DECOMMISSIONING PLAN
Radiological Laboratories and Alpha Field

Prepared By:
Health Physics Office
U.S. Army Chemical School
Fort McClellan, AL 36205-5020

March 1999

DEPARTMENT OF THE ARMY
US ARMY CHEMICAL SCHOOL
FORT MCCLELLAN, ALABAMA 36205-5020

REPLY TO
ATTENTION OF:

19 MAR 1999

ATZN-CMA-HP (385-11m)

MEMORANDUM FOR U.S. Nuclear Regulatory Commission, Region 2, Nuclear Material Licensing Section, ATTN: Orysia Bailey, 61 Forsyth Street, S.W., Suite 23T85, Atlanta, Georgia 30303-3415

SUBJECT: Decommissioning Plan for Chemical School Radiological Laboratories and Alpha Field, License Number 01-02861-05, Docket Number 030-17584 and License Number SNM-1877, Docket Number 7002934.

1. The Decommissioning Plan for the Chemical School Radiological Laboratories and Alpha Field is enclosed for your review and approval. Decommissioning will be accomplished by the Health Physics Office of the Chemical School to meet the criteria in 10 CFR 20.1402.

2. The Decommissioning Plan for the Burial Mound at Pelham Range was sent as a separate document and will be decommissioned to meet the criteria in 10 CFR 20.1403.

3. The Chemical School point of contact is Mr. John W. May, Health Physics Manager at (256) 848-5737.

FOR THE COMMANDANT

DANIEL F. UYESUGI
Colonel, U.S. Army
Assistant Commandant

Encls

DECOMMISSIONING PLAN

For the
Radiological Laboratories
and
Alpha Field
at the
U.S. Army Chemical School
Fort McClellan, Alabama

Prepared by:
Health Physics Office
U.S. Army Chemical School

John W. May
Health Physics Manager
(256) 848-5737

March 1999

3. DESCRIPTION OF METHODS USED FOR PROTECTION OF OCCUPATIONAL AND PUBLIC HEALTH AND SAFETY.

3.1. Facility Radiological History Information.

3.1.2. Radiological Laboratories, Building 1081. Construction of the facility was completed in late 1988.

On 14 November 1988, random smears were taken in the vault and laboratory 7 to establish a baseline. The smears were counted on the Tenelec LB5100 gas-proportional counter. Ten (10) smears were taken in the vault and counted. The highest activities were: 1.14 dpm alpha, 11.24 dpm beta, and 9.91 dpm gamma. Fifteen (15) smears were taken in laboratory 7. The highest activities were: 0.36 dpm alpha, 4.53 dpm beta, and 15.03 dpm gamma.

On 9 December 1988, random smears were again taken in the vault and laboratory 7 and counted on the Tenelec LB5100. Fifteen (15) samples were taken in Laboratory 7. The highest activities were: 1.25 dpm alpha, 8.56 dpm beta, and 12.11 dpm gamma. Ten (10) samples were taken in the vault. The highest activities were: 0.34 dpm alpha, 4.08 dpm beta, and 12.47 dpm gamma.

An instrument survey conducted 4-12 January 1989 using an Eberline E-520 survey meter indicated an average background reading of 0.02 mR/hr.

The only unsealed radioactive materials used in the facility were Au-198, Co-60, Cs-137, Ca-45 and Sr/Y-90. Less than 10 mCi of Co-60, Ca-45 and Au-198 were used at any one time and less than 100 uCi of Cs-137 and Sr/Y-90. The only locations where unsealed radioactive materials were present were Laboratory 1, the Preparation Laboratory, the Health Physics Laboratory, and the storage vault.

Only sealed sources were used in the other laboratories. Laboratory 2 housed a gamma calibrator with a Cs-137 source with a maximum activity of 120 Curies. Also used in Laboratory 2 were a 100 mCi Co-60 source and a 10 mCi Cs-137 source. Sealed sources of Co-60, Cs-137, Ca-45, Sr/Y-90, U-235, U-238, Pu-239, Am-241, H-3, P-147, Ni-63, Mn-54, Cd-109, Co-57, Na-22, C-14, Tc-99, Cl-36, Th-230 and Bi-210 of less than 10 uCi each were used in Laboratory 1, laboratory 5, Laboratory 7, the preparation laboratory and the Health Physics Laboratory. All sources were stored in the storage vault except the multi-curie Cs-137 calibrator. The largest sources in the storage vault were two 500 mCi Cs-137 sealed sources.

The only contamination during the history of the facility was in the preparation laboratory isotope hood and that intentionally introduced into laboratory 1 for training. Contamination in the isotope hood was Ca-45 and Au-198. Contamination in Laboratory 1 was Au-198. Areas are decontaminated after each use.

3.1.3. Alpha Field (see diagram at Attachment 6)

The current operating license authorized operation of an alpha field. Even though licensed for operation, the field was never used. No licensed material was ever placed in the field. A baseline survey was conducted in June 1985. Swipes and soil samples were taken. Analysis of the soil samples indicated elevated levels of Cs-137 in the soil. There is no record of radioactive material ever being used in this area. A copy of the survey results are at Attachment 7.

3.2. Ensuring that Occupational Radiation Exposures Are As Low As Is Reasonably Achievable (ALARA)
The current ALARA plan for the operating licenses will remain in effect during decommissioning.

3.3. Health Physics Program
The Health Physics Program for the operating licenses will remain in effect during decommissioning.

3.4. Contractor Personnel.
The current radiation protection plan will apply to any contractors used during decommissioning of the laboratories.

3.5. Radioactive Waste Management
The Radioactive waste management section of the current operating licenses will be in effect during decommissioning. Since routine surveys of the facilities show no contamination, no radioactive waste is expected to be generated during decommissioning.

4. PLANNED FINAL RADIATION SURVEY

The final radiation survey will be used to demonstrate that the radiological laboratories and the alpha field at the U.S. Army Chemical School meets the criteria for unrestricted use. The Multi-Agency Radiation Survey and Site Investigation Manuel (MARSSIM) and NUREG-5849 were used in developing the survey plan.

Based upon prior surveys and the facility history, no residual radioactivity is expected. Release limits will be based upon a letter issued by the U.S. NRC dated May 1987, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses For Byproduct, Source or Special Nuclear Material". These are the same as Table I from Regulatory Guide 1.86, see Attachment 4. These guidelines will become the Derived Concentration Guideline Limits (DCGL) for this survey. The release limits for exposure rates will be 5 microrem per hour above background, at 1 meter. This is the limit routinely applied by the NRC where site specific criteria has not been established.

4.1. Classification of Areas by Contamination Potential.

Each individual room or area within the impacted area has been assigned a Classification based upon contamination potential. The contamination potential was determined based upon the types and quantity of radioactive material used or stored in each room. The will be 4 Class 1 areas, 4 Class 2 areas, and 16 Class 3 areas. Also being surveyed will be 4 non-impacted areas adjacent to the impacted areas. Diagrams of the facility and individual rooms within the facility are in Attachment 1 to this Decommissioning Plan. The Alpha field will be surveyed as a Class 3 area,

4.2. Identification of Survey Units.

Survey units are indicated on the diagrams at Attachment 1. The number of data points per unit has been standardized throughout the survey area as follows.

Class 1 Area (inside):

Grid floors, walls, and ceilings in 1 meter squares. Divide each 1 meter grid into 4 quadrants. Take a smear sample of 100 square centimeters in each quadrant and count each sample in the Tenelec Gas-proportional counter. Take a meter reading at each smear location with the Eberline 520 survey meter with the HP 260 pancake probe. Perform a 100% scan of floors, walls and ceiling with the Bicron MicroRem meter.

Class 2 Area (inside):

Grid floors and lower walls, to a height of 2 meters, in 1 meter squares. Divide each 1 meter grid into 4 quadrants. Take a smear sample of 100 square centimeters in each quadrant of the floors and lower walls, to a height of 2 meters, and count each sample in the Tenelec Gas-proportional counter. Take a meter reading at each smear location with the Eberline 520 survey meter with the HP 260 pancake probe. Perform a 100% scan of floors and walls, to a height of 2 meters, with the Bicron MicroRem meter. Grid upper walls, and ceiling in 1 meter squares. Take a smear sample of 100 square centimeters in each 1 meter grid of the upper walls and ceiling and count each sample in the Tenelec Gas-proportional counter. Take a meter reading at each smear location with the Eberline 520 survey meter with the HP 260 pancake probe. Perform a 50% scan of upper walls and ceilings with the Bicron MicroRem meter.

Class 3 Area (inside):

Grid floors and lower walls, to a height of 2 meters, in 1 meter squares. Take a smear sample of 100 square centimeters in each 1 meter grid and count each sample in the Tenelec Gas-proportional counter. Take a meter reading at each smear location with the Eberline 520 survey meter with the HP 260 pancake probe. Perform a 25% scan of floors, walls, and ceilings with the Bicron MicroRem meter.

Class 3 Area (Alpha Field);

The field will be divided into 10 meter by 10 meter grids as per the diagram at Attachment 6. Take a sample in each 10 meter grid and count each sample in the Tenelec Gas-proportional counter. Take a meter reading at each sample location with the Eberline 520 survey meter with the HP 260 pancake probe. Take random soil samples for analysis. Perform a 25% scan of the field with the Bicron MicroRem meter.

Non-Impacted Area:
Grid floors and lower walls, to a height of 2 meters, in 2 meter square grids. Take a smear sample of 100 square centimeters in each grid and count each sample in the Tenelec Gas-proportional counter. Perform a 10% scan of floors and lower walls with the Bicron MicroRem meter.

In addition to the samples and measurements shown above, random samples will be taken and counted on the Packard Liquid Scintillation Counter. A copy of the form to be used for recording results smear analysis and point monitoring are at Attachment 5.

4.3. Background Radiation

The Laboratories have been surveyed monthly during the entire history of operations and baseline surveys were conducted in November and December 1988 prior to radioactive material being moved to the facility. Two rooms of the laboratory were selected for the baseline, the radiation storage vault and laboratory 7. The data sheets for these surveys are at Attachment 2.
An instrument survey performed in January 1989 and subsequent monthly surveys to date indicate an average background of 0.015 mR/hr. Copies of selected monthly dose rate surveys are at Attachment 3. A copy of the Baseline survey performed of the alpha field is at Attachment 7.

4.4. Instruments to be Used During Survey.

INSTRUMENT TYPE	MAKE & MODEL	RADIATION DETECTED	SENSITIVITY RANGE	WINDOW THICHNESS (mg/sqcm)	USE
Scintillation, NaI Proportional gas flow	Tennelec, LB5100-III	alpha, beta, gamma	to 999,999 counts	0.08	low level counting
Liquid Scintillation	Packard 1900	alpha/ beta/ gamma		na	low level counting
Geiger-Mueller	Eberline Md 520 w/HP-260 probe	beta, gamma	0.01-200 mR/hr bkg-24k cpm	30 1.4	survey & monitoring
Scintillation, ZnS	AN/PDR-77	alpha, beta, gamma	to 999k cpm to 999k mR/hr	1.5 11	survey & monitoring
Scintillation, NaI	Eberline SPA-3	gamma	bkg to 3M cpm	na	survey
Scintillation	Bicron MicroRem	gamma	bkg to 2k uRem/hr	na	survey

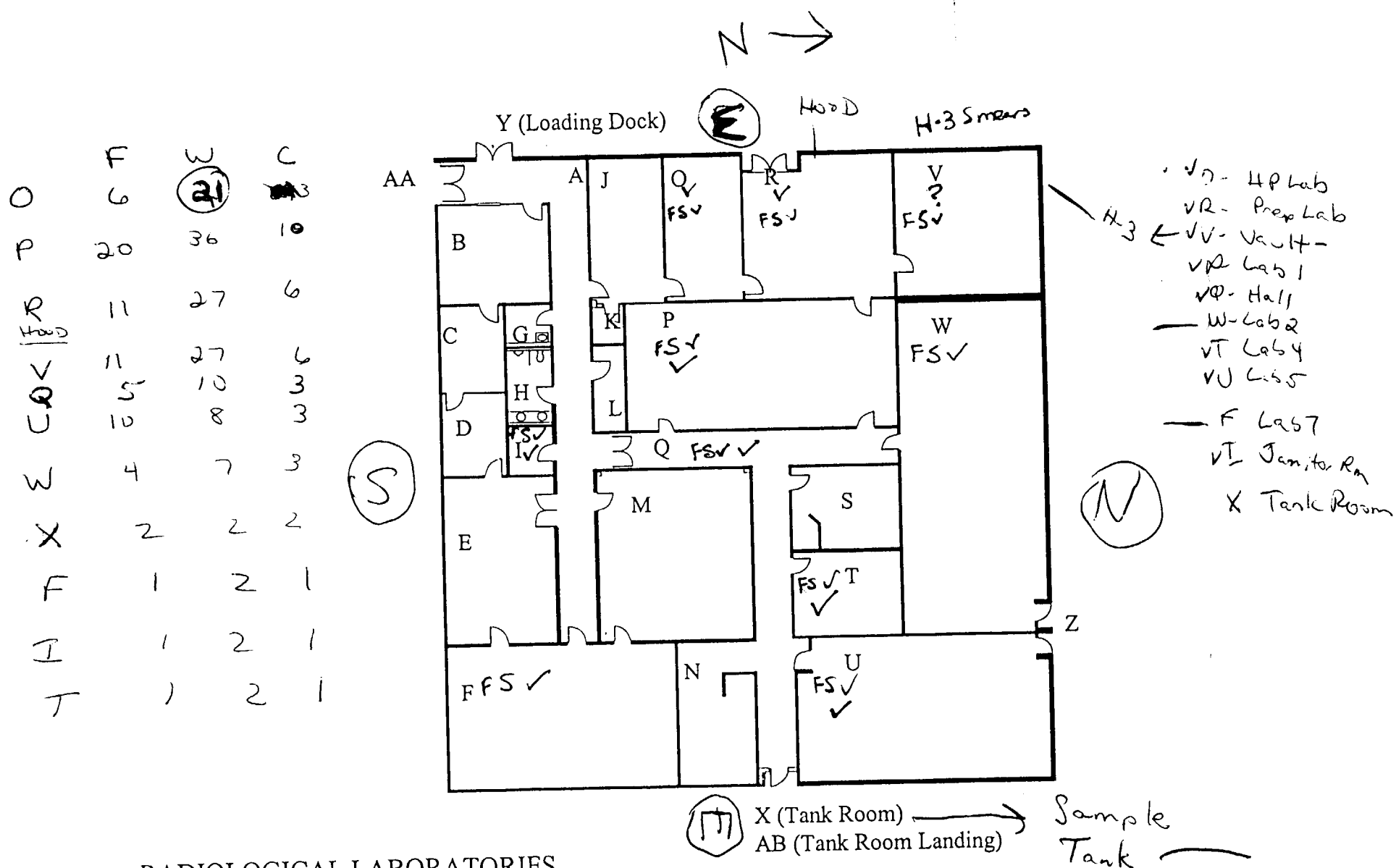
5. FUNDING

Decommissioning will be performed by the Chemical School Health Physics staff, augmented by temporary hires. The Direct Labor cost is for the manhours of the staff and contract labor cost reflect the cost of the temporary hires.

Direct Labor	$30,000
Supplies	$70,000
Freight	$ 5,000
Analysis	$12,820
Contract Labor	$11,520
TOTAL Direct Cost	$129,340

6. PHYSICAL SECURITY PLAN AND MATERIAL CONTROL AND ACCOUNTING PLAN PROVISIONS IN PLACE DURING DECOMMISSIONING

No special provisions are applicable for this decommissioning plan. Physical security and control of the facility will remain the same as under the current operating licenses.



	F	W	C
O	6	(21)	3
P	20	36	10
R	11	27	6
Hood			
V	11	27	6
Q	5	10	3
U	10	8	3
W	4	7	3
X	2	2	2
F	1	2	1
I	1	2	1
T	1	2	1

RADIOLOGICAL LABORATORIES
BUILDING 1081, SIBERT HALL
FORT MCCLELLAN, AL 36205

Sample Tank
Sample Drain
Prep Room

Efficiency of DA Meter
for Tc99 vs Sr 90

AREA CODE	LOCATION	ROOM NUMBER	AREA CLASS	# OF SMEARS A & B	# OF SMEARS LSC	Floor/Ceiling SIZE	WALL (L) SIZE	WALL (W) SIZE	AREA IN METERS SQ FLOOR AREA	AREA IN METERS SQ CEILING AREA	AREA IN METERS SQ WALL AREA	NUMBER OF SMEARS FOR FLOOR SMEARS	NUMBER OF SMEARS FOR CEILING SMEARS	NUMBER OF SMEARS FOR WALL SMEARS
	IMPACT AREA						H = 2.74	H = 2.74						
A	MAIN HALLWAY	NA	3	198	198	33.83 X 2.00	(2) 33.83	(2) 2.00	67.66	67.66	143.32	64	0	134
B	Rad Lab OFFICE	1010	3	84	84	5.56 X 5.18	(2) 5.56	(2) 5.18	28.81	28.81	58.86	36	0	48
C	Instructor's OFC	1010-A	3	56	56	4.57 X 3.51	(2) 4.57	(2) 3.51	16.02	16.02	44.28	20	0	36
D	Rad Lab CHIEF	1010-B	3	56	56	4.57 X 3.51	(2) 4.57	(2) 3.51	16.02	16.02	44.28	20	0	36
E	Electronic SHOP	1010-C	3	114	114	8.99 x 5.59	(2) 8.99	(2) 5.59	50.24	50.24	79.9	54	0	60
F	LAB 7	1017	3	176	176	11.89 x 7.67	(2) 11.89	(2) 7.67	91.18	91.18	107.19	96	0	80
G	WOMEN's RM	1013	3	20	20	1.93 x 1.78	(2) 1.93	(2) 1.78	3.43	3.43	20.17	4	0	16
H	MEN's RM	1015	3	32	32	3.45 x 1.78	(2) 3.45	(2) 1.78	6.14	6.14	28.66	8	0	24
I	JANITOR RM	1016	3	32	32	2.79 x 1.78	(2) 2.79	(2) 1.78	4.97	4.97	25.04	8	0	24
J	H. P. OFFICE	1011	3	80	80	7.62 x 3.71	(2) 7.62	(2) 3.71	28.26	28.26	62.09	32	0	48
K	H. P. STORAGE	1012	3	20	20	1.85 x 1.40	(2) 1.85	(2) 1.40	2.59	2.59	17.81	4	0	16
L	RAD Lab Storage	1014	3	38	38	4.57 x 1.40	(2) 4.57	(2) 1.40	6.38	6.38	32.72	10	0	28
M	LAB 8	1018	3	152	152	9.14 x 7.62	(2) 9.14	(2) 7.62	69.65	69.65	91.84	80	0	72
N	LAB 6	1023	3	80	80	7.62 x 3.45	(2) 7.62	(2) 3.45	26.32	26.32	60.66	32	0	48
Nw	Lab 6 X Wall	1023	3	4	4	Both Sides	(2) 0.94	NA	NA	NA	5.15	0	0	4
O	H. P. LAB	1011-A	1	516	516	7.62 x 3.71	(2) 7.62	(2) 3.71	28.26	28.26	62.09	120	120	276
P	LAB 1	1019	1	1288	1288	13.64 x 6.60	(2) 13.64	(2) 6.60	90.08	90.08	110.91	392	392	504
Q	Hallway To LABS	NA	2	850	850	29.57 x 1.93	(2) 29.57	(2) 1.93	57.06	57.06	172.62	264	66	520
R	PREP LAB	1011-B	1	810	810	7.62 x 7.47	(2) 7.62	(2) 7.47	56.92	56.92	82.69	225	225	360
S	LAB 3	1021	3	74	74	5.28 x 4.34	(2) 5.28	(2) 4.34	22.92	22.92	52.72	30	0	44
Sw	Lab 3 X Wall	1021	3	8	8	Both Sides	(2) 2.24	NA	NA	NA	12.25	0	0	8
T	LAB 4	1022	3	74	74	5.28 x 4.47	(2) 5.28	(2) 4.47	23.60	23.60	53.43	30	0	44
U	LAB 5	1024	2	800	800	12.8 x 7.62	(2) 12.8	(2) 7.62	97.54	97.54	111.90	389	91	320
V	VAULT	1011-C	1	810	810	7.47 x 7.39	(2) 7.47	(2) 7.39	55.21	55.21	81.43	225	225	360
Vw	Vault, X Wall	1011-C	1	156	156	Both Sides	(2) 6.25	NA	NA	NA	34.24	0	0	156
W	LAB 2	1020	2	0	0	18.08 x 7.37	(2) 18.08	(2) 7.37	133.29	133.29	139.47			
Ww	Lab 2 X Wall	1020	2	0	0	Both Sides	(2) 2.54	(2) 1.37	NA	NA	21.44	0	0	
X**	TANK ROOM	1025	2	0	0	5.31 x 2.11	(2) 5.31	(2) 2.11	11.20	11.20	40.66			
Xw	Tank Rm X Wall	1025	2	0	0	Both Sides	(2) 1.19	NA	NA	NA	5.90	0	0	
	NON IMPACT AREA													
Y	Loading Dock		non-imp	0	0								0	
Z	Outside Lab 2&5		non-imp	0	0								0	
AA	Ajadcent		non-imp	0	0								0	
AB	Outside Exit To Tank RM		non-imp	0	0								0	
			TOTAL	6528	6528								0	

NOTE: FOUR (4) CLASS 1; FOUR (4) CLASS 2; SIXTEEN (16) CLASS 3; & FOUR (4) NON AFFECTED AREAS.

90	O	F	7	J	3	100
91	O	F	7	J	4	100
92	O	F	7	K	1	100
93	O	F	7	K	3	100

NOTE: FIRST DIGIT = AREA CODE: (O), ROOM 1011A, HEALTH PHYSICS LABORATORY
SECOND DIGIT = SURFACE BEING SURVEYED: FLOOR
THIRD DIGIT = Y AXIS QUADRANT: 4 THRU 7
FOURTH DIGIT = X AXIS QUADRANT: D THRU K
FIFTH DIGIT = SMEAR LOCATION IN QUADRANT: 1 THRU 4
TOP TO BOTTOM THEN LEFT TO RIGHT: 1 = TOP LEFT; 2 = TOP RIGHT; 3 = BOTTOM LEFT; & 4 = BOTTOM RIGHT

LEGEND: R4 = RECOUNT FOR; A = ALPHA; B1 = BETA 1; B2 = BETA 2; AND G = GAMMA
DIGITS 1, 2, & 4 ARE LETTERS ONLY. DIGIT 3 & 5 ARE NUMBERS ONLY.

RONALD DEGUMBIA
SSG, US ARMY
Health Physics Technician

CONCUR/NONCONCUR
Health Physics Manager

WIPE SURVEY SAMPLE ANALYSIS RECORD

PURPOSE: [ ] SPECIAL [ ] SCHEDULED [ ] OTHER (SPECIFY)

DATE: | SURVEY #: | LOCATION:

INSTRUMENT								DISPOSITION
Contamination				Instrument Survey				[ ] HIGHLIGHTED READINGS RESURVEYED
Tennelec LB5100, S/N 64169				Meter:				ALPHA > 220 DPM/100 cm^2
	Alpha	Beta	Gamma	Probe:		Cal Due:		BETA/GAMMA > 2200 DPM/100 cm^2
Efficiency								
Bkg CPM				Background:		(mR/hr)(CPM)(μR/hr)		[ ] NO ACTION REQUIRED

Sensitivity (CPM)	L_C	LLD	L_D	L_Q
Alpha				
Beta				
Gamma				

SURVEYOR:

REVIEWED BY:

HEALTH PHYSICS MANAGER

#	LOCATION	AREA (cm^2)	Dose Rate	Gross CPM			Net CPM			Net DPM/100 cm^2		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
1												
2												
3												
4												
5												
6												
7												
8												
9												
0												

ERB CLOSEOUT SURVEY FOR AREA O FLOOR, RM 1011A, HEALTH PHYSICS LABORATORY, DATED , AT HOURS

Radiation Type	EFFICIENCY % at 2 Pi	EFFICIENCY % at 4 Pi	BKGRND(cpm) at 2 Pi	BKGRND(cpm) at 4 Pi
ALPHA		NA		NA
H-3 BETA 1	NA	varies	NA	
C-14 BETA 2	NA	varies	NA	
GAMMA		NA		NA

Radiation Type	SENSITIVITY (cpm) L_C	LLD	L_D	L_Q
ALPHA				
H-3 BETA 1				
C-14 BETA 2				
GAMMA				

INSTRUMENT/EQUIPMENT INFORMATION

[redacted] COUNTING

(2 Pi) Tennelec LB5100, S/N 64169

(4 Pi) LSC Packard 1900CA, S/N 102105

[redacted] SURVEY METER

Meter Type: BICRON micro rem, S/N C162C

Calib.Due: ; Background urem/hr

LSC Computations for Each Individual Sample

	tSIE	Beta 1	%	tSIE	Beta 2	%
ALPHA						
H-3 BETA 1		equals			equals	
C-14 BETA 2	sample	unkwn	x	sample	unkwn	x
GAMMA		equals			equals	

DISPOSITION

[ ] **ELEVATED SAMPLE RESULTS HIGHLIGHTED**

ALPHA > LLD/100 cm^2 for SAMPLE # :

BETA > LLD/100 cm^2 for SAMPLE # :

GAMMA > LLD/100 cm^2 for SAMPLE # :

[ ] **RECOUNTED ON: UNDER TITLE:**

[ ] **DECONTAMINATION & RESURVEY TO BE PERFORMED**

[ ] **NO ACTION REQUIRED**

SURVEYED BY: SSG RONALD DEGUMBIA

Health Physics Technician. DATED:

REVIEWED BY: JOHN W. MAY

Health Physics Manager. DATED:

seq	DIGIT CODE					AREA	doserate	Gross CPM				Net CPM				LSC BETA 1 DATA			LSC BETA 2 DATA			Net DPM/100 cm^2				Sample
#	1	2	3	4	5	cm^2	urem/hr	Alpha	Beta 1	Beta 2	Gamma	Alpha	Beta 1	Beta 2	Gamma	tSIE	Xstrap	Eff/Vial	tSIE	Xstrap	Eff/Vial	Alpha	Beta 1	Beta 2	Gamma	Remark
1	O	F	4	D	1	100																				
2	O	F	4	D	2	100																				
3	O	F	4	D	3	100																				
4	O	F	4	D	4	100																				
5	O	F	4	E	1	100																				
6	O	F	4	E	2	100																				
7	O	F	4	E	3	100																				
8	O	F	4	E	4	100																				
9	O	F	4	F	1	100																				
10	O	F	4	F	2	100																				
11	O	F	4	F	3	100																				
12	O	F	4	F	4	100																				
13	O	F	4	G	1	100																				
14	O	F	4	G	2	100																				
15	O	F	4	G	3	100																				
16	O	F	4	G	4	100																				
17	O	F	4	H	1	100																				
18	O	F	4	H	2	100																				
19	O	F	4	H	3	100																				
20	O	F	4	H	4	100																				
21	O	F	4	I	1	100																				
22	O	F	4	I	2	100																				
23	O	F	4	I	3	100																				
24	O	F	4	I	4	100																				
25	O	F	4	J	1	100																				
26	O	F	4	J	2	100																				

DEPARTMENT OF THE ARMY
US ARMY CHEMICAL SCHOOL
FORT MCCLELLAN, ALABAMA 36205-5020

REPLY TO
ATTENTION OF:

19 MAR 1999

ATZN-CMA-HP (385-11m)

MEMORANDUM FOR U.S. Nuclear Regulatory Commission, Region 2, Nuclear Material Licensing Section, ATTN: Orysia Bailey, 61 Forsyth Street, S.W., Suite 23T85, Atlanta, Georgia 30303-3415

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2. The Decommissioning Plan for the Burial Mound at Pelham Range was sent as a separate document and will be decommissioned to meet the criteria in 10 CFR 20.1403.

3. The Chemical School point of contact is Mr. John W. May, Health Physics Manager at (256) 848-5737.

FOR THE COMMANDANT

DANIEL F. UYESUGI
Colonel, U.S. Army
Assistant Commandant

Encls

DECOMMISSIONING PLAN

For the
Radiological Laboratories
and
Alpha Field
at the
U.S. Army Chemical School
Fort McClellan, Alabama

Prepared by:
Health Physics Office
U.S. Army Chemical School

John W. May
Health Physics Manager
(256) 848-5737

March 1999

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Attachment 4 Table I, Draft Regulatory Guide 1.86

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Attachment 6 Diagram of Alpha Field

Attachment 7 Baseline, Alpha Field

DECOMMISSIONING PLAN

1. GENERAL INFORMATION

This decommissioning plan is intended to cover the scope and intent of actions necessary for the release of the radiological laboratories located at building 1081 and the alpha field operated by the U.S. Army Chemical School at Fort McClellan, AL.

Department of the Army
U.S. Army Chemical School
ATZN-CMA-HP
Fort McClellan, AL 36205-5020

NRC License Number 01-02861-05, Docket Number 030-17584
NRC License Number SNM-1877, Docket Number 070-02934

2. DESCRIPTION OF PLANNED DECOMMISSIONING ACTIVITIES

Decommissioning will take place in increments, since the laboratories will be conducting normal operations in some of the rooms of the laboratories during the decommissioning effort. As operations in each room terminate, that room will be shut down and decommissioned.

2.1. Decommissioning Objective, Activities, Tasks, and Schedules

The objective of this decommissioning plan is the unrestricted release of the radiological laboratories in building 1081 and the alpha field. Since no radioactive material was ever introduced into the alpha field and the history of routine monthly surveys in the laboratories indicate no contamination, decommissioning will consist of transferring licensed material and a detailed survey of the facility to insure no contamination is present.

2.1.1. Decommissioning Objective, Activities, and Tasks.

Objectives	**Activities**	**Tasks**
2.1.1.1 Prepare for final closeout surveys of facilities.	1) Transfer operational control of facilities from Directorate of Training to Health Physics Office.	1. Cease normal operations in laboratories. 2. Clear rooms of furniture and equipment. 3. Turn keys over to Health Physics Office.
	2)Transfer Radioactive material to Fort Leonard Wood, MO	1. Prepare sources for shipment. 2. Ship Sources
2.1.1.2 Verification Survey	1) Final Survey	1. Design Sampling Strategy 2. Sample Collection 3. Independent Laboratory Analysis 4. Data Evaluation 5. Report of Survey Findings
2.1.1.3 Vacate Facilities.	1) Move equipment offsite	1. Survey equipment for release 2. Ship equipment to Ft Leonard Wood
	2) Transfer personnel	1. Survey party personnel depart site.
2.1.1.4 Submit Final Report	1) Final Report	1. Receive Independent Laboratory Results 2. Compare Data 3. Draft Report 4. Assemble Report and Supporting Data
	2) Submit Final Report	1. Send Final Report to NRC.

2.1.2. Description

Activities	Tasks	Description
2.1.1.1 1) Transfer operational control of facilities from Directorate of Training to Health Physics Office.	1. Cease normal operations in laboratories. 2. Clear rooms of furniture and equipment. 3. Turn keys over to Health Physics Office.	Due to a requirement to phase out operations at Fort McClellan and phase in operations at Fort Leonard Wood, the laboratories will be closed in phases. When a room or area at McClellan is no longer needed for training, the furniture and equipment in that room will be sent to the new lab at Leonard Wood and the keys to the room turned over to the Health Physics Office for decommissioning.
2.1.1.1 2)Transfer Radioactive material to Fort Leonard Wood, MO	1. Prepare sources for shipment. 2. Ship Sources	The licensed material will be transferred to the U.S. Army Chemical School at Fort Leonard Wood, Missouri under license number 01-32063-01, docket number 030-34652. Transfer of licensed material will involve leak testing of sources, packaging, and shipping to Fort Leonard Wood.
2.1.1.2 1) Final Survey	1. Design Sampling Strategy 2. Sample Collection 3. Independent Laboratory Analysis 4. Data Evaluation 5. Report of Survey Findings	Release surveys of the facilities will be conducted as each room and/or area is closed to use. Release surveys will consist of dose rate surveys and contamination surveys. Since the entire history of the facility is known, each room/area will be classified based on contamination potential, as recommended by MARSSIM. Class 1, class 2, and class 3 areas will be designated. The number of data points will be determined. Grid each room/area and perform the designated scan survey. Collect the designated number of samples, as smears. Each smear will be evaluated in a gas proportional counter and liquid scintillation counter. A portion of the smears will be sent to an independent laboratory for counting to confirm results. Laboratory counting and exposure rate measurement data will be evaluated.
2.1.1.3 1) Move equipment offsite	1. Survey equipment for release 2. Ship equipment to Ft Leonard Wood	Equipment used during the decommissioning will be surveyed for contamination. Equipment used during final survey will be shipped to Fort Leonard Wood.
2.1.1.3 2) Transfer personnel	1. Survey party personnel depart site.	Personnel performing decommissioning efforts will depart.
2.1.1.4 1) Final Report	1. Receive Independent Laboratory Results 2. Compare Data 3. Draft Report Assemble Report and Supporting Data	Approximately 500 samples will be shipped for third party analysis. Results of third party analysis will be compared to results of Chemical School analysis. Write draft narrative report. Assemble field data and analytical results and compile into a single report.
2.1.1.4 2) Submit Final Report	1. Send Final Report to NRC.	The narrative, field data, and analytical results will be compiled into a single submittal.

