guidelines For Decontamination Prior To Release For Unrestricted Use." No levels of fixed contamination were found to exceed the values identified as acceptable. In addition no averaging of elevated readings was necessary.

Removable Contamination

Removable contamination levels were determined in each grid by swiping 100 cm² of surface area with a dissolvable material. In the event that elevated levels of fixed contamination had been identified, the swipe was taken of that specific area. The swipes were placed in pre-numbered 20 milliliter vials. These vials were stored in a locked office, to ensure proper *chain of custody*, prior to transfer to the Applied Health Physics Inc. laboratory. Laboratory personnel at AHP will, upon receipt of the vials, verify the contents and associated documentation. The scintillation cocktail is then added and the swipes are counted on the calibrated liquid scintillation counter.

The results of removable contamination surveys indicated no levels in excess of the regulatory limit of 1000 dpm/100 cm². The data spread sheets can be found in Appendix A.

Gamma Surveys

Surveys of the Biofor Inc. facility included monitoring for gamma radiation. Although there was no known usage of gamma emitting isotopes, AHP technicians performed the surveys for the support of eventual license termination. Other than fluctuations in background radiation levels due to the "naturally occurring radiation" in construction materials, no elevated radiation levels were found.

Appendix A contains the spread sheets with documented gamma levels.

INSTRUMENTATION

Applied Health Physics Inc. utilizes calibrated survey instruments consistent with the guidelines outlined in the USNRC Guidelines and applicable regulations.

Portable Survey Meters

Ludlum Model 2221 Scaler/Ratemeters with gas proportional detectors
Ludlum Model 3 Geiger Mueller Survey Meter with a Pancake Window Detector
Bicron Model Micro REM LE

Laboratory Counting Equipment

Beckman Liquid Scintillation Counter Model LS 5000

EMPLOYEES STATEMENTS

During the initial phases of AHP's involvement in the disposal of remaining radioactive materials and the planning of laboratory surveys, Mr. Todd Mobley of AHP questioned the Radiation Safety Officer, Ms. Banasree Das, as to the areas in which radioisotopes were used and stored. Ms. Das stated verbally that during her experience at the Biofor facility the radioisotopes Hydrogen-3 and Carbon-14 were used only in the Cell Biology and the Pharmacology laboratories and stored in the Chemical Storage Room.

Following the termination of Ms. Das as an employee of Biofor, Mr. Robert Krell, *designated user* on the Biofor USNRC license, verified via telephone conversations that usage of the radioisotopes was limited to the Cellular and Pharmacology Laboratories.

Mr. Thomas J. Griffin (Property Supervisor), has been employed at the Biofor Inc. facility since 1991. Telephone and verbal conversations with Mr. Griffin corroborate statements as proposed by the RSO and the Authorized User.

BACKGROUND DATA

Background data was established by surveying floors, walls and counter tops (similar in design and materials to the affected labs) in an unaffected laboratory on the second floor of the Biofor Facility. The fixed contamination, removable contamination and gamma backgrounds were performed so as to provide baseline data for comparison to laboratory surveys in which radioisotopes were used.

ADJACENT AREAS

As previously mentioned, the radioactive materials were only used in the two laboratories and stored in the Chemical Waste Storage Room. AHP technicians performed surveys of adjacent areas to verify that no radioactive materials or contaminants were present. These areas included the hallway connecting the two laboratories and the Chemical Waste Storage Room, and an adjacent room called the Kilo Laboratory.

The results of these surveys indicated no elevated levels of fixed contamination, removable contamination or gamma radiation.

QUALITY ASSURANCE

Prior to initiating the decommissioning project at the Biofor Inc. facility, the characterization, decontamination, and final survey plans were discussed with and reviewed by Ms. Lisa Blough, AHP Inc. Radiation Safety Officer. Ms. Blough is responsible for Quality Assurance reviews of all projects of this type.

RADIOACTIVE WASTE DISPOSAL

Applied Health Physics Inc. personnel packaged all remaining radioactive materials at the Biofor Inc. facility. Included were all remaining radioisotopes, HEPA filters, contaminated lab equipment i.e. test tubes, pipettes, absorbent cloths, etc. In addition, any equipment that AHP technicians suspected of being contaminated but were unable to survey due to physical constraints was packaged as radioactive waste.

The small section of floor tile in the Cell Biology Laboratory previously identified by AHP as exceeding the USNRC release criteria was removed and packaged as waste.

FINDINGS

AHP technicians performed detailed surveys of floors, walls, equipment and countertops of the identified usage areas. The results of the surveys indicated only one area of in which the contamination level exceeded the USNRC *Guidelines for Unrestricted Use*. The Cell Biology Laboratory floor grid F-5 had been identified during preliminary surveys by AHP technicians as having elevated contamination levels.

Attempts to decontaminate the floor tile were unsuccessful, so the affected section was cut out and packaged for disposal as radioactive waste. Surveys of the area below the removed tile indicated no residual contamination.

The laboratory analysis of swipes taken throughout the facility indicated no removable contamination in excess of regulatory limits.

Gamma radiation surveys indicated no elevated levels throughout the Biofor Inc. facility other than those associated with naturally occurring radioactive materials within the building material.

RECOMMENDATIONS

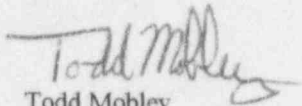
Applied Health Physics Inc. has reviewed all available information and documents related to radiological operations the Biofor Inc. facility. This report identifies the tasks performed in support of eventual license termination

Retain this report on file until such time as the license is terminated.

Send a copy of this report and the supporting documentation to the Region I office of the United States Nuclear Regulatory Commission.

If you have any questions concerning this report, please contact me at (412)-835-9555.

This report was prepared by:



Todd Mobley
Applied Health Physics Inc.
Technical Services Supervisor

APPENDIX A

Biofor Inc. Radiological Data Spread Sheets

Pharmacology Lab

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg.	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	1040	1040	24.9%	1174	-120	-120	24-28				
A-2	1049	1049	24.9%	1174	-238	-238	24-28				
A-3	1185	1185	24.9%	1174	-116	-116	24-28				
A-4	1169	1169	24.9%	1174	-131	-131	24-28	191	< 1000	< 1000	< 1000
A-5	1180	1180	24.9%	1174	-121	-121	24-28	193	< 1000	< 1000	< 1000
A-6	1169	1169	24.9%	1174	-131	-131	24-28				
A-7	1390	1390	24.9%	1174	67	67	24-28	194	< 1000	< 1000	< 1000
A-8	1336	1336	24.9%	1174	18	18	24-28				
A-9	1353	1353	24.9%	1174	33	33	24-28	195	< 1000	< 1000	< 1000
A-10	1251	1251	24.9%	1174	-58	-58	24-28				
A-11	N/A	N/A	N/A	N/A	N/A	N/A	24-28				
B-1	1115	1115	24.9%	1174	-53	-53	24-28				
B-2	1094	1094	24.9%	1174	-71	-71	24-28	137	< 1000	< 1000	< 1000
B-3	1290	1290	24.9%	1174	104	104	24-28				
B-4	1112	1112	24.9%	1174	-55	-55	24-28	190	< 1000	< 1000	< 1000
B-5	1147	1147	24.9%	1174	-24	-24	24-28	189	< 1000	< 1000	< 1000
B-6	1217	1217	24.9%	1174	38	38	24-28	188	< 1000	< 1000	< 1000
B-7	1021	1021	24.9%	1174	-137	-137	24-28	187,192	< 1000	< 1000	< 1000
B-8	1098	1098	24.9%	1174	-68	-68	24-28	146,186	< 1000	< 1000	< 1000
B-9	1062	1062	24.9%	1174	-100	-100	24-28	147	< 1000	< 1000	< 1000
B-10	1111	1111	24.9%	1174	-56	-56	24-28	148-152,180	< 1000	< 1000	< 1000
B-11	1148	1148	24.9%	1174	-23	-23	24-28	153-155, 179	< 1000	< 1000	< 1000
C-1	1151	1151	24.9%	1174	-21	-21	24-28				
C-2	1212	1212	24.9%	1174	34	34	24-28				
C-3	1207	1207	24.9%	1174	29	29	24-28				
C-4	1207	1207	24.9%	1174	29	29	24-28	185	< 1000	< 1000	< 1000
C-5	1279	1279	24.9%	1174	94	94	24-28				
C-6	1234	1234	24.9%	1174	54	54	24-28	184	< 1000	< 1000	< 1000
C-7	1124	1124	24.9%	1174	-45	-45	24-28	183	< 1000	< 1000	< 1000
C-8	1191	1191	24.9%	1174	15	15	24-28	182	< 1000	< 1000	< 1000
C-9	1062	1062	24.9%	1174	-100	-100	24-28	181	< 1000	< 1000	< 1000
C-10	1151	1151	24.9%	1174	-21	-21	24-28	178	< 1000	< 1000	< 1000
C-11	1265	1265	24.9%	1174	81	81	24-28	177	< 1000	< 1000	< 1000
D-1	1035	1035	24.9%	1174	-124	-124	24-28				
D-2	1072	1072	24.9%	1174	-91	-91	24-28				
D-3	1080	1080	24.9%	1174	-84	-84	24-28				
D-4	1145	1145	24.9%	1174	-26	-26	24-28	174,173	< 1000	< 1000	< 1000
D-5	1248	1248	24.9%	1174	66	66	24-28	144	< 1000	< 1000	< 1000
D-6	1214	1214	24.9%	1174	36	36	24-28				
D-7	1167	1167	24.9%	1174	-6	-6	24-28	143	< 1000	< 1000	< 1000
D-8	1232	1232	24.9%	1174	52	52	24-28				
D-9	1284	1284	24.9%	1174	98	98	24-28	142	< 1000	< 1000	< 1000
D-10	1273	1273	24.9%	1174	88	88	24-28	175	< 1000	< 1000	< 1000
D-11	1166	1166	24.9%	1174	-7	-7	24-28	176	< 1000	< 1000	< 1000
E-1	1098	1098	24.9%	1174	-68	-68	24-28				
E-2	1112	1112	24.9%	1174	-55	-55	24-28	138	< 1000	< 1000	< 1000
E-3	1282	1282	24.9%	1174	96	96	24-28				
E-4	1200	1200	24.9%	1174	23	23	24-28	172	< 1000	< 1000	< 1000
E-5	1168	1168	24.9%	1174	-5	-5	24-28	171	< 1000	< 1000	< 1000
E-6	1051	1051	24.9%	1174	-110	-110	24-28	170	< 1000	< 1000	< 1000
E-7	1116	1116	24.9%	1174	-52	-52	24-28	169	< 1000	< 1000	< 1000
E-8	1060	1060	24.9%	1174	-102	-102	24-28	168	< 1000	< 1000	< 1000

