

**ENCLOSURE 2-4**

**SUMMARY OF WIPES AND REMOVABLE CONDITIONS (30.35  
(g)(1))**

Room No.	Start	Phased Out	Converted to Office Space*	Amounts in mCi		Gross # of wipes	ALARA Removable	Current Room Status
				NSC ALARA Threshold: 100 dpm - Army ALARA Threshold: 1000 dpm <sup>14</sup> C	NSC ALARA Threshold: 1000 dpm - Army ALARA Threshold: 10,000 dpm <sup>3</sup> H			
Research Building (3)								
R110	Oct-67	Apr-68	1982			70	0	Office area
R114	Dec-73	Jan-74	1982	X		20	0	Office area
R120	Nov-66	Apr-68	1982			246	0	Office area
R121(R123 )	Feb-67	Apr-68	1983			257	0	Office area
R131/133	Jun-65	Apr-68	1982	X		695	1	Office area
R132(AKA R128)	Jun-65	Apr-68	1982	X		628	0	Office area
R136	Mar-70	Oct-78	1982	X		890	0	Office area
R137	Oct-67	Apr-68	1982			80	0	Office area
R138/140	Feb-75	Dec-79	1985	X		1312	0	Office area
R140	Apr-67	Apr-68	1985	X			0	Office area
R214 (AKA R210)	Aug-65	Oct-72	N/A	X	X	1800	12	Vending (front)/Laboratory (rear room)
R214 (AKA 210)	Aug-75	Oct-78	N/A	X		396	0	Vending (front)/Laboratory (rear room)
R239	Apr-68	Feb-69	Rechecking date	X		110	0	Office area
R305	Apr-67	Mar-68	Sep-92	X		530	0	Office area
R305	Feb-70	Mar-75	Sep-92	X		140	0	Office area
R307/309	Jul-65	Apr-74	late 80s - early 90s	X		1034	0	Office area
R308	Apr-75	Dec-79	N/A	X	X	170	0	Laboratory
R311	Jan-67	Mar-68	N/A	X		204	0	Laboratory
R319	May-68	Jun-77	N/A	X		943	0	Laboratory
R326	Jun-69	Apr-76	N/A	X		735	0	Laboratory
R336	Jun-71	Apr-72	N/A	X		80	0	Laboratory
R342	Aug-84	Aug-85	N/A			130	0	Laboratory
Health Clinic Building (30)								
P100 (AKA SEL13) 1/	Dec-65	Jun-71	Jan-84		X	404	0	Office area
P103 (AKA SEL 2) 1/	Oct-65	Jun-71	N/A		X	404	0	Office/counting laboratory
P101/103**	Nov-87	Sep-02	N/A	X	X	2880	0	Office/counting laboratory
P105 (AKA SEL 3)	Oct-65	Jun-71	Jan-84		X	404	0	Office area
P105	Dec-74	Jun-76	Jan-84		X	110	0	Office area
P105	Nov-74	Feb-80	Jan-84	X		140	0	Office area
P105	Nov-78	Feb-82	Jan-84	X	X	775	1	Office area
P108***	Nov-87	Nov-93	Rechecking date	X	X	932	0	Office area
P111 (AKA SEL 6)	May-65	Jul-69	Jan-84	X	X	722	0	Office area
P119/119A (AKA SEL 11)	May-65	Jul-71	N/A	X	X	593	0	Laboratory
P120/120A	Nov-72	Feb-80	Jan-84	X		770	0	Office area
P120	Dec-79	Feb-82	Jan-84	X	X	532	0	Office area
						14	<==total	
Half-Life	Isotope	Decay Mode	E <sub>max</sub> (KeV)					
5730 years	<sup>14</sup> C	β	156.5					
12.32 years	<sup>3</sup> H	β-	18.6					
LLWR Storage Building (89) 2/								
---	Dec-93	Sep-02	N/A	X	X	960	0	Empty

\* Conversion included removal of all laboratory cabinets, benches, counter tops, sinks, relate sanitary sewerage piping, floor tiles, ceiling tiles, and light fixtures. These locations are either a service area or are presently carpeted and contain modular office or meeting room furnishings.

\*\* Old Safety Office - See ICF Monthly Radiation Survey Summary Report dated June 2004 which summarized wipes for P101/103 (Building 30 - Health Clinic).

\*\*\* Old LLRW storage released 2 December 1993 for unrestricted use after extensive wipe testing done on 29 Nov 1993 .

1/ Cleared as uncontrolled areas Aug 1971

2/ License modification that allowed dry active compactable waste to be stored for off-site disposal. Everything was double bagged and sealed in Type 7A drum conatiners.