2.1.3. Procedures

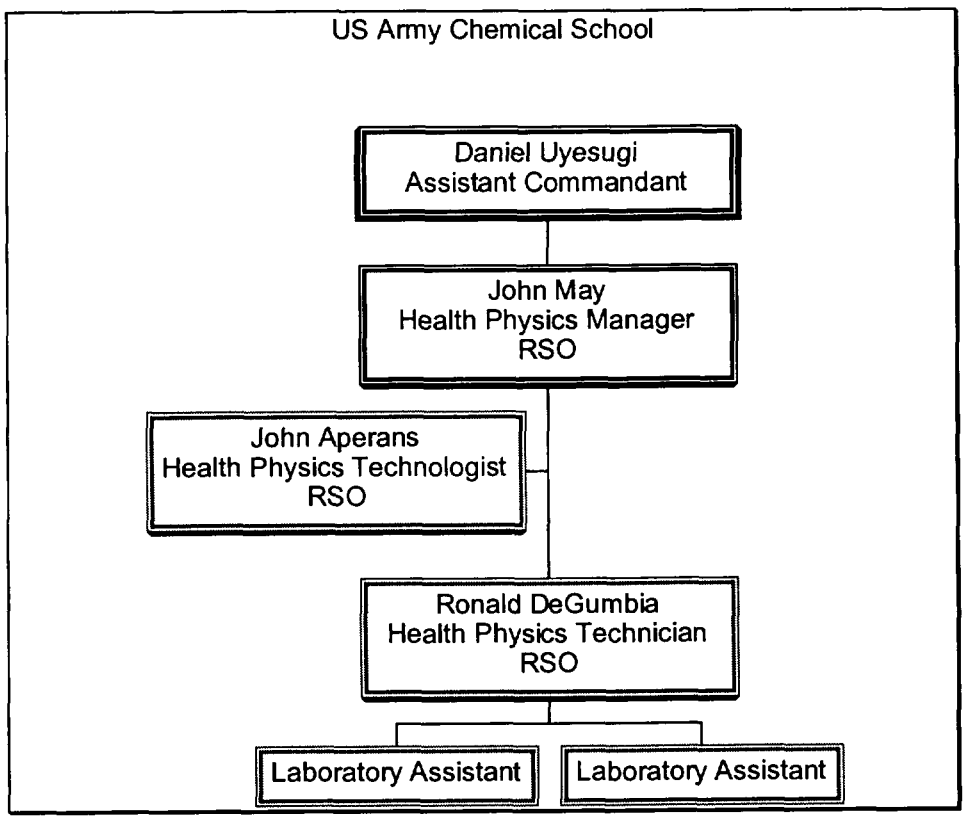
Execution of this decommissioning plan will be in accordance with U.S Army Chemical School Regulation 385-1 and the Chemical School Health Physics Standing Operating Procedures unless a different procedure is stated in this plan. Both documents are currently used under the operating licenses.

2.1.4. Schedules

TASK	Start Date	Due Date
1. Planning Phase		
Submit Decommissioning Plan	Mon 3/22/99	Tue 3/23/99
Regulatory Comment period	Wed 3/24/99	Fri 4/23/99
Decommissioning Plan Approval	Mon 4/26/99	Fri 4/30/99
2. Decommissioning Phase		
Transfer Laboratories 4, 5, and 6 to Health Physics	Mon 5/3/99	Mon 5/10/99
Final survey of Laboratories 4, 5, and 6.	Mon 5/11/99	Fri 5/28/99
Transfer Alpha Field to Health Physics	Mon 6/7/99	Fri 6/11/99
Final Survey of Alpha Field	Fri 6/11/99	Fri 6/18/99
Transfer Radioactive Material to FLW	Mon 7/5/99	Fri 7/9/99
Transfer laboratories 1, 2, 3 and tank room to Health Physics	Fri 7/9/99	Wed 7/14/99
Final Survey of Laboratories 1, 2, 3 and tank room.	Wed 7/14/99	Mon 7/19/99
Transfer Admin areas to Health Physics	Mon 8/2/99	Mon 8/9/99
Final survey of Admin areas, H. P. Lab, prep Lab, and storage vault.	Mon 8/9/99	Mon 8/16/99
Final Survey of non-impacted areas	Mon 8/16/99	Fri 8/20/99
3. Final Report		
Send Samples for third party analysis	Mon 8/23/99	Fri 8/27/99
Move decommissioning equipment offsite	Mon 8/30/99	Mon 9/6/99
Receive field and analytical results	Mon 9/6/99	Wed 9/15/99
Compile Final Report	Thu 9/16/99	Thu 9/30/99
Transfer remaining personnel	Mon 9/20/99	Wed 9/29/99
Submit Final Report	Thu 9/30/99	Thu 9/30/99

2.2. Decommissioning Organization and Responsibilities.

The Organization and Responsibilities for this plan will be the same as for operation under the current licenses



2.3. Training

The training for this decommissioning plan will be the same as that under the current operating licenses.

2.4. Contractor Assistance

Contract workers will be used if needed to assist with layout, sampling, and data entry.
This will consist of personnel hired through a local employment agency.

3. DESCRIPTION OF METHODS USED FOR PROTECTION OF OCCUPATIONAL AND PUBLIC HEALTH AND SAFETY.

3.1. Facility Radiological History Information.

3.1.2. Radiological Laboratories, Building 1081. Construction of the facility was completed in late 1988.

On 14 November 1988, random smears were taken in the vault and laboratory 7 to establish a baseline. The smears were counted on the Tenelec LB5100 gas-proportional counter. Ten (10) smears were taken in the vault and counted. The highest activities were: 1.14 dpm alpha, 11.24 dpm beta, and 9.91 dpm gamma. Fifteen (15) smears were taken in laboratory 7. The highest activities were: 0.36 dpm alpha, 4.53 dpm beta, and 15.03 dpm gamma.

On 9 December 1988, random smears were again taken in the vault and laboratory 7 and counted on the Tenelec LB5100. Fifteen (15) samples were taken in Laboratory 7. The highest activities were: 1.25 dpm alpha, 8.56 dpm beta, and 12.11 dpm gamma. Ten (10) samples were taken in the vault. The highest activities were: 0.34 dpm alpha, 4.08 dpm beta, and 12.47 dpm gamma.

An instrument survey conducted 4-12 January 1989 using an Eberline E-520 survey meter indicated an average background reading of 0.02 mR/hr.

The only unsealed radioactive materials used in the facility were Au-198, Co-60, Cs-137, Ca-45 and Sr/Y-90. Less than 10 mCi of Co-60, Ca-45 and Au-198 were used at any one time and less than 100 uCi of Cs-137 and Sr/Y-90. The only locations where unsealed radioactive materials were present were Laboratory 1, the Preparation Laboratory, the Health Physics Laboratory, and the storage vault.

Only sealed sources were used in the other laboratories. Laboratory 2 housed a gamma calibrator with a Cs-137 source with a maximum activity of 120 Curies. Also used in Laboratory 2 were a 100 mCi Co-60 source and a 10 mCi Cs-137 source. Sealed sources of Co-60, Cs-137, Ca-45, Sr/Y-90, U-235, U-238, Pu-239, Am-241, H-3, P-147, Ni-63, Mn-54, Cd-109, Co-57, Na-22, C-14, Tc-99, Cl-36, Th-230 and Bi-210 of less than 10 uCi each were used in Laboratory 1, laboratory 5, Laboratory 7, the preparation laboratory and the Health Physics Laboratory. All sources were stored in the storage vault except the multi-curie Cs-137 calibrator. The largest sources in the storage vault were two 500 mCi Cs-137 sealed sources.

The only contamination during the history of the facility was in the preparation laboratory isotope hood and that intentionally introduced into laboratory 1 for training. Contamination in the isotope hood was Ca-45 and Au-198. Contamination in Laboratory 1 was Au-198. Areas are decontaminated after each use.

3.1.3. Alpha Field *(see diagram at Attachment 6)*

The current operating license authorized operation of an alpha field. Even though licensed for operation, the field was never used. No licensed material was ever placed in the field. A baseline survey was conducted in June 1985. Swipes and soil samples were taken. Analysis of the soil samples indicated elevated levels of Cs-137 in the soil. There is no record of radioactive material ever being used in this area. A copy of the survey results are at Attachment 7.

3.2. Ensuring that Occupational Radiation Exposures Are As Low As Is Reasonably Achievable (ALARA)
The current ALARA plan for the operating licenses will remain in effect during decommissioning.

3.3. Health Physics Program
The Health Physics Program for the operating licenses will remain in effect during decommissioning.

3.4. Contractor Personnel.
The current radiation protection plan will apply to any contractors used during decommissioning of the laboratories.

3.5. Radioactive Waste Management
The Radioactive waste management section of the current operating licenses will be in effect during decommissioning. Since routine surveys of the facilities show no contamination, no radioactive waste is expected to be generated during decommissioning.

4. PLANNED FINAL RADIATION SURVEY

The final radiation survey will be used to demonstrate that the radiological laboratories and the alpha field at the U.S. Army Chemical School meets the criteria for unrestricted use. The Multi-Agency Radiation Survey and Site Investigation Manuel (MARSSIM) and NUREG-5849 were used in developing the survey plan.

Based upon prior surveys and the facility history, no residual radioactivity is expected. Release limits will be based upon a letter issued by the U.S. NRC dated May 1987, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses For Byproduct, Source or Special Nuclear Material". These are the same as Table I from Regulatory Guide 1.86, see Attachment 4. These guidelines will become the Derived Concentration Guideline Limits (DCGL) for this survey. The release limits for exposure rates will be 5 microrem per hour above background, at 1 meter. This is the limit routinely applied by the NRC where site specific criteria has not been established.

4.1. Classification of Areas by Contamination Potential.

Each individual room or area within the impacted area has been assigned a Classification based upon contamination potential. The contamination potential was determined based upon the types and quantity of radioactive material used or stored in each room. The will be 4 Class 1 areas, 4 Class 2 areas, and 16 Class 3 areas. Also being surveyed will be 4 non-impacted areas adjacent to the impacted areas. Diagrams of the facility and individual rooms within the facility are in Attachment 1 to this Decommissioning Plan. The Alpha field will be surveyed as a Class 3 area,

4.2. Identification of Survey Units.

Survey units are indicated on the diagrams at Attachment 1. The number of data points per unit has been standardized throughout the survey area as follows.

Class 1 Area (inside):

Grid floors, walls, and ceilings in 1 meter squares. Divide each 1 meter grid into 4 quadrants. Take a smear sample of 100 square centimeters in each quadrant and count each sample in the Tenelec Gas-proportional counter. Take a meter reading at each smear location with the Eberline 520 survey meter with the HP 260 pancake probe. Perform a 100% scan of floors, walls and ceiling with the Bicron MicroRem meter.

Class 2 Area (inside):

Grid floors and lower walls, to a height of 2 meters, in 1 meter squares. Divide each 1 meter grid into 4 quadrants. Take a smear sample of 100 square centimeters in each quadrant of the floors and lower walls, to a height of 2 meters, and count each sample in the Tenelec Gas-proportional counter. Take a meter reading at each smear location with the Eberline 520 survey meter with the HP 260 pancake probe. Perform a 100% scan of floors and walls, to a height of 2 meters, with the Bicron MicroRem meter. Grid upper walls, and ceiling in 1 meter squares. Take a smear sample of 100 square centimeters in each 1 meter grid of the upper walls and ceiling and count each sample in the Tenelec Gas-proportional counter. Take a meter reading at each smear location with the Eberline 520 survey meter with the HP 260 pancake probe. Perform a 50% scan of upper walls and ceilings with the Bicron MicroRem meter.

Class 3 Area (inside):

Grid floors and lower walls, to a height of 2 meters, in 1 meter squares. Take a smear sample of 100 square centimeters in each 1 meter grid and count each sample in the Tenelec Gas-proportional counter. Take a meter reading at each smear location with the Eberline 520 survey meter with the HP 260 pancake probe. Perform a 25% scan of floors, walls, and ceilings with the Bicron MicroRem meter.

Class 3 Area (Alpha Field);

The field will be divided into 10 meter by 10 meter grids as per the diagram at Attachment 6. Take a sample in each 10 meter grid and count each sample in the Tenelec Gas-proportional counter. Take a meter reading at each sample location with the Eberline 520 survey meter with the HP 260 pancake probe. Take random soil samples for analysis. Perform a 25% scan of the field with the Bicron MicroRem meter.

Non-Impacted Area:
Grid floors and lower walls, to a height of 2 meters, in 2 meter square grids. Take a smear sample of 100 square centimeters in each grid and count each sample in the Tenelec Gas-proportional counter. Perform a 10% scan of floors and lower walls with the Bicron MicroRem meter.

In addition to the samples and measurements shown above, random samples will be taken and counted on the Packard Liquid Scintillation Counter. A copy of the form to be used for recording results smear analysis and point monitoring are at Attachment 5.

4.3. Background Radiation

The Laboratories have been surveyed monthly during the entire history of operations and baseline surveys were conducted in November and December 1988 prior to radioactive material being moved to the facility. Two rooms of the laboratory were selected for the baseline, the radiation storage vault and laboratory 7. The data sheets for these surveys are at Attachment 2.
An instrument survey performed in January 1989 and subsequent monthly surveys to date indicate an average background of 0.015 mR/hr. Copies of selected monthly dose rate surveys are at Attachment 3. A copy of the Baseline survey performed of the alpha field is at Attachment 7.

4.4. Instruments to be Used During Survey.

INSTRUMENT TYPE	MAKE & MODEL	RADIATION DETECTED	SENSITIVITY RANGE	WINDOW THICHNESS (mg/sqcm)	USE
Scintillation, NaI Proportional gas flow	Tennelec, LB5100-III	alpha, beta, gamma	to 999,999 counts	0.08	low level counting
Liquid Scintillation	Packard 1900	alpha/ beta/ gamma		na	low level counting
Geiger-Mueller	Eberline Md 520 w/HP-260 probe	beta, gamma	0.01-200 mR/hr bkg-24k cpm	30 1.4	survey & monitoring
Scintillation, ZnS	AN/PDR-77	alpha, beta, gamma	to 999k cpm to 999k mR/hr	1.5 11	survey & monitoring
Scintillation, NaI	Eberline SPA-3	gamma	bkg to 3M cpm	na	survey
Scintillation	Bicron MicroRem	gamma	bkg to 2k uRem/hr	na	survey

5. FUNDING

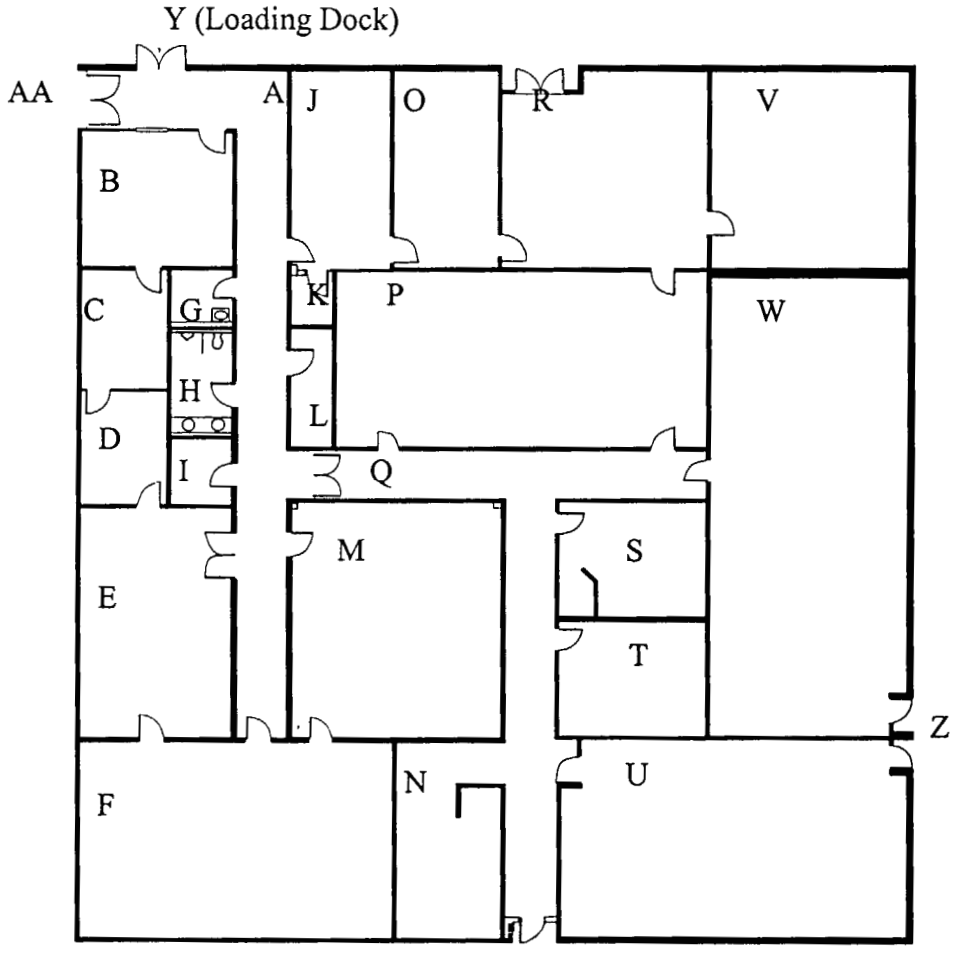
Decommissioning will be performed by the Chemical School Health Physics staff, augmented by temporary hires. The Direct Labor cost is for the manhours of the staff and contract labor cost reflect the cost of the temporary hires.

Direct Labor	$30,000
Supplies	$70,000
Freight	$ 5,000
Analysis	$12,820
Contract Labor	$11,520
TOTAL Direct Cost	$129,340

6. PHYSICAL SECURITY PLAN AND MATERIAL CONTROL AND ACCOUNTING PLAN PROVISIONS IN PLACE DURING DECOMMISSIONING

No special provisions are applicable for this decommissioning plan. Physical security and control of the facility will remain the same as under the current operating licenses.

Attachment 1

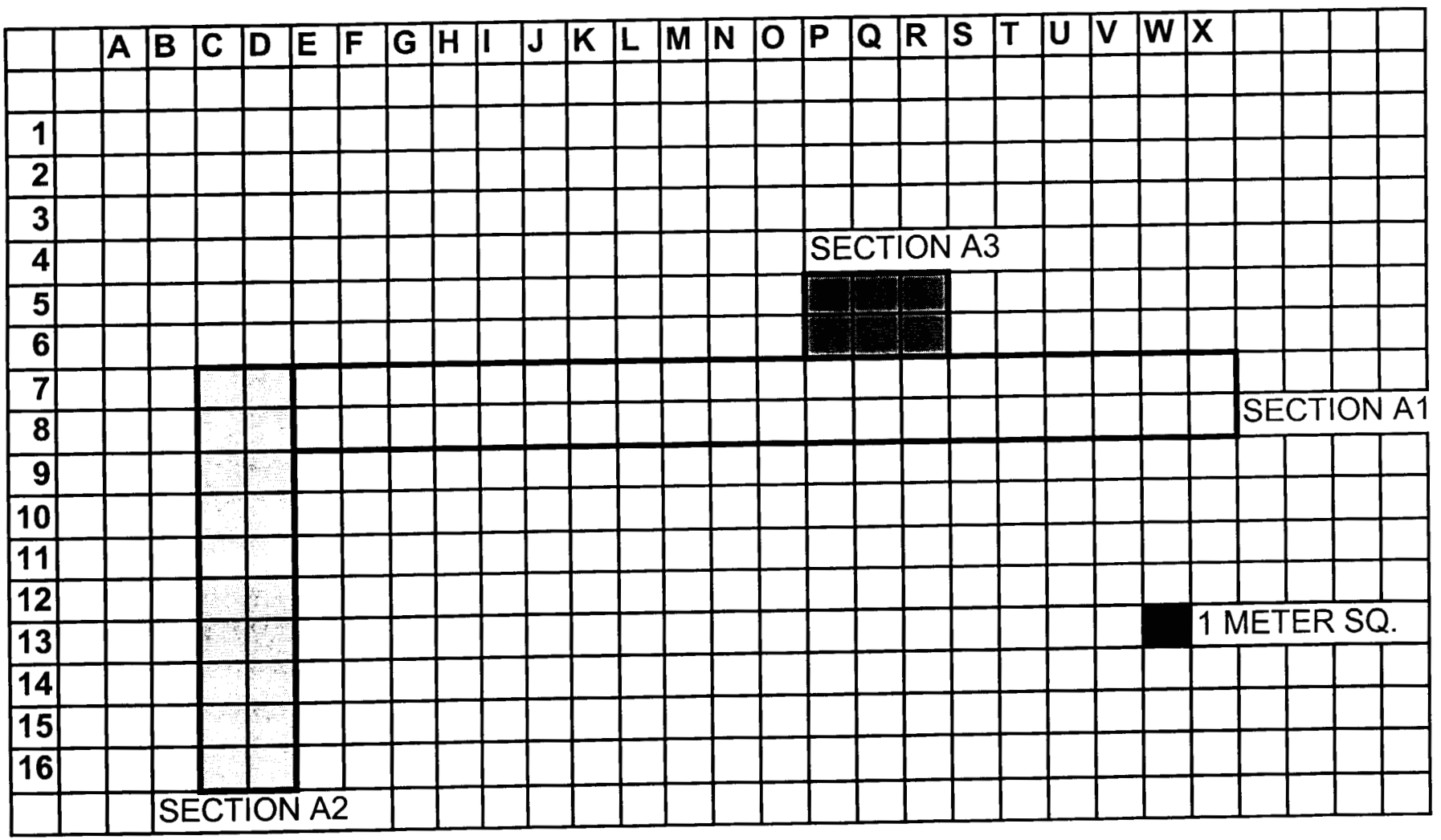


RADIOLOGICAL LABORATORIES
BUILDING 1081, SIBERT HALL
FORT MCCLELLAN, AL 36205

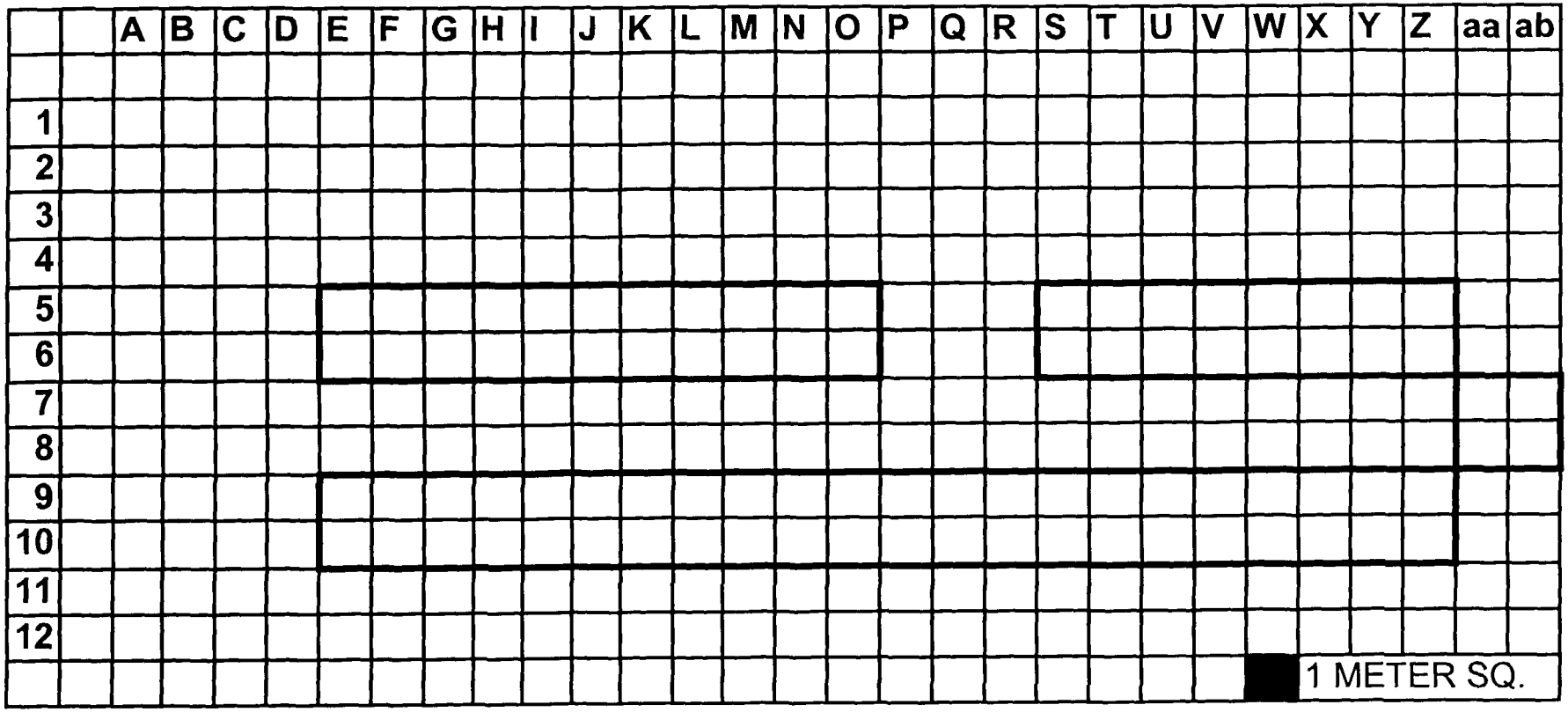
AREA CODE	LOCATION	ROOM NUMBER	AREA CLASS	# OF SMEARS A & B	# OF SMEARS LSC	Floor/Ceiling SIZE	WALL (L) SIZE	WALL (W) SIZE	AREA IN METERS SQ FLOOR AREA	AREA IN METERS SQ CEILING AREA	AREA IN METERS SQ WALL AREA	NUMBER OF SMEARS FOR FLOOR SMEARS	NUMBER OF SMEARS FOR CEILING SMEARS	NUMBER OF SMEARS FOR WALL SMEARS
	IMPACT AREA						H = 2.74	H = 2.74						
A	MAIN HALLWAY	NA	3	198	198	33.83 X 2.00	(2) 33.83	(2) 2.00	67.66	67.66	143.32	64	0	134
B	Rad Lab OFFICE	1010	3	84	84	5.56 X 5.18	(2) 5.56	(2) 5.18	28.81	28.81	58.86	36	0	48
C	Instructor's OFC	1010-A	3	56	56	4.57 X 3.51	(2) 4.57	(2) 3.51	16.02	16.02	44.28	20	0	36
D	Rad Lab CHIEF	1010-B	3	56	56	4.57 X 3.51	(2) 4.57	(2) 3.51	16.02	16.02	44.28	20	0	36
E	Electronic SHOP	1010-C	3	114	114	8.99 x 5.59	(2) 8.99	(2) 5.59	50.24	50.24	79.9	54	0	60
F	LAB 7	1017	3	176	176	11.89 x 7.67	(2) 11.89	(2) 7.67	91.18	91.18	107.19	96	0	80
G	WOMEN's RM	1013	3	20	20	1.93 x 1.78	(2) 1.93	(2) 1.78	3.43	3.43	20.17	4	0	16
H	MEN's RM	1015	3	32	32	3.45 x 1.78	(2) 3.45	(2) 1.78	6.14	6.14	28.66	8	0	24
I	JANITOR RM	1016	3	32	32	2.79 x 1.78	(2) 2.79	(2) 1.78	4.97	4.97	25.04	8	0	24
J	H. P. OFFICE	1011	3	80	80	7.62 x 3.71	(2) 7.62	(2) 3.71	28.26	28.26	62.09	32	0	48
K	H. P. STORAGE	1012	3	20	20	1.85 x 1.40	(2) 1.85	(2) 1.40	2.59	2.59	17.81	4	0	16
L	RAD Lab Storage	1014	3	38	38	4.57 x 1.40	(2) 4.57	(2) 1.40	6.38	6.38	32.72	10	0	28
M	LAB 8	1018	3	152	152	9.14 x 7.62	(2) 9.14	(2) 7.62	69.65	69.65	91.84	80	0	72
N	LAB 6	1023	3	80	80	7.62 x 3.45	(2) 7.62	(2) 3.45	26.32	26.32	60.66	32	0	48
Nw	Lab 6 X Wall	1023	3	4	4	Both Sides	(2) 0.94	NA	NA	NA	5.15	0	0	4
O	H. P. LAB	1011-A	1	516	516	7.62 x 3.71	(2) 7.62	(2) 3.71	28.26	28.26	62.09	120	120	276
P	LAB 1	1019	1	1288	1288	13.64 x 6.60	(2) 13.64	(2) 6.60	90.08	90.08	110.91	392	392	504
Q	Hallway To LABS	NA	2	850	850	29.57 x 1.93	(2) 29.57	(2) 1.93	57.06	57.06	172.62	264	66	520
R	PREP LAB	1011-B	1	810	810	7.62 x 7.47	(2) 7.62	(2) 7.47	56.92	56.92	82.69	225	225	360
S	LAB 3	1021	3	74	74	5.28 x 4.34	(2) 5.28	(2) 4.34	22.92	22.92	52.72	30	0	44
Sw	Lab 3 X Wall	1021	3	8	8	Both Sides	(2) 2.24	NA	NA	NA	12.25	0	0	8
T	LAB 4	1022	3	74	74	5.28 x 4.47	(2) 5.28	(2) 4.47	23.60	23.60	53.43	30	0	44
U	LAB 5	1024	2	800	800	12.8 x 7.62	(2) 12.8	(2) 7.62	97.54	97.54	111.90	389	91	320
V	VAULT	1011-C	1	810	810	7.47 x 7.39	(2) 7.47	(2) 7.39	55.21	55.21	81.43	225	225	360
Vw	Vault, X Wall	1011-C	1	156	156	Both Sides	(2) 6.25	NA	NA	NA	34.24	0	0	156
W	LAB 2	1020	2	0	0	18.08 x 7.37	(2) 18.08	(2) 7.37	133.29	133.29	139.47			
Ww	Lab 2 X Wall	1020	2	0	0	Both Sides	(2) 2.54	(2) 1.37	NA	NA	21.44	0	0	
X**	TANK ROOM	1025	2	0	0	5.31 x 2.11	(2) 5.31	(2) 2.11	11.20	11.20	40.66			
Xw	Tank Rm X Wall	1025	2	0	0	Both Sides	(2) 1.19	NA	NA	NA	5.90	0	0	
	NON IMPACT AREA													
Y	Loading Dock		non-imp	0	0								0	
Z	Outside Lab 2&5		non-imp	0	0								0	
AA	Ajadcent		non-imp	0	0								0	
AB	Outside Exit To Tank RM		non-imp	0	0								0	
			TOTAL	6528	6528								0	

NOTE: FOUR (4) CLASS 1; FOUR (4) CLASS 2; SIXTEEN (16) CLASS 3; & FOUR (4) NON AFFECTED AREAS.