Pharmacology Lab

Grid Location	High Beta (cpm)	Beta Ave. (cpm)	Beta Eff.	Beta Bkg. cpm	High Beta cm ²	Ave. Beta cm ²	Dose Rate uR/hr	Sample Number	Tritium cm ²	C-14 cm ²	Gross cm ²
E-9	1198	1198	24.9%	1174	21	21	24-28	167	< 1000	< 1000	< 1000
E-10	1261	1261	24.9%	1174	78	78	24-28	166	< 1000	< 1000	< 1000
E-11	1205	1205	24.9%	1174	28	28	24-28	165	< 1000	< 1000	< 1000
F-1	N/A	N/A	N/A	N/A	N/A	N/A	24-28				
F-2	N/A	N/A	N/A	N/A	N/A	N/A	24-28				
F-3	N/A	N/A	N/A	N/A	N/A	N/A	24-28				
F-4	1219	1210	24.9%	1174	40	32	24-28	157	< 1000	< 1000	< 1000
F-5	1275	1153	24.9%	1174	90	-19	24-28	158	< 1000	< 1000	< 1000
F-6	1173	1123	24.9%	1174	-1	-46	24-28	159,141	< 1000	< 1000	< 1000
F-7	1150	1143	24.9%	1174	-21	-28	24-28	160, 156, 140	< 1000	< 1000	< 1000
F-8	1145	1134	24.9%	1174	-26	-36	24-28	161, 133	< 1000	< 1000	< 1000
F-9	1152	1130	24.9%	1174	-20	-40	24-28	162	< 1000	< 1000	< 1000
F-10	1147	1119	24.9%	1174	-24	-50	24-28	163	< 1000	< 1000	< 1000
F-11	1215	1215	24.9%	1174	37	37	24-28	164	< 1000	< 1000	< 1000
G-10	1030	1093	24.9%	1174	-129	-73	24-28	117, 125, 126	< 1000	< 1000	< 1000
G-11	1024	1024	24.9%	1174	-134	-134	24-28	124	< 1000	< 1000	< 1000
H-10	1078	1078	24.9%	1174	-86	-86	24-28	118, 127	< 1000	< 1000	< 1000
H-11	1065	1065	24.9%	1174	-97	-97	24-28	123, 135	< 1000	< 1000	< 1000
I-10	1175	1122	24.9%	1174	1	-47	24-28	128, 119	< 1000	< 1000	< 1000
I-11	1213	1213	24.9%	1174	35	35	24-28	122,134	< 1000	< 1000	< 1000
J-10	1203	1203	24.9%	1174	26	26	24-28				
J-11	1195	1195	24.9%	1174	19	19	24-28	121,133	< 1000	< 1000	< 1000
K-10	1088	1073	24.9%	1174	-77	-91	24-28	129, 130,120	< 1000	< 1000	< 1000
K-11	1062	1062	24.9%	1174	-100	-100	24-28	136, 131,132	< 1000	< 1000	< 1000

Cell Biology Lab

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg.	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	1070	1070	24.7%	967	93	93	15-25				
A-2	957	957	24.7%	967	-9	-9	15-25				
A-3	1103	1103	24.7%	967	122	122	15-25				
A-4	996	996	24.7%	967	26	26	15-25	226, 293-295	< 1000	< 1000	< 1000
A-5	1078	1078	24.7%	967	100	100	15-25	202, 297, 225	< 1000	< 1000	< 1000
A-6	1011	1011	24.7%	967	40	40	15-25	234	< 1000	< 1000	< 1000
A-7	1003	1003	24.7%	967	32	32	15-25	233	< 1000	< 1000	< 1000
A-8	N/A	N/A	N/A	N/A	N/A	N/A	15-25				
A-9	N/A	N/A	N/A	N/A	N/A	N/A	15-25	257-258	< 1000	< 1000	< 1000
A-10	N/A	N/A	N/A	N/A	N/A	N/A	15-25	259-260	< 1000	< 1000	< 1000
A-11	N/A	N/A	N/A	N/A	N/A	N/A	15-25	261-262	< 1000	< 1000	< 1000
B-1	1046	1046	24.7%	967	71	71	15-25				
B-2	884	884	24.7%	967	-75	-75	15-25	196	< 1000	< 1000	< 1000
B-3	1031	1031	24.7%	967	58	58	15-25				
B-4	1031	1031	24.7%	967	58	58	15-25	289-292, 223	< 1000	< 1000	< 1000
B-5	1068	1068	24.7%	967	91	91	15-25	224, 201, 296, 298	< 1000	< 1000	< 1000
B-6	986	986	24.7%	967	17	17	15-25	232, 299	< 1000	< 1000	< 1000
B-7	980	980	24.7%	967	12	12	15-25	231, 255-256	< 1000	< 1000	< 1000
B-8	894	894	24.7%	967	-66	-66	15-25	239	< 1000	< 1000	< 1000
B-9	1074	1074	24.7%	967	96	96	15-25	240	< 1000	< 1000	< 1000
B-10	978	978	24.7%	967	10	10	15-25	241, 266	< 1000	< 1000	< 1000
B-11	1055	1055	24.7%	967	79	79	15-25	242, 263-265	< 1000	< 1000	< 1000
C-1	1050	1050	24.7%	967	75	75	15-25				
C-2	1023	1023	24.7%	967	50	50	15-25				
C-3	1033	1033	24.7%	967	59	59	15-25	197	< 1000	< 1000	< 1000
C-4	1111	1111	24.7%	967	130	130	15-25	217	< 1000	< 1000	< 1000
C-5	1102	1102	24.7%	967	121	121	15-25	215, 301	< 1000	< 1000	< 1000
C-6	1107	1107	24.7%	967	126	126	15-25	213	< 1000	< 1000	< 1000
C-7	953	953	24.7%	967	-13	-13	15-25	211	< 1000	< 1000	< 1000
C-8	1009	1009	24.7%	967	38	38	15-25	209	< 1000	< 1000	< 1000
C-9	993	993	24.7%	967	23	23	15-25	207, 249-250	< 1000	< 1000	< 1000
C-10	1044	1044	24.7%	967	69	69	15-25	205, 251-252	< 1000	< 1000	< 1000
C-11	1078	1078	24.7%	967	100	100	15-25	203, 253-254	< 1000	< 1000	< 1000
D-1	1052	1052	24.7%	967	76	76	15-25	198	< 1000	< 1000	< 1000
D-2	999	999	24.7%	967	29	29	15-25	218, 287-288	< 1000	< 1000	< 1000
D-3	1082	1082	24.7%	967	103	103	15-25				
D-4	1089	1089	24.7%	967	110	110	15-25	218, 287-288	< 1000	< 1000	< 1000
D-5	1003	1003	24.7%	967	32	32	15-25	216	< 1000	< 1000	< 1000
D-6	1103	1103	24.7%	967	122	122	15-25	214	< 1000	< 1000	< 1000
D-7	963	963	24.7%	967	-4	-4	15-25	212	< 1000	< 1000	< 1000
D-8	1068	1068	24.7%	967	91	91	15-25	210	< 1000	< 1000	< 1000
D-9	1019	1019	24.7%	967	47	47	15-25	208, 247-248	< 1000	< 1000	< 1000
D-10	1024	1024	24.7%	967	51	51	15-25	206, 245-246	< 1000	< 1000	< 1000
D-11	1033	1033	24.7%	967	59	59	15-25	204, 243-244	< 1000	< 1000	< 1000
E-1	976	976	24.7%	967	8	8	15-25				
E-2	1109	1109	24.7%	967	128	128	15-25	199	< 1000	< 1000	< 1000
E-3	1043	1043	24.7%	967	68	68	15-25				
E-4	977	977	24.7%	967	9	9	15-25	220, 285-286	< 1000	< 1000	< 1000