# Removable Instances

Instance No.*	Date	Room	DPM	Isotope	Comments
1	12-Jul-67	R131/133	250,440.0	<sup>14</sup> C	Vacuum evaporator and discharge port location A-7 in R131 - cleaned once, retested (see below)
	13-Jul-67	R131/133	14,081.0	<sup>14</sup> C	Vacuum evaporator and discharge port location A-7 in R131 - cleaned once, retested, then cleaned again, retested, and passed @ 63 and 126 dpm
2	20-Oct-71	R214 (AKA R210)	105.2	<sup>14</sup> C	Sink Counter Top - location G-2 cleaned, retested, and passed @ 1.5 and 3.0 dpm
3	19-Nov-71	R214 (AKA R210)	379.0	<sup>14</sup> C	Refrigerator & Table (101.0 dpm) - cleaned, retested @ 152.5/87.5 and 36.0 dpm, respectively
	24-Nov-71	R214 (AKA R210)	152.5	<sup>14</sup> C	Refrigerator location C-6 retested 5 Jan 72 resulting in N.S.O.
4	17-Nov-70	R214 (AKA R210)	188.5	<sup>14</sup> C	Refrigerator # 33103 - cleaned, retested and passed @ 12.2 and 6.8 dpm
5	25-Apr-68	R214 (AKA R210)	124.8	<sup>14</sup> C	Waste can was rechecked 15 May 68 results were 1.0 dpm
6	25-Jan-67	R210	387.5	<sup>14</sup> C	Shelves, location L-2, cleaned and retested @ 25/35 dpm
7	8-Sep-66	R210	4,039.0	<sup>3</sup> H	Refrigerator, location C-6
	6-Oct-66	R210	1,184.1	<sup>3</sup> H	Refrigerator, location C-6, cleaned and retested 15 Nov 66 results were 515.9 dpm.
8	7-Sep-66	R210	17,286.2	<sup>14</sup> C	Hood, location D-2 - cleaned, retested and passed with N.S.O.
9	19-May-66	R210	578.8	<sup>14</sup> C	Floor, location B-6 was retested 26 May 66 with 20.0 dpm.
10	7-Jun-66	R210	1,342.6	<sup>3</sup> H	Hood, location I-2, retested 8 July 66 @ 16.4 dpm.
11	27-Apr-66	R210	577.5	<sup>14</sup> C	Table top, location B-7 - Cleaned, retested, and passed @ 8.75 dpm
12	15-Apr-66	R210	215.0	<sup>14</sup> C	Hood, location B-2 - This was a dry wipe. Retested 19 Jun 66 @ 42.5.
	21-Apr-66	R210	1146.94	<sup>14</sup> C	Hood, location B-2, retested 9 Jun 66 @ 42.5 dpm.
13	21-Apr-66	R210	2634.36	<sup>3</sup> H	Hood, location C-2, retested 26 May 66 @ 23.08 dpm.
14	28-Aug-80	P105	1086.5	<sup>3</sup> H	Table, location E-5, cleaned and retested at 144.25 dpm

\* See attached sheets (instance number in upper right corner) for each instance

	Thresholds, DPM	
	Army	NSC
<sup>14</sup> C	1,000	100
<sup>3</sup> H	10,000	1,000

Enclosure 2-4-1

SURVEY AND MONITORING WORK SHEET

Room No. R191-133 Laboratory Supervisor D.V. Thorndick

Division/Branch ARIEM

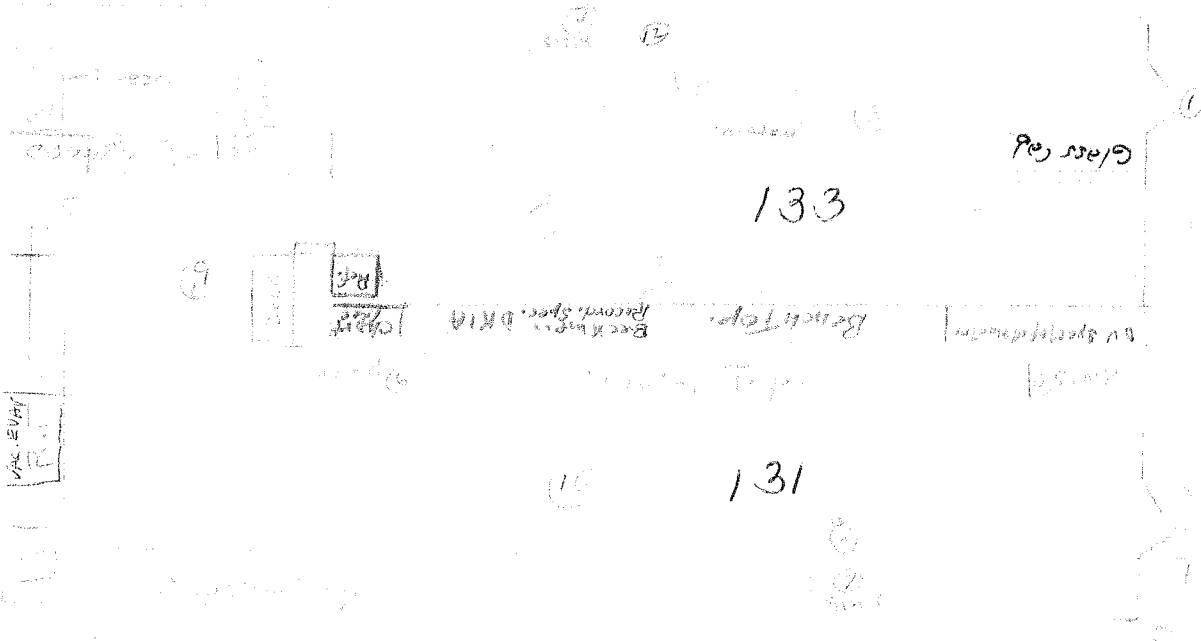
Surveyor APRIL 1964 Date \_\_\_\_\_

Instruments Used Nuclear Chicago Model 151A

Source of Radiation/Radionuclides C<sup>14</sup>

Results/Comments \_\_\_\_\_

Floor Plan Sketch - Location of Radiation Measurements and Smear Tests



Signature of Surveyor \_\_\_\_\_

AMRE-FES

12 July 1967

MEMORANDUM FOR RECORD TO: Thomas G. Martin, III

SUBJECT: Vacuum Evaporator, Room 131 - ARHM

A routine survey was performed on 12 July 1967. A-7 Vacuum Evaporator was found to exceed the limit of 100 dpm/100 cm<sup>2</sup>. Inclosed are the counting results obtained from the Nuclear Chicago (dry wipe) and the Packard Tri-Carb (wet wipe).