AREA A SECTION FLOOR LAYOUT - MAIN HALLWAY - CLASS 3



AREA A (SECTION 1) - MAIN HALLWAY - CLASS 3



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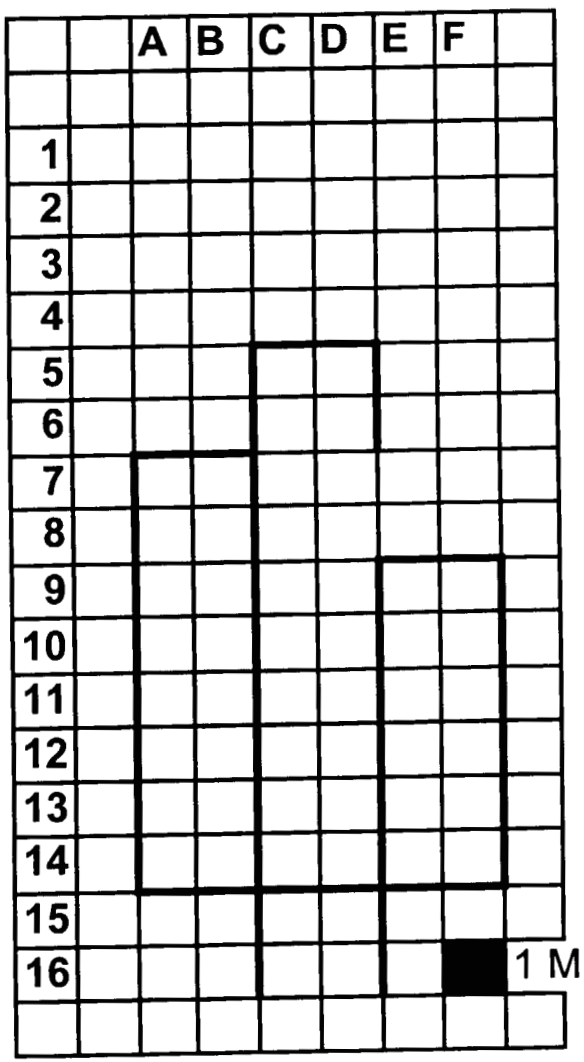
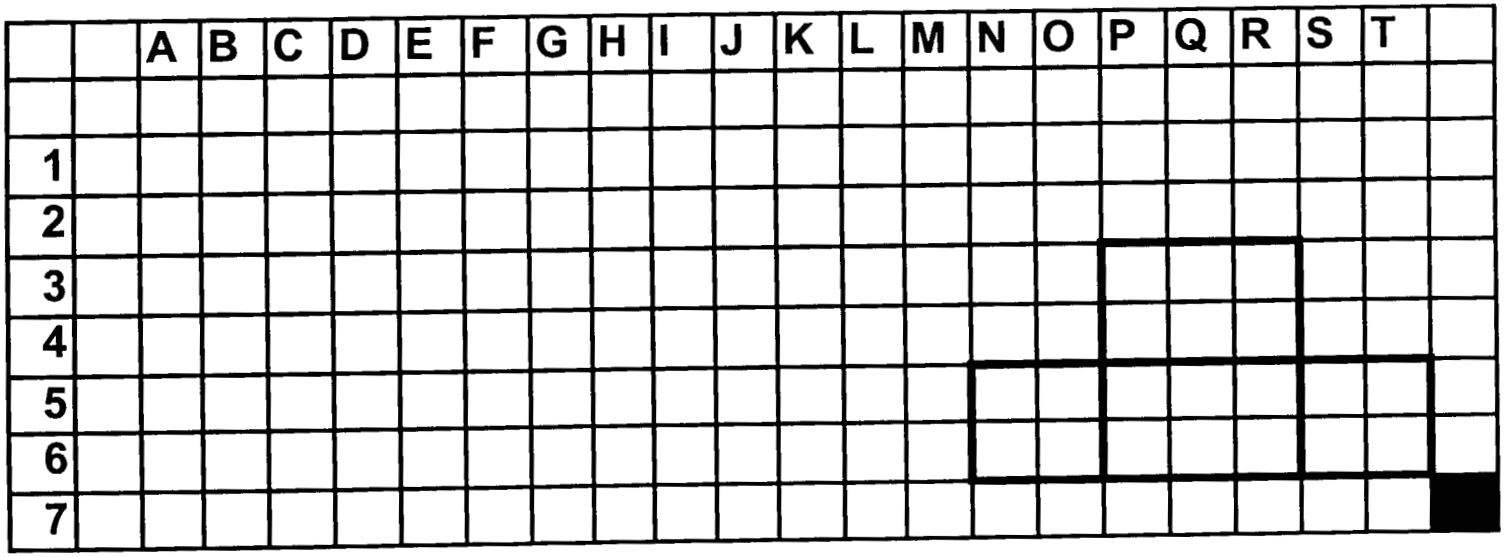


1 METER SQ.

AREA A (SECTION 3) - MAIN HALLWAY - CLASS 3



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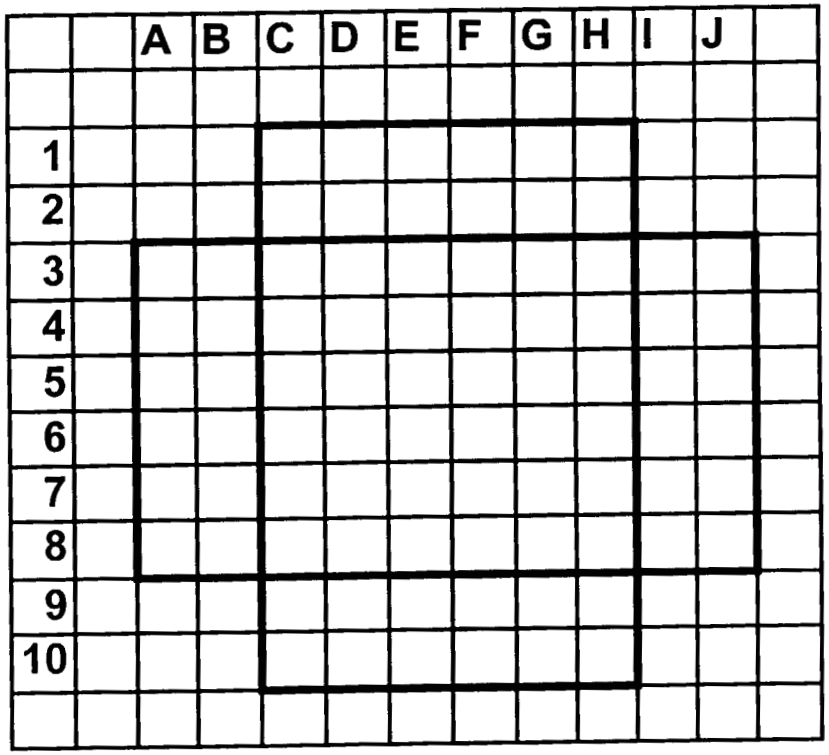
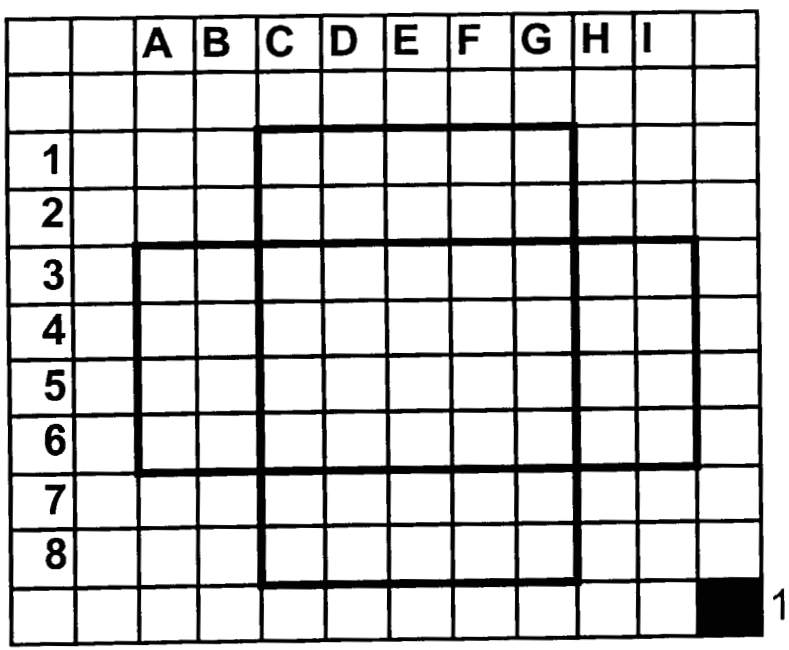
AREA B, RAD LAB OFFICE - ROOM 1010 - CLASS 3



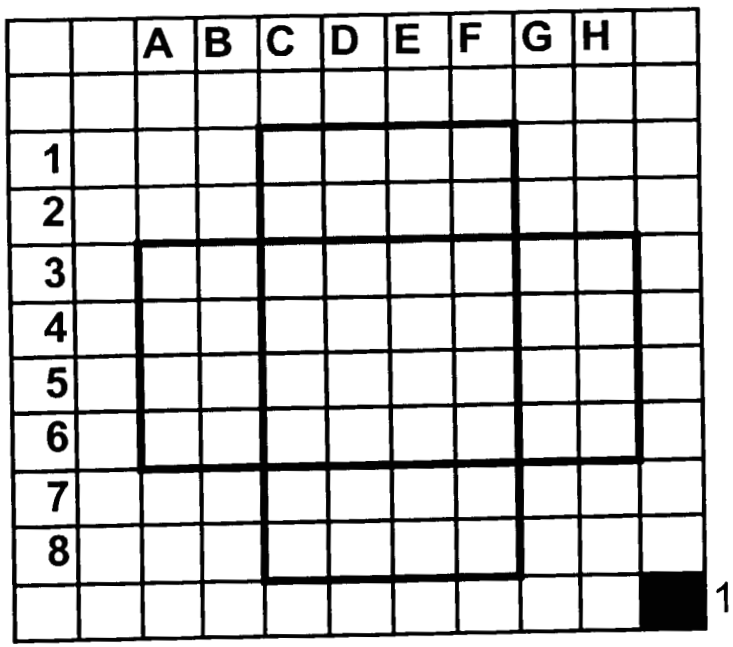
1 METER SQ.

AREA C, RAD LAB INSTR OFFICE- ROOM 1010A - CLASS 3



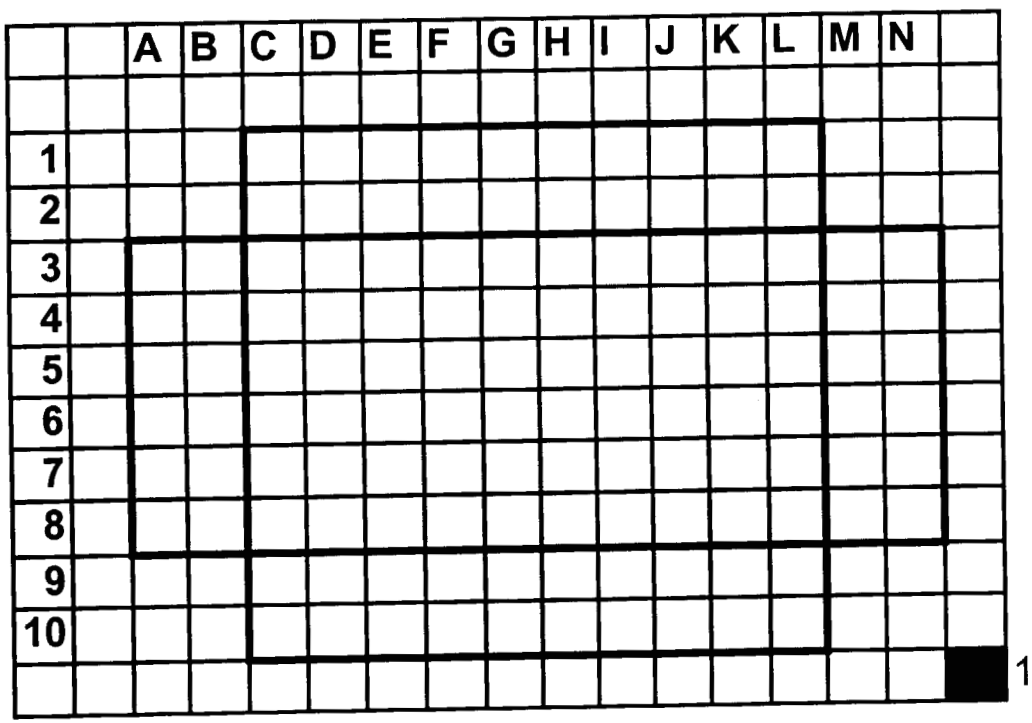
1 METER SQ.

AREA D - RAD LAB CHIEF'S OFFICE- ROOM 1010B - CLASS 3

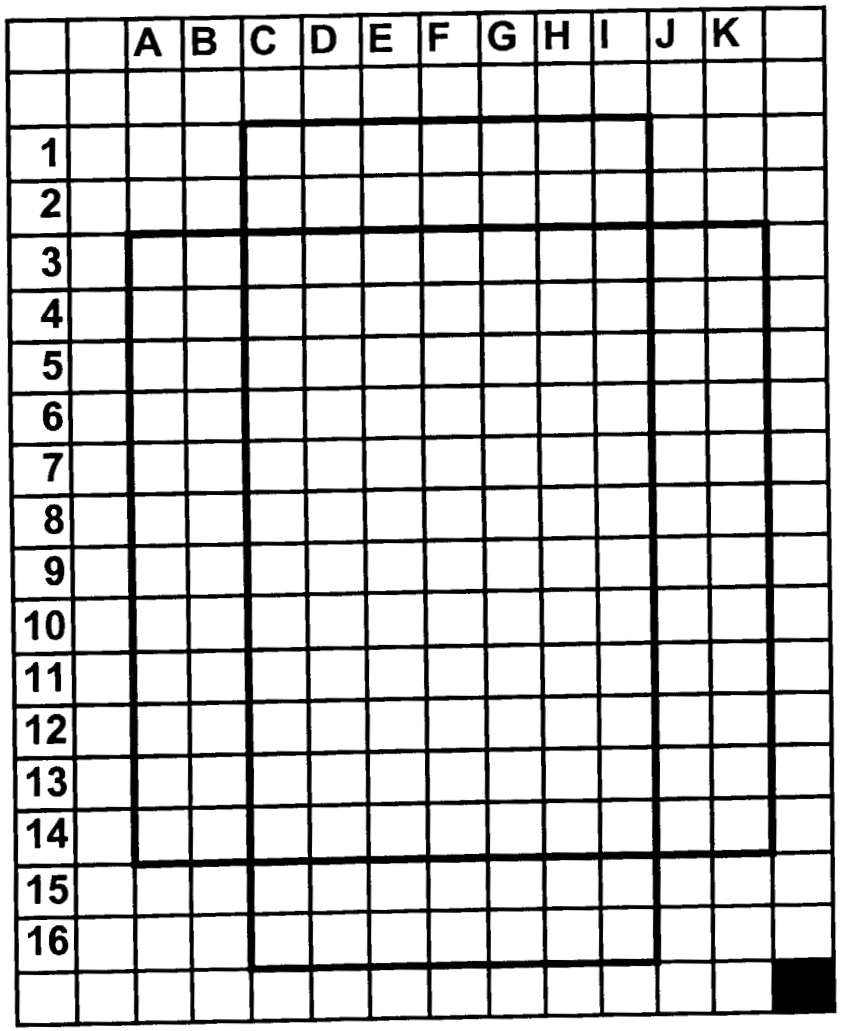


1 METER SQ.

AREA E - ELECTRONIC SHOP - ROOM 1010C - CLASS 3

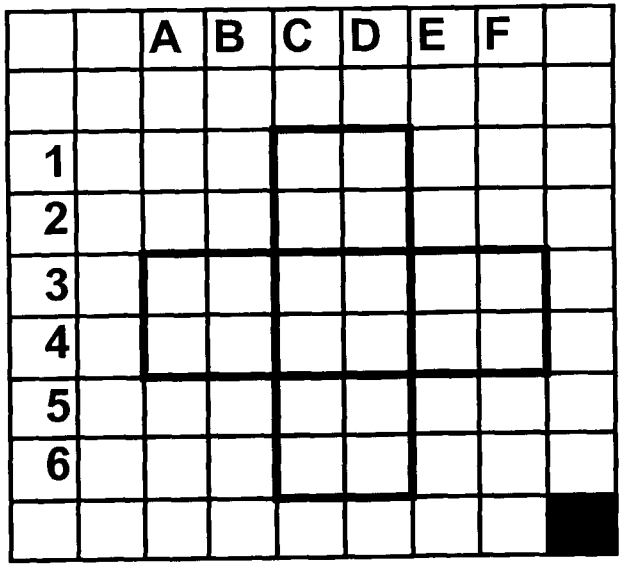


AREA F - LABORATORY 7 - ROOM 1017 - CLASS 3



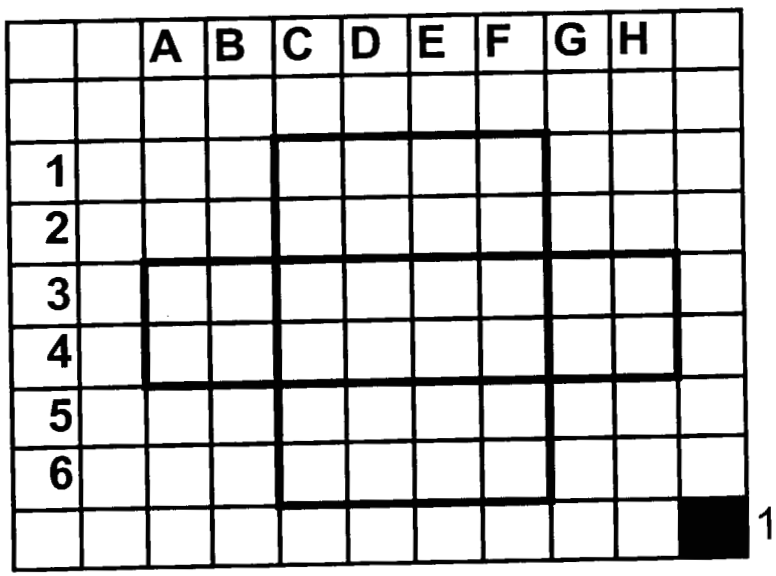
1 METER SQ.

AREA G - WOMEN'S ROOM - RM 1013 - CLASS 3



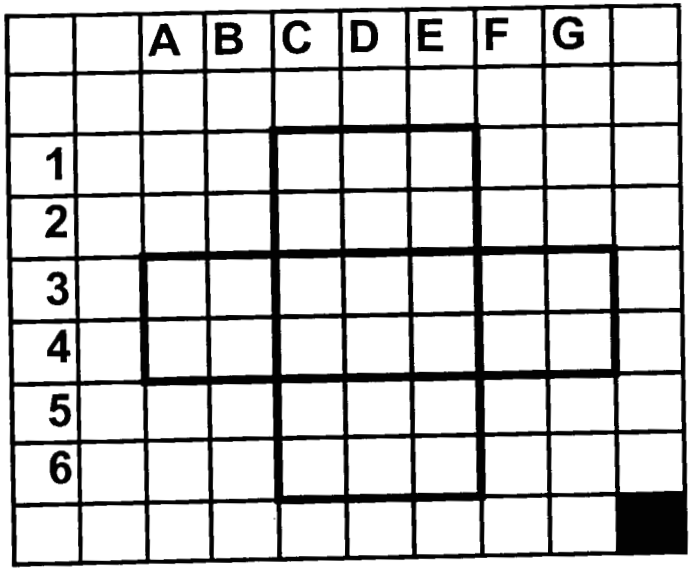
1 METER SQ.

AREA H - MEN'S ROOM - RM 1015 - CLASS 3



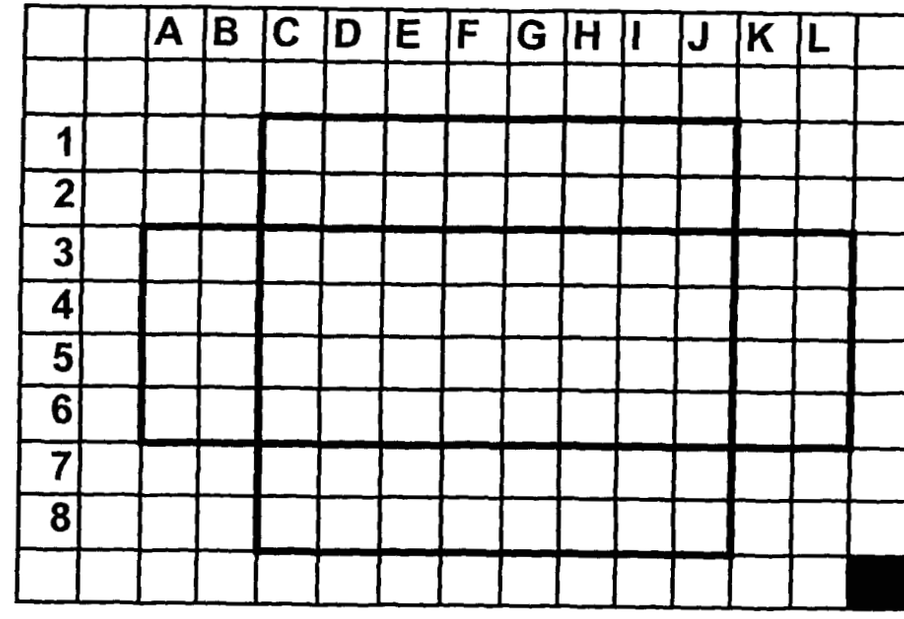
1 METER SQ.

AREA I - JANITOR'S ROOM - RM 1016 - CLASS 3



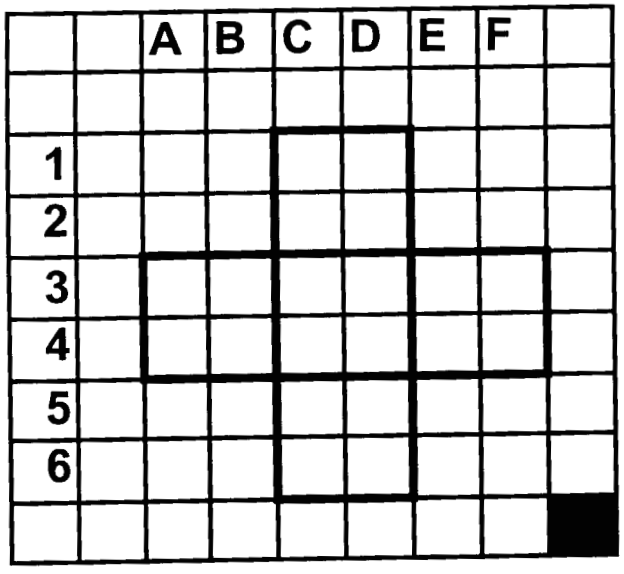
1 METER SQ.

AREA J - HP OFFICES- RM 1011 - CLASS 3



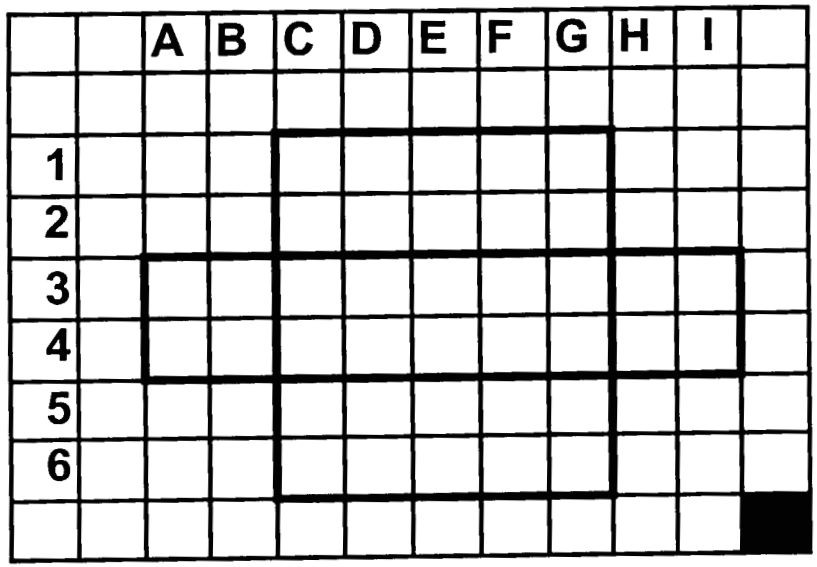
1 METER SQ.

AREA K - HP STORAGE ROOM - RM 1012 - CLASS 3



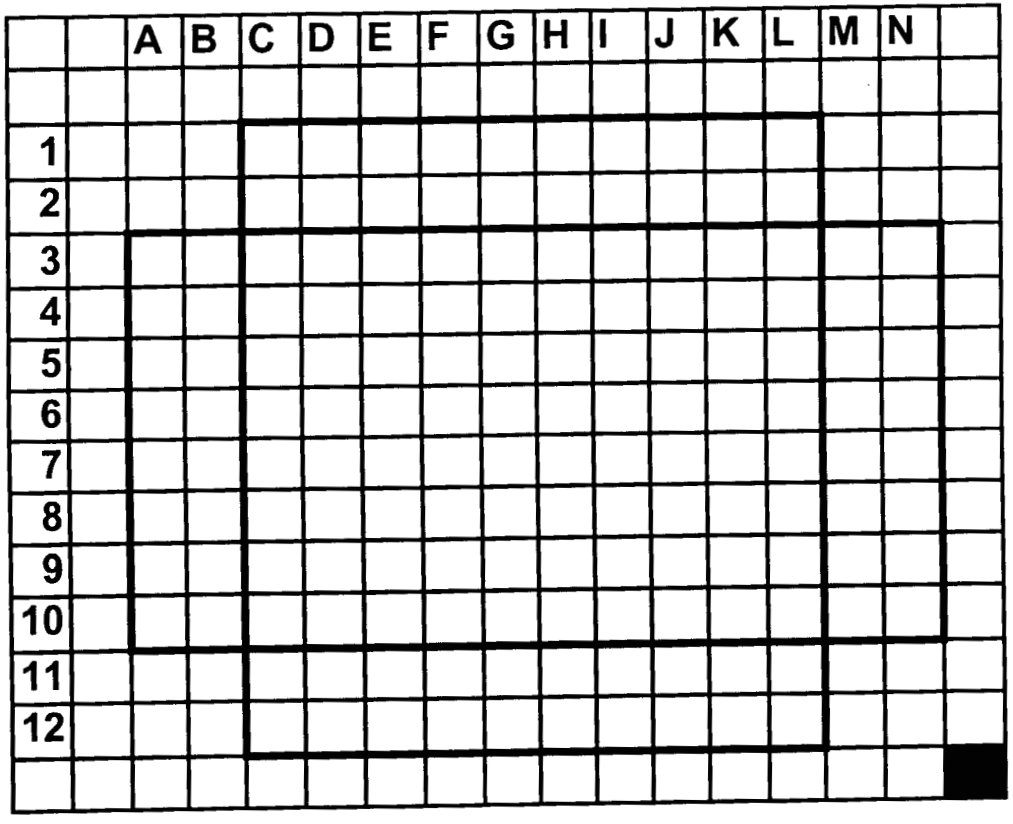
1 METER SQ.

AREA L - RAD LAB STORAGE - RM 1014 - CLASS 3

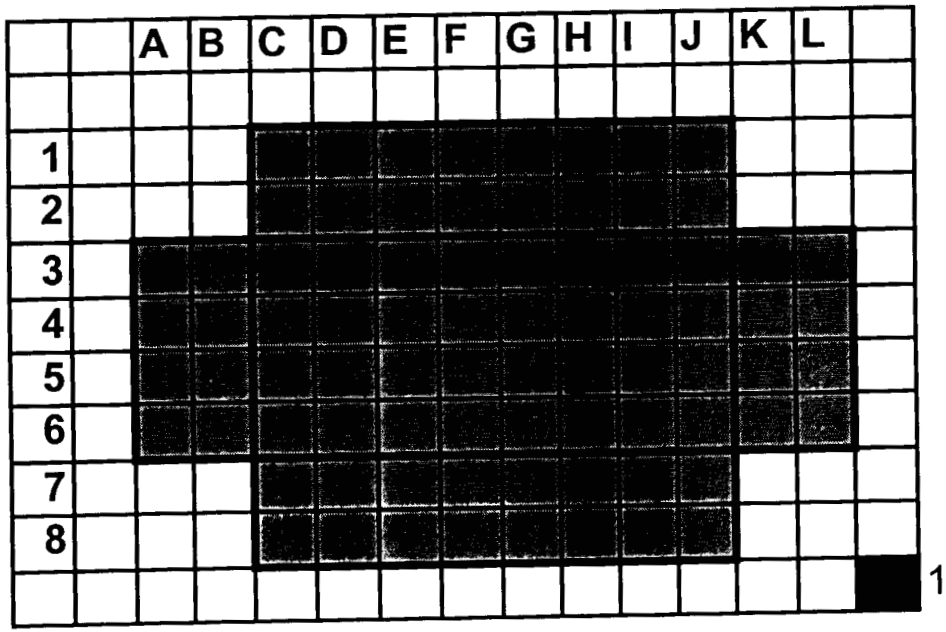


1 METER SQ.

AREA M - LABORATORY 8 - RM 1018 - CLASS 3

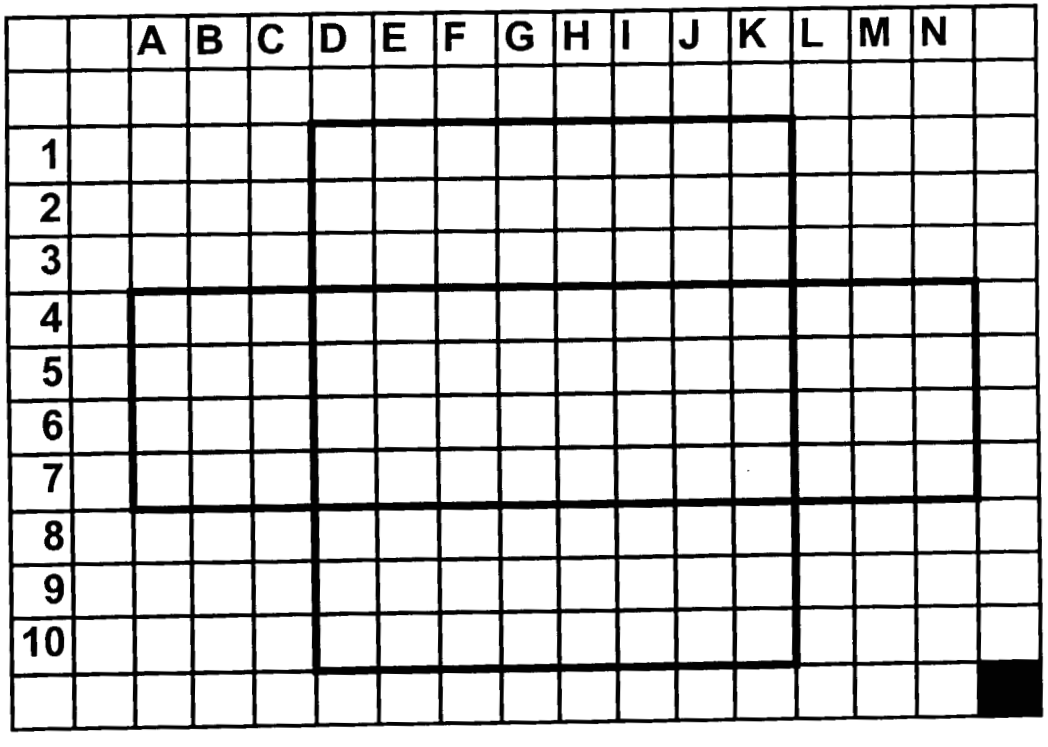


AREA N - LABORATORY 6 - RM 1023 - CLASS 3



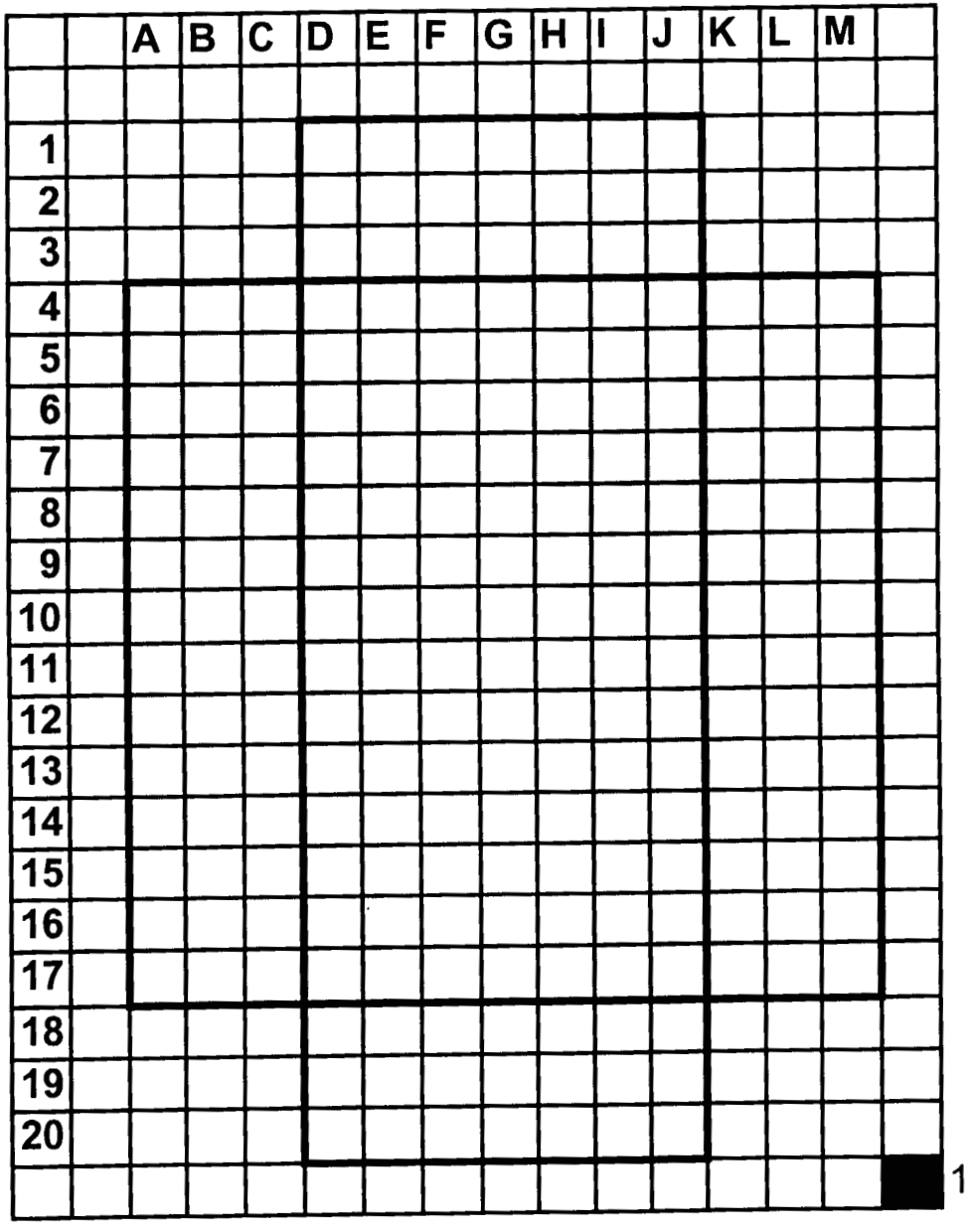
1 METER SQ.