Cell Biology Lab

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg.	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
E-5	1063	1063	24.7%	967	86	86	15-25	219, 200	< 1000	< 1000	< 1000
E-6	948	948	24.7%	967	-17	-17	15-25	228	< 1000	< 1000	< 1000
E-7	928	928	24.7%	967	-35	-35	15-25	227, 279-280	< 1000	< 1000	< 1000
E-8	1126	1126	24.7%	967	143	143	15-25	235	< 1000	< 1000	< 1000
E-9	1067	1067	24.7%	967	90	90	15-25	236, 267-268	< 1000	< 1000	< 1000
E-10	1127	1127	24.7%	967	144	144	15-25	237, 269-270	< 1000	< 1000	< 1000
E-11	1082	1082	24.7%	967	103	103	15-25	238, 271-274	< 1000	< 1000	< 1000
F-1	1052	1052	24.7%	967	76	76	15-25				
F-2	1022	1022	24.7%	967	49	49	15-25				
F-3	1069	1069	24.7%	967	92	92	15-25				
F-4	992	992	24.7%	967	22	22	15-25	221-222, 281-282	< 1000	< 1000	< 1000
F-5	1453	1453	24.7%	967	437	437	15-25				
F-6	1007	1007	24.7%	967	36	36	15-25	230	< 1000	< 1000	< 1000
F-7	998	998	24.7%	967	28	28	15-25	229, 283-284, 277-278	< 1000	< 1000	< 1000
F-8	1092	1092	24.7%	967	112	112	15-25	275-276	< 1000	< 1000	< 1000
F-9	N/A	N/A	N/A	N/A	N/A	N/A	15-25				
F-10	N/A	N/A	N/A	N/A	N/A	N/A	15-25				
F-11	N/A	N/A	N/A	N/A	N/A	N/A	15-25				

Chemical Waste Storage Room

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg.	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	1340	1340	25.4%	1044	259	259	23-25	94	< 1000	< 1000	< 1000
A-2	1262	1262	25.4%	1044	191	191	23-25				
A-3	1270	1270	25.4%	1044	198	198	23-25				
A-4	1202	1202	25.4%	1044	138	138	23-25	96	< 1000	< 1000	< 1000
A-5	1210	1210	25.4%	1044	145	145	23-25				
A-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
A-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
B-1	1092	1092	25.4%	1044	42	42	23-25				
B-2	1198	1198	25.4%	1044	135	135	23-25	93	< 1000	< 1000	< 1000
B-3	1215	1215	25.4%	1044	150	150	23-25				
B-4	1213	1213	25.4%	1044	148	148	23-25	95	< 1000	< 1000	< 1000
B-5	1187	1187	25.4%	1044	125	125	23-25				
B-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
B-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
C-1	1202	1202	25.4%	1044	138	138	23-25	89	< 1000	< 1000	< 1000
C-2	1195	1195	25.4%	1044	132	132	23-25	88	< 1000	< 1000	< 1000
C-3	1217	1217	25.4%	1044	151	151	23-25	97-102, 92	< 1000	< 1000	< 1000
C-4	1239	1239	25.4%	1044	171	171	23-25	91, 103-104	< 1000	< 1000	< 1000
C-5	1198	1198	25.4%	1044	135	135	23-25	105-110, 90	< 1000	< 1000	< 1000
C-6	1243	1243	25.4%	1044	174	174	23-25	76	< 1000	< 1000	< 1000
C-7	1301	1301	25.4%	1044	225	225	23-25	74	< 1000	< 1000	< 1000
D-1	1290	1290	25.4%	1044	215	215	23-25	86	< 1000	< 1000	< 1000
D-2	1231	1231	25.4%	1044	164	164	23-25	84	< 1000	< 1000	< 1000
D-3	1111	1111	25.4%	1044	59	59	23-25	82	< 1000	< 1000	< 1000
D-4	1092	1092	25.4%	1044	42	42	23-25	80	< 1000	< 1000	< 1000
D-5	1104	1104	25.4%	1044	52	52	23-25	78	< 1000	< 1000	< 1000
D-6	1227	1227	25.4%	1044	160	160	23-25	77	< 1000	< 1000	< 1000
D-7	1212	1212	25.4%	1044	147	147	23-25	75	< 1000	< 1000	< 1000
E-1	1254	1254	25.4%	1044	184	184	23-25	87	< 1000	< 1000	< 1000
E-2	1279	1279	25.4%	1044	206	206	23-25	85	< 1000	< 1000	< 1000
E-3	1309	1309	25.4%	1044	232	232	23-25	83	< 1000	< 1000	< 1000
E-4	1267	1267	25.4%	1044	195	195	23-25	81	< 1000	< 1000	< 1000
E-5	1140	1140	25.4%	1044	84	84	23-25	79	< 1000	< 1000	< 1000
E-6	1232	1232	25.4%	1044	164	164	23-25				
E-7	1240	1240	25.4%	1044	171	171	23-25				

KiloLab-Adjacent Area

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
A-2	1137	1137	24.9%	1174	-33	-33	23-25				
A-3	1034	1034	24.9%	1174	-125	-125	23-25				
A-4	1197	1197	24.9%	1174	21	21	23-25				
A-5	1111	1111	24.9%	1174	-56	-56	23-25				
A-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
A-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
B-1	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
B-2	1002	1002	24.9%	1174	-154	-154	23-25				
B-3	1120	1120	24.9%	1174	-48	-48	23-25				
B-4	1209	1209	24.9%	1174	31	31	23-25				
B-5	1146	1146	24.9%	1174	-25	-25	23-25				
B-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
B-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
C-1	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
C-2	1132	1132	24.9%	1174	-37	-37	23-25				
C-3	1113	1113	24.9%	1174	-54	-54	23-25				
C-4	1138	1138	24.9%	1174	-32	-32	23-25				
C-5	1143	1143	24.9%	1174	-28	-28	23-25				
C-6	1135	1135	24.9%	1174	-35	-35	23-25				
C-7	1129	1129	24.9%	1174	-40	-40	23-25				
D-1	1130	1130	24.9%	1174	-39	-39	23-25				
D-2	1058	1058	24.9%	1174	-104	-104	23-25				
D-3	1148	1148	24.9%	1174	-23	-23	23-25				
D-4	1114	1114	24.9%	1174	-54	-54	23-25				
D-5	1062	1062	24.9%	1174	-100	-100	23-25				
D-6	1252	1252	24.9%	1174	70	70	23-25				
D-7	1258	1258	24.9%	1174	75	75	23-25				
E-1	1056	1056	24.9%	1174	-105	-105	23-25				
E-2	1170	1170	24.9%	1174	-4	-4	23-25				
E-3	990	990	24.9%	1174	-164	-164	23-25				
E-4	1006	1006	24.9%	1174	-150	-150	23-25				
E-5	1103	1103	24.9%	1174	-63	-63	23-25				
E-6	1097	1097	24.9%	1174	-69	-69	23-25				
E-7	1334	1334	24.9%	1174	143	143	23-25				
F-1	1056	1056	24.9%	1174	-105	-105	23-25				
F-2	1034	1034	24.9%	1174	-125	-125	23-25				
F-3	1131	1131	24.9%	1174	-38	-38	23-25				
F-4	1181	1181	24.9%	1174	6	6	23-25				
F-5	1159	1159	24.9%	1174	-13	-13	23-25				
F-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
F-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
G-1	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
G-2	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
G-3	1098	1098	24.9%	1174	-68	-68	23-25				
G-4	1059	1059	24.9%	1174	-103	-103	23-25				
G-5	1054	1054	24.9%	1174	-107	-107	23-25				
G-6	N/A	N/A	N/A	N/A	N/A	N/A	23-25				
G-7	N/A	N/A	N/A	N/A	N/A	N/A	23-25				