Nuclear Chicago (dry wipe) Eff. 8%

Wipe	Location	Area cm <sup>2</sup>	Counted for	Time min.	Gross counts	cpm cpm	Bgnd	Net cpm	Dpm 100cm <sup>2</sup>	uc/cm <sup>2</sup>
A-7	Vac. Evap.	100	$\beta$	20	715	35.8	13.1	22.7	223.8	$1.3 \times 10^{-6}$

Packard Tri-Carb (wet wipes) Eff. 62.5%

Wipe	Location	Area cm <sup>2</sup>	Counted for	Time min.	Gross counts	cpm cpm	Bgnd	Net cpm	Dpm 2 100cm	uc/cm <sup>2</sup>
A-7	Vac. Evap.	100	$\beta$	5	393775	78755.0	38.6	78716.4	125946.2	$5.7 \times 10^{-4}$
A-7	Disch. Port Vac. Evap.	100	$\beta$	5	782820	156564.0	38.6	156525.4	250440.0	$1.1 \times 10^{-3}$

I informed Dr. Donald Therriault of the results and he stated he would have the Vacuum Evaporator cleaned, then I could rewipe for further counting.

HIMAN MORRISON  
Radiation Sources Division  
Feed Laboratory



ANXEN-FES

13 July 1967

MEMORANDUM FOR RECORD: Thomas G. Martin, III

SUBJECT: Vacuum Evap. R131 ANXEN

After receiving information that the Vacuum Evaporator in Room 131 was decontaminated, I took wet smears of the Vacuum Evaporator and equipment.

Wipe #	Location	Area (cm <sup>2</sup> )	Counted for	Time min.	Gross Counts	cpm	Std	Net cpm	Doc	nc/cm <sup>2</sup>
1.A-7	Vac. Evap.	100	B	10	884.27	884.27	41.8	8800.9	14081.4	$6.3 \times 10^5$
2.A-7	Disch. Port	100	B	10	1029	102.9	41.8	61.1	97.8	$4.4 \times 10^{-7}$
3.A-8	Line to pump	100	B	10	459	45.9	41.8	4.1	6.6	$3.0 \times 10^{-8}$
4.A-9	Pump Disch.	100	B	10	483	48.3	41.8	6.5	10.4	$4.7 \times 10^{-8}$

I called Dr. Donald Therriault and informed him that the decontamination of the Vacuum Evaporator had brought the level down, but not within tolerance. He stated he would have it recleaned, and when it is completed I would rewipe and inform him of the results.

The second decontamination of the Vacuum Evaporator was completed on 18 July 1967. The results brought the Vacuum Evaporator within limits. I informed Dr. Donald Therriault of the results.

Wipe #	Location	Area (cm <sup>2</sup> )	Counted for	Time min.	Gross Counts	cpm	Std	Net cpm	Doc	nc/cm <sup>2</sup>
1.A-7	Vac. Evap.	100	B	10	762	76.2	38.9	39.3	62.9	$2.8 \times 10^{-7}$
2.A-7	Vac. Evap.	100	B	10	1174	117.4	38.9	78.5	125.6	$5.6 \times 10^{-7}$