AREA O - HPO LABORATORY - RM 1011A - CLASS 1



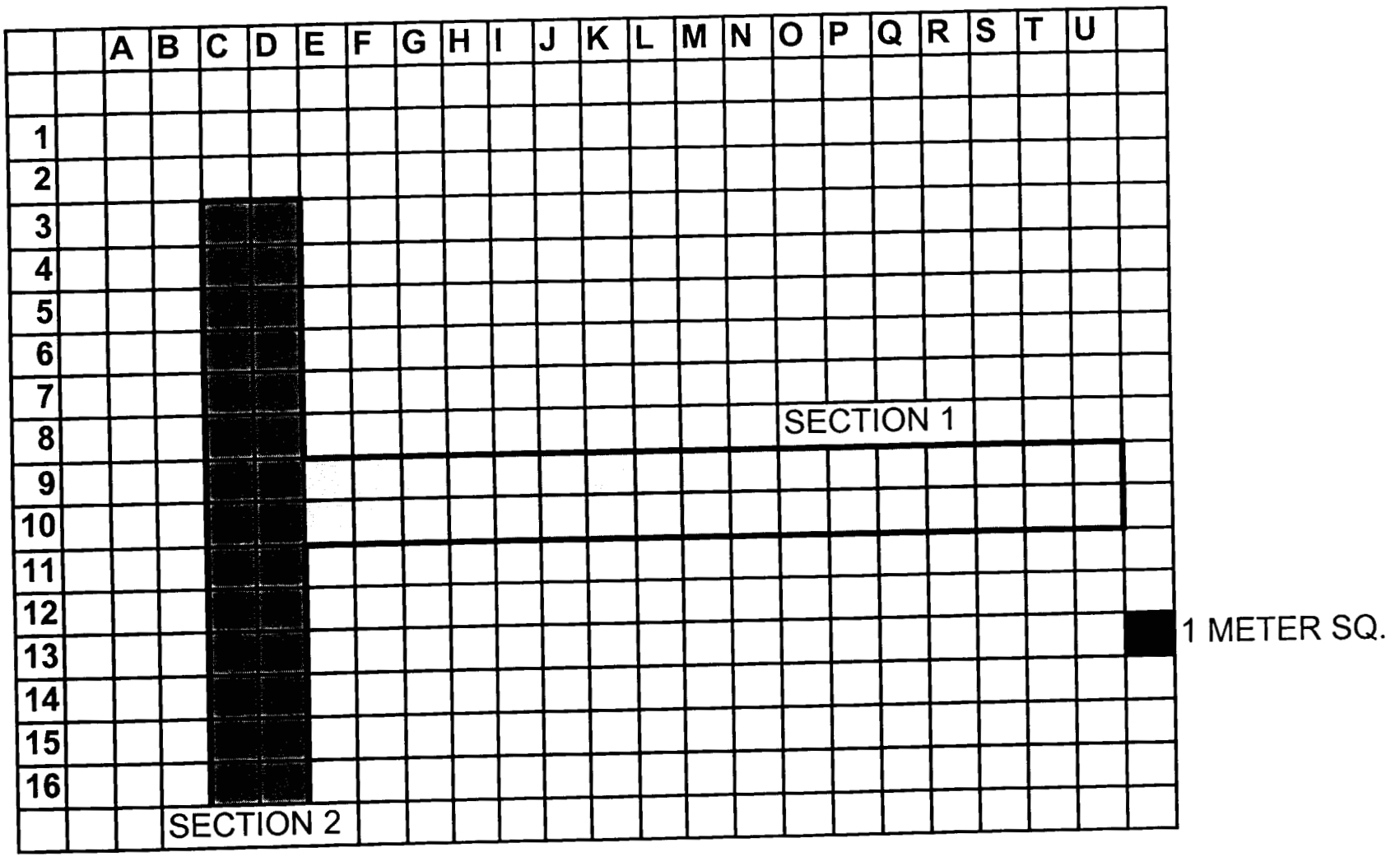
1 METER SQ.

AREA P - LABORATORY 1 - ROOM 1019 - CLASS 1

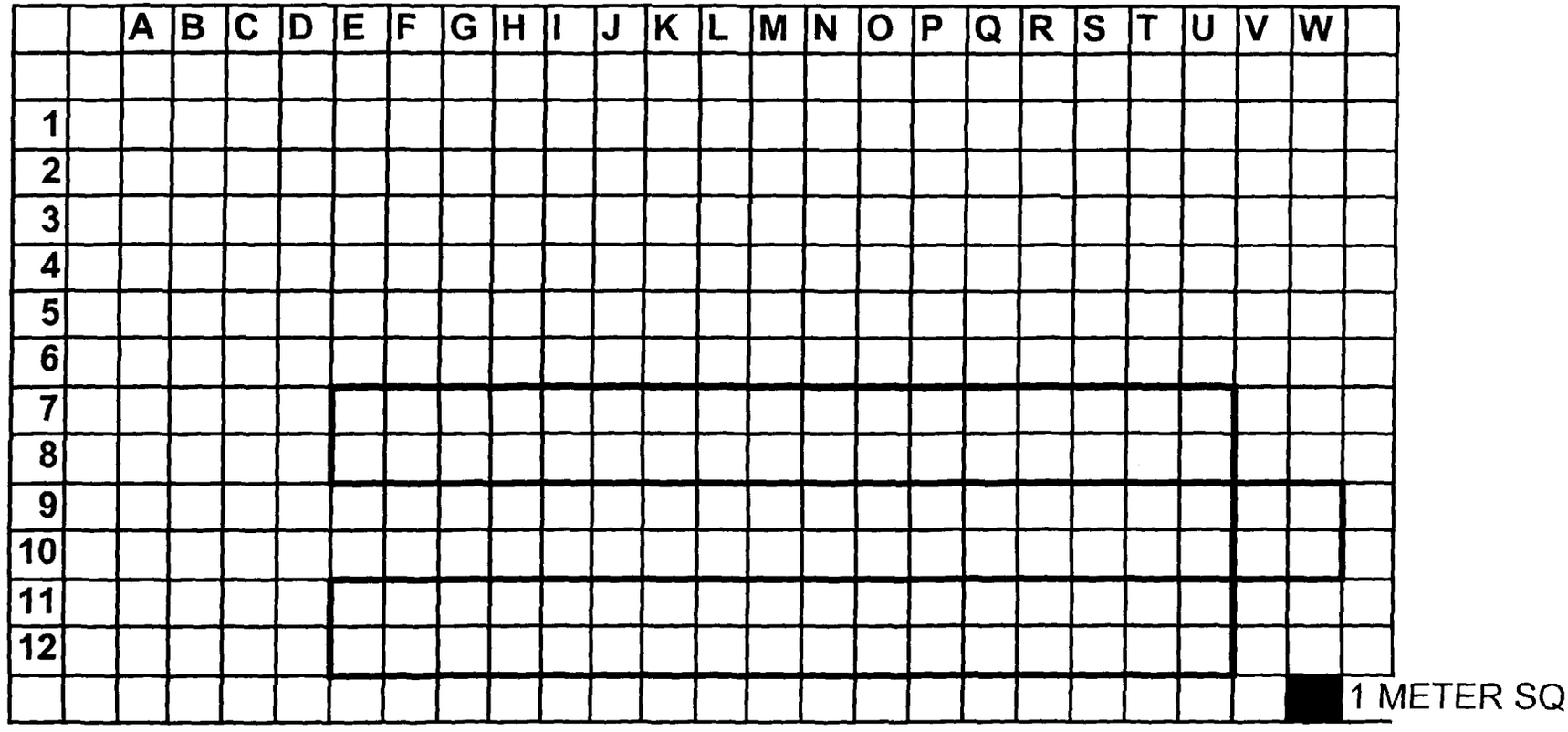


1 METER SQ.

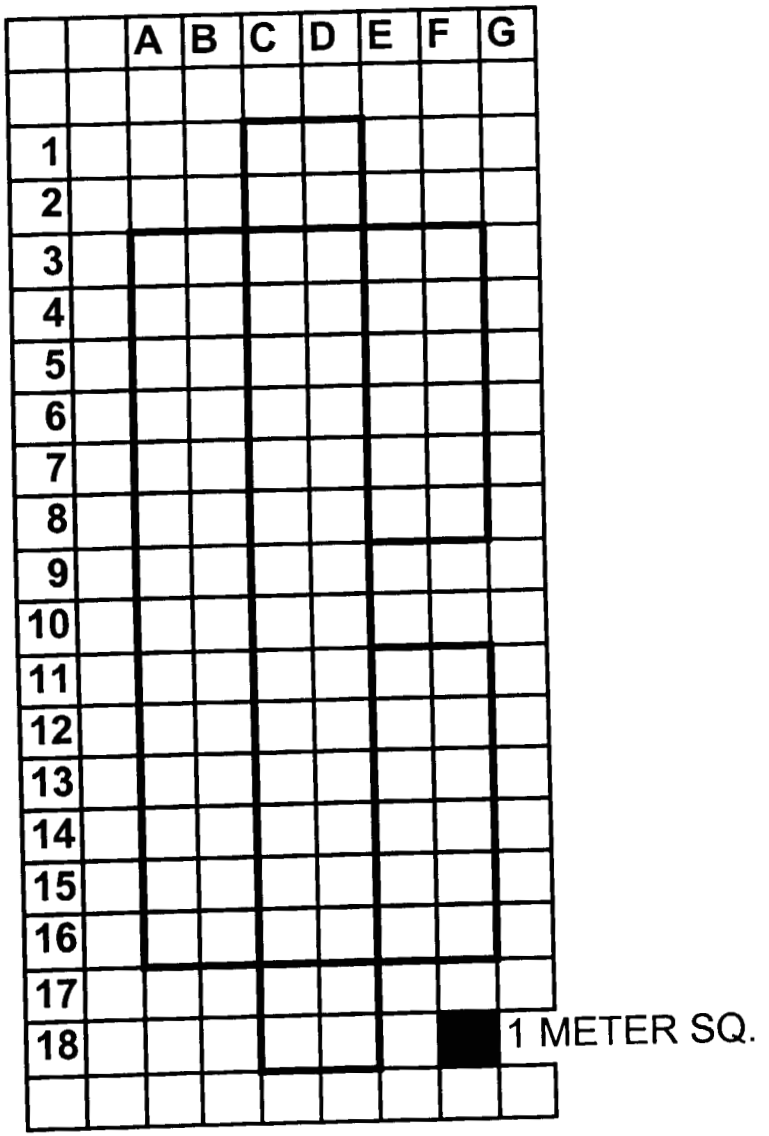
AREA Q - SECTION FLOOR LAYOUT - LABORATORY HALLWAY - CLASS 2



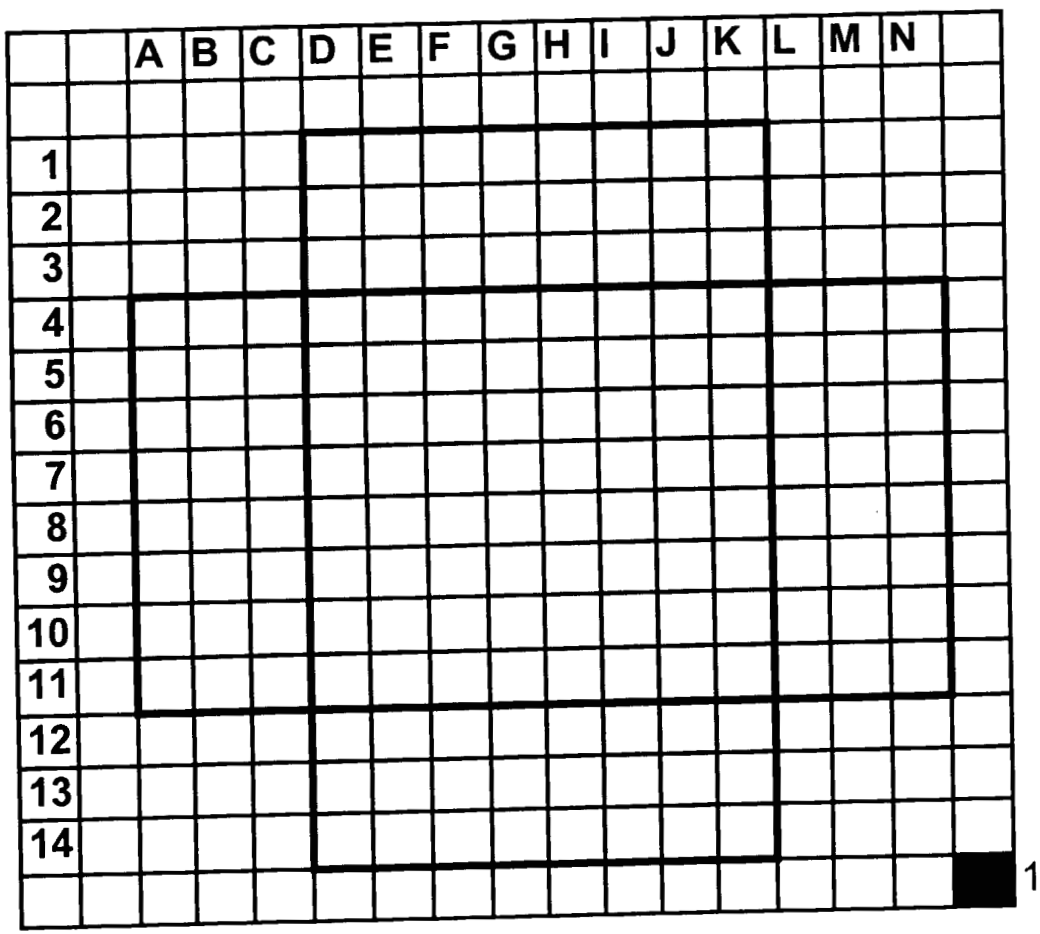
AREA Q (SECTION 1) - LABORATORY HALLWAY - CLASS 2



AREA Q (SECTION 2) - LABORATORY HALLWAY - CLASS 2

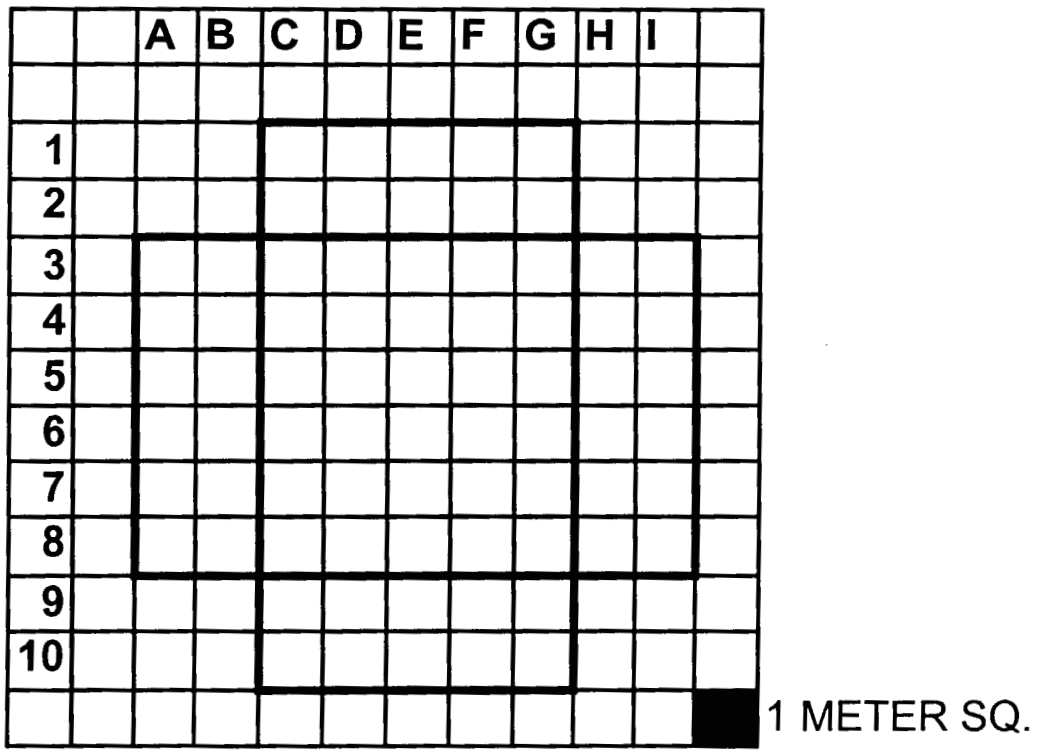


AREA R - PREP LABORATORY - RM 1011B - CLASS 1

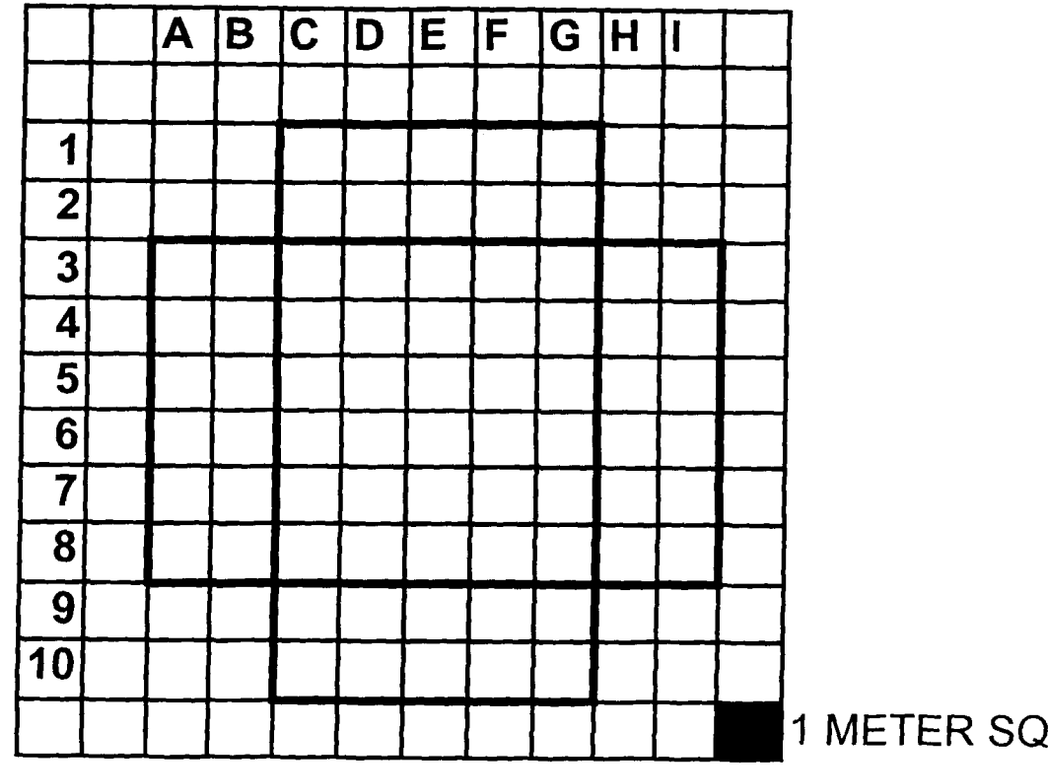


1 METER SQ.

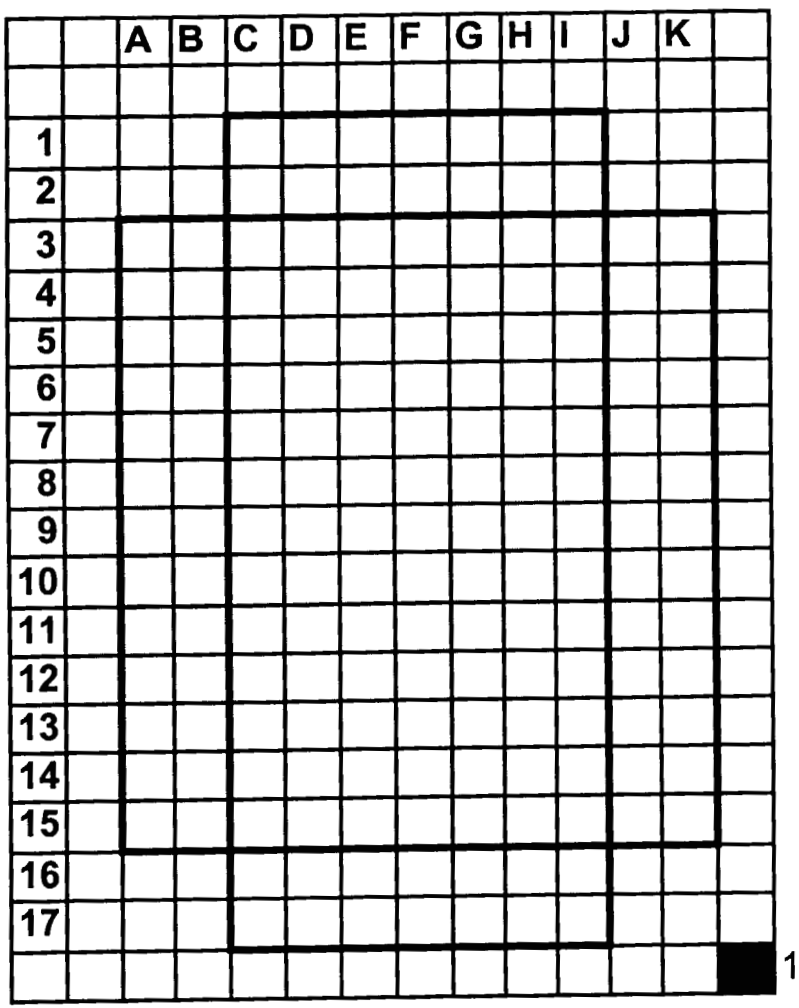
AREA S, LABORATORY 3 - ROOM 1021 - CLASS 3



AREA T, LABORATORY 4 - ROOM 1022 - CLASS 3

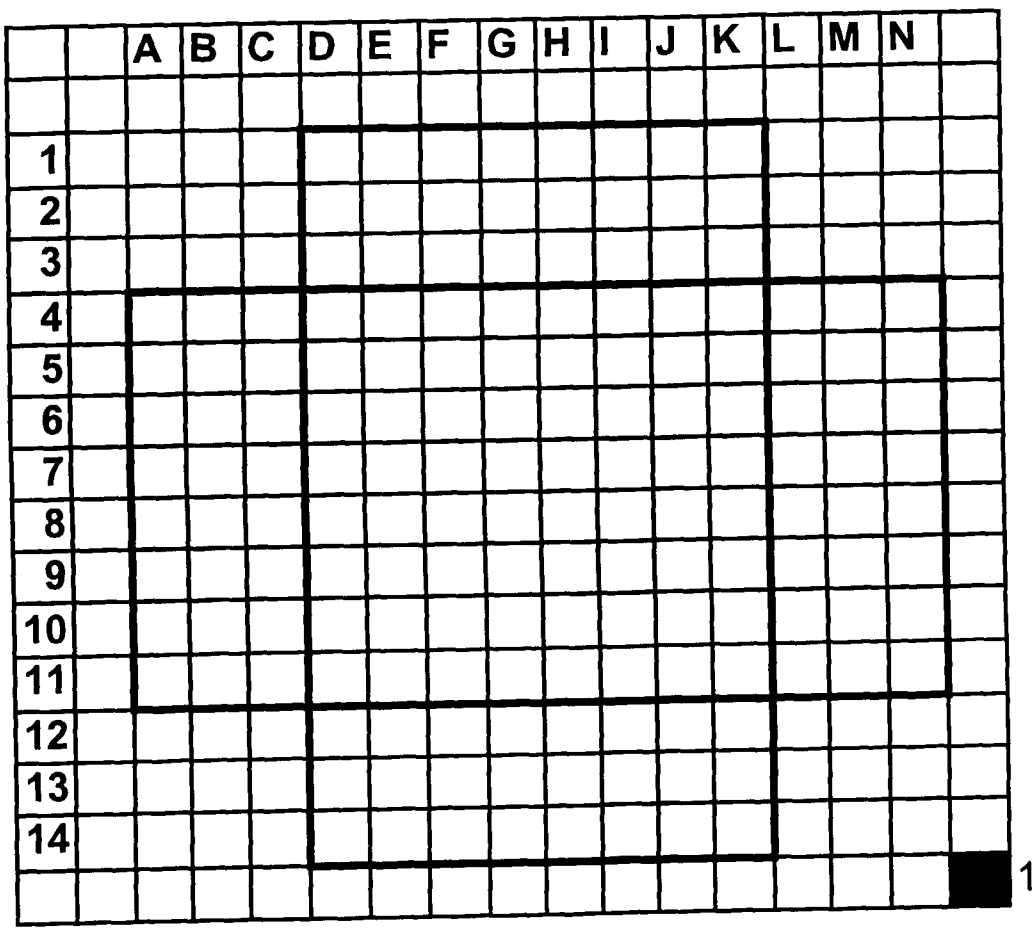


AREA U - LABORATORY 5 - ROOM 1024 - CLASS 2



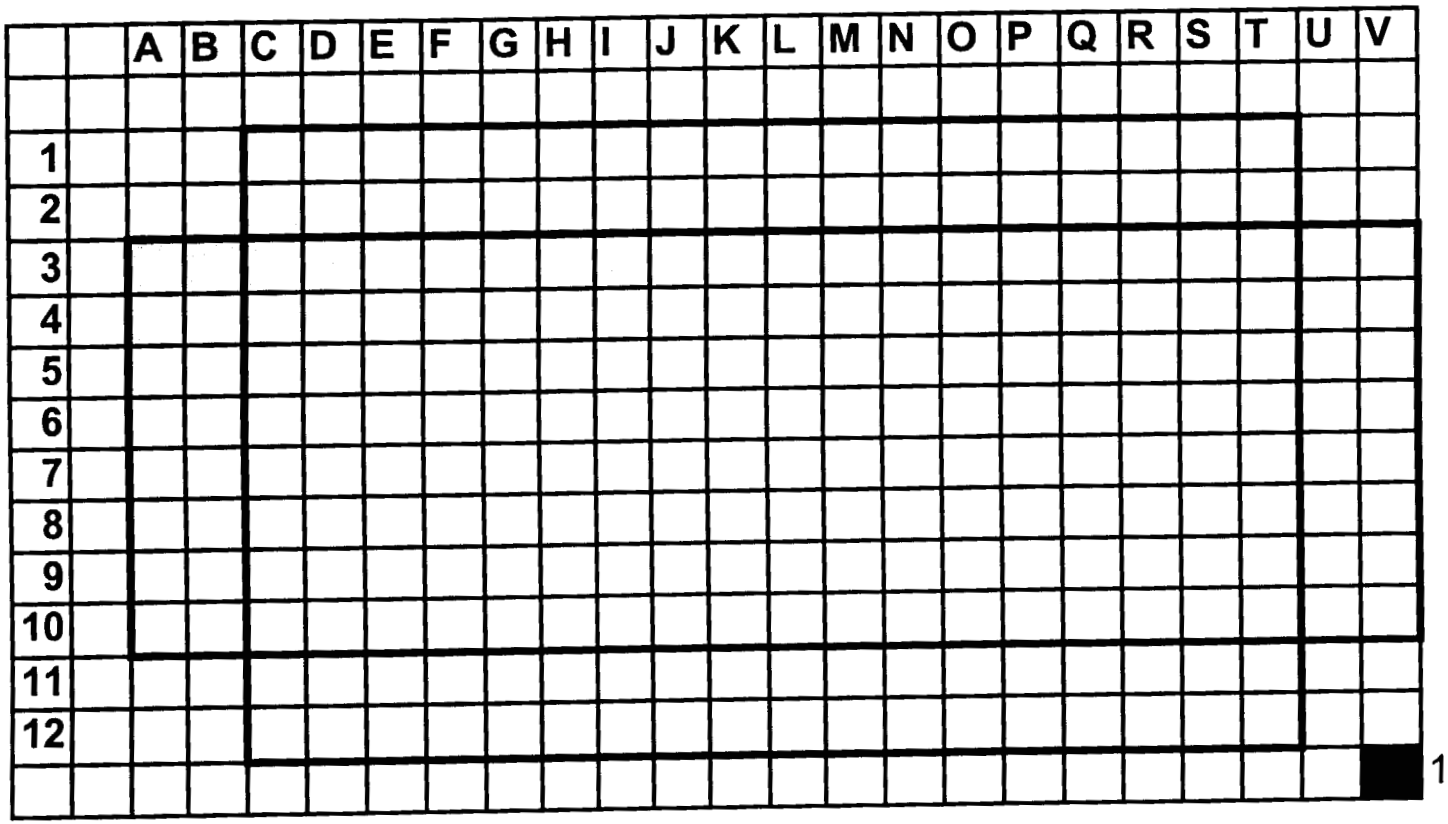
1 METER SQ.