Kilo-Lab Adjacent Area Distillery Room

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Pkg.	High Beta	Ave. Beta	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	N/A	N/A	N/A	N/A	N/A	N/A				
A-2	N/A	N/A	N/A	N/A	N/A	N/A				
A-3	N/A	N/A	N/A	N/A	N/A	N/A				
A-4	1010	1010	24.9%	1174	-146	-146				
A-5	N/A	N/A	N/A	N/A	N/A	N/A				
A-6	N/A	N/A	N/A	N/A	N/A	N/A				
B-1	N/A	N/A	N/A	N/A	N/A	N/A				
B-2	N/A	N/A	N/A	N/A	N/A	N/A				
B-3	N/A	N/A	N/A	N/A	N/A	N/A				
B-4	980	980	24.9%	1174	-173	-173				
B-5	N/A	N/A	N/A	N/A	N/A	N/A				
B-6	N/A	N/A	N/A	N/A	N/A	N/A				
C-1	N/A	N/A	N/A	N/A	N/A	N/A				
C-2	1210	1210	24.9%	1174	32	32				
C-3	1070	1070	24.9%	1174	-93	-93				
C-4	1143	1143	24.9%	1174	-28	-28				
C-5	1070	1070	24.9%	1174	-93	-93				
C-6	1035	1035	24.9%	1174	-124	-124				
D-1	N/A	N/A	N/A	N/A	N/A	N/A				
D-2	1080	1080	24.9%	1174	-84	-84				
D-3	1050	1050	24.9%	1174	-111	-111				
D-4	1137	1137	24.9%	1174	-33	-33				
D-5	1170	1170	24.9%	1174	-4	-4				
D-6	1075	1075	24.9%	1174	-88	-88				
E-1	N/A	N/A	N/A	N/A	N/A	N/A				
E-2	980	980	24.9%	1174	-173	-173				
E-3	1021	1021	24.9%	1174	-137	-137				
E-4	1056	1056	24.9%	1174	-105	-105				
E-5	1130	1130	24.9%	1174	-39	-39				
E-6	1046	1046	24.9%	1174	-114	-114				
F-1	N/A	N/A	N/A	N/A	N/A	N/A				
F-2	N/A	N/A	N/A	N/A	N/A	N/A				
F-3	N/A	N/A	N/A	N/A	N/A	N/A				
F-4	1056	1056	24.9%	1174	-105	-105				
F-5	N/A	N/A	N/A	N/A	N/A	N/A				
F-6	N/A	N/A	N/A	N/A	N/A	N/A				
G-1	N/A	N/A	N/A	N/A	N/A	N/A				
G-2	N/A	N/A	N/A	N/A	N/A	N/A				
G-3	N/A	N/A	N/A	N/A	N/A	N/A				
G-4	1024	1024	24.9%	1174	-134	-134				
G-5	N/A	N/A	N/A	N/A	N/A	N/A				
G-6	N/A	N/A	N/A	N/A	N/A	N/A				

First Floor Hallway

Grid Location	High Beta	Beta Ave.	Beta Eff	Beta Bkg	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	927	927	25.4%	1054	-111	-111	20-30	11	< 1000	< 1000	< 1000
A-2	987	987	25.4%	1054	-59	-59	20-30	13	< 1000	< 1000	< 1000
A-3	1107	1107	25.4%	1054	46	46	20-30	15	< 1000	< 1000	< 1000
A-4	1177	1177	25.4%	1054	108	108	20-30	17	< 1000	< 1000	< 1000
A-5	1000	1000	25.4%	1054	-47	-47	20-30	19	< 1000	< 1000	< 1000
A-6	1128	1128	25.4%	1054	65	65	20-30	21	< 1000	< 1000	< 1000
A-7	1088	1088	25.4%	1054	30	30	20-30	23	< 1000	< 1000	< 1000
A-8	1080	1080	25.4%	1054	23	23	20-30	25	< 1000	< 1000	< 1000
A-9	1027	1027	25.4%	1054	-24	-24	20-30	27	< 1000	< 1000	< 1000
A-10	1010	1010	25.4%	1054	-38	-38	20-30	29	< 1000	< 1000	< 1000
A-11	1066	1066	25.4%	1054	10	10	20-30	31	< 1000	< 1000	< 1000
A-12	1073	1073	25.4%	1054	17	17	20-30	33	< 1000	< 1000	< 1000
A-13	987	987	25.4%	1054	-59	-59	20-30	35	< 1000	< 1000	< 1000
A-14	1002	1002	25.4%	1054	-45	-45	20-30	37	< 1000	< 1000	< 1000
A-15	1001	1001	25.4%	1054	-46	-46	20-30	39	< 1000	< 1000	< 1000
A-16	1042	1042	25.4%	1054	-10	-10	20-30	41	< 1000	< 1000	< 1000
A-17	1057	1057	25.4%	1054	3	3	20-30	43	< 1000	< 1000	< 1000
A-18	997	997	25.4%	1054	-50	-50	20-30	45	< 1000	< 1000	< 1000
A-19	1109	1109	25.4%	1054	48	48	20-30	47	< 1000	< 1000	< 1000
A-20	1027	1027	25.4%	1054	-24	-24	20-30	49	< 1000	< 1000	< 1000
A-21	1037	1037	25.4%	1054	-15	-15	20-30	51	< 1000	< 1000	< 1000
A-22	1083	1083	25.4%	1054	25	25	20-30	53	< 1000	< 1000	< 1000
A-23	1079	1079	25.4%	1054	22	22	20-30	55	< 1000	< 1000	< 1000
A-24	1025	1025	25.4%	1054	-25	-25	20-30	57	< 1000	< 1000	< 1000
A-25	1057	1057	25.4%	1054	3	3	20-30	59	< 1000	< 1000	< 1000
A-26	997	997	25.4%	1054	-50	-50	20-30	61	< 1000	< 1000	< 1000
A-27	1089	1089	25.4%	1054	31	31	20-30	63	< 1000	< 1000	< 1000
A-28	1011	1011	25.4%	1054	-38	-38	20-30	65	< 1000	< 1000	< 1000
A-29	986	986	25.4%	1054	-59	-59	20-30	67	< 1000	< 1000	< 1000
A-30	1045	1045	25.4%	1054	-8	-8	20-30	69	< 1000	< 1000	< 1000
B-1	1031	1031	25.4%	1054	-20	-20	20-30	12	< 1000	< 1000	< 1000
B-2	944	944	25.4%	1054	-96	-96	20-30	14	< 1000	< 1000	< 1000
B-3	908	908	25.4%	1054	-128	-128	20-30	16	< 1000	< 1000	< 1000
B-4	984	984	25.4%	1054	-61	-61	20-30	18	< 1000	< 1000	< 1000
B-5	988	988	25.4%	1054	-58	-58	20-30	20	< 1000	< 1000	< 1000
B-6	1095	1095	25.4%	1054	36	36	20-30	22	< 1000	< 1000	< 1000
B-7	1106	1106	25.4%	1054	45	45	20-30	24	< 1000	< 1000	< 1000
B-8	1060	1060	25.4%	1054	5	5	20-30	26	< 1000	< 1000	< 1000
B-9	1055	1055	25.4%	1054	1	1	20-30	28	< 1000	< 1000	< 1000
B-10	1027	1027	25.4%	1054	-24	-24	20-30	30	< 1000	< 1000	< 1000
B-11	1188	1188	25.4%	1054	117	117	20-30	32	< 1000	< 1000	< 1000
B-12	1090	1090	25.4%	1054	31	31	20-30	34	< 1000	< 1000	< 1000
B-13	990	990	25.4%	1054	-56	-56	20-30	36	< 1000	< 1000	< 1000
B-14	1021	1021	25.4%	1054	-29	-29	20-30	38	< 1000	< 1000	< 1000
B-15	1032	1032	25.4%	1054	-19	-19	20-30	40	< 1000	< 1000	< 1000
B-16	1076	1076	25.4%	1054	19	19	20-30	42	< 1000	< 1000	< 1000
B-17	1142	1142	25.4%	1054	77	77	20-30	44	< 1000	< 1000	< 1000
B-18	1091	1091	25.4%	1054	32	32	20-30	46	< 1000	< 1000	< 1000

First Floor Hallway

Grid Location	High Beta	Beta Ave	Beta Eff	Beta Bkg	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
B-19	1077	1077	25.4%	1054	20	20	20-30	48	< 1000	< 1000	< 1000
B-20	1067	1067	25.4%	1054	11	11	20-30	50	< 1000	< 1000	< 1000
B-21	1081	1081	25.4%	1054	24	24	20-30	52	< 1000	< 1000	< 1000
B-22	1111	1111	25.4%	1054	50	50	20-30	54	< 1000	< 1000	< 1000
B-23	1104	1104	25.4%	1054	44	44	20-30	56	< 1000	< 1000	< 1000
B-24	1202	1202	25.4%	1054	129	129	20-30	58	< 1000	< 1000	< 1000
B-25	1063	1063	25.4%	1054	8	8	20-30	60	< 1000	< 1000	< 1000
B-26	1005	1005	25.4%	1054	-43	-43	20-30	62	< 1000	< 1000	< 1000
B-27	1021	1021	25.4%	1054	-29	-29	20-30	64	< 1000	< 1000	< 1000
B-28	1017	1017	25.4%	1054	-32	-32	20-30	66	< 1000	< 1000	< 1000
B-29	1113	1113	25.4%	1054	52	52	20-30	68	< 1000	< 1000	< 1000
B-30	1033	1033	25.4%	1054	-18	-18	20-30	70	< 1000	< 1000	< 1000

2nd Floor Lab - Non Rad

Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg.	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
A-2	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
A-3	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
A-4	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
A-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
A-6	700	700	25.4%	1054	-1394	-1394	20-25	3	< 1000	< 1000	< 1000
A-7	691	691	25.4%	1054	-1429	-1429	20-25				
A-8	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-1	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-2	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-3	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-4	N/A	N/A	25.4%	1054	N/A	N/A	20-25	10	< 1000	< 1000	< 1000
B-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-6	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-7	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
B-8	691	681.5	25.4%	1054	-1429	-1467	20-25				
C-1	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
C-2	738	738	25.4%	1054	738	738	20-25	6	< 1000	< 1000	< 1000
C-3	733	731.5	25.4%	1054	-1264	-1270	20-25	5	< 1000	< 1000	< 1000
C-4	722	699.5	25.4%	1054	-1307	-1396	20-25				
C-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
C-6	N/A	N/A	25.4%	1054	N/A	N/A	20-25	9	< 1000	< 1000	< 1000
C-7	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
C-8	643	643	25.4%	1054	-1618	-1618	20-25				
D-1	682	682	25.4%	1054	-1465	-1465	20-25				
D-2	784	784	25.4%	1054	-1063	-1063	20-25	7	< 1000	< 1000	< 1000
D-3	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
D-4	741	713.5	25.4%	1054	-1232	-1341	20-25	4	< 1000	< 1000	< 1000
D-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
D-6	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
D-7	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
D-8	712	684	25.4%	1054	-1346	-1457	20-25				
E-1	706	706	25.4%	1054	-1370	-1370	20-25				
E-2	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
E-3	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
E-4	N/A	N/A	25.4%	1054	N/A	N/A	20-25	8	< 1000	< 1000	< 1000
E-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
E-6	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
E-7	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
E-8	669	669	25.4%	1054	-1516	-1516	20-25	2	< 1000	< 1000	< 1000
F-1	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
F-2	707	707	25.4%	1054	707	707	20-25	1	< 1000	< 1000	< 1000
F-3	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
F-4	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
F-5	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
F-6	N/A	N/A	25.4%	1054	N/A	N/A	20-25				
F-7	677	645	25.4%	1054	-1484	-1610	20-25				
F-8	N/A	N/A	25.4%	1054	N/A	N/A	20-25				

2nd Floor Lab - Non Rad

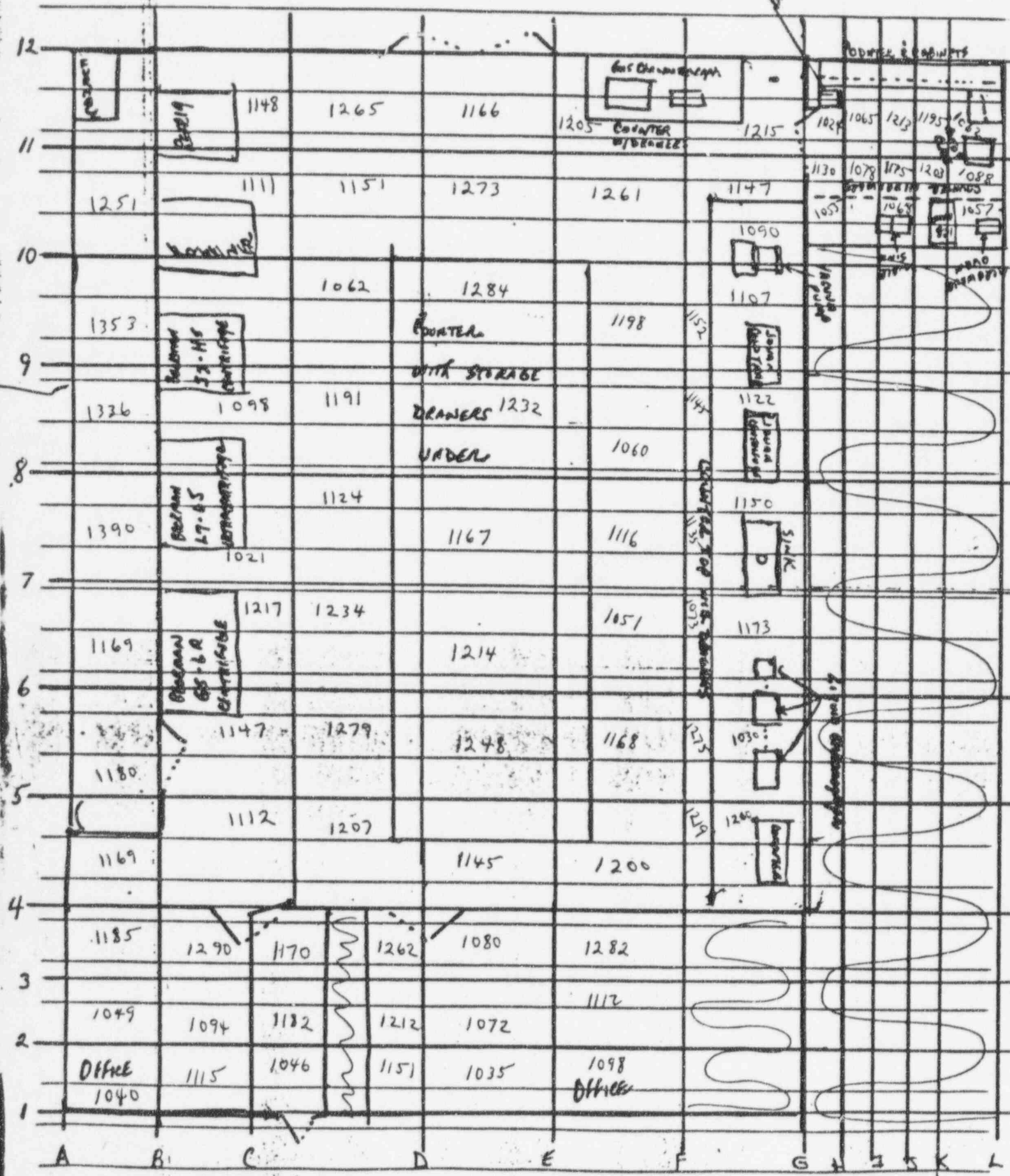
Grid Location	High Beta	Beta Ave.	Beta Eff.	Beta Bkg	High Beta	Ave. Beta	Dose Rate	Sample	Tritium	C-14	Gross
	(cpm)	(cpm)		cpm	(dpm/100 cm ²)	(dpm/100 cm ²)	uR/hr	Number	(dpm/100 cm ²)	(dpm/100 cm ²)	(dpm/100 cm ²)
A-1	1424	1424	25.4%	1054	1457	1457	20-30				
A-2	1234	1234	25.4%	1054	709	709	20-30				
A-3	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
A-4	1279	1279	25.4%	1054	886	886	20-30				
A-5	1259	1259	25.4%	1054	807	807	20-30				
A-6	1279	1279	25.4%	1054	886	886	20-30				
B-1	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
B-2	1443	1443	25.4%	1054	1531	1531	20-30				
B-3	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
B-4	1373	1373	25.4%	1054	1256	1256	20-30				
B-5	1251	1251	25.4%	1054	776	776	20-30				
B-6	1268	1268	25.4%	1054	843	843	20-30				
C-1	1399	1399	25.4%	1054	1358	1358	20-30				
C-2	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
C-3	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
C-4	1390	1390	25.4%	1054	1323	1323	20-30				
C-5	1320	1320	25.4%	1054	1047	1047	20-30				
C-6	1391	1391	25.4%	1054	1327	1327	20-30				
D-1	1427	1427	25.4%	1054	1469	1469	20-30				
D-2	1431	1431	25.4%	1054	1484	1484	20-30				
D-3	1354	1354	25.4%	1054	1181	1181	20-30				
D-4	N/A	N/A	25.4%	1054	N/A	N/A	20-30				
D-5	1325	1325	25.4%	1054	1067	1067	20-30				
D-6	N/A	N/A	25.4%	1054	N/A	N/A	20-30				

APPENDIX B

**Biofor Inc. Radiological Assessment
Survey Maps**

N
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Dr. H. H. H. H.

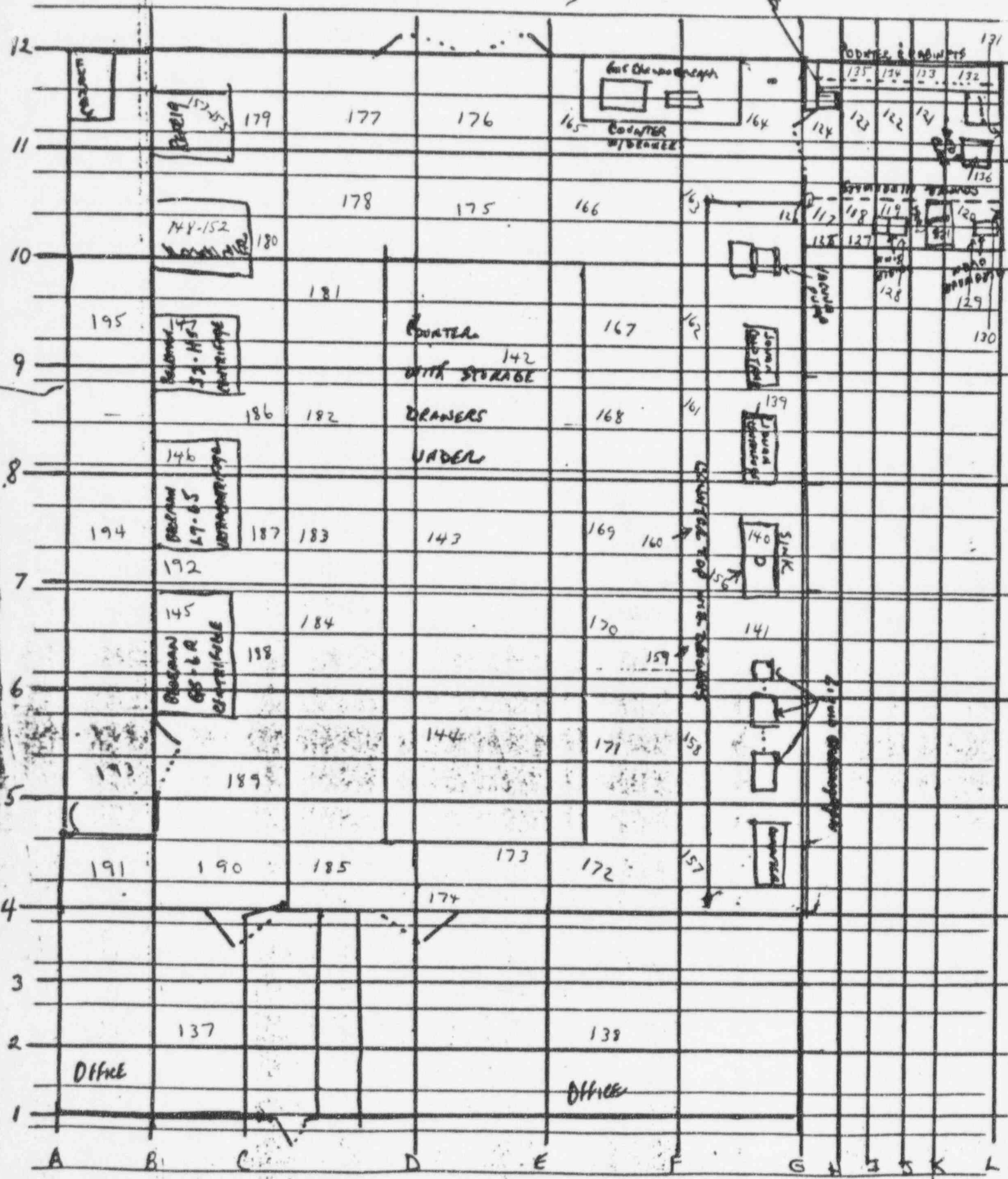


N
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5-30-96

Pharmacology Lab

Smear Survey / Gammar Survey



5-31-96

Ludlum 2221 #108865 w/43-77 probe #68478

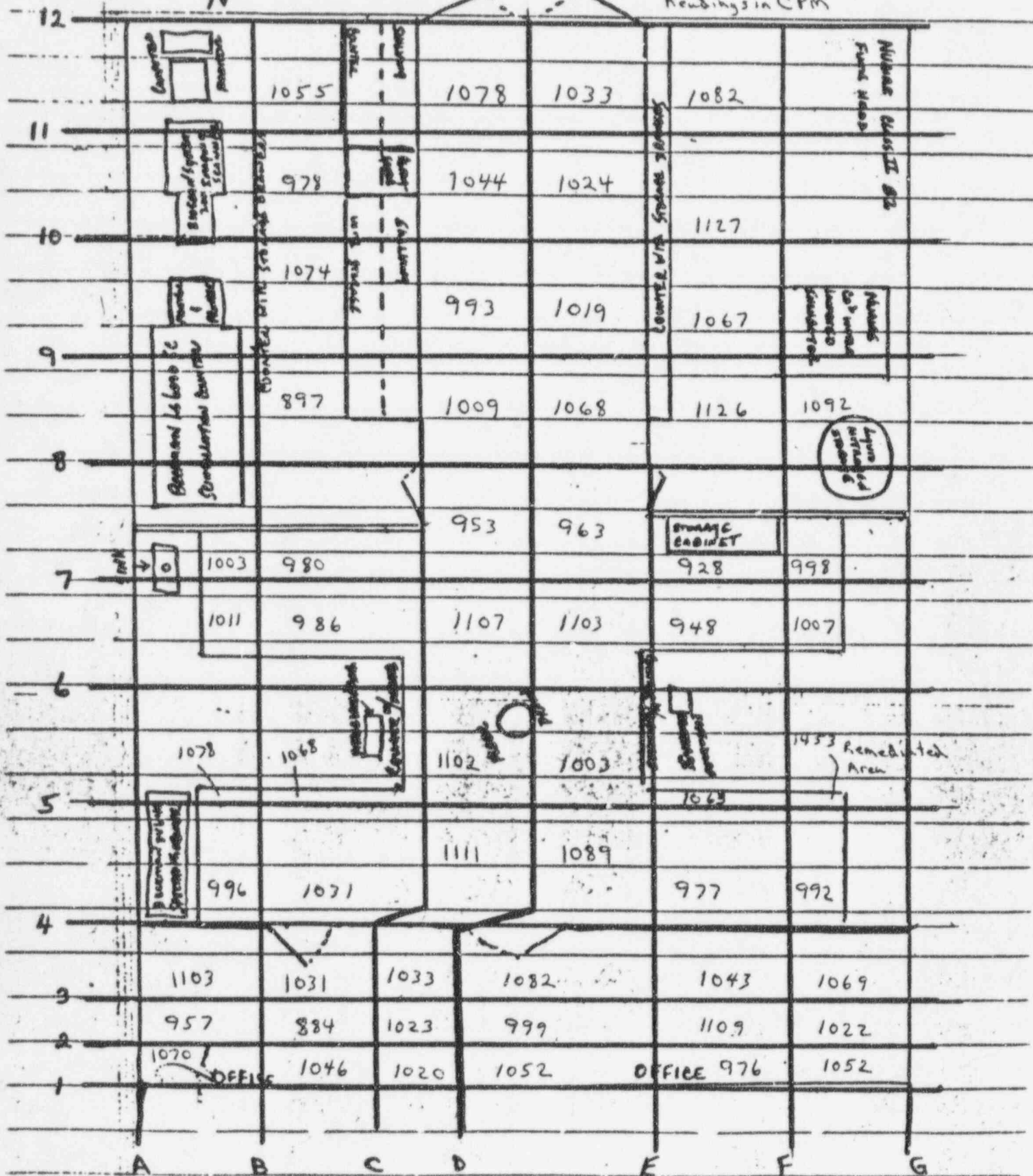
CELL BIOLOGY LAB

Team: Mobley, Cuthbert, Sidorn