HYMAN MORRISON  
Radiation Sources Division  
Food Laboratory

Room No. R 210 (214) Laboratory Supervisor \_\_\_\_\_

Division/Branch P. R. D

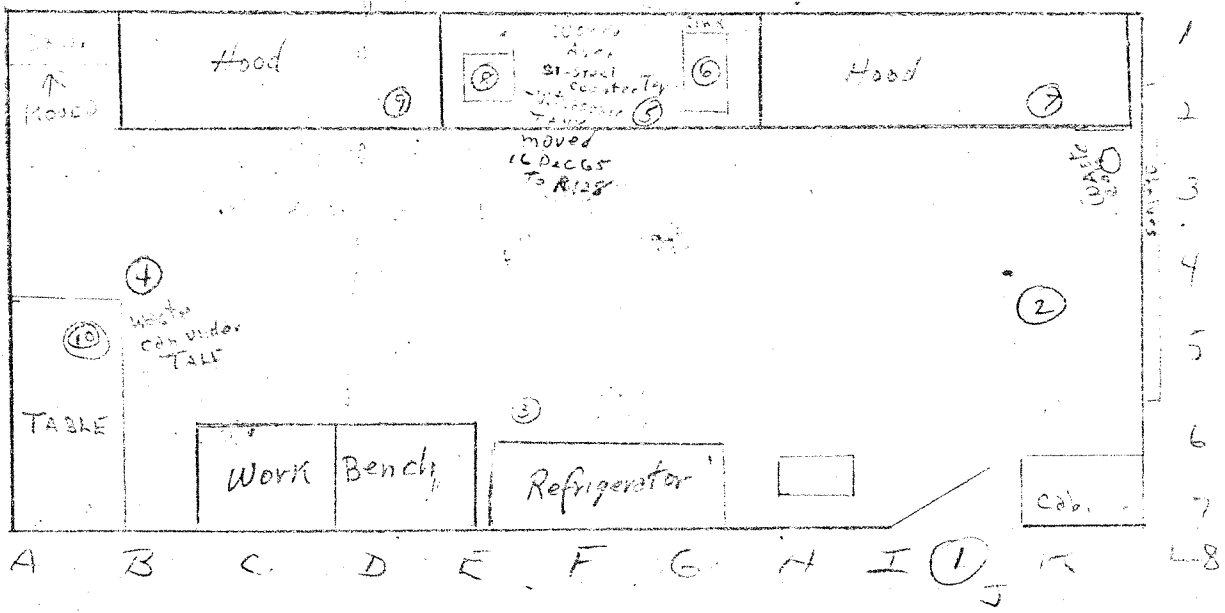
Surveyor Morrison Date 13 Aug. 1965

Instruments Used Nuclear - Chicago Model 151 A

Source of Radiation/Radionuclides Sr. <sup>90</sup> 14 H<sup>3</sup>

Results/Comments \_\_\_\_\_

Floor Plan Sketch - Location of Radiation Measurements and Smear Tests



Signature of Surveyor \_\_\_\_\_

26 October 1971

2

MEMORANDUM FOR: Mr. T.G. Martin III, Radiation Protection Officer

SUBJECT: Contamination found in PRL Room 214

1. Routine surveys were performed on 1 October 1971 and on 20 October 1971. One area in Room 214 was found to exceed the limit of 100 dpm/100 cm<sup>2</sup>. Two other areas in Room 214 were very close to the limit, and it was my decision to have these areas decontaminated. The results are as follows:

Before Decontamination-Counted in Nuclear Chicago Auto Sample Changer - Eff 40%

Date	W#	Location	Area (cm <sup>2</sup> )	Counted for	Time Min.	Gross Counts	CPM	BKGD	NET CPM	DPM 100 cm <sup>2</sup>
10 Oct 71	4)D-3	Floor	100	β	20	1,036	51.8	14.0	37.8	94.5
20 Oct 71	8)G-2	Sink C.T.	100	β	20	1,129	56.4	14.3	42.1	105.2
20 Oct 71	10)D-5	Floor	100	β	20	874	43.7	14.3	29.4	73.5

After Decontamination

22 Oct 71	1)D-3	Floor	100	β	20	331	16.6	14.2	2.4	6.0
	2)D-3	Floor	100	β	20	328	16.4	14.2	2.2	5.5
	3)G-2	Sink C.T.	100	β	20	307	15.4	14.2	1.2	3.0
	4)G-2	Sink C.T.	100	β	20	296	14.8	14.2	0.6	1.5
	5)D-5	Floor	100	β	20	304	15.2	14.2	1.0	2.5
	6)D-5	Floor	100	β	20	316	15.8	14.2	1.6	4.0

After decontamination, the areas were found to be within the limits set up for good Health Physics practices.

HYMAN M. MORRISON /jm/2753  
Health Physics Section  
Radiation Sources Division  
Food Laboratory



# WIPE TESTS Eff 40%

Room 214 PRL

19 Nov 1971

PTS	WIPE #	LOCATION	AREA (cm <sup>2</sup> )	COUNTED FOR	TIME MIN.	GROSS COUNTS cpm	BKGD	NET cpm	DPM 100 cm <sup>2</sup>	pci/cm <sup>2</sup>
24 Nov	1) A-5	Desk Top	100	$\beta$	20	312 15.6	14.8	0.8	2.0	
	2) B-6	FLOOR	100	$\beta$	20	1080 54.0	14.8	39.2	98.0	
	3) D-6	Refrigerator	100	$\beta$	20	3328 166.4	14.8	151.6	379.0	
	4) D-3	FLOOR	100	$\beta$	20	924 46.2	14.8	31.4	78.5	
	5) E-4	FLOOR	100	$\beta$	20	763 38.2	14.8	23.4	58.5	
	6) F-7	TABLE	100	$\beta$	20	1103 55.2	14.8	40.4	101.0	
	7) F-1	Counter Top	100	$\beta$	20	690 34.5	14.8	19.7	49.2	
	8) F-6	TABLE	100	$\beta$	20	909 45.4	14.8	30.6	76.5	
	9) H-5	FLOOR	100	$\beta$	20	441 22.0	14.8	7.2	18.0	
	10) I-3	FLOOR	100	$\beta$	20	673 33.6	14.8	18.8	47.0	

# WIPE TESTS Eff. 40%

Room 214

PRL

Wipes taken after area cleaned.

24 Nov. 1971

PTS	WIPE #	LOCATION	AREA (cm <sup>2</sup> )	COUNTED FOR	TIME MIN.	GROSS COUNTS cpm	BKGD	NET cpm	DPM 100 cm <sup>2</sup>	pci/cm <sup>2</sup>
	1) B-6	FLOOR	100	$\beta$	20	372 18.6	14.6	4.0	10.0	
	2) B-6	FLOOR	100	$\beta$	20	1080 54.0	14.6	39.4	98.5	✓
	3) D-6	Refrigerator	100	$\beta$	20	1511 75.6	14.6	61.0	152.5	✗
	4) D-6	Refrigerator	100	$\beta$	20	991 49.6	14.6	35.0	87.5	✗
	5) F-7	TABLE	100	$\beta$	20	574 28.7	14.6	14.1	35.2	
	6) F-7	TABLE	100	$\beta$	20	579 29.0	14.6	14.4	36.0	

WIDE PRINTS Est 4022

Room 214 P.R.L.