AREA V - VAULT - RM 1011C - CLASS 1

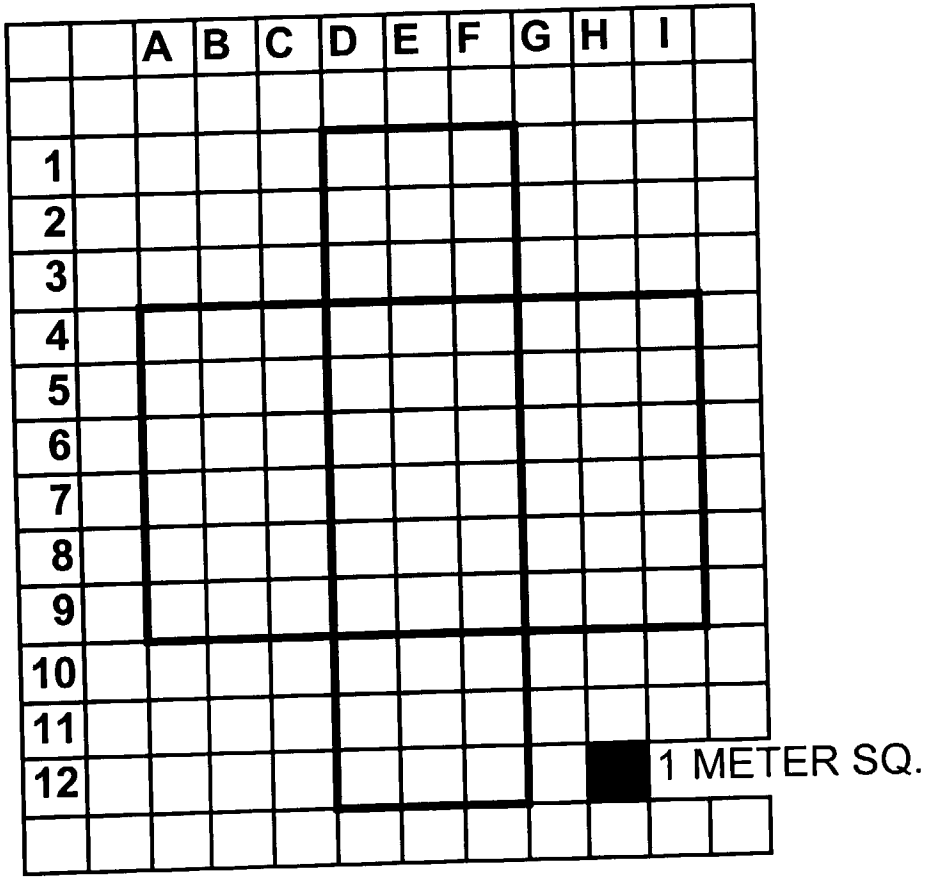


1 METER SQ.

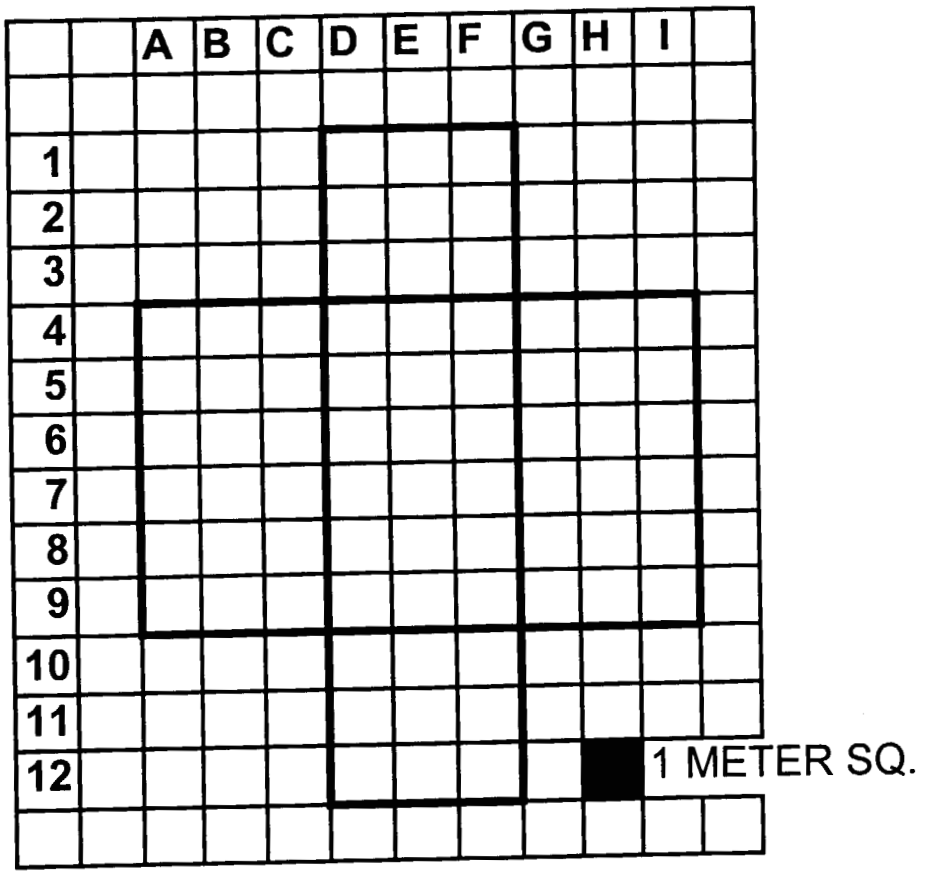
AREA W - LABORATORY 2 - ROOM 1020 - CLASS 2



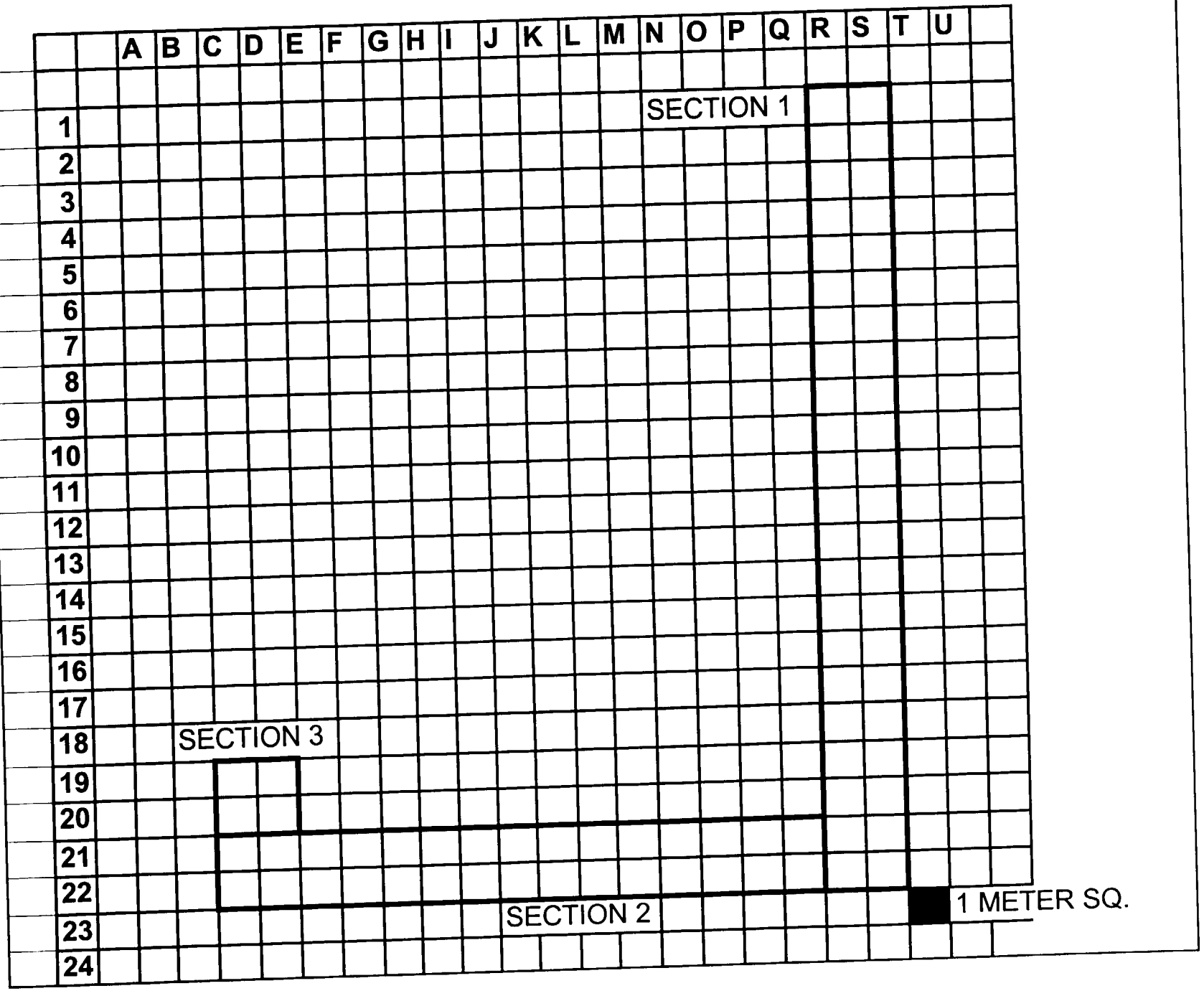
AREA X - TANK ROOM - CLASS 1



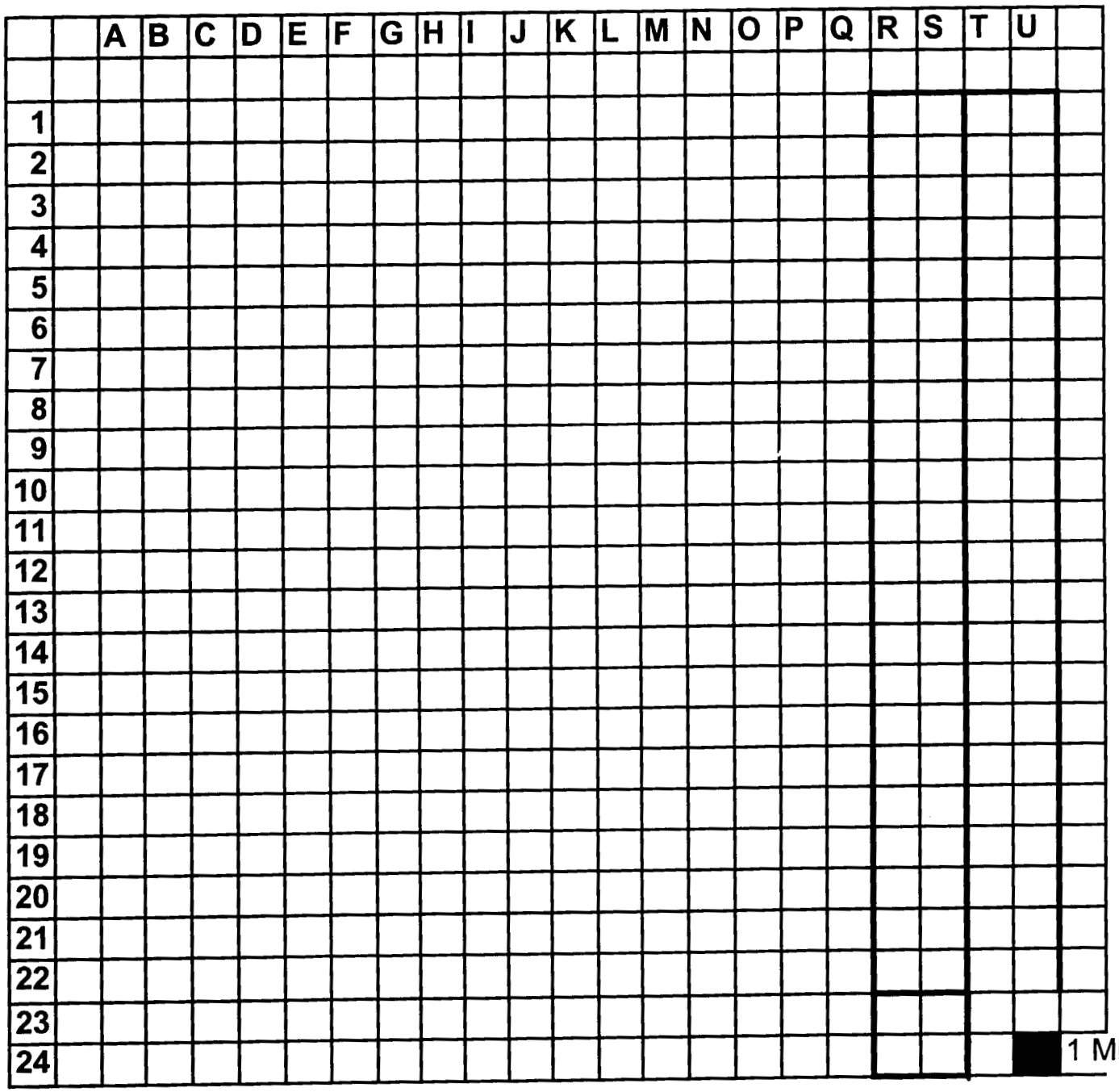
AREA X - TANK ROOM - ROOM 1025 - CLASS 1



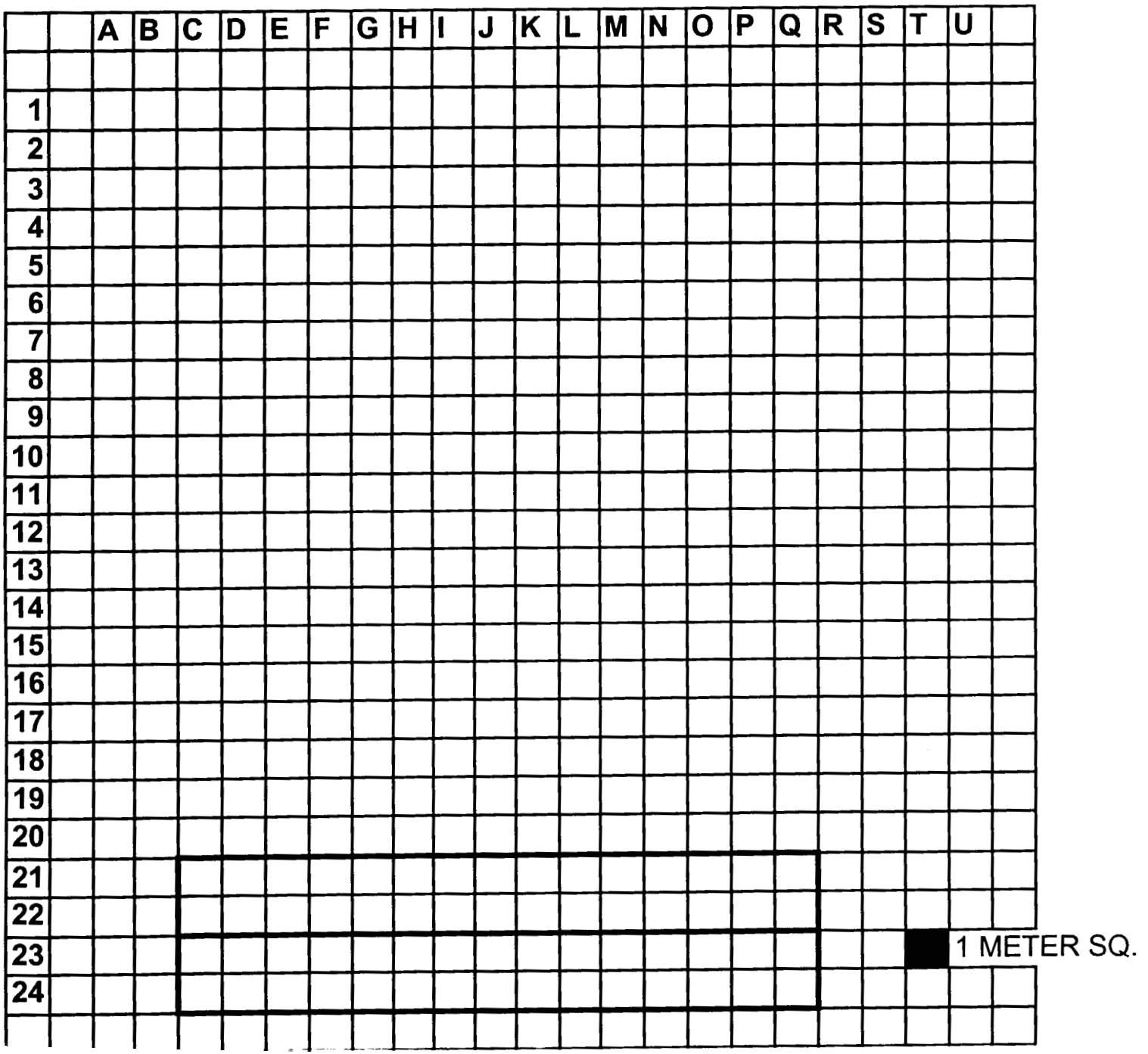
AREA Y - SECTION LAYOUT - OU .DE LOADING DOCK - NON IMPACT AREA



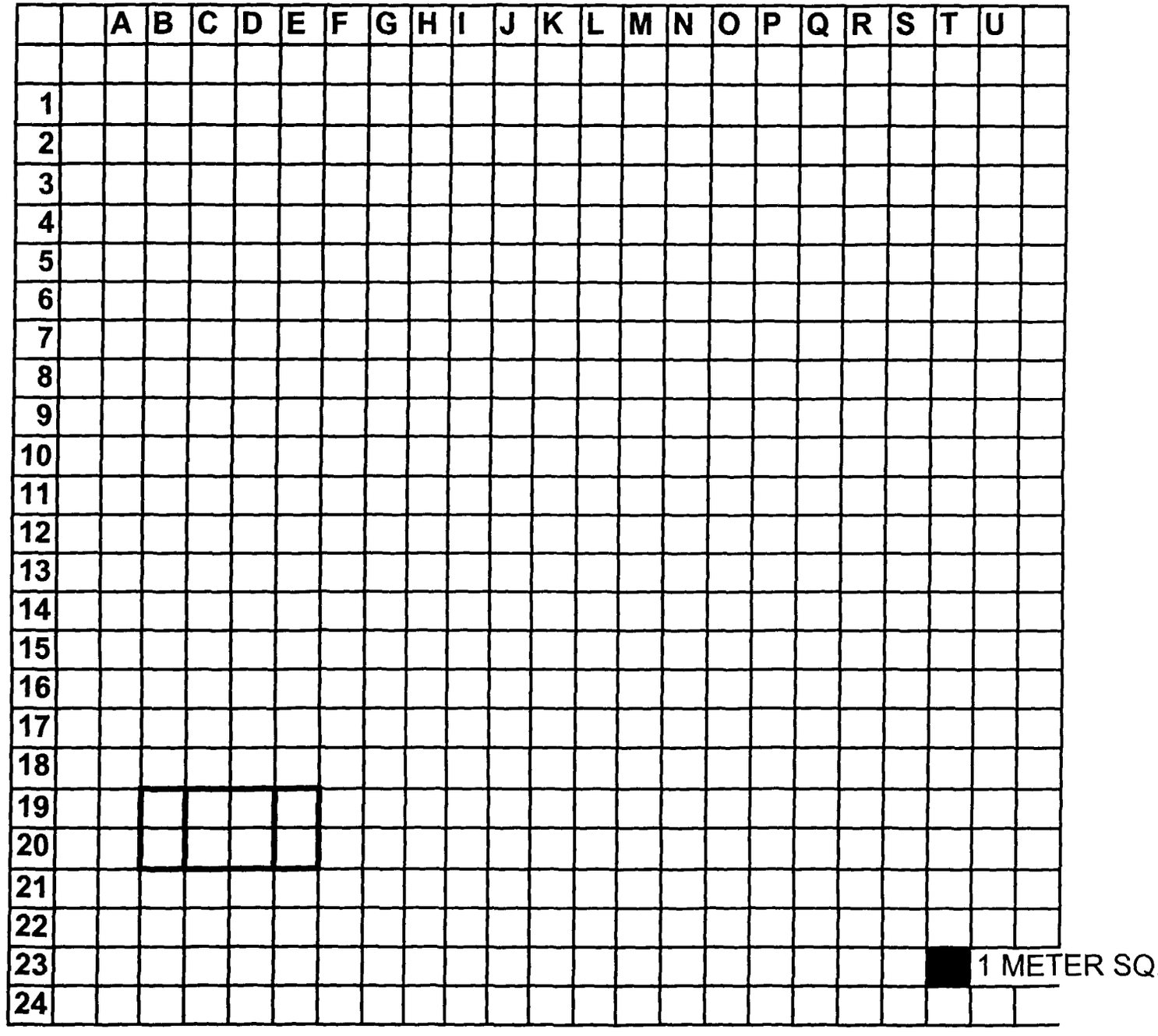
AREA Y - (SECTION 1) - WALKW. , STAIRS & WALLS
NON IMPACT AREA



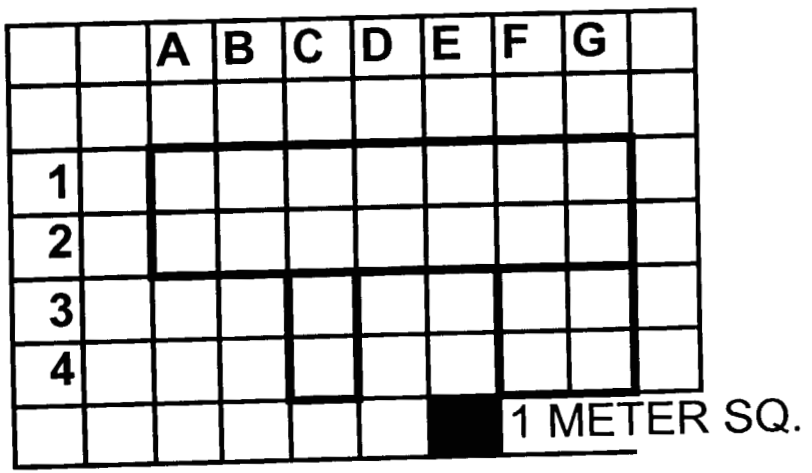
REA Y - (SECTION 2) - WALKWAY NALLS
NON IMPACT AREA



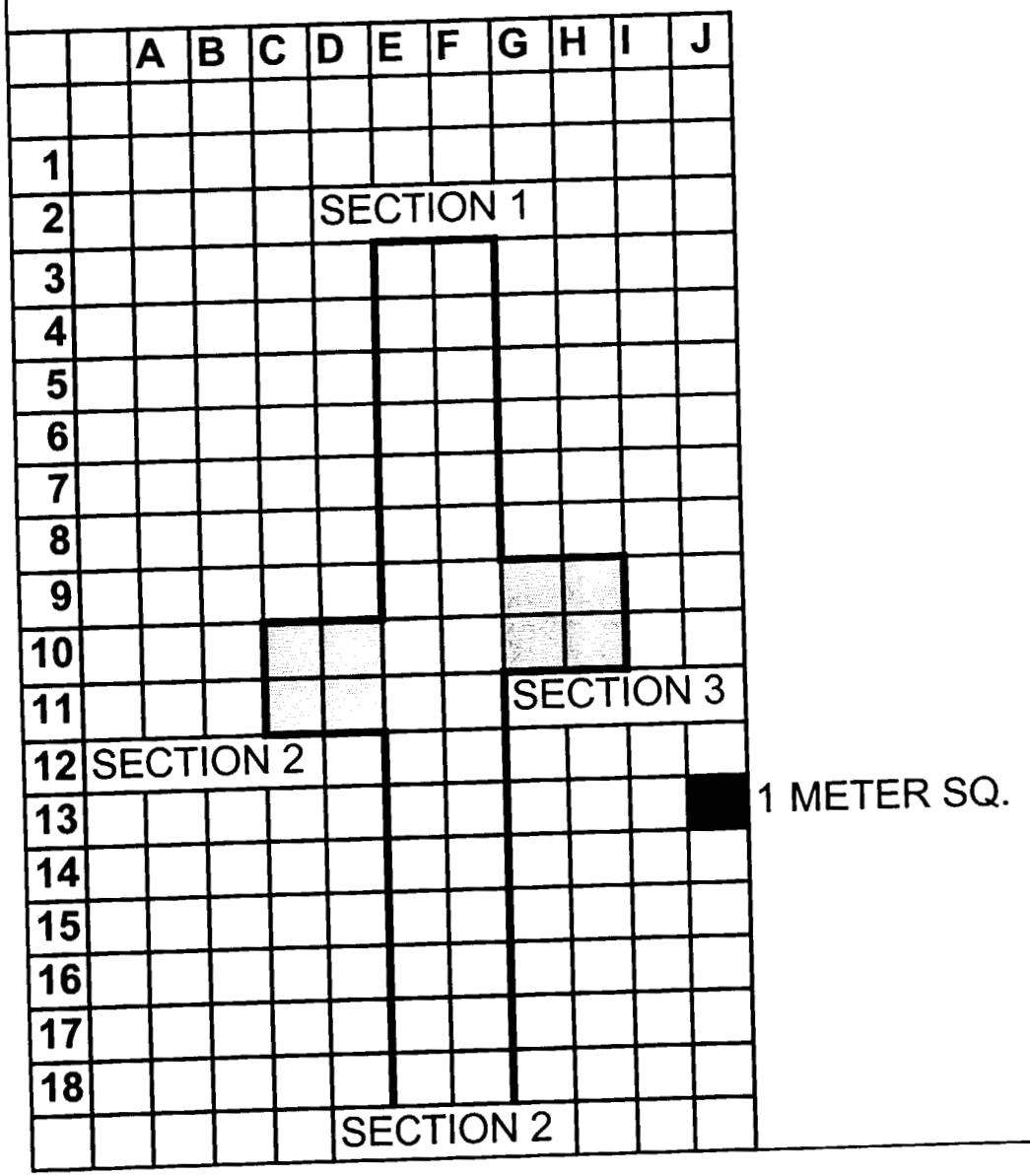
.REA Y - (SECTION 3) - STAIRS & I LINGS -
NON IMPACT AREA



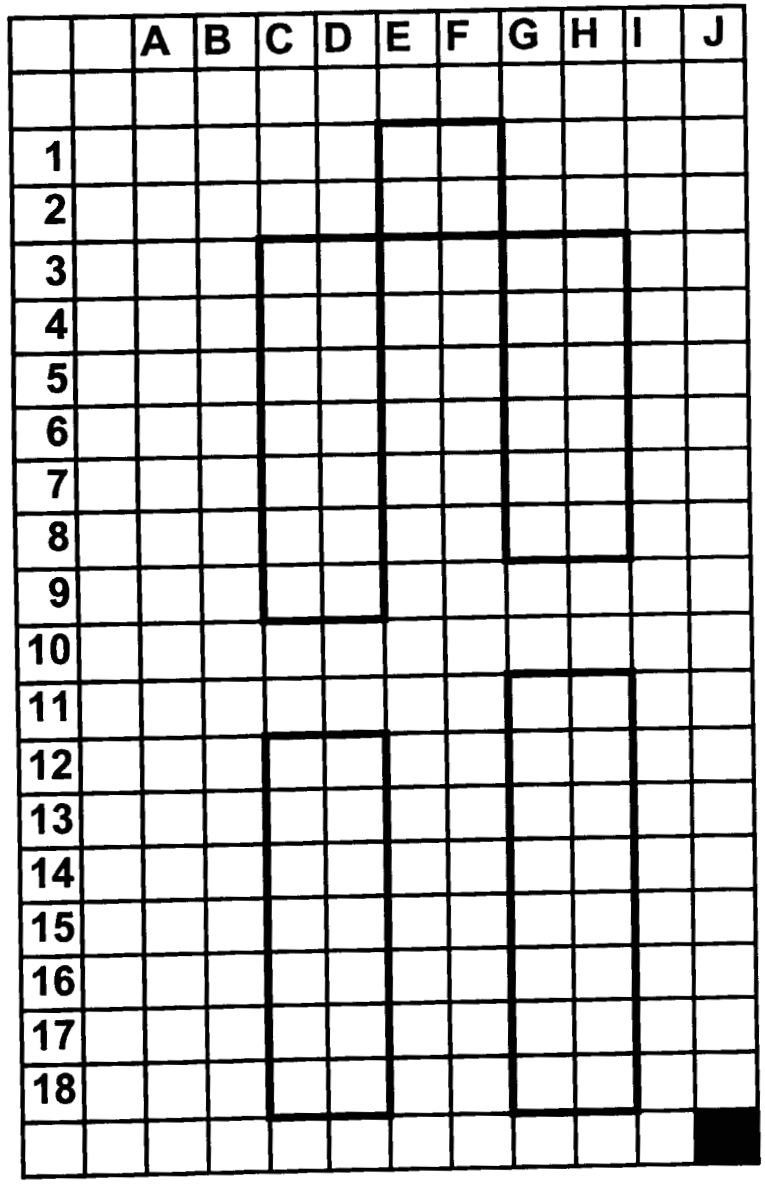
AREA Z - OUTSIDE LANDING FOR LABS 2 & 5



AREA AA - SECTION FLOOR LAYOUT - ADJACENT HALLWAY
NON - IMPACT AREA

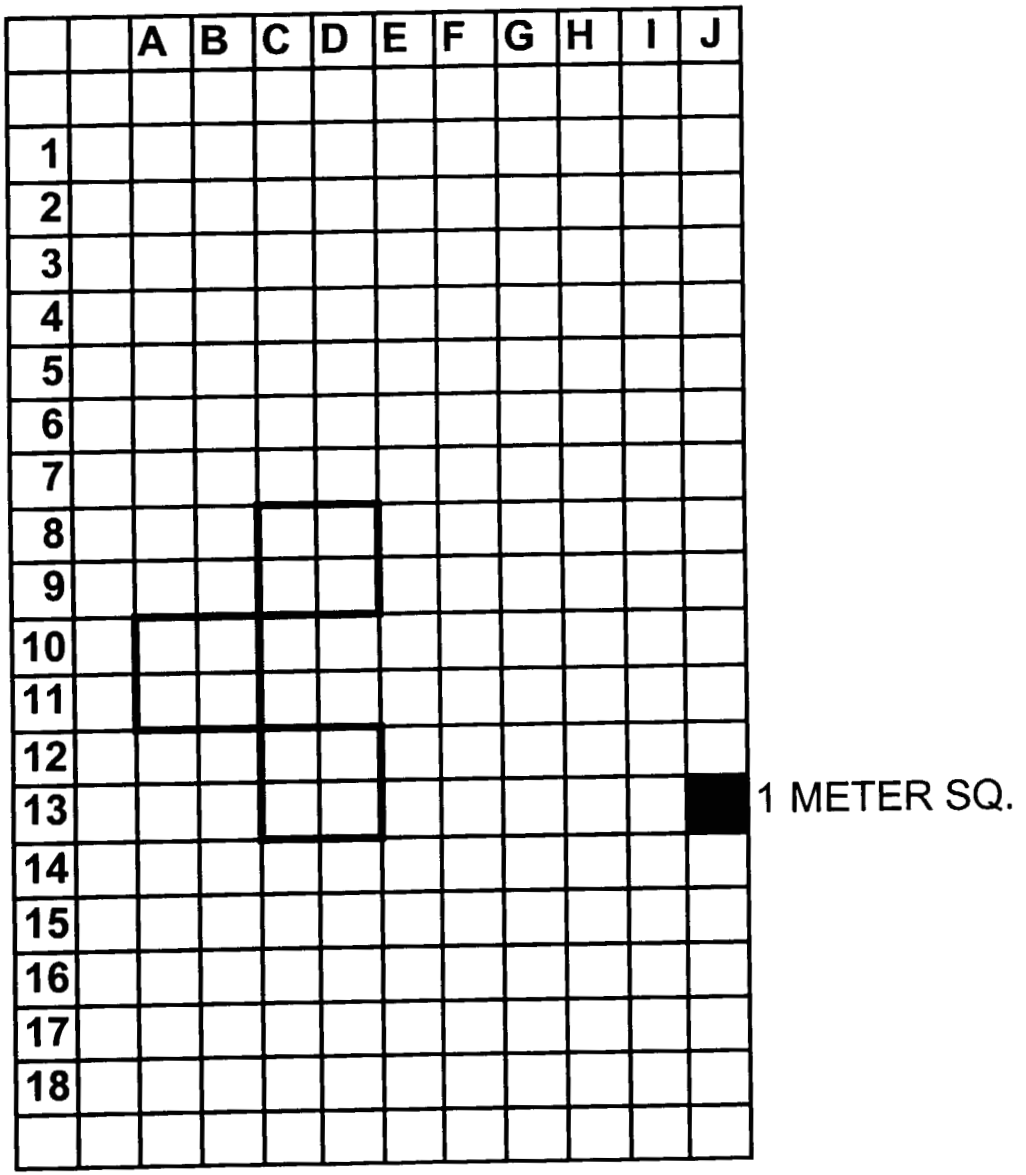


AREA AA - (SECTION 1) - ADJACENT HALLWAY
NON - IMPACT AREA



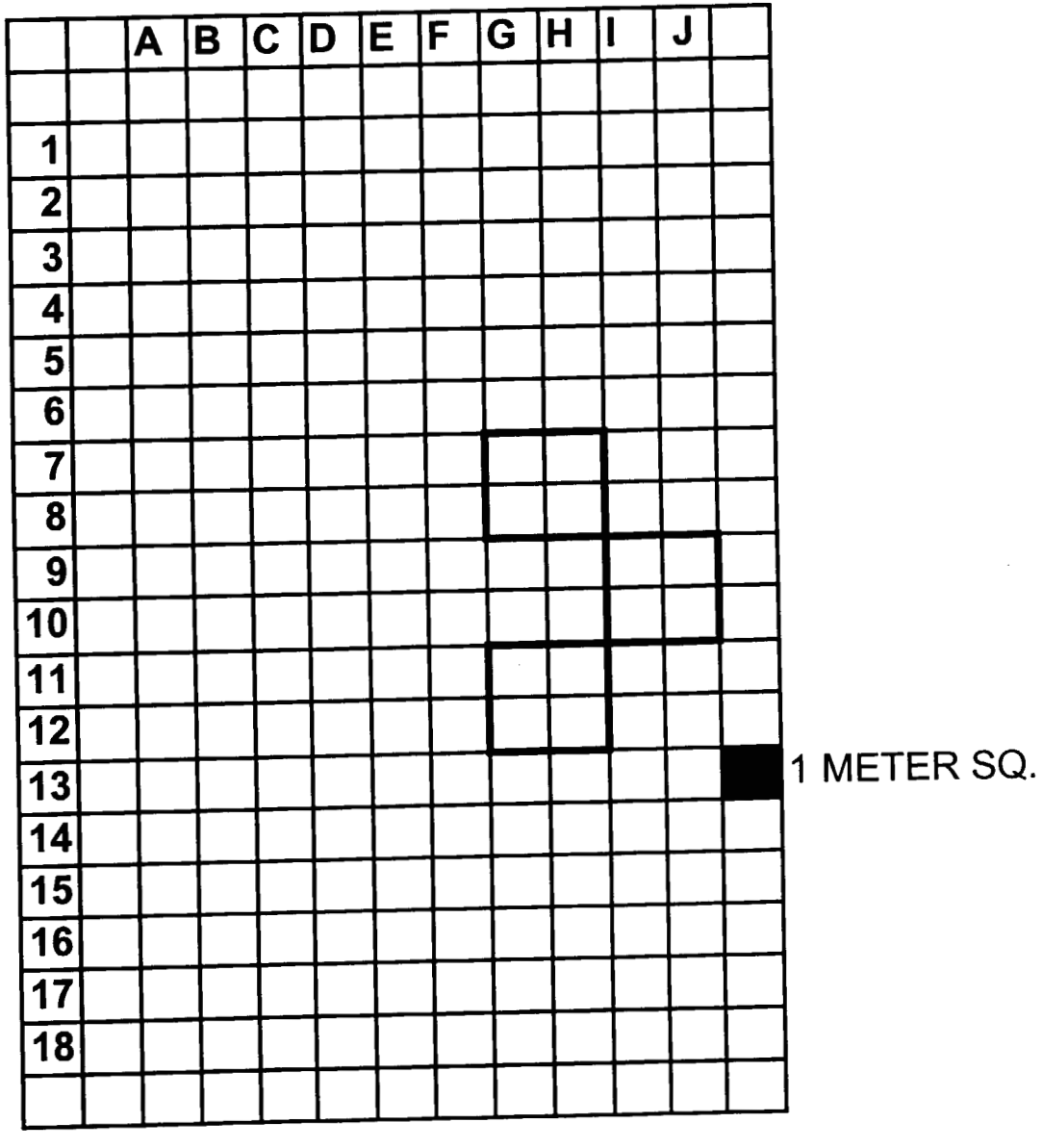
1 METER SQ.

AREA AA - (SECTION 2) - ADJACENT HALLWAY
NON - IMPACT AREA

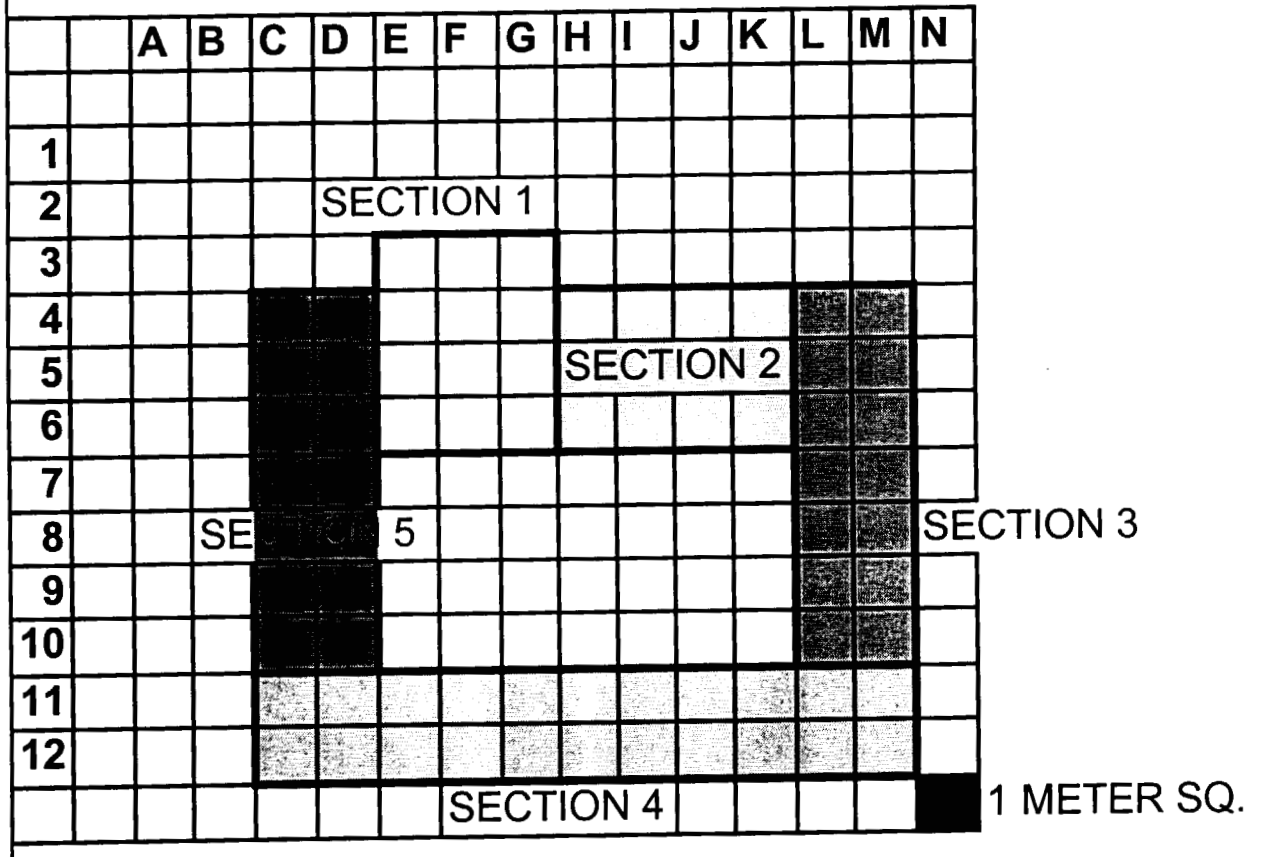


1 METER SQ.

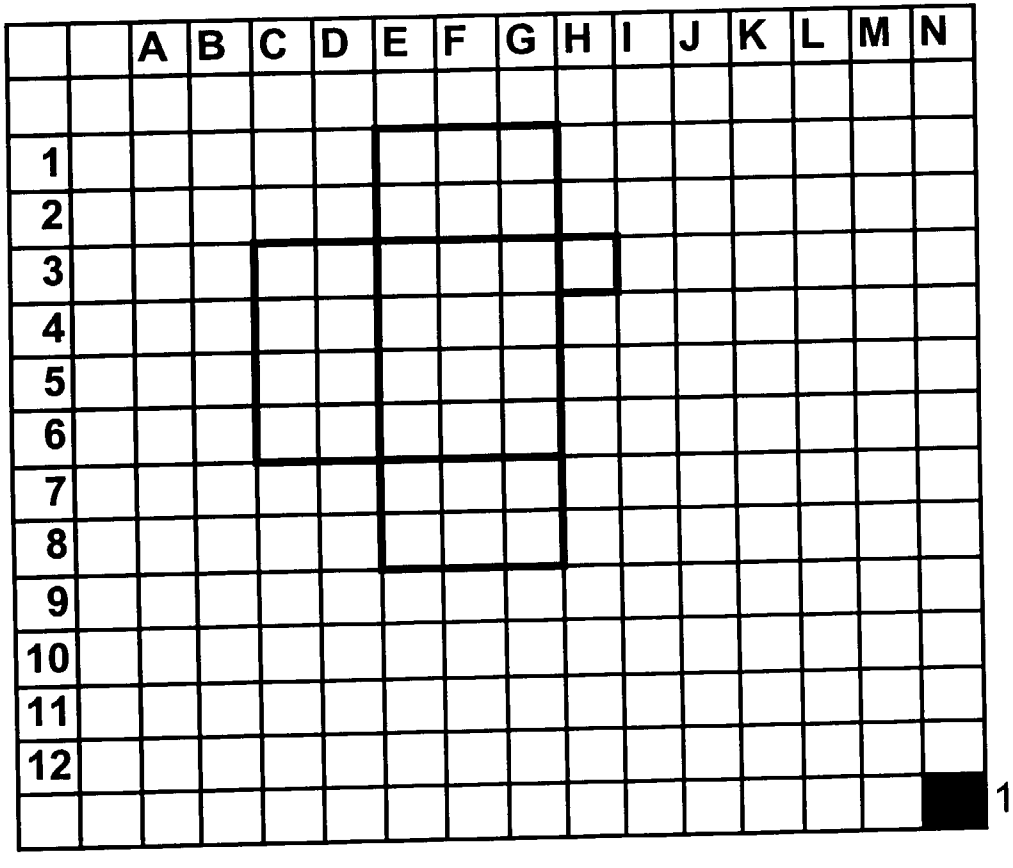
AREA AA - (SECTION 3) - ADJACENT HALLWAY
NON - IMPACT AREA



AREA AB - SECTION LAYOUT - OUTSIDE LAB HALLWAY - LANDING, STAIRS, SIDEWALK AND WALLS - NON - IMPACT AREA

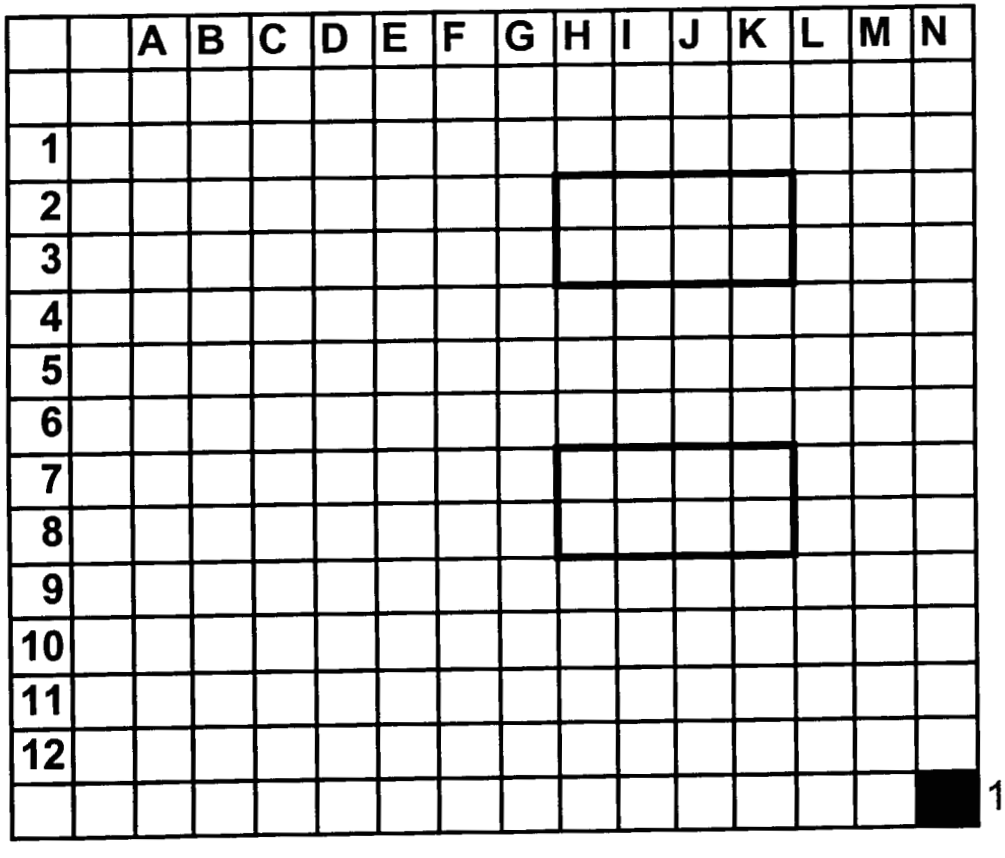


AREA AB - (SECTION 1) - LANDING & WALLS
NON - IMPACT AREA



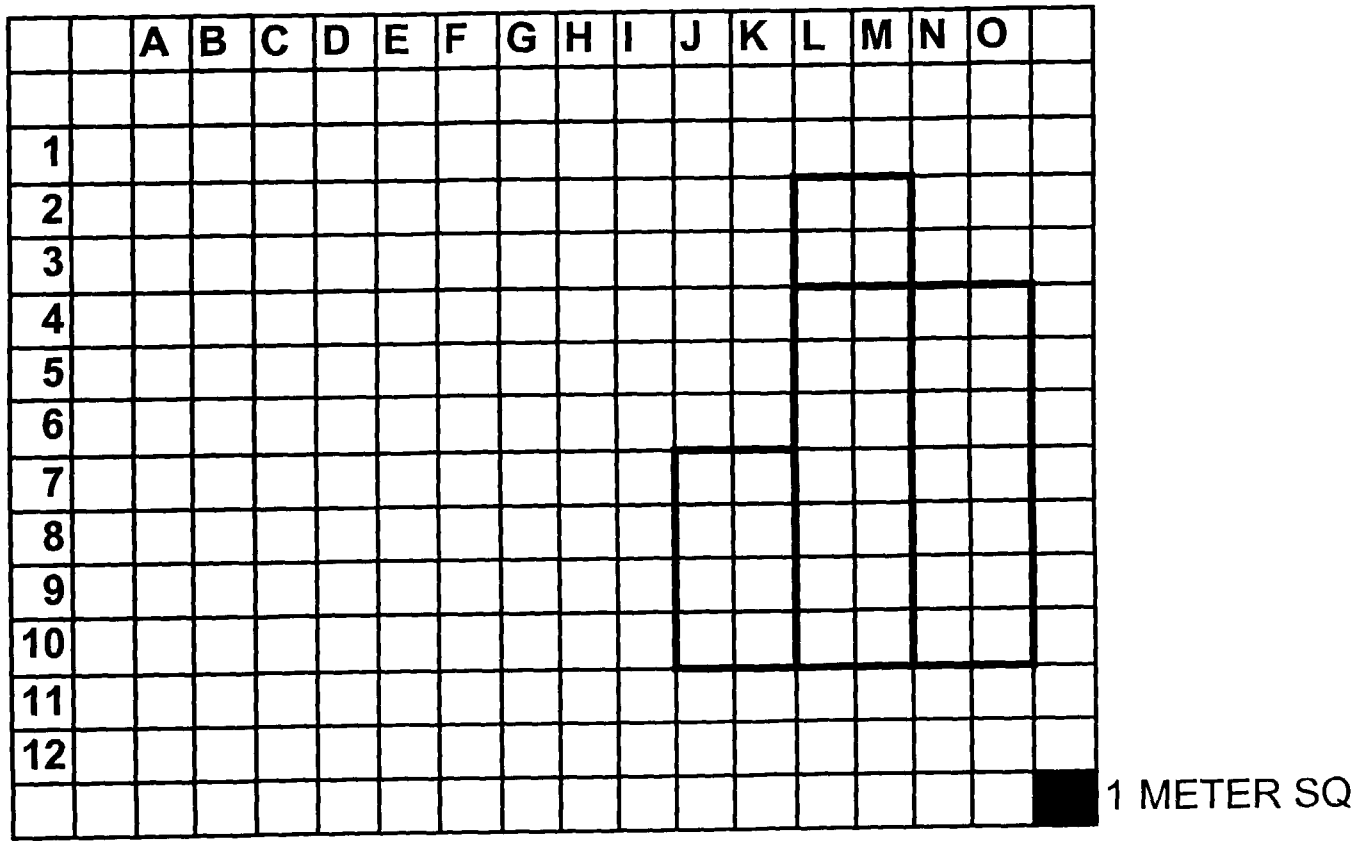
1 METER SQ.

AREA AB - (SECTION 2) - STAIRS & WALLS
NON - IMPACT AREA

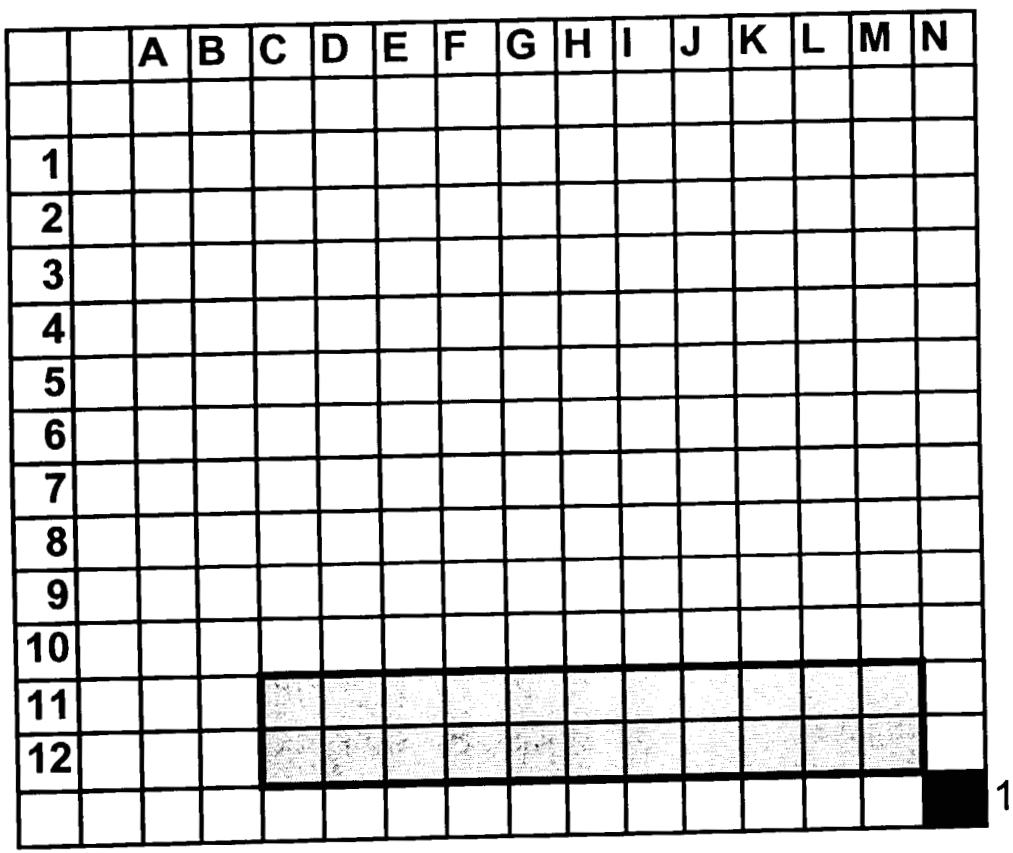


1 METER SQ.

AREA AB - (SECTION 3) - STAIRS, LANDING & WALLS
NON - IMPACT AREA

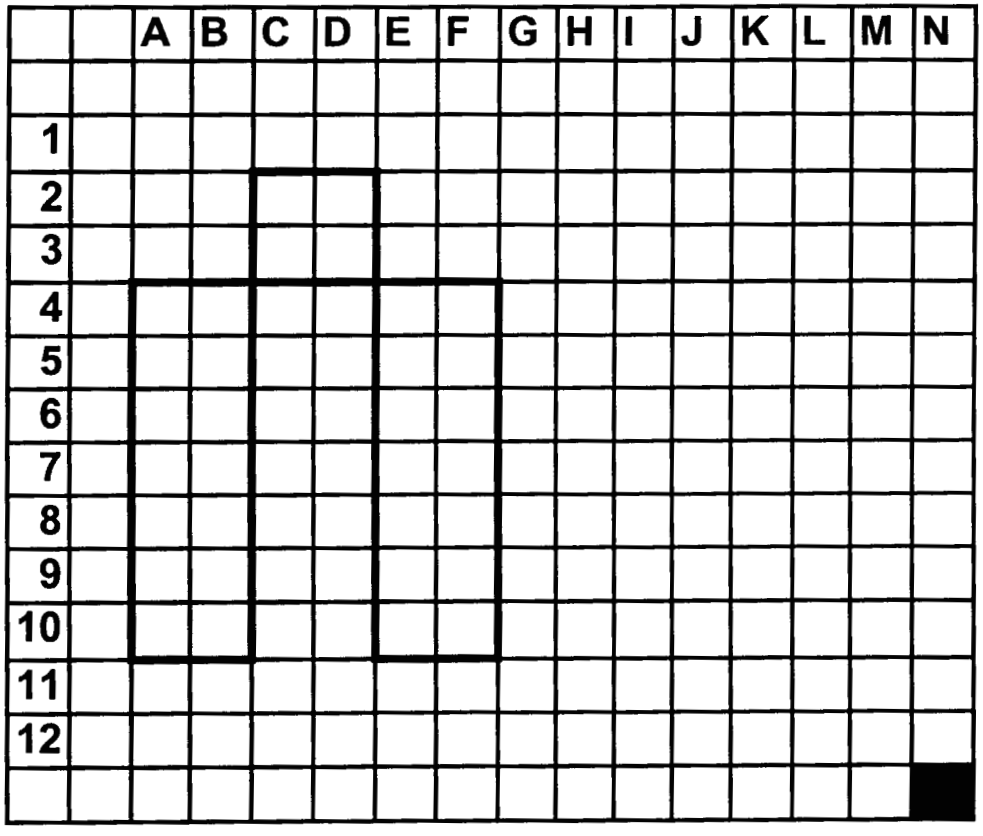


AREA AB - (SECTION 4) - SIDEWALK
NON - IMPACT AREA



1 METER SQ.

AREA AB - (SECTION 5) - SIDEWALK & WALLS - NON - IMPACT AREA



1 METER SQ.

Attachment 2

88-040

BASELINE

WED AUG 31, 1988GROUP E SWIPES FROM THE NEW ACADEMIC FACILITY, 1-8= VAULT, 9-14= LAB 7

SAMPLE	LOCATION	TIME	ALPHA	BETA	GAMMA	ALPHA	BETA	GAMMA
CODE	LAB		CPM	CPM	CPM	DPM	DPM	DPM
1 88-040	0	14:36:45	-0.25	1.72	-1.45	-0.13	9.39	-5.15
2 88-040	0	14:46:58	0.25	0.92	-1.95	0.13	5.02	-6.93
3 88-040	0	14:57:12	-0.25	1.12	-1.45	-0.13	6.12	-5.15
4 88-040	0	15:07:27	-0.25	-0.08	-1.95	-0.13	-0.43	-6.93
5 88-040	0	15:17:41	0.25	1.42	0.45	0.41	7.75	1.59
6 88-040	0	15:27:53	-0.25	0.42	-2.55	-0.41	2.29	-9.06
7 88-040	0	15:56:30	0.25	0.02	4.35	0.13	0.10	15.46
8 88-040	0	16:06:43	-0.25	0.52	-4.45	-0.13	2.84	-15.81
9 88-040	0	16:16:56	0.25	0.42	1.95	0.13	2.29	6.93
10 88-040	0	16:27:09	[illegible]	0.62	-6.25	[illegible]23	3.38	-22.21
11 88-040	0	16:37:22	[illegible]	0.32	0.25	0[illegible]85	1.74	0.88
12 88-040	0	16:47:35	-0.25	1.22	-4.95	-0.13	6.66	-17.59
13 88-040	0	16:57:48	0.25	0.32	-1.75	0.41	1.74	-6.22
14 88-040	0	17:08:01	-0.25	1.02	-0.45	-0.41	5.57	-1.59

DOS READY

OPERATION COMPLETE

11 33-040	0	09:46:06	0.05	1.62	4.65	0.13	3.85	16.53

M

88-040

THU SEP 01, 1988GROSS WIPES FROM THE NEW ACADEMIC FACILITY, 1-8= VAULT, 9-14= LAB 7

SAMPLE	LOCATION	TIME	ALPHA	BETA	GAMMA	ALPHA	BETA	GAMMA
CODE	LAB		CPM	CPM	CPM	DPM	DPM	DPM
10 88-040	1	08:25:05	0.45	2.82	-4.75	1.23	15.40	-16.88
11 88-040	1	08:25:18	-0.05	0.72	-1.35	-0.13	3.93	-4.79
12 88-040	1	08:45:21	0.35	1.62	0.55	0.95	8.85	1.95

OPERATION COMPLETE

THU SEP 01, 1988GROSS WIPES FROM THE NEW ACADEMIC FACILITY, 1-8= VAULT, 9-14= LAB 7

SN	SAMPLE CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
10	88-040	1	08:55:50	0.25	0.82	5.15	0.69	4.48	18.30
11	88-040	1	09:25:44	0.05	0.52	0.35	0.13	2.84	1.24

OPERATION COMPLETE

OPERATION COMPLETE

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OPERATION COMPLETE

CONTAMINATION/RADIATION SURVEY REPORT	DATE	TIME START	TIME COMPL	PAGE 1 OF 2	SURVEY NO.	NO. OF SAMPLES
	14 Nov 88	0830	0930		88-049	25

LOCATION: Bg 1081 Vault + Analysis lab.

REASON FOR SURVEY: PROCEDURE NO. HP SOP.

☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☐ ROUTINE

SURVEYOR: Sgt Jones

REVIEWER: TITLE Kemp HP

PHONE 5044

☒ NO ACTION REQ'D ☐ CIRCLED READINGS - DECONTAMINATE/RES

PERMISSIBLE LEVELS
- ☐ <220 dpm/100 cm² ALPHA
- ☐ <2200 dpm 100 cm² BETA-GAMMA
- ☐ OTHER ____

CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA LB 5100	BETA-GAMMA LB 5100	
INSTRUMENT SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	NEUTRON

SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY	
SOURCE ID	ALPHA Po-210	BETA-GAMMA e-M Cs-137	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr
INSTRUMENT EFFICIENCY	38.32 %	β 17.88 · γ 27.34 %	%	%
BACKGROUND	0.16 cpm	1.29 ~~1.44~~ cpm	cpm	mR/hr

LOWER LIMITS OF DETECTION

2 MINUTE COUNTS	ALPHA	BETA-GAMMA
BG		
LC		
LD		
LQ		

5 MINUTE COUNTS	ALPHA	BETA-GAMMA
BG		
LC		
LD		
LQ		

REMARKS: LLD α = 0.59 cpm β = 1.67 cpm γ = 11.56 cpm.

counted on LB 5100 (TN)

SAMPLE	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER ____ GROSS	ALPHA ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ Cs-137 ☐ OTHER ____ GROSS	BETA-GAMMA ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM ☐	ITEM OR LOCATION
1						Vault - Random
2						sampling.
3						
4						Thermoluminescent badges - one per
5						station.
6						Survey diagrams not
7						available at this time.
8						
9						
10						
1						
2						
3						
4						
5						
8						
9						
10						

1	88-049	0	09:51:14	0.24	0.31	-0.29	0.83	6.65	-6.69
2	88-049	0	09:22:01	1.04	0.11	-1.09	0.10	11.24	-3.54
3	88-049	0	9:42:14	.46	1....	...	1....	2.42	...
4	88-049	0	10:10:03	-0.06	0.21	-0.41	-0.15	...	...
5	88-049	0	...:...:41	0.04	0.41	-1.09	0.10	...26	-1....
6	88-049	0	11:17:59	-0.16	0.01	-0.41	-0.15	0.05	-1.76
7	88-049	0	10:53:02	-0.16	-0.01	-0.39	-0.41	0.05	-1.46
8	88-049	0	10:21:40	-0.02	-0.59	...1	-0.15	-0.39	0.42
9	88-049	0	10:...:02	0.04	0.01	...71	0.10	0.05	0.61
10	88-049	0	10:...:47	-0.16	0.41	-0.39	-0.41	0.25	-28.64
11	88-049	0	11:44:02	-0.06	-0.31	0.83	-0.15	-1.18	0.09
12	88-049	0	11:14:15	0.14	-0.39	-1.59	0.36	-1.69	-2.15
13	88-049	0	11:14:29	-0.06	0.81	-0.39	-0.15	4.53	-5.06
14	88-049	0	11:14:43	0.04	0.21	-0.05	0.10	1.17	-16.61
15	88-049	0	11:44:58	-0.16	0.41	0.01	-0.41	2.29	3.69
16	88-049	0	11:55:09	0.04	0.01	0.71	0.10	0.05	2.59
17	88-049	0	12:05:23	-0.06	0.01	-1.59	-0.15	0.05	-5.81
18	88-049	0	12:15:26	-0.16	-0.29	-2.79	-0.41	-1.52	-10.20
19	88-049	0	12:25:49	0.14	0.11	0.71	0.36	0.61	2.39
20	88-049	0	12:36:03	-0.05	-0.09	4.11	-0.15	-0.50	15.03
21	88-049	0	12:46:16	-0.16	0.01	1.71	-0.41	0.05	6.25
22	88-049	0	12:56:30	-0.06	-0.29	1.01	-0.15	-1.52	3.69
23	88-049	0	13:06:42	-0.16	0.61	0.81	-0.41	4.53	2.96
	88-049	0	13:16:56	0.04	0.01	0.41	0.10	0.05	1.49
	88-049	0	13:27:10	0.04	-0.19	1.01	0.10	-1.06	3.69
2	88-049	0	14:33:26	-0.06	-0.19	2.41	-0.15	-1.06	8.61

DOS READY

CONTAMINATION/RADIATION SURVEY REPORT	DATE	TIME START	TIME COMPL	PAGE 1 OF 3	SURVEY NO.	NO. OF SAMPLES
	9 Dec 88	0940	1346		88-055	25

LOCATION	REASON FOR SURVEY: PROCEDURE NO. HPO SOP	SURVEYOR:
Calibration Surveys Upon Inst. Lab + Vault.	☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☒ ROUTINE	Sgt Torres

REVIEWER: TITLE Comp HP	PHONE 5044	☒ NO ACTION REQ'D	☐ CIRCLED READINGS - DECONTAMINATE/RESURVEY

PERMISSIBLE LEVELS		CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	
☐ ≤220 dpm/100 cm² ALPHA ☐ <2200 dpm 100 cm² BETA-GAMMA ☐ OTHER		INSTRUMENT SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	NEUTRON

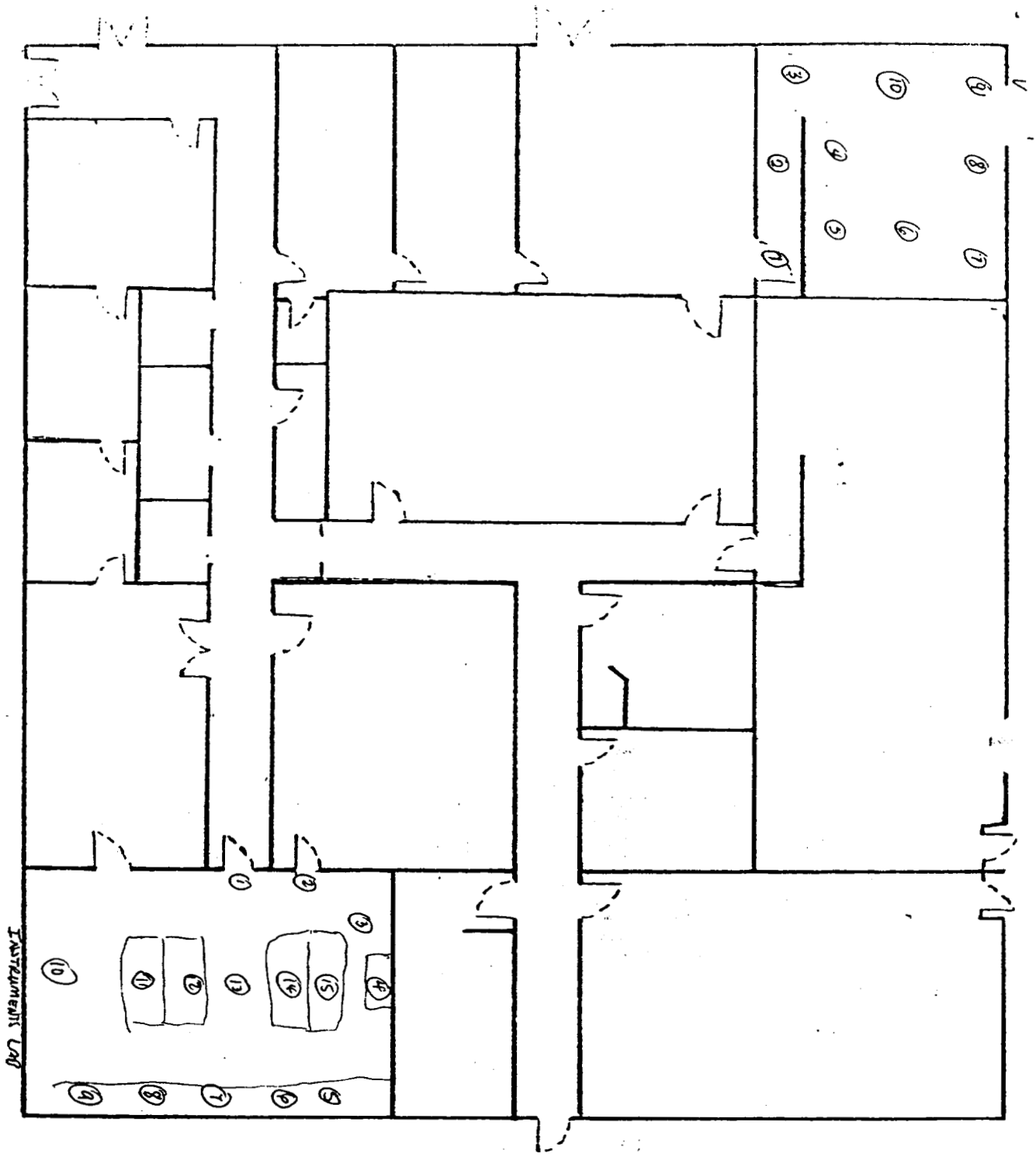
SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION		
SOURCE ID	ALPHA Po-210	BETA-GAMMA C-14 / Cs-137	ALPHA	BETA-GAMMA	2 MINUTE COUNTS	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr	BG		
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr	LC		
INSTRUMENT EFFICIENCY	43.36 %	17.86 / 27.41 %	%	%	LD		
BACKGROUND	0.15 cpm	1.27 / 4.38 cpm	cpm	mR/hr	LQ		
					5 MINUTE COUNTS	ALPHA	BETA-GAMMA
					BG		
					LC		
					LD		
					LQ		

REMARKS: Counted with LB 5100 (TENNELEC) system. For complete information on system efficiency, see the Dec 88

S E	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER GROSS	ALPHA ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ Cs-137 ☐ OTHER GROSS	BETA-GAMMA ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM	ITEM OR LOCATION
1						1-15 Instrument Labs
2						16-25 Vault
3						see attached sketch for
4						Locations.
5						
6						
7						
8						
9						
10						
1						
2						
3						
4						
5						
8						
9						
10						

	DE	LAB							
1	88-055	1411	09:40:42	0.15	1.32	-0.38	1.18	8.35	-1.26
2	88-055	1445	09:50:56	-0.15	1.23	0.98	-0.11	7.44	1.30
3	88-055	1476	10:01:09	0.25	0.13	-1.88	0.37	0.72	-7.80
4	88-055	1177	10:11:13	-0.05	0.23	3.32	-0.11	1.28	18.11
5	88-055	1515	10:21:27	-0.05	0.13	-0.38	-0.11	0.72	-1.21
6	88-055	1501	10:31:31	-0.05	0.23	-0.38	-0.11	1.28	-1.71
7	88-055	1511	10:41:45	-0.15	0.13	0.62	-0.34	0.72	3.42
8	88-055	1544	10:51:59	0.15	0.33	-0.38	0.11	1.84	-2.11
9	88-055	1417	11:02:13	-0.15	-0.27	-0.38	-0.34	-1.51	-2.11
10	88-055	1394	11:12:26	0.15	0.13	2.72	0.34	0.72	15.04
11	88-055	1379	11:22:30	-0.15	0.13	-2.48	-0.34	0.72	-13.74
12	88-055	1366	11:32:12	0.15	1.02	-0.23	0.34	5.64	-1.31
13	88-055	1439	11:42:27	0.05	0.63	-0.28	0.11	3.52	-2.21
14	88-055	1424	11:53:41	-0.05	-0.07	-2.08	-0.11	-0.39	-7.56
15	88-055	1446	12:03:55	0.15	-0.27	-2.48	0.34	-1.51	-13.69
16	88-055	1340	12:14:08	-0.15	0.73	-1.58	-0.34	4.08	-5.76
17	88-055	1481	12:24:22	0.15	-0.37	-1.68	0.34	-1.51	-6.65
18	88-055	1336	12:34:35	-0.05	-0.27	-1.38	-0.11	-1.51	-5.03
19	88-055	1881	12:44:50	-0.05	-0.07	-3.88	-0.11	-0.39	-14.15
20	88-055	1821	12:55:04	-0.15	-0.27	-2.28	-0.34	-1.51	-8.31
21	88-055	1504	13:05:18	-0.15	0.53	1.02	-0.34	2.96	3.72
22	88-055	1492	13:15:31	-0.15	0.23	0.72	-0.34	1.28	2.62
23	88-055	1506	13:25:45	0.05	0.43	-0.08	0.11	2.40	-0.29
	3-055	1527	13:35:59	0.05	0.13	3.42	0.11	0.72	12.47
	88-055	1440	13:46:13	0.05	0.13	-2.38	0.11	0.72	-8.68

DDS READY



88-055

9 Dec 88

Attachment 3

CONTAMINATION/RADIATION SURVEY REPORT	DATE 4 Jan 89 12 Jan 89	TIME START —	TIME COMPL	PAGE 1 OF 4	SURVEY NO. 89-001	NO. OF SAMPLES 75
LOCATION Bldg 1081 HLAC Area	REASON FOR SURVEY: PROCEDURE NO. HPO SOP. ☐ SOIL ☑ WIPE ☐ SOURCE ☐ SPECIAL ☐ ROUTINE				SURVEYOR: Jeff Torres.	
REVIEWER: TITLE Kong HP	PHONE	☒ NO ACTION REQ'D	☐ CIRCLED READINGS · DECONTAMINATE/RESURVEY			

PERMISSIBLE LEVELS	CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	NEUTRON
☐ ≤220 dpm/100 cm² ALPHA ☐ <2200 dpm 100 cm² BETA-GAMMA ☐ OTHER			LB5100	LB5100	
	INSTRUMENT SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA E-520 Sn 3812	NEUTRON

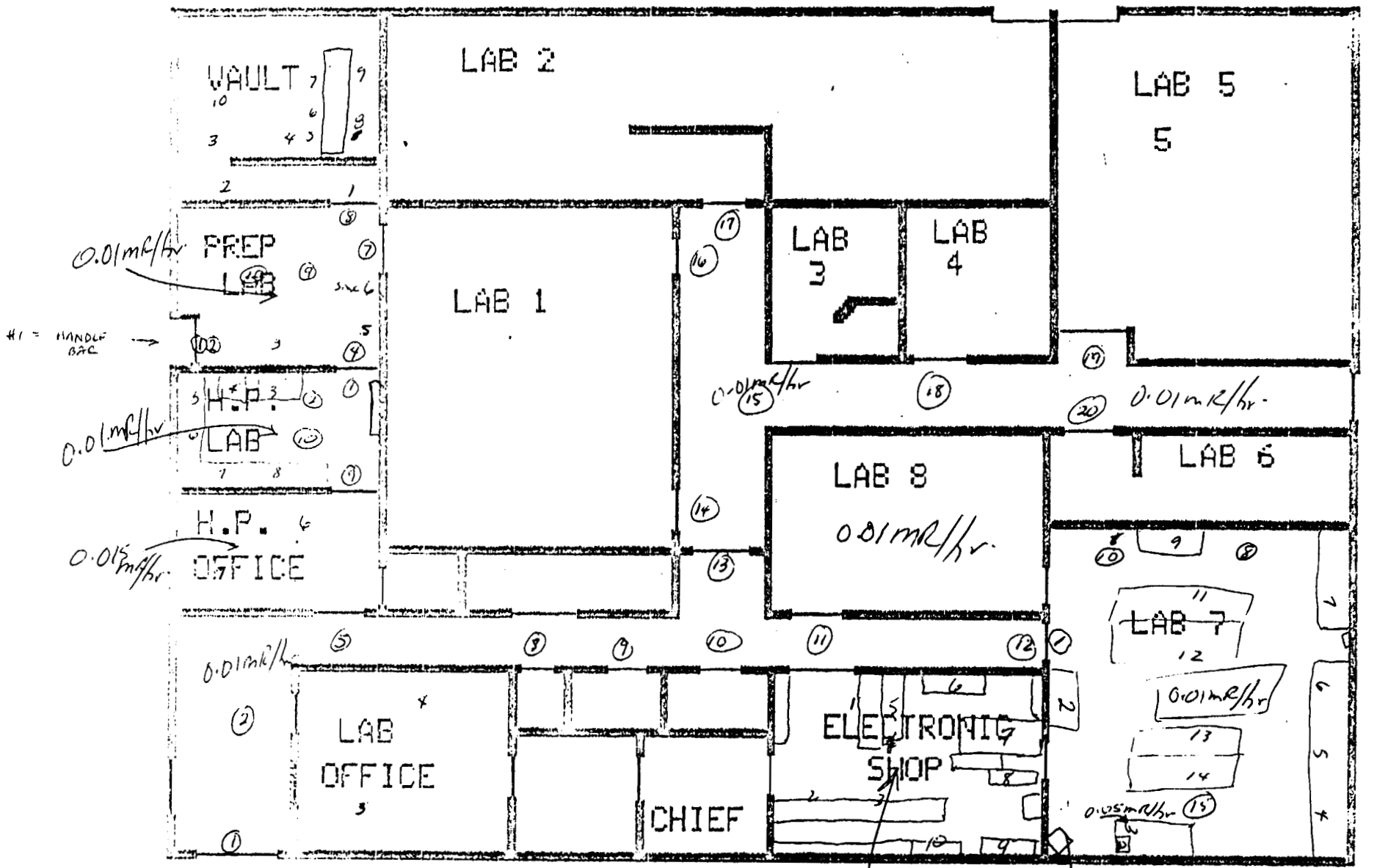
SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY	
SOURCE ID	ALPHA Po-210	BETA-GAMMA C-14 - Cs-137	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr
INSTRUMENT EFFICIENCY	47.27 %	17.81 / 57.46 %	%	%
BACKGROUND	cpm	cpm	cpm	mR/hr

REMARKS: Efficiency data for the LB5100 can be found in the Efficiency/Background files for LB5100 for Jan 89. E-520 survey instrument was checked with the HP check set. and logged in the log book. αLLD 1.15, βLLD 9.32, γLLD 41.97 (dpms)

LOWER LIMITS OF DETECTION	2 MINUTE COUNTS ALPHA	2 MINUTE COUNTS BETA-GAMMA	5 MINUTE COUNTS ALPHA	5 MINUTE COUNTS BETA-GAMMA
BG				
LC				
LD				
LQ				

SAMPLE	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER GROSS	ALPHA ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ Cs-137 ☐ OTHER GROSS	BETA-GAMMA ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM ☐	ITEM OR LOCATION
1						Locations are identified
2						in the computer printout
3						and the diagram for the labs
4						~~Areas~~ surveyed were..
5						Instruments Lab.
6						Vault.
7						Prep lab
8						HPO LAB
9						Instruments ~~Storage~~ ELECTRONIC SHOP Storage Room
10						Hallways & Offices
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

4 Jan 1989



1/11/89. F

Instrument survey done with E-520 Sn. 3812

Bg = 0.01 mR/hr.

THU JAN 05, 1989 GROUP D SWIPES STUART HALL 1ST SHIFT

AYS+OFFICES

SN	SAMPLE CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
1	89-001	0	09:04:22	-0.04	-0.57	[illegible]	-0.08	-5.44	0.10
2	89-001	0	09:14:36	0.26	-0.17	-4.57	0.55	-0.95	-18.09
3	89-001	0	09:24:50	-0.14	-0.17	-0.87	-0.29	-0.95	-3.16
4	89-001	0	09:35:04	-0.04	-0.37	-4.07	-0.08	-2.07	-14.82
5	89-001	0	09:45:18	0.36	0.53	0.43	0.76	2.97	1.56
6	89-001	0	09:55:32	0.16	0.53	-0.87	0.33	2.97	-3.16
7	89-001	0	10:05:45	-0.04	-0.27	-4.77	-0.08	-1.51	-17.37
8	89-001	0	10:15:59	0.06	-0.17	0.63	0.12	-0.95	2.29
9	89-001	0	10:26:13	0.06	-0.17	-0.27	0.12	-0.95	-0.98
10	89-001	0	10:36:27	0.06	0.93	-1.77	0.12	5.22	-6.44
11	89-001	0	10:46:41	0.05	0.43	0.63	0.12	2.41	2.29
12	89-001	0	10:56:55	-0.14	-0.17	-0.77	-0.29	-0.95	-2.80
13	89-001	0	11:07:09	-0.04	0.23	-0.77	-0.09	1.29	-2.80
14	89-001	0	11:17:23	0.06	-0.07	-1.27	0.12	-0.39	-4.62
15	89-001	0	11:27:36	-0.04	0.63	-1.57	-0.08	3.53	-5.71
16	89-001	0	11:37:50	0.06	-0.07	-0.77	0.12	-0.39	-2.80
17	89-001	0	11:48:04	-0.04	-0.27	-2.67	-0.08	-1.51	-9.72
18	89-001	0	11:58:18	0.16	-0.37	0.43	0.33	-2.07	1.56
19	89-001	0	12:08:32	-0.04	0.23	-2.17	-0.08	1.29	-7.90
20	89-001	0	12:18:46	0.16	-0.37	-1.57	0.33	-2.07	-5.71
21	89-001	0	12:29:00	-0.06	0.03	-2.87	0.12	0.16	-10.45
22	89-001	0	12:39:15	-0.04	0.73	-2.37	-0.08	4.09	-8.63
23	89-001	0	12:49:29	0.16	0.13	-0.97	0.33	0.72	-3.53
24	89-001	0	12:59:43	-0.14	0.03	-1.77	-0.29	0.16	-6.44
25	89-001	0	13:09:57	-0.14	-0.37	-3.67	-0.29	-2.07	-13.36
26	89-001	0	13:15:11	-0.04	-0.27	-2.27	-0.08	-1.51	-8.26
27	89-001	0	13:25:25	-0.04	0.13	-4.87	-0.08	0.72	-17.73
28	89-001	0	13:35:39	0.06	-0.37	-3.97	0.12	-2.07	-14.45
29	89-001	0	13:45:53	0.26	0.03	-5.07	0.55	0.16	-18.45
30	89-001	0	13:56:07	-0.04	0.63	-3.27	-0.08	3.53	-11.80
31	89-001	0	14:06:21	0.06	-0.17	-6.67	0.12	-0.95	-24.28
32	89-001	0	14:16:34	-0.14	0.03	-0.63	-0.29	0.16	-2.26
33	89-001	0	14:26:48	-0.04	0.73	-1.57	-0.08	4.09	-5.71
34	89-001	0	14:37:02	-0.14	-0.17	-0.53	-0.29	-0.95	-1.93
35	89-001	0	14:47:16	-0.14	-0.03	-3.77	-0.29	-0.16	-13.73
36	89-001	0	14:57:29	-0.14	-0.07	-3.47	-0.29	-0.39	-12.64
37	89-001	0	15:07:43	0.26	0.23	-3.57	0.55	1.29	-13.00
38	89-001	0	15:17:57	-0.06	-0.27	-4.07	-0.12	-1.51	-14.82
39	89-001	0	15:28:10	-0.04	-0.13	1.13	-0.08	-0.76	4.11
40	89-001	0	15:38:24	-0.16	0.23	-0.53	-0.33	1.29	-1.93
41	89-001	0	15:48:38	-0.04	-0.27	-3.17	-0.08	-1.51	-11.54
42	89-001	0	15:58:52	-0.14	0.03	-0.37	-0.29	0.16	-1.35
43	89-001	0	16:09:06	-0.14	-0.07	-5.37	-0.29	-0.39	-19.55
44	89-001	0	16:19:20	0.06	-0.27	-5.77	0.12	-1.51	-21.00
45	89-001	0	16:29:35	-0.04	0.13	0.93	-0.08	0.72	3.38
46	89-001	0	16:39:49	-0.04	0.43	-1.87	-0.08	2.41	-6.80
47	89-001	0	16:50:03	-0.04	-0.57	-2.07	-0.08	-3.20	-7.53
48	89-001	0	17:00:16	-0.14	-0.27	-0.47	-0.29	-1.51	-1.71
49	89-001	0	17:10:30	-0.04	-0.27	-3.97	-0.08	-1.51	-14.45
50	89-001	0	17:20:44	-0.04	0.83	-1.57	-0.08	4.66	-5.71
51	89-001	0	17:30:58	-0.04	-0.17	-2.67	-0.08	-0.95	-9.72
52	89-001	0	17:41:12	0.16	-0.17	-2.27	0.33	-0.95	-8.26
53	89-001	0	17:51:26	-0.04	0.33	-1.57	-0.08	1.85	-5.71
54	89-001	0	18:01:40	-0.14	-0.47	-2.97	-0.29	-2.63	-10.81
55	89-001	0	18:11:54	0.06	0.83	-1.57	0.12	4.66	-5.71
56	89-001	0	18:22:08	-0.04	-0.37	-5.07	-0.08	-2.07	-18.45
57	89-001	0	18:32:22	0.16	-0.07	-3.47	0.33	-0.39	-12.64
58	89-001	0	18:42:36	0.06	-0.27	-3.67	0.12	-1.51	-13.36

2 of 2

56	89-001	0	18:22:08	-0.04	-0.37	-1.97	-0.08	-2.07	-7.17
57	89-001	0	18:32:22	-0.14	-0.07	-2.27	-0.33	-0.39	-8.26
58	89-001	0	18:42:36	-0.04	-0.37	-2.57	-0.12	-2.07	-9.35
59	89-001	0	18:52:50	-0.14	-0.47	-0.77	-0.29	-2.63	-2.80
60	89-001	0	19:03:04	-0.04	0.33	-5.17	-0.08	1.85	-18.82
61	89-001	0	19:13:18	-0.04	-10.43	-2.77	-0.08	2.41	-10.08
62	89-001	0	19:23:32	-0.04	0.23	0.53	-0.08	1.29	1.93
63	89-001	0	19:33:46	-0.14	0.13	0.03	-0.29	0.72	0.10
64	89-001	0	19:44:00	-0.04	-0.37	-0.67	-0.08	-2.07	-2.43
65	89-001	0	19:54:13	-0.14	-0.17	-2.57	-0.29	-0.95	-9.35
66	89-001	0	20:04:28	-0.14	-0.07	-0.47	-0.29	-0.39	-1.71
67	89-001	0	20:14:42	0.16	-0.47	0.03	0.33	-2.63	0.10
68	89-001	0	20:24:56	-0.16	-0.03	-4.72	-0.33	0.16	-17.37
69	89-001	0	20:35:09	-0.14	0.23	-4.97	-0.29	1.29	-18.09
70	89-001	0	20:45:23	-0.14	0.03	-5.27	-0.29	0.16	-19.19
71	89-001	0	20:55:37	-0.14	0.23	-6.07	-0.29	1.29	-22.10
72	89-001	0	21:05:50	-0.04	-0.47	-1.67	-0.08	-2.63	-6.08
73	89-001	0	21:16:05	-0.04	-0.47	-3.07	-0.08	-2.63	-11.17
74	89-001	0	21:26:19	-0.04	0.33	-2.87	-0.08	1.85	-10.45
75	89-001	0	21:36:33	-0.14	0.03	-0.93	-0.29	0.16	-3.38

3 of 4

DOS READY

CONTAMINATION/RADIATION SURVEY REPORT	DATE 2/2/89	TIME START	TIME COMPL	PAGE 1 OF 3	SURVEY NO. 88-003	NO. OF SAMPLES 75
LOCATION Bldg 1081/Sicherl Hall. LABS	REASON FOR SURVEY: PROCEDURE NO. HPO SOP. ☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☒ ROUTINE				SURVEYOR: Sgt Torres.	
REVIEWER: TITLE HP	PHONE	☐ NO ACTION REQ'D ☐ CIRCLED READINGS - DECONTAMINATE/RESURVEY				

PERMISSIBLE LEVELS		CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	
☐ ≤220 dpm/100 cm² ALPHA ☐ ≤2200 dpm 100 cm² BETA-GAMMA ☐ OTHER		INSTRUMENT SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA E-520, Sn 3812	NEUTRON

SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION		
SOURCE ID	ALPHA Po-210	BETA-GAMMA C-14 - Cs-137	ALPHA	BETA-GAMMA	2 MINUTE COUNTS	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	0.9 mR/hr	BG		
INSTRUMENT RESPONSE	cpm	cpm	cpm	0.9 mR/hr	LC		
INSTRUMENT EFFICIENCY	34.86 %	17.81 - 27.18%	%	SEE instrument check log %	LD		
BACKGROUND	0.14 cpm	1.29 - 60.92 cpm	cpm	0.02 mR/hr	LQ		
					5 MINUTE COUNTS	ALPHA	BETA-GAMMA
					BG		
					LC		
					LD		
					LQ		

REMARKS: Counted with LB5100, α,β,γ counting system. For efficiency data see the Feb 89 - IDN or current resp efficiency data file. LLD_α = 1.58 dpm, LLD_β = 9.41 dpm LLD_γ = 42.31 dpm.

SAMPLE	ALPHA EQUIV ☐ Am 241 ☒ OTHER Po-210 GROSS ACTIVITY		BETA-GAMMA EQUIV ☐ Co-60 ☒ Cs-137 ☒ OTHER β - C-14 GROSS ACTIVITY		MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM ☐	ITEM OR LOCATION
1	SEE ATTACHED	REPORT	(computer	generated)		See attached sketch for Locations.
2						
3						
4						
5						
6						
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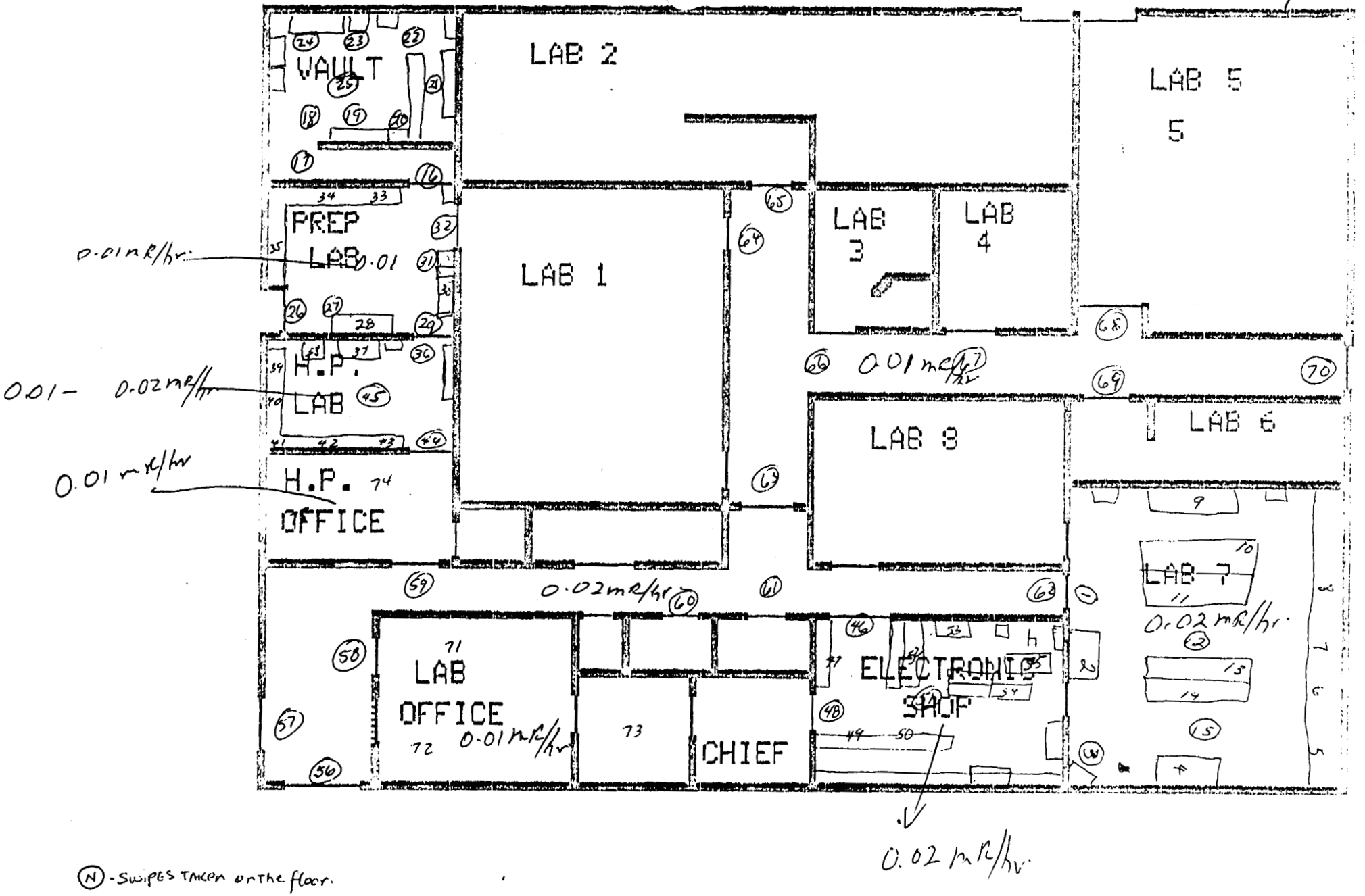

(N) - Swipes taken on the floor.

AYE+JAFICES

SAMPLE SN	LOCATION CODE	LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
	89-003	0	10:25:37	0.16	0.21	0.68	0.45	1.17	3.23
	89-003	0	10:35:51	-0.14	-0.69	-4.62	-0.40	-4.99	-16.99
	89-003	0	10:46:05	0.16	1.01	-1.22	0.45	5.67	-4.48
4	89-003	0	10:56:19	-0.04	0.11	-2.82	-0.11	0.61	-10.37
5	89-003	0	11:06:33	-0.14	0.21	-2.82	-0.40	1.17	-10.37
6	89-003	0	11:16:47	0.16	-0.39	-2.92	0.45	-2.18	-10.74
7	89-003	0	11:27:01	-0.04	0.21	-6.62	-0.11	1.17	-24.35
8	89-003	0	11:37:15	-0.04	0.61	1.18	-0.11	3.42	4.34
9	89-003	0	11:47:29	-0.14	-0.69	-7.12	-0.40	-3.87	-26.19
10	89-003	0	11:57:43	-0.14	-0.09	-2.62	-0.40	-0.50	-9.63
11	89-003	0	12:07:57	-0.14	-0.39	-3.62	-0.40	-2.18	-13.31
12	89-003	0	12:18:11	0.26	0.71	-0.12	0.74	3.98	-0.44
13	89-003	0	12:28:25	-0.14	0.11	-1.42	-0.40	0.61	-5.22
14	89-003	0	12:38:39	-0.04	0.21	-0.02	-0.11	1.17	-0.07
15	89-003	0	12:48:53	-0.04	0.11	-1.82	-0.11	0.61	-6.69
16	89-003	0	12:59:07	-0.14	0.11	-3.12	-0.40	0.61	-11.47
17	89-003	0	13:09:22	0.16	-0.19	-0.52	0.45	-1.06	-1.91
18	89-003	0	13:19:36	-0.04	-0.29	-1.62	-0.11	-1.62	-5.96
19	89-003	0	13:29:50	0.16	-0.29	-1.42	0.45	-1.62	-5.22
20	89-003	0	13:40:04	0.06	-0.29	3.08	0.17	-1.62	11.33
21	89-003	0	13:50:18	-0.04	0.21	-5.32	-0.11	1.17	-19.57
22	89-003	0	14:00:32	-0.14	0.01	1.78	-0.40	0.05	6.54
23	89-003	0	14:10:46	0.06	0.71	1.88	0.17	3.98	6.91
24	89-003	0	14:21:00	-0.14	0.41	-1.02	-0.40	2.30	-3.75
25	89-003	0	14:31:15	0.16	-0.39	1.08	0.45	-2.18	3.97
26	89-003	0	14:41:29	-0.04	-0.09	-2.02	-0.11	-0.50	-7.43
27	89-003	0	14:51:43	-0.04	0.61	-1.02	-0.11	3.42	-3.75
28	89-003	0	15:01:57	0.06	0.31	-2.92	0.17	1.74	-10.74
29	89-003	0	15:12:11	-0.14	-0.69	0.48	-0.40	-3.87	1.76
30	89-003	0	15:22:25	-0.04	-0.09	1.38	-0.11	-0.50	5.07
31	89-003	0	15:32:40	-0.14	-0.19	-4.72	-0.40	-1.06	-17.36
32	89-003	0	15:42:54	0.06	-0.59	-0.12	0.17	-3.31	-0.44
33	89-003	0	15:53:08	-0.04	-0.19	-1.52	-0.11	-1.06	-5.59
34	89-003	0	16:03:22	-0.04	0.01	-3.62	-0.11	0.05	-13.31
35	89-003	0	16:13:36	0.06	-0.19	-3.82	0.17	-1.06	-14.05
36	89-003	0	16:23:50	-0.04	-0.69	-3.82	-0.11	-3.87	-14.05
37	89-003	0	16:34:04	-0.04	0.41	-1.92	-0.11	2.30	-7.06
38	89-003	0	16:44:18	-0.04	-0.49	-4.22	-0.11	-2.75	-15.52
39	89-003	0	16:54:32	-0.14	-0.29	-1.62	-0.40	-1.62	-5.96
40	89-003	0	17:04:46	-0.14	-0.19	-5.62	-0.40	-1.06	-20.67
41	89-003	0	17:15:00	-0.14	-0.39	-2.82	-0.40	-2.18	-10.37
42	89-003	0	17:25:14	0.06	-0.29	-5.72	0.17	-1.62	-21.04
43	89-003	0	17:35:28	-0.14	-0.29	-4.32	-0.40	-1.62	-15.89
44	89-003	0	17:45:43	0.06	0.21	-1.12	0.17	1.17	-4.12
45	89-003	0	17:55:57	-0.14	0.01	-2.52	-0.40	0.05	-9.27
46	89-003	0	18:06:11	-0.14	-0.19	-0.32	-0.40	-1.06	-1.17
47	89-003	0	18:16:25	-0.14	0.41	-0.42	-0.40	2.30	-1.54
48	89-003	0	18:26:39	0.26	-0.09	-2.82	0.74	-0.50	-10.37
49	89-003	0	18:36:53	-0.14	-0.39	0.18	-0.40	-2.18	0.66
50	89-003	0	18:47:07	-0.14	0.11	1.68	-0.40	0.61	6.18
51	89-003	0	18:57:21	-0.14	-0.29	1.68	-0.40	-1.62	6.18
	89-003	0	19:07:35	0.06	0.31	-2.72	0.17	1.74	-10.00
	89-003	0	19:17:49	0.06	-0.19	-4.82	0.17	-1.06	-17.73
	89-003	0	19:28:04	-0.04	-0.09	-0.52	-0.11	-0.50	-1.91
55	89-003	0	19:38:18	0.16	-0.39	1.28	0.45	-2.18	4.70
	89-003	0	08:52:38	0.06	-0.09	-2.62	0.17	-0.50	-9.63
	89-003	0	09:02:52	0.06	0.01	-3.02	0.17	0.05	-11.21
		0	09:13:06	0.06	0.41		0.17	2.30	
		0	09:23:21	-0.04	-0.39		-0.11	-2.18	

47	89-003	0	18:16:25	-0.14	-0.41	-0.42	-0.40	-2.30	-1.54	
48	89-003	0	18:26:39	-0.26	-0.09	-2.82	-0.78	-0.50	-10.37	
49	89-003	0	18:36:53	-0.14	-0.39	0.18	-0.40	-2.18	0.66	
50	89-003	0	18:47:07	-0.14	0.11	1.68	-0.40	0.61	6.18	
	89-003	0	18:57:21	-0.14	-0.29	1.68	-0.40	-1.62	6.18	
	89-003	0	19:07:35	-0.06	0.31	-2.72	-0.17	1.74	-10.00	
	89-003	0	19:17:49	0.06	-0.19	-4.82	0.17	-1.06	-17.73	
	89-003	0	19:28:04	-0.04	-0.09	-0.52	-0.11	-0.50	-1.91	
55	89-003	0	19:38:18	0.16	-0.39	1.28	0.45	-2.18	4.70	
56	89-003	0	08:52:38	0.06	-0.09	-2.62	0.17	-0.50	-9.63	
57	89-003	0	09:02:52	0.06	0.01	-3.32	0.17	0.05	-12.21	
58	89-003	0	09:13:06	-0.04	-0.39	-2.08	-0.11	-2.75	-7.43	
59	89-003	0	09:23:21	-0.04	-0.39	-5.72	-0.11	-2.18	-21.04	
60	89-003	0	09:33:35	-0.14	-0.29	-0.12	-0.40	-1.62	-0.44	
61	89-003	0	09:43:49	-0.14	-0.49	1.68	-0.40	-2.75	6.18	
62	89-003	0	09:54:03	-0.04	-0.39	-3.92	-0.11	-2.18	-14.42	
63	89-003	0	10:04:17	0.06	-0.01	0.58	0.17	0.05	2.13	
64	89-003	0	10:14:31	0.16	0.21	0.68	0.45	1.17	2.50	
65	89-003	0	10:24:45	0.06	0.21	-2.32	0.17	1.17	-8.53	
66	89-003	0	10:34:59	-0.04	-0.69	-1.42	-0.11	-3.87	-5.22	
67	89-003	0	10:45:13	-0.04	-0.59	-1.82	-0.11	-3.31	-6.69	
68	89-003	0	10:55:28	0.16	-0.99	3.48	0.45	-5.55	12.80	
69	89-003	0	11:05:41	-0.04	-0.69	-0.52	-0.11	-3.87	-1.91	
70	89-003	0	11:15:55	-0.04	-0.09	-2.12	-0.11	-0.50	-7.79	
71	89-003	0	11:26:09	-0.04	-0.09	-4.22	-0.11	-0.50	-15.52	
72	89-003	0	11:36:23	-0.04	-0.59	-2.02	-0.11	-3.31	-7.43	
73	89-003	0	11:46:37	-0.04	-0.39	-4.22	-0.11	-2.18	-15.98	
74	89-003	0	11:56:51	-0.04	-0.39	-1.42	-0.11	-2.18	-5.22	
75	89-003	0	12:07:05	-0.14	-0.69	-0.02	-0.40	-3.87	-0.07	

CONTAMINATION/RADIATION SURVEY REPORT	DATE	TIME START	TIME COMPL	PAGE 1 OF 3	SURVEY NO.	NO. OF SAMPLES
	2 MAR 89	1400	—		89-008	75

LOCATION	REASON FOR SURVEY: PROCEDURE NO. HPO SOP	SURVEYOR:
Bldg 1081 & Labs.	☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☒ ROUTINE	Sgt Torres

REVIEWER: TITLE Kory, Hp	PHONE	☒ NO ACTION REQ'D	☐ CIRCLED READINGS - DECONTAMINATE/RESURVEY

PERMISSIBLE LEVELS		CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	
☐ <220 dpm/100 cm² ALPHA ☐ <2200 dpm 100 cm² BETA-GAMMA ☐ OTHER_____		INSTRUMENT SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA E520 Sn 3812	NEUTRON

SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION		
SOURCE ID	ALPHA	BETA-GAMMA	ALPHA	BETA-GAMMA	2 MINUTE COUNTS	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr	BG		
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr	LC		
INSTRUMENT EFFICIENCY	34.99 %	17.73/27.2%	%	%	LD		
BACKGROUND	cpm	cpm	cpm	mR/hr	LQ		
					5 MINUTE COUNTS	ALPHA	BETA-GAMMA
					BG		
					LC		
					LD		
					LQ		

REMARKS: Swipes are taken randomly and in accordance with HPO. SOP. Swipes are allowed to dry 24 hrs and then counted in the LB 5100 aut. system:

α LLD = 1.56 dpm β LLD = 9.42 dpm γ LLD = 42.19 dpm.

S E	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER_____ GROSS	ALPHA ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ Cs-137 ☐ OTHER_____ GROSS	BETA-GAMMA ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM ☐	ITEM OR LOCATION
1						For Location of the swipes
2						see attached diagram
3						
4						
5						Readings taken w/ E-520
6						Sn 3812 @ waste level.
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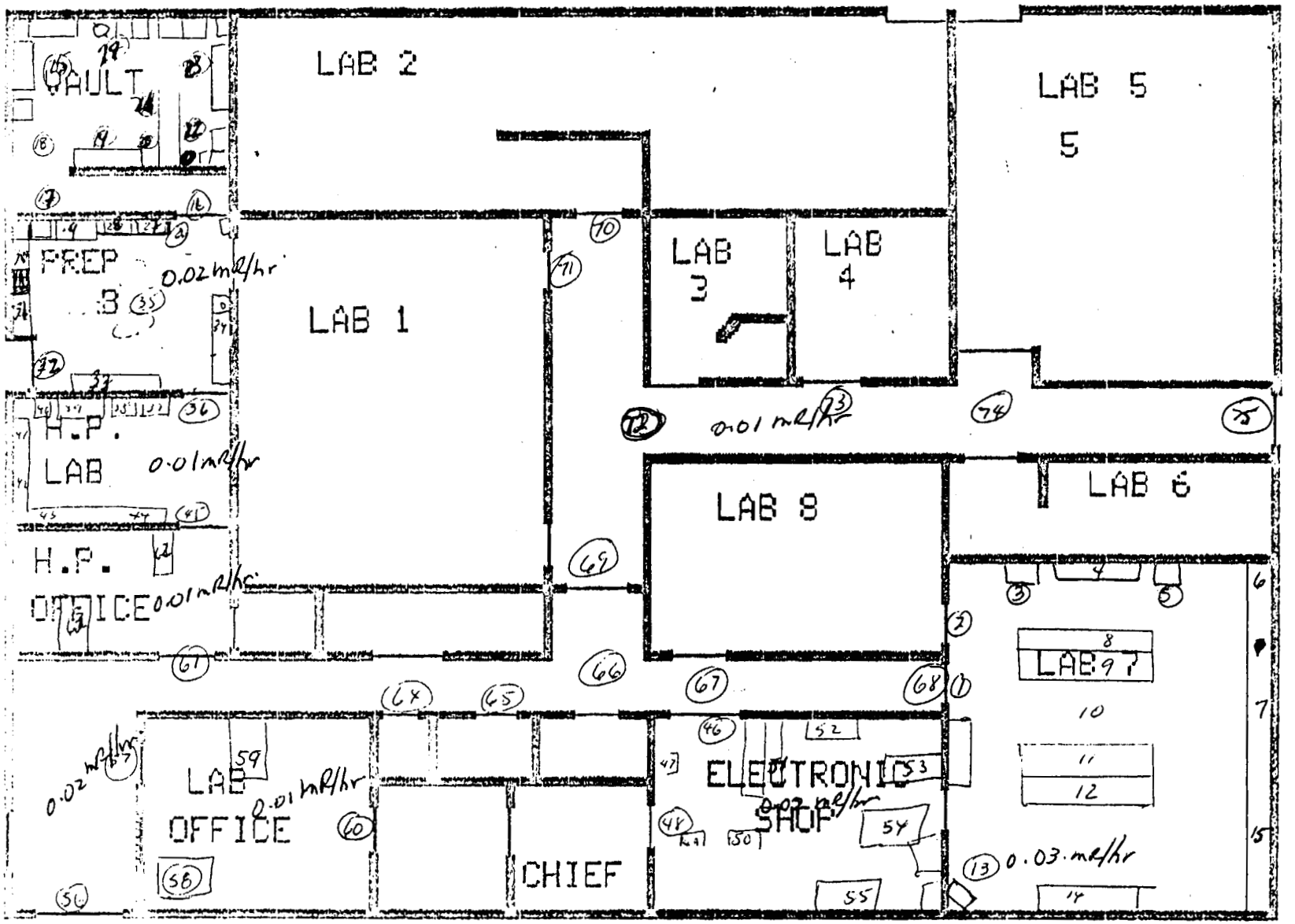
89-008


LAB 2
LAB 5
5
VAULT
PREP
0.02 mR/hr
LAB 1
LAB 3
LAB 4
H.P. LAB
0.01 mR/hr
LAB 8
LAB 6
H.P. OFFICE
0.01 mR/hr
LAB 7
10
11
12
0.02 mR/hr
LAB OFFICE
0.01 mR/hr
CHIEF
ELECTRONICS SHOP
0.03 mR/hr

THU MAR 02, 1989 [illegible] SWIPE[illegible] HOLE [illegible]
[illegible]

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CONTAMINATION/RADIATION SURVEY REPORT	DATE	TIME START	TIME COMPL	PAGE 1 OF 3	SURVEY NO.	NO. OF SAMPLES
	10 April 89		2140 11 April 89		89-009	[redacted] 75

LOCATION	REASON FOR SURVEY:	PROCEDURE NO.	SURVEYOR:
Bldg 1081, Rad Labs	☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☒ ROUTINE	HP SOP	Sgt Torres

REVIEWER: TITLE	PHONE	
Kopp		☐ NO ACTION REQ'D ☐ CIRCLED READINGS - DECONTAMINATE/RESURVEY

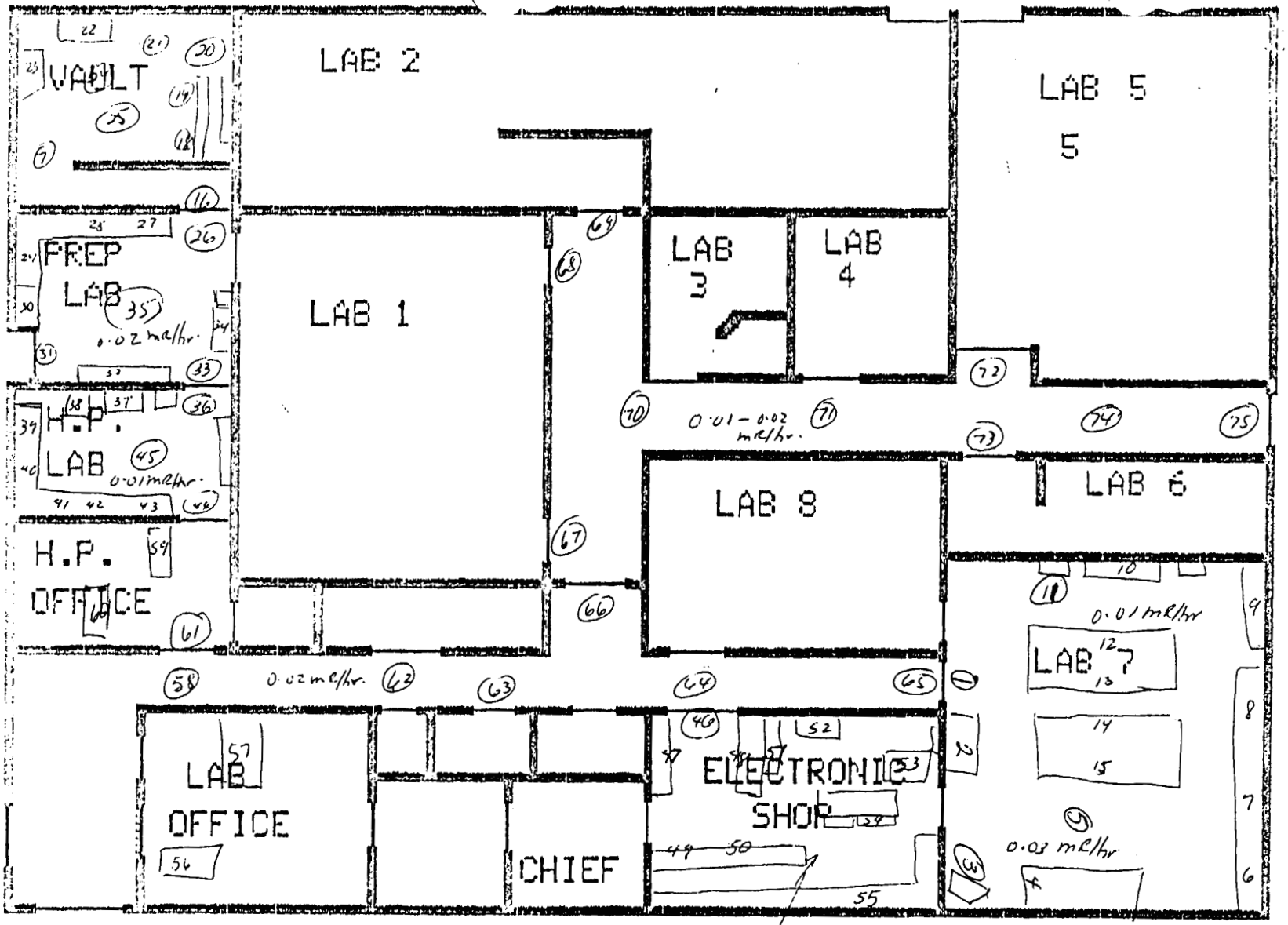
PERMISSIBLE LEVELS					
☐ <220 dpm/100 cm² ALPHA ☐ <2200 dpm 100 cm² BETA-GAMMA ☐ OTHER _____	CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	
	INSTRUMENT SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA E-529/Sn 3812	NEUTRON

SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION		
SOURCE ID	ALPHA Po-210	BETA-GAMMA C-14 & Cs-137	ALPHA	BETA-GAMMA	2 MINUTE COUNTS	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr	BG		
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr	LC		
INSTRUMENT EFFICIENCY	33.79 %	17.76 / 37.22 %	%	%	LD		
BACKGROUND	0.14 cpm	1.38 / 60.62 cpm	cpm	mR/hr	LQ		
					5 MINUTE COUNTS	ALPHA	BETA-GAMMA
					BG		
					LC		
					LD		
					LQ		

REMARKS: Swipes counted with the LB 5100, see Apr Bg and efficiency data files for specific response of the system.
Swipes are taken moistened and allow to dry overnight.

#	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER Po-210 GROSS	ALPHA ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ OTHER β = C-14 ☒ Cs-137 GROSS	BETA-GAMMA ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM ☐	ITEM OR LOCATION
1						Bldg 1081, Rad Labs.
2						Labs 7, Vault, Prop Lab
3						HP Lab, Instrument Storage,
4						Hallways.
5						See attached diagrams
6						for swipes location.
7						
8						- No counts above
9						LLD found -
10						
1						
2						
3						
4						
5						
8						
9						
10						

Ft McCl FM 1560


VAULT
LAB 2
LAB 5
5
LAB 1
LAB 3
LAB 4
PREP LAB
0.02 mR/hr.
H.P. LAB
0.01 mR/hr.
H.P. OFFICE
LAB 8
LAB 6
0.01 - 0.02 mR/hr.
0.01 mR/hr
LAB 7
0.02 mR/hr.
LAB OFFICE
CHIEF
ELECTRONIC SHOP
0.03 mR/hr
0.02 mR/hr avg.

(N) = floor

TUE APR 11, 1989 GROUP D SWIPES SIEBERT HALL 1-15=INST LAB, 16-25=VAULT, 26-35=PREP LAB, 36-45=HPO LAB, 46-55=INST STORAGE, 56-75=HALW
P[illegible]FICES

	E	LOCATION	TIME	ALPHA	BETA	GAMMA	ALPHA	BETA	GAMMA
	IDE	LAB		CPM	CPM	CPM	DPM	DPM	DPM
1	89-009	1	08:43:55	0.06	0.59	1.17	0.17	3.32	4.29
2		1	08:54:09	-0.04	0.19	-5.23	-0.11	1.06	-19.21
3		1	09:04:23	0.06	-0.01	-1.33	0.17	-0.05	-4.88
4		1	09:14:38	0.06	0.49	-0.93	0.17	2.75	-3.41
5		1	09:24:52	0.26	-0.21	-2.03	0.76	-1.18	-7.45
6		1	09:35:06	0.16	0.09	-1.63	0.47	0.50	-5.98
7		1	09:45:20	-0.04	0.49	-2.33	-0.11	2.75	-8.55
8		1	09:55:35	0.16	0.49	0.27	0.47	2.75	0.99
9		1	10:05:49	-0.14	0.19	-1.93	-0.41	1.06	-7.09
10		1	10:16:03	0.16	-0.11	-2.03	0.47	-0.61	-7.45
11		2	10:26:18	-0.04	-0.01	-1.43	-0.11	-0.05	-5.25
12		2	10:36:32	-0.04	0.39	0.67	-0.11	2.19	2.46
13		2	10:46:46	-0.04	-0.31	-5.43	-0.11	-1.74	-19.94
14		2	10:57:00	-0.14	0.09	-0.93	-0.41	0.50	-3.41
15		2	11:07:15	0.16	0.09	-0.33	0.47	0.50	-1.21
16		2	11:17:29	0.16	-0.11	-3.03	0.47	-0.61	-11.13
17		2	11:27:43	-0.04	-0.11	-0.43	-0.11	-0.61	-1.57
18		2	11:37:58	0.16	0.09	-5.63	0.47	0.50	-20.68
19		2	11:48:12	0.16	0.09	0.57	0.47	0.50	2.09
20		2	11:58:26	-0.04	-0.11	-1.53	-0.11	-0.61	-5.62
21		3	12:08:41	0.16	-0.21	3.37	0.47	-1.18	12.38
22		3	12:18:55	0.06	0.29	-1.83	0.17	1.63	-6.72
		3	12:29:10	0.06	0.09	0.37	0.17	0.50	1.35
		3	12:39:24	-0.04	0.29	-3.53	-0.11	1.63	-12.96
		3	12:49:39	-0.14	0.29	-1.63	-0.41	1.63	-5.98
		3	12:59:53	0.06	-0.51	0.47	0.17	-2.87	1.72
27		3	13:10:08	-0.04	-0.11	-5.83	-0.11	-0.61	-21.41
28		3	13:20:22	-0.04	-0.41	1.27	-0.11	-2.30	4.66
29		3	13:30:37	0.26	-0.01	-1.33	0.76	-0.05	-4.88
30		3	13:40:51	0.16	-0.41	2.87	0.47	-2.30	10.54
31		4	13:51:06	0.06	-0.41	-0.33	0.17	-2.30	-1.21
32		4	14:01:20	0.26	-0.11	2.97	0.76	-0.61	10.91
33		4	14:11:34	-0.14	-0.11	0.37	-0.41	-0.61	1.35
34		4	14:21:49	-0.14	-0.31	-0.23	-0.41	-1.74	-0.84
35		4	14:32:03	-0.04	-0.11	-2.03	-0.11	-0.61	-7.45
36		4	14:42:17	-0.14	-0.31	1.47	-0.41	-1.74	5.40
37		4	14:52:31	-0.04	0.49	-0.03	-0.11	2.75	-0.11
38		4	15:02:46	0.36	-0.81	-3.33	1.06	-4.56	-12.23
39		4	15:13:00	-0.04	-0.41	-6.33	-0.11	-2.30	-23.25
40		4	15:23:14	-0.14	-0.31	3.97	-0.41	-1.74	14.58
41		5	15:33:29	-0.14	-0.71	0.47	-0.41	-3.99	1.72
42		5	15:43:43	0.26	0.29	-3.73	0.76	1.63	-13.70
43		5	15:53:57	0.26	-0.41	-1.93	0.76	-2.30	-7.09
44		5	16:04:11	0.26	-0.01	-1.73	0.76	-0.05	-6.35

45	5	16:14:26	-0.04	-0.21	-5.03	-0.11	-1.18	-18.47
[illegible]	5	16:24:40	-0.04	-0.61	-3.03	-0.11	-3.43	-11.13
	5	16:43:13	-0.14	-0.31	0.87	-0.41	-1.74	3.19
	5	16:53:27	0.16	-0.21	-1.63	0.47	-1.18	-5.98
	5	17:03:41	0.06	-0.81	1.87	0.17	-4.56	6.86
49	5	17:13:56	-0.04	-0.61	-3.23	-0.11	-3.43	-11.86
50	5	17:24:10	-0.14	-0.71	-1.13	-0.41	-3.99	-4.15
51	6	17:34:24	0.16	-0.41	4.47	0.47	-2.30	16.42
52	6	17:44:39	0.26	-0.11	-4.03	0.76	-0.61	-14.80
53	6	17:54:53	-0.14	-0.31	0.37	-0.41	-1.74	1.35
54	6	18:05:07	-0.14	-0.01	1.47	-0.41	-0.05	5.40
55	6	18:15:21	-0.04	-0.31	0.07	-0.11	-1.74	0.25
56	6	18:25:36	-0.04	-0.71	-5.23	-0.11	-3.99	-19.21
57	6	18:35:50	0.16	-0.41	0.37	0.47	-2.30	1.35
58	6	18:46:04	0.06	-0.01	-1.63	0.17	-0.05	-5.98
59	6	18:56:19	0.06	-0.21	-0.53	0.17	-1.18	-1.94
60	6	19:06:33	0.16	-0.51	-1.93	0.47	-2.87	-7.09
61	7	19:16:48	0.16	-0.31	1.87	0.47	-1.74	6.86
62	7	19:27:02	-0.14	-0.51	1.87	-0.41	-2.87	6.86
63	7	19:37:16	-0.14	-0.61	-1.03	-0.41	-3.43	-3.78
64	7	19:47:31	0.06	0.29	-2.23	0.17	1.63	-8.19
65	7	19:57:45	-0.14	0.19	-4.33	-0.41	1.06	-15.90
66	7	20:08:00	0.06	0.09	-1.93	0.17	0.50	-7.09
67	7	20:18:14	0.06	-0.41	-4.23	0.17	-2.30	-15.54
68	7	20:28:28	-0.04	0.09	-2.93	-0.11	0.50	-10.76
69	7	20:38:43	0.06	-0.01	-2.03	0.17	-0.05	-7.45
70	7	20:48:57	-0.14	-0.31	-0.03	-0.41	-1.74	-0.11
	8	20:59:12	-0.04	0.49	-2.63	-0.11	2.75	-9.66
	8	21:09:26	0.06	0.19	-5.23	0.17	1.06	-19.21
	8	21:19:40	0.16	-0.51	-1.03	0.47	-2.87	-3.78
74	8	21:29:54	0.16	-0.41	1.07	0.47	-2.30	3.93
75	8	21:40:09	0.16	-0.71	-0.53	0.47	-3.99	-1.94

DOS READY

CONTAMINATION/RADIATION SURVEY REPORT	DATE 14 June 89	TIME START	TIME COMPL	PAGE 1 OF 4	SURVEY NO. 89-016	NO. OF SAMPLES 75

LOCATION Bldg 1081 / LABS

REASON FOR SURVEY: PROCEDURE NO. HP 508

☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☒ ROUTINE

SURVEYOR: Sgt. TORRES

REVIEWER: TITLE Kemp Lt

PHONE

☒ NO ACTION REQ'D ☐ CIRCLED READINGS - DECONTAMINATE/RESURVEY

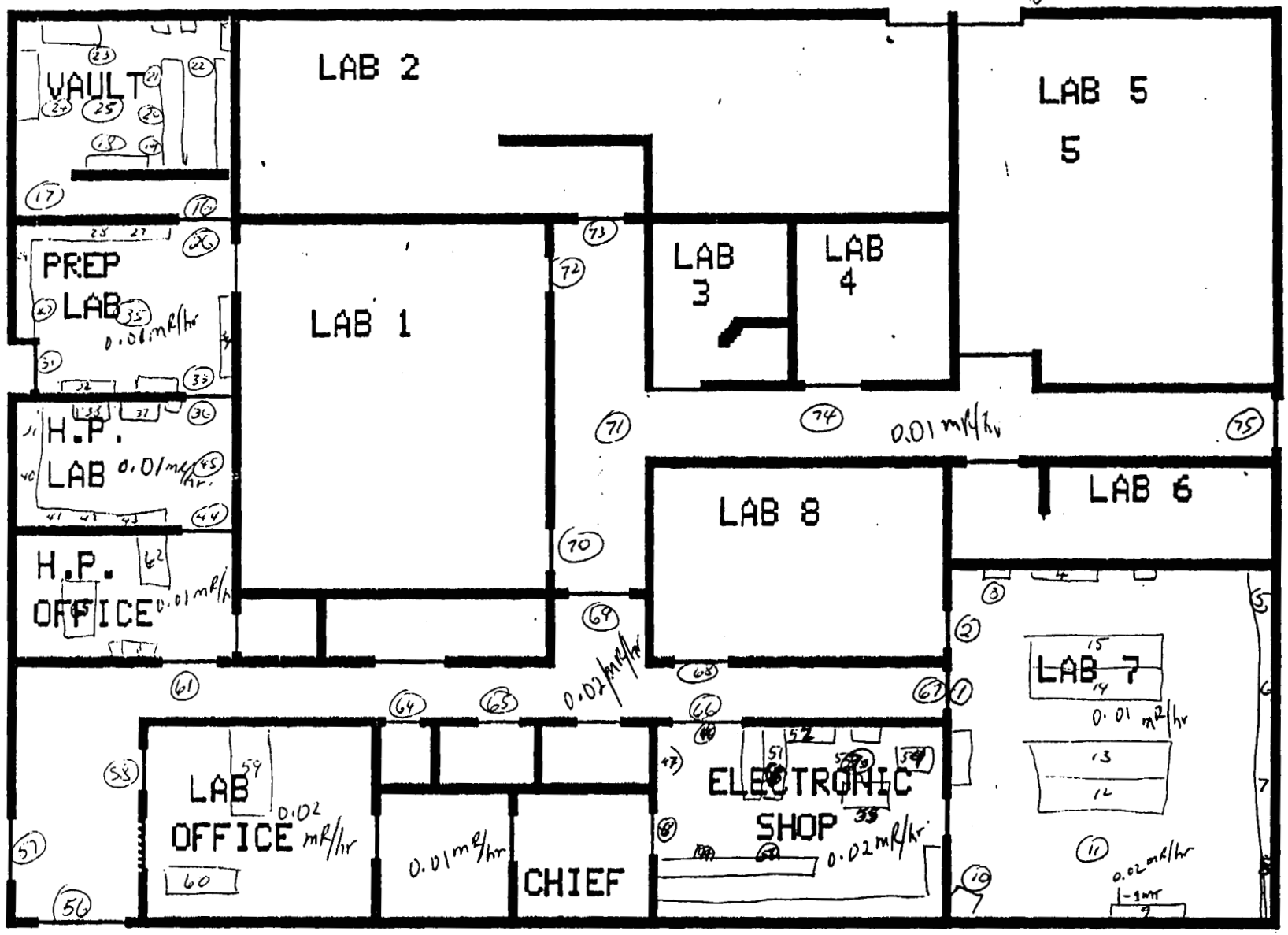
PERMISSIBLE LEVELS	CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	
☐ <220 dpm/100 cm² ALPHA ☐ <2200 dpm 100 cm² BETA-GAMMA ☐ OTHER	INSTRUMENT SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA E-520 Sn 3812	NEUTRON

SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION		
SOURCE ID	ALPHA 210-210	BETA-GAMMA C-14 / Cs-137	ALPHA	BETA-GAMMA	2 MINUTE COUNTS	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr	BG		
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr	LC		
INSTRUMENT EFFICIENCY	35.19 %	57.68 / 27.28%	%	%	LD		
BACKGROUND	Avg 0.05 0.29 cpm	1.36 60.44 cpm	cpm	mR/hr	LQ		
					5 MINUTE COUNTS	ALPHA	BETA-GAMMA
					BG		
					LC		
					LD		
					LQ		

REMARKS: Swipes were counted in two seperate days The 1ST time IT seems like The Thunderstorm That caused me to stop counting The 1ST day also caused a flick in The power That altered The way data was stored for This count (Background group). I recounted The swipes to ensure nothing was wrong in The complex. Counted with LB 5100

	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER GROSS	ALPHA ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ Cs-137 ☐ OTHER GROSS	BETA-GAMMA ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM	ITEM OR LOCATION
1						1-15 Inst LAB
2						16-25 Vault
3						26-35 Prep Lab
4						36-45 HP0 Lab
5						46-55 Inst Storage
6						
7						
8						
9						
10						
1						
2						
3						
4						
8						
9						
10						

14 June 89
instrument survey done in red ink



'ED JUN 14, 1989 GROUP D SWIPES SIEBERT HALL 1-15=INST LAB, 16-25=VAULT, 26-35=PREP LAB, 36-45=HPO LAB, 46-55=INST STORAGE, 56-75= HAL
'S

	MPLE CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
1	89-016	0	13:06:12	0.45	1.14	-0.44	1.27	6.44	-1.61
2	89-016	0	13:16:27	0.15	0.54	-0.94	0.42	3.05	-3.45
3	89-016	0	13:26:41	0.25	-0.26	0.46	0.71	-1.47	1.68
4	89-016	0	13:36:56	-0.15	0.24	-0.54	-0.42	1.35	-1.98
5	89-016	0	13:47:11	-0.05	-0.16	2.76	-0.14	-0.90	10.13
6	89-016	0	13:57:25	0.15	-0.06	-1.24	0.42	-0.33	-4.55
7	89-016	0	14:07:40	-0.05	-0.36	-0.44	-0.14	-2.03	-1.61
8	89-016	0	14:17:54	-0.05	-0.36	0.86	-0.14	-2.03	3.15
9	89-016	0	14:28:09	0.35	0.54	0.26	0.99	3.05	0.95
10	89-016	0	14:38:23	-0.05	0.24	2.56	-0.14	1.35	9.40
11	89-016	0	14:48:38	0.15	0.24	1.76	0.42	1.35	6.46
12	89-016	0	14:58:53	0.25	0.14	-2.14	0.71	0.79	-7.86
13	89-016	0	15:09:07	0.05	0.44	-0.84	0.14	2.48	-3.08
14	89-016	0	15:19:22	0.45	0.04	-0.84	1.27	0.22	-3.08
15	89-016	0	15:29:37	0.05	0.74	-3.34	0.14	4.18	-12.27
16	89-016	0	15:39:52	0.05	-0.46	1.16	0.14	-2.60	4.26
17	89-016	0	15:50:06	0.25	0.14	-1.94	0.71	0.79	-7.12
18	89-016	0	16:00:21	-0.05	0.04	-0.04	-0.14	0.22	-0.14
19	89-016	0	16:10:36	0.15	-0.06	-3.74	0.42	-0.33	-13.73
20	89-016	0	08:03:19	0.05	0.04	-2.74	0.14	0.22	-10.06
21	89-016	0	08:13:33	0.15	-0.06	1.56	0.42	-0.33	5.73
?	89-016	0	08:23:48	-0.05	0.14	-2.54	-0.14	0.79	-9.33
(	89-016	0	08:34:03	-0.15	-0.26	0.16	-0.42	-1.47	0.58
	89-016	0	08:44:17	0.35	0.44	1.66	0.99	2.48	6.09

THU JUN 15, 1989
GROUP B BACKGROUND

SAMPLE SN	CODE	TIME (MIN.)	ALPHA COUNTS	BETA COUNTS	ALPHA CPM	BETA CPM	GAMMA COUNTS	GAMMA CPM		
25	BKG	10.00	1	5	0.10	0.50	409	40.90	08:54:34	THU JUN 15, 1989
26	89-016	10.00	2	18	0.20	1.80	602	60.20	09:04:50	THU JUN 15, 1989
27	89-016	10.00	1	14	0.10	1.40	595	59.50	09:15:05	THU JUN 15, 1989
28	89-016	10.00	2	7	0.20	0.70	631	63.10	09:25:20	THU JUN 15, 1989
29	89-016	10.00	0	9	0	0.90	584	58.40	09:35:34	THU JUN 15, 1989
30	89-016	10.00	1	14	0.10	1.40	610	61.00	09:45:49	THU JUN 15, 1989
31	89-016	10.00	3	7	0.30	0.70	560	56.00	09:56:04	THU JUN 15, 1989
32	89-016	10.00	1	10	0.10	1.00	599	59.90	10:06:18	THU JUN 15, 1989
33	89-016	10.00	1	12	0.10	1.20	589	58.90	10:16:33	THU JUN 15, 1989
34	89-016	10.00	0	8	0	0.80	598	59.80	10:26:48	THU JUN 15, 1989
35	89-016	10.00	4	19	0.40	1.90	584	58.40	10:37:02	THU JUN 15, 1989
36	89-016	10.00	1	9	0.10	0.90	601	60.10	10:47:17	THU JUN 15, 1989
37	89-016	10.00	4	10	0.40	1.00	541	54.10	10:57:32	THU JUN 15, 1989
38	89-016	10.00	2	9	0.20	0.90	621	62.10	11:07:47	THU JUN 15, 1989
39	89-016	10.00	4	12	0.40	1.20	555	55.50	11:18:01	THU JUN 15, 1989
40	89-016	10.00	2	16	0.20	1.60	600	60.00	11:28:16	THU JUN 15, 1989
41	89-016	10.00	1	11	0.10	1.10	585	58.50	11:38:31	THU JUN 15, 1989
42	89-016	10.00	1	21	0.10	2.10	619	61.90	11:48:46	THU JUN 15, 1989
43	89-016	10.00	1	16	0.10	1.60	597	59.70	11:59:00	THU