Direct Readings - Floor



Readings in CPM

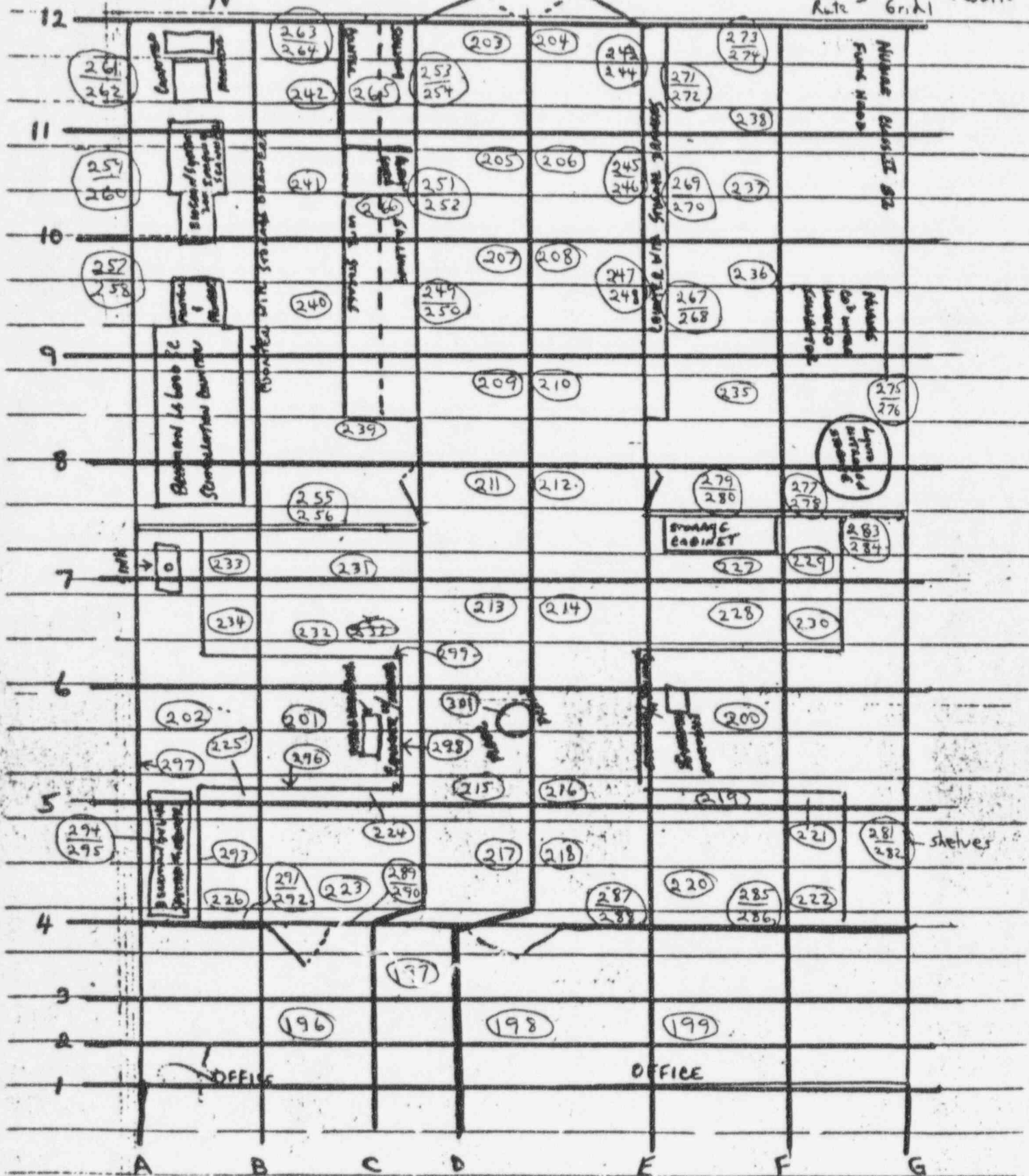


Gamma Survey - 5-28-96 15-25 uS/hr by Bieron MicroAnalyst #A147W

CELL BIOLOGY LAB

Smear Survey + Gamma Survey

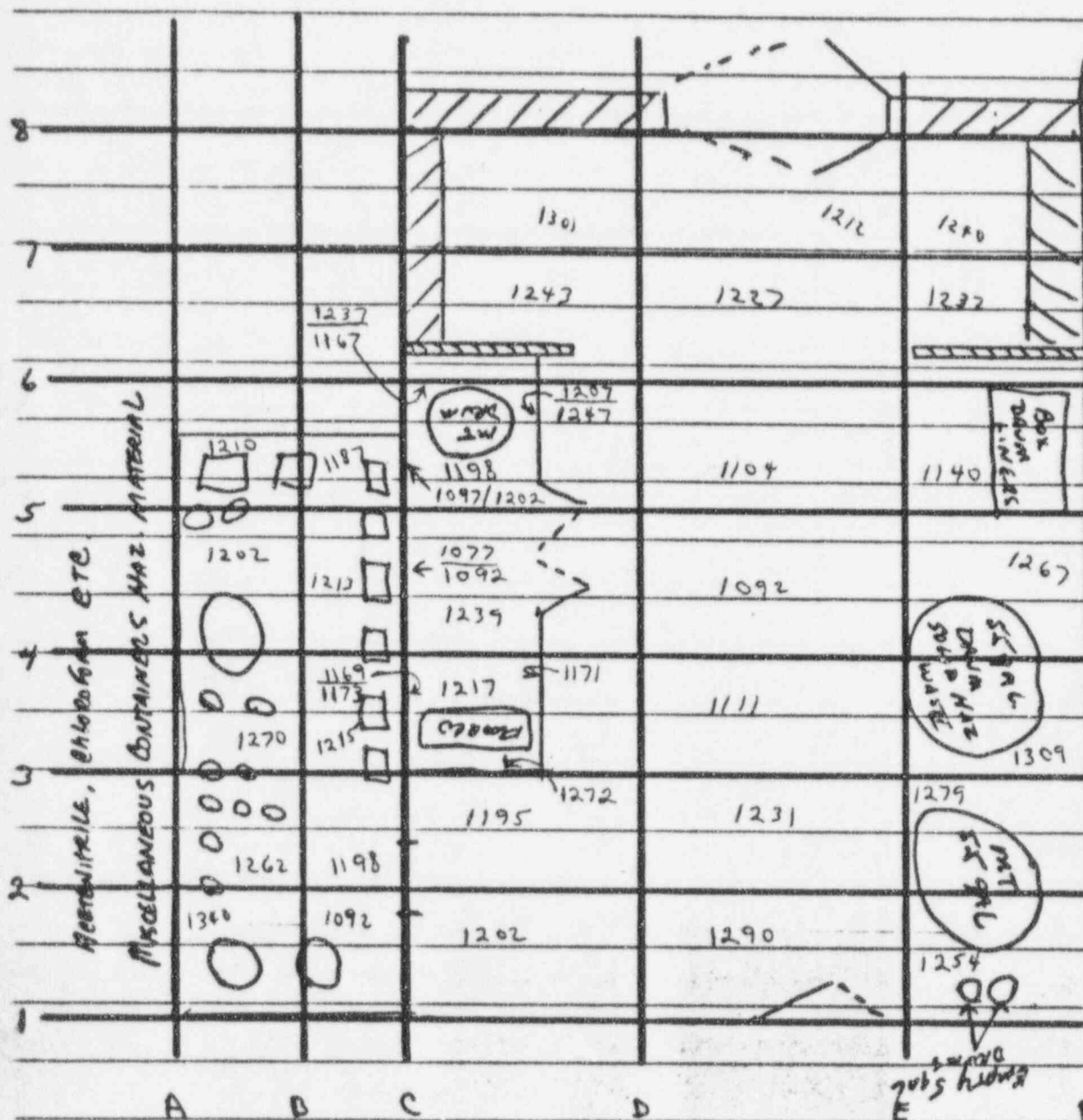
Rate = $\frac{\text{Grid 2}}{\text{Grid 1}}$ results



Note: Brinkman Centrifuge #5415/B/45951 sent to Rad waste

Notice: Fume Hood - Filters discarded properly - All surfaces at Bkgd levels

CHEMICAL WASTE STORAGE ROOM

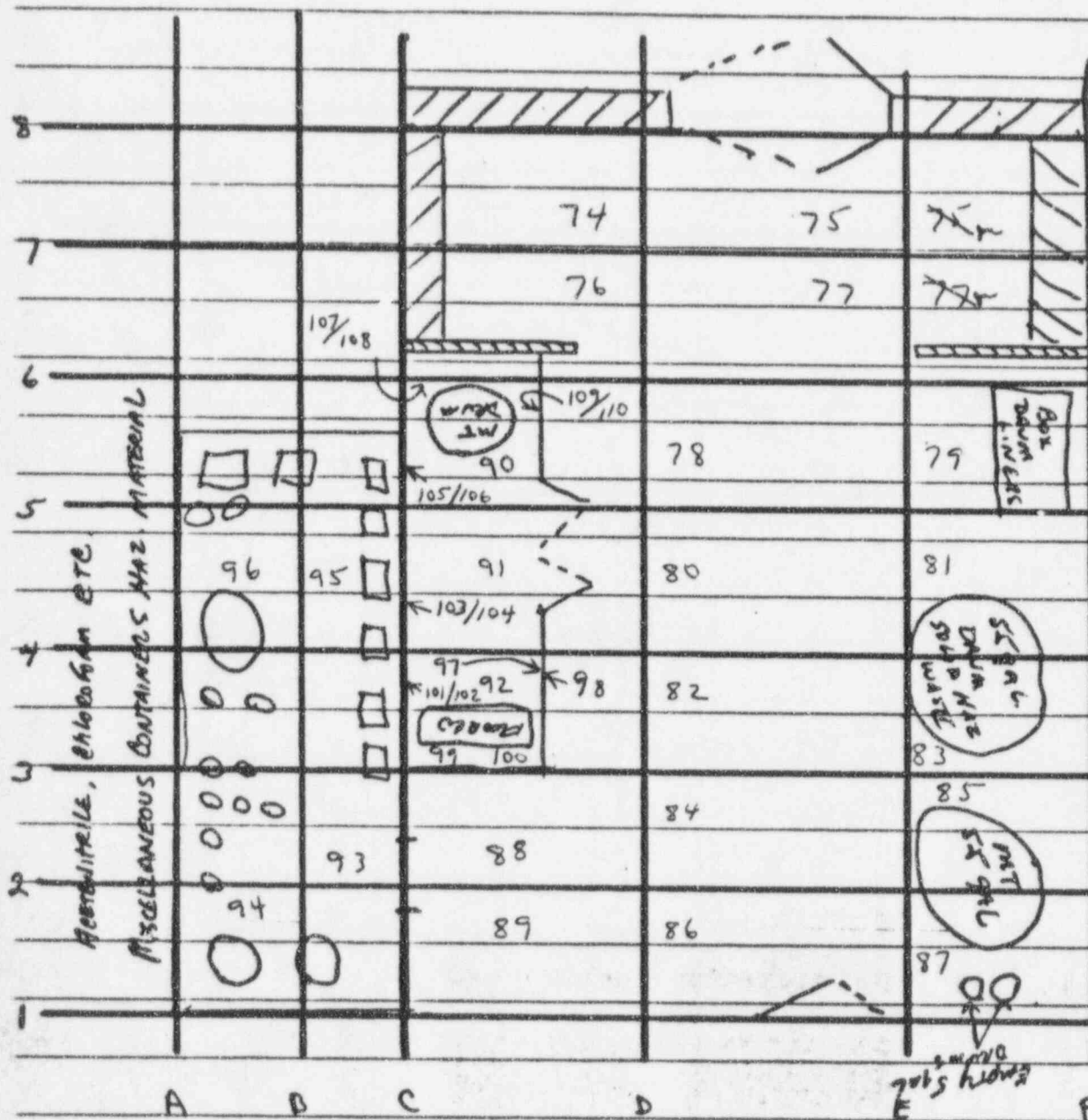


Direct Reading Survey w/ 450 cm² probe

concrete floor bkgd. avg 1259 cpm

rate Grid 2
rate = Grid 1 rates

CHEMICAL WASTE STORAGE ROOM



Smear Survey locations listed Above

Gamma Survey Results - 23-25 uR/h

Radiological Survey Record Form

page 1 of 2

DATE <u>5-30-96</u>	TIME <u>0910</u>	SURVEYOR <u>Cumby</u>
LOCATION <u>Kilo Lab - Adjacent Area</u>		RADIONUCLIDES <u>C¹⁴ H³</u>

SURVEY TYPE	SURVEY INSTRUMENT	SERIAL NO.	BACKGROUND

↑
N

8									
7	X	X	1129	1258	1334	X	X	X	
6			1135	1252	1097	X	X	X	
5	1111	1146	1143	1062	1103	X	1159	1054	X
4	1197	1209	1138	1114	1006	X	1181	1059	X
3	1034	1120	1113	1148	990	X	1131	1098	X
2	1137	1002	1132	1058	1170	1034	X	X	X
1	X	X	X	1130	1056	1056	X	X	X
	A	B	C	D	E	F	G	H	

DECISION ACTIVITY _____	SAMPLE COUNT TIME _____
SAMPLE BLANK COUNT _____	DETECTOR EFFICIENCY _____

COMMENTS Gamma Survey Results - 20-25 nS/h

Radiological Survey Record Form

page 2 of 2

DATE 5-30-96 TIME 1300 SURVEYOR C. Gable
 LOCATION Kilo Lab - Adjacent Area RADIONUCLIDES C-14 H₂
Distillery Rm

SURVEY TYPE	SURVEY INSTRUMENT	SERIAL NO.	BACKGROUND

N →

7	X	X	1035	1075	1046	X	X	X
6	X	X	1070	1170	1130	X	X	X
5	1010	980	1143	1137	1056	1056	1024	X
4	X	X	1070	1050	1021	X	X	X
3	X	X	1210	1080	980	X	X	X
2	X	X	X	X	X	X	X	X
1	X	X	X	X	X	X	X	X
	A	B	C	D	E	F	G	H

DECISION ACTIVITY _____
 SAMPLE BLANK COUNT _____

SAMPLE COUNT TIME _____
 DETECTOR EFFICIENCY _____

COMMENTS C. Gable

BioForce - 1st Floor Hallway

50-76

Ludlum 2221⁹ 108865

443-37 probe #68478

grids compressed to fit page

N →

Rest
Rooms

Storage
Room

Stairway

Waste Vault

Conference
Room

Copier
Room

Dark
Room

Maintenance
Room

change
Room

Cell
Biology Lab

Pharmacology Lab

Storage
Room

Storage
Room

Stairs

Kilo Lab

Main

Door

1		12	
2	927	1031	
3	987	944	
4	1107	908	
5	1177	984	
6	1000	988	
7	1128	1095	
8	1088	1106	
9	1080	1060	
10	1027	1055	
11	1010	1027	
12	1066	1188	
13	1072	1090	
14	987	990	
15	1002	1021	
16	1001	1032	
17	1042	1076	
18	1057	1142	
19	997	1091	
20	1109	1077	
21	1027	1067	
22	1037	1081	
23	1083	1111	
24	1079	1104	
25	1025	1203	
26	1057	1063	
27	997	1005	
28	1089	1021	
29	1011	1017	
30	986	1113	
31	1045	1033	

A

B

C

Bldg floor Levels B & 8

Office floor concrete w/ carpet



Lab floor - concrete w/ Linoleum

2nd floor Lab - Non Rad

Gamma Survey results = 20-30 uR/h

APPENDIX C

Biofor Inc. Laboratory Equipment

Biofor Inc.
Scherer Health Care

Radiological Equipment Assessment

Pharmacology Lab

Frigidaire Refirgirator/Freezer

Harris Freezer

J2-HS Centrifuge

L7-65 Ultra Centrifuge

RC-1010 Centrifuge

GS-6R Centrifuge

Hirayama Autoclave

Gibson Dishwasher

Millipore Water Purifier

Amana Microwave

Jouan Cold Trap Refirgerator

Built-in Sinks and Traps (2)

Cell Biology Lab-Main Room

Beckman 640 Spectrophotometer

Fisher Water Bath

Sink and Trap(1)

Cell Biology Lab-Cell Culture Room

Nuaire Fume Hood

Nuaire Incubator

Locator 4 Liquid Nitrogen Container

Cell Biology Lab-Instrument Room

Beckman LS6000SC Counter

Bioscan Image Scanner

Fisher Scientific Model 811 Scale

Mettler Scale

Corning Stirrer

Small Refrigerator

All listed equipment surveyed for both fixed and removable contamination, utilizing NRC contamination criteria, and found to be acceptable for release to general use.

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: 03620
STATUS CODE: 0
FEE CATEGORY: 3M
EXP. DATE: 20030331
FEE COMMENTS:
DECOM FIN ASSUR REQD: N

LICENSE FEE TRANSMITTAL

A. REGION

I

1. APPLICATION ATTACHED

APPLICANT/LICENSEE: BIOFOR, INC.
RECEIVED DATE: 960703
DOCKET NO: 3033078
CONTROL NO.: 123399
LICENSE NO.: 37-30020-01
ACTION TYPE: TERMINATION

2. FEE ATTACHED

AMOUNT: -----
CHECK NO.: -----

3. COMMENTS

SIGNED
DATE

M. A. Perkins

7/10/96

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE Q3 IS ENTERED / /)

1. FEE CATEGORY AND AMOUNT: *3M*

FEE EXEMPT
Termination

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:

AMENDMENT -----
RENEWAL -----
LICENSE -----

3. OTHER -----

SIGNED
DATE

B. Brown

7/16/96

RECEIVED BY LFDCB	
DATE	<i>7/16/96</i>
LD	<i>July 5 1996</i>
BY	<i>B. Brown</i>
DATE	<i>7/16/96</i>

1996 JUL 15 AM 11:15