1472

5<sup>th</sup> July 1974

DATE	WIPE #	LOCATION	AREA (cm <sup>2</sup> )	COUNTED FOR	TIME MIN.	GROSS COUNTS	CKGD	NET cpm	DPM 100 cm <sup>2</sup>	uci/cm <sup>2</sup>
	1) B-6	FLOOR	100	β	20	277 13.8	14.0	—	—	
	2) D-6	Refrigerator	100	β	20	277 13.8	14.0	—	—	
	3) D-3	FLOOR	100	β	20	274 13.7	14.0	—	—	
	4) E-4	FLOOR	100	β	20	303 15.2	14.0	1.2	3.0	
	5) F-7	TABLE	100	β	20	271 13.6	14.0	—	—	
	6) K-1	Counter Top	100	β	20	279 14.0	14.0	—	—	
	7) C-6	TABLE	100	β	20	305 15.2	14.0	1.2	3.0	
	8) G-5	FLOOR	100	β	20	317 15.8	14.0	1.8	4.5	
	9) H-6	FLOOR	100	β	20	271 13.6	14.0	—	—	
	10) G-2	Sink	100	β	20	286 14.3	14.0	0.3	0.8	

A B C

Wipe Eff 40%

# Room 214 R Refrigerator # 33103

Decontaminated for Removal from Area 17 Nov 75

	Area	Area (cm <sup>2</sup> )	Cont'd for	Time Min.	Probe Counts	Rate	Net CPM	CPM (200cm <sup>2</sup> )	cpm/m <sup>2</sup>
1)	Inside Wall of Door	100	B	20	552	27.6	27.8	—	—
2)	Wall A	100	B	20	551	27.6	27.5	—	—
3)	Wall B	100	B	20	546	28.3	27.8	0.5	1.2
4)	Wall C	100	B	20	570	28.5	27.8	0.7	1.8
5)	Evaporator	100	B	20	587	29.4	27.8	1.4	4.0
6)	Shelf	100	B	20	541	27.0	27.8	—	—
7)	Shelf	100	B	20	583	29.4	27.8	1.6	4.0
8)	Bottom Shelf	100	B	20	587	29.4	27.8	1.6	4.0
9)	Base	100	B	20	2,064	103.2	27.8	75.7	188.5
10)	Outside Door	100	B	20	591	29.6	27.5	0.8	2.0

1	Back of Refrigerator	100	B	20	530	26.5	21.6	4.9	12.2
2	" " "	100	B	20	413	20.6	21.6	—	—
3	" " "	100	B	20	406	20.3	21.6	—	—
4	" " "	100	B	20	486	24.3	21.6	2.7	6.8

# WIPE TEST Eff 40%

PRL Room 214

25 Apr 1965

TE	Location	Area (cm <sup>2</sup> )	Cont'd for	Time Min.	Gross Counts ↓ CAM	BKgd.	Net CPM	DPM (100cm <sup>2</sup> )	uc/cm <sup>2</sup>
25 Apr 1) E-6	Bench	100	β	20	325	16.2	14.5	1.7	4.2
2) B-7	Floor	100	β	20	288	14.4	14.5	—	—
3) D-6	Work Bench	100	β	20	286	14.3	14.5	—	—
4) D-4	FLOOR	100	β	20	310	15.5	14.5	1.0	2.5
5) F-7	Refrigerator Room	100	β	20	413	20.6	14.5	6.1	15.2
6) E-1	Stainless Steel Counter	100	β	20	307	15.4	14.5	0.9	2.2
7) G-2	Sink	100	β	20	354	16.7	14.5	2.2	5.5
8) I-2	Floor	100	β	20	359	18.0	14.5	3.5	8.8
9) J-3	Floor	100	β	20	325	16.2	14.5	1.7	4.2
10) K-3	Waste Can	100	β	20	1238	64.4	14.5	49.9	124.8

# WIPE TEST

PRL Room 214 Eff. 40%

15 May 1965

TE	Location	Area (cm <sup>2</sup> )	Cont'd for	Time Min.	Gross Counts ↓ CAM	BKgd.	Net CPM	DPM (100cm <sup>2</sup> )	uc/cm <sup>2</sup>
15 May 1) K-3	Waste Can	100	β	20	311	15.6	15.2	0.4	1.0
2) K-7	Cabinet	100	β	20	315	15.8	15.2	0.6	1.5
3) J-2	HOOD	100	β	20	278	13.9	15.2	—	—
4) F-2	St. Steel Counter Top	100	β	20	314	15.7	15.2	0.5	1.2
5) G-7	Refrigerator	100	β	20	297	14.8	15.2	—	—
6) I-4	FLOOR	100	β	20	292	14.6	15.2	—	—
7) F-6	FLOOR	100	β	20	305	15.2	15.2	—	—
8) E-7	Work Bench	100	β	20	331	16.6	15.2	1.4	3.5
9) B-5	Floor	100	β	20	386	19.3	15.2	4.1	10.2
10) A-5	Bench	100	β	20	338	16.9	15.2	1.7	4.2

Eff. 8%

IP 210

25 Jan. 1967



Room 210

PRD.

 $H^3$  wipe

8 Sept 1966

Eff. 19.5%

1)	K-8	Floor	106.2 dpm
2)	J-3	Floor	N.S.O.
3)	C-4	Floor	14.8 dpm
4)	H-7	Waste Can	27.2 dpm
5)	A-5	TABLE Top	47.2 dpm
6)	C-6	Refrigerator	403.9 dpm
7)	C-2	Hood	27.2 dpm
8)	I-2	Hood	154.9 dpm
9)	E-2	St. St. Counter Top	N.S.O
10)	G-1	Sink	8.7 dpm.

Room 210 P.R.D. H<sup>3</sup> Wipe

6 Oct 1966

Eff. 19.5%

1	K-2	Hood.	115.4 dpm
2	G-2	Sink	3.6 dpm
3	B-2	Hood	N.S.D.
4	C-6	Refrigerator	1,184.1 dpm
5	D-5	Floor	42.6 dpm
6	A-3	Floor	80.0 dpm
7	K-5	Floor	N.S.D.
8	K-7	Cabinet	10.2 dpm
9	B-5	Waste Can.	171.8 dpm
10	F-1	St. Steel Counter Top	4.1 dpm

Room 210 PRD. H<sup>2</sup> majors

15 Nov. 1966

Eff. 19.5%

- |     |     |                 |           |
|-----|-----|-----------------|-----------|
| 1)  | C-6 | Refrigerator    | 515.9 dpm |
| 2)  | H-1 | Hood            | N.S.C.    |
| 3)  | B-5 | Waste Can       | 1.0 dpm   |
| 4)  | C-2 | Hood            | N.S.C.    |
| 5)  | H-8 | Floor           | N.S.C.    |
| 6)  | A-7 | TABLE Top       | 154.9 dpm |
| 7)  | F-7 | Work Bench      | N.S.C.    |
| 8)  | K-6 | Base of Cabinet | N.S.C.    |
| 9)  | L-3 | Shelves         | N.S.C.    |
| 10) | E-3 | Floor           | N.S.C.    |



Room 210 P.R.D.

7 Sept 1966

8

WATER

Date		Time	Temp	Wind	Bar	Hum	Dir	Speed	Remarks
11/10/19									
1	P-1	10:00	20	272	13.5	1.1	0.1		
2	P-7	11:00		280	11.2	1.4	0.1	7.5	
3	P-16	12:00		1194	59.7	1.1	46.2	51.2	
4	A-3	13:00	20	302	12.7	1.4	2.0		
5	P-1	14:00	20	279	14.2	1.1			
6	P-1	15:00		280	1.1	1.1			
7	P-1	16:00		280	1.1	1.1			
8	P-1	17:00		280	1.1	1.1			
9	P-1	18:00		280	1.1	1.1			
10	P-1	19:00		280	1.1	1.1			
11	P-1	20:00		280	1.1	1.1			
12	P-1	21:00		280	1.1	1.1			
13	P-1	22:00		280	1.1	1.1			
14	P-1	23:00		280	1.1	1.1			
15	P-1	00:00		280	1.1	1.1			
16	P-1	01:00		280	1.1	1.1			
17	P-1	02:00		280	1.1	1.1			
18	P-1	03:00		280	1.1	1.1			
19	P-1	04:00		280	1.1	1.1			
20	P-1	05:00		280	1.1	1.1			



# NOPE TEST

Date	Location	Area (sq ft)	Time (min)	Gross Counts	Expt.	Net CPM	CEM (100±3)	100±2
1) K-7 Floor			20	257 12.8		2.8	35.0	
2) H-7 Floor			20	237 14.8		2.2	27.5	
3) A-2 Floor			-	271 15.1	12.2	2.8	35.0	
4) -			20	257 14.2	12.2	1.0	20.0	11/11
5) -			-	255 14.2	12.6	1.6	20.0	
6) -			-	265 13.2	12.6	0.6	10.0	
7) -	St. of 2	10	-	258 14.2	12.6	1.6	20.0	
8) -	Sink	10	-	269 13.1	12.6	0.8	10.0	
9) -	Room	10	-	255 14.2	12.6	1.6	20.0	
10) -	Room	10	-	275 18.8	12.2	6.2	77.5	
11) -	Refrigerator	10	-	293 14.6		2.0	25.0	
12) -	Room	10	-	281 14.2		1.6	20.0	

Room 210

P.R.D.

H<sup>3</sup> Wipes

Eff 19.5%

7 June 1966

- |     |     |                     |             |
|-----|-----|---------------------|-------------|
| 1)  | I-2 | Hood                | 1342.56 dpm |
| 2)  | J-1 | Hood                | 13.85 dpm   |
| 3)  | B-2 | Hood                | 672.31 dpm  |
| 4)  | C-2 | Hood                | 66.67 dpm   |
| 5)  | C-6 | Inside Refrigerator | 225.13 dpm  |
| 6)  | K-7 | Cabinet             | 8.2 dpm     |
| 7)  | B-6 | Table               | 25.64 dpm   |
| 8)  | B-5 | Waste Can           | 308.72 dpm  |
| 9)  | E-7 | Waste Can           | 123.59 dpm  |
| 10) | K-6 | Floor               | 20.0 dpm    |
| 11) | I-3 | Floor               | 227.69 dpm  |
| 12) | B-3 | Floor               | N.S.O       |

Room 210

P.R.D.

H<sup>3</sup> wipe

8 July 1966

Eff. 19.5%

- |                            |           |
|----------------------------|-----------|
| 2) I-2 Hood                | 16.4 dpm  |
| 3) H-2 Hood                | N.S.O     |
| 4) B-2 Hood                | N.S.O     |
| 5) D-2 Hood                | 5.1 dpm   |
| 6) B-5 Waste Can           | 688.7 dpm |
| 7) E-7 Waste Can           | N.S.O     |
| 8) C-6 Inside Refrigerator | 126.7 dpm |
| 9) B-6 Table               | 8.7 dpm   |
| 10) B-3 Floor              | 7.7 dpm   |
| 11) J-3 Floor              | N.S.O     |

# WIRE LOG

MOON 210 P.A.D.

Date	Wtgs	Location	Area (sq ft)	Cons'd for	Time Min.	Gross Counts	Effct.	Net CPM	CFR (1000)
2-4-64	L-8	Floor	100	✓	2	255 12.8	13.3	—	—
	2) L-4	Shelves	100	✓	2	335 16.5	12.3	3.2	4.2
	3) B-4	Floor	100	✓	2	272 13.6	13.3	0.3	3.75
2-4-64	4) F-5	Floor	100	✓	2	265 13.2	13.0	0.2	2.5
	5) I-3	Floor	100	✓	2	253 12.6	13.0	—	—
	6) L-7	Cabinet	100	✓	2	259 13.0	12.0	—	—
	7) F-2	St. Steel Bench	100	✓	2	273 13.6	12.0	0.6	7.5
	8) G-1	Sink	100	✓	2	279 14.0	13.0	1.0	12.5
	9) B-7	Table Top	100	✓	20	1185 59.2	13.0	46.2	577.5
	10) C-1	Hood	100	✓	20	309 15.4	13.0	2.4	30.0
	11) D-2	Hood	100	✓	20	285 14.2	13.0	1.2	15.00
	12) E-1	Hood	100	✓	20	252 12.6	13.0	—	—
	13) F-1	Hood	100	✓	20	286 14.3	13.0	1.3	16.25
	14) L-2	Waste Cn.	100	✓	20	288 14.4	13.0	1.4	17.5
	15) L-6	W. E. Cn.	100	✓	20	257 12.8	13.0	—	—
	B-7	W. E. Cn.	100	✓	20	1122 56.1	13.0	72.2	7237.5 dp

A blank coordinate grid. The vertical axis is labeled 'A' and the horizontal axis is labeled 'B'. The horizontal axis has tick marks labeled 7, 6, and 5 from left to right.

# NOV 21 1964

[illegible]

100

100

[illegible][illegible]

Figure 1 shows the chemical structures of five compounds, labeled 1 through 5. They are all derivatives of 1,2,3,4-tetrahydro-6-methyl-5H-benzothiazepine. The structures are shown in a row, with their respective chemical names written below them. The structures are: 1, 2, 3, 4, and 5. The names are: 1,2,3,4-tetrahydro-6-methyl-5H-benzothiazepine, 1,2,3,4-tetrahydro-6-methyl-5H-benzothiazepine, 1,2,3,4-tetrahydro-6-methyl-5H-benzothiazepine, 1,2,3,4-tetrahydro-6-methyl-5H-benzothiazepine, and 1,2,3,4-tetrahydro-6-methyl-5H-benzothiazepine.

[illegible]

1. *What is the main purpose of the study?*

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

[illegible]



# WIPE TEST

Room 210. PRD.

Date	Wipe #	Location	Area (cm <sup>2</sup> )	Cont'd for	Time Min.	Gross Counts	BKgd.	Net CPM	DPM (100cm <sup>2</sup> )	uc/cm <sup>2</sup>
11-2-66	1	Floor	100	P	20	271	14.7	13.3	1.4	17.5
	2	Floor	100	P	20	268	13.4	13.3	0.1	1.25
	3	Floor	100	P	20	221	16.3	12.7	3.6	37.5
12-20-66	4	Floor	100	P	20	309	15.4	13.2	2.2	27.5
	5	Floor	100	P	20	263	15.2	13.2	2.0	25.0
	6	Floor	100	P	20	274	14.7	13.2	1.5	18.75
	7	Shower Room	100	P	20	245	13.4	13.2	0.2	2.50
	8	Floor	100	P	20	271	13.6	13.2	0.4	5.0
11-4-66	9	Floor	100	P	20	285	14.2	14.0	0.2	2.5
	10	Floor	100	P	20	241	12.4	11.7	—	—
	11	Floor	100	P	20	232	14.1	11.0	0.1	1.25
	12	Floor	100	P	20	302	31.2	14.0	17.2	215.0
	13	Rest Room	100	P	20	271	15.2	14.0	1.2	12.5
	14	Floor	100	P	20	240	13.8	14.0	—	—

21 April 1966

Room 210

H<sup>3</sup> Wipes

Eff 19.5%

- 1) L-3 Floor 57.44 dpm
- 2) B-3 Floor 187.95 dpm
- 3) K-3 Floor 40.0 dpm
- 4) L-2 Shelves 293.85 dpm
- 5) B-2 Hood 96.92 dpm
- 6) C-2 Hood 2,237.36 dpm
- 7) H-2 Hood 60.51 dpm
- 8) J-2 Hood 157.95 dpm
- 9) C-6 Inside Refry. 183.08 dpm
- 10) K-7 Cabinet 48.20 dpm
- 11) E-6 Waste Can 112.31 dpm
- 12) B-5 Waste Can N.S.O

14) B-2 Hood 942.05 dpm

counted for <sup>cid</sup> eff. 62%

52) B-2 Hood 1146.94 dpm

H

# WIRE TEST

Room 210 P.R.D.

7 Jan 1960

Date	Area =	Location	Area (m <sup>2</sup> )	Cont'd for	Time Min.	Gross Counts	Engl.	Net CFM	CFM (200m <sup>2</sup> )	ug/m <sup>3</sup>
2/1/60	1)	I-2 Hood	100	P	20	285 14.2	13.0	1.2	15.0	
	2)	J-1 Hood	100	P	20	250 12.6	13.0	—	—	
	3)	R-2 Hood	100	P	20	327 16.1	13.0	3.1	42.5	
	4)	— Hood	100	P	20	275 13.8	13.0	0.6	10.0	
	5)	C-6 In. Airway	100	P	20	267 13.1	13.0	2.4	—	
	6)	K-7 Cabinet	100	P	20	285 14.2	13.0	1.2	15.0	
	7)	B-8 Table	100	P	20	273 13.6	13.0	0.6	7.5	
	8)	White C.	100	P	20	310 15.5	13.0	2.5	31.2	
	9)	A-9 White C.	100	P	20	281 14.2	13.0	1.2	15.0	
	10)	Floor	100	P	20	264 13.2	13.0	0.2	2.5	
	11)	I-2 Floor	100	P	20	267 13.1	13.0	0.4	5.0	
7 Jan 1960	12)	H-1 Floor	100	P	20	298 14.9	13.3	1.6	20.0	

21 April 1966

Room 210

 $H^3$  Wipes

Eff 19.5%

- |     |     |               |                               |
|-----|-----|---------------|-------------------------------|
| 1)  | L-3 | Floor         | 37.44 dpm                     |
| 2)  | B-3 | Floor         | 187.95 dpm                    |
| 3)  | K-3 | Floor         | 40.0 dpm                      |
| 4)  | L-2 | Shelves       | 29.3.85 dpm                   |
| 5)  | B-2 | Hood          | 96.92 dpm                     |
| 6)  | C-2 | Hood          | 2,634.36 dpm                  |
| 7)  | H-2 | Hood          | 60.31 dpm                     |
| 8)  | J-2 | Hood          | 157.95 dpm                    |
| 9)  | C-6 | Inside Refry. | 183.08 dpm                    |
| 10) | K-7 | Cabinet       | 48.20 dpm                     |
| 11) | L-6 | Waste Can     | 112.31 dpm                    |
| 12) | B-5 | Waste Can     | N.S.O                         |
|     |     |               |                               |
| 14) | B-2 | Hood          | 942.05 dpm                    |
|     |     |               | counted for $C^{14}$ Eff. 62% |
| 52) | B-2 | Hood          | 1146.94 dpm                   |

Room 210 PRD.

N<sup>3</sup> Wipes

Eff 19.5%

26 May 1966

1)	J-8	Floor	N.S.O.
2)	K-4	Floor	50.77 dpm
3)	C-6	Floor	N.S.O.
4)	D-3	Floor	18.46 dpm
5)	E-2	Hood	23.08 dpm
6)	D-1	Hood	20.00 dpm
7)	L-3	Shelves	7.18 dpm
8)	I-2	Hood	222.56 dpm
9)	K-2	Hood	86.67 dpm
10)	C-6	Inside Refrigerator	464.62 dpm
11)	L-7	Cabinet	171.79 dpm
12)	E-6	Waste Can	95.90 dpm
13)		Brqd Blank	

(Health Clinic - P) SURVEY AND MONITORING WORK SHEET

Room No. Room 105 Laboratory Supervisor Dr. K.A. Narayan

Division/Branch Micro & Nutrition Div. Food Sciences Lab.

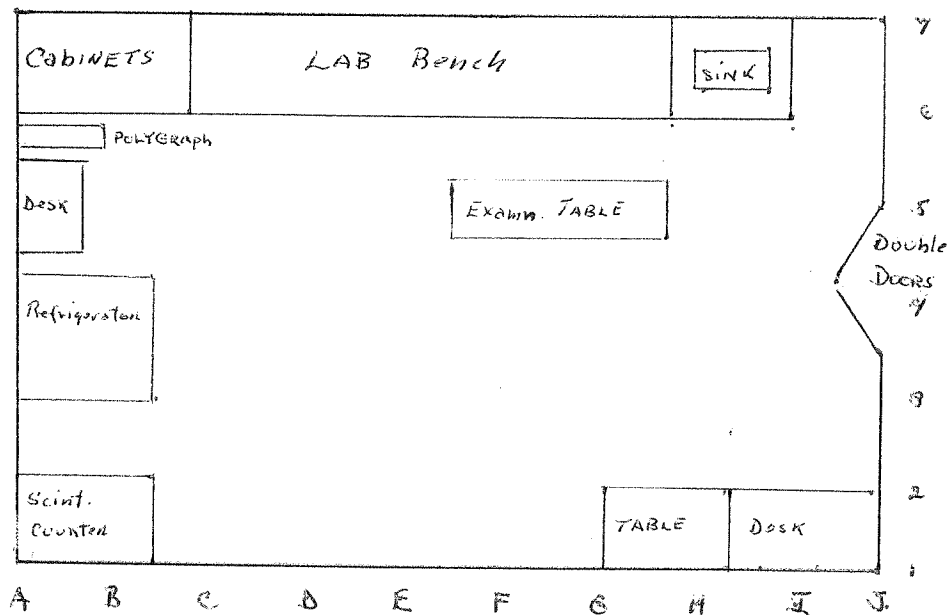
Surveyor MORRISON Date 23 Oct. 1974

Instruments Used \_\_\_\_\_

Source of Radiation/Radionuclides C<sup>14</sup> & H<sup>3</sup>

Results/Comments \_\_\_\_\_

Floor Plan Sketch - Location of Radiation Measurements and Smear Tests



MORRISON  
Signature of Surveyor

$H^3$  WIPE TESTS 48% Aug

DATE	WIPE #	LOCATION	AREA (cm <sup>2</sup> )	COUNTED FOR	TIME MIN.	GROSS COUNTS cpm		BKGD	NET cpm	DPM 100 cm <sup>2</sup>	μCi/cm <sup>2</sup>
S-105	H-6	Sink	100	β	10	1611	1611	55.0	106.1	265.25	
"	G-6	Lab Bench	"	"	"	817	817	"	26.7	66.75	
"	D-6	"	"	"	"	1044	1044	"	49.4	123.5	
"	G-5	Table	"	"	"	917	917	"	36.7	91.75	
"	F-5	Table	"	"	"	4896	4896	"	434.6	1086.5	✓ 144.25 DPK
"	B-4	Ref-ris.	"	"	"	1420	1420	"	87.0	217.5	
"	F-1	Sing. Counter	"	"	"	1783	1783	"	123.3	308.25	
"	B-2	Floor	"	"	"	786	786	"	23.6	59.0	
S-105	H-1	Table	"	"	"	1094	1094	"	54.4	136.0	
"	H-2	Floor	100	β	10	931	931	55.0	92.5	231.25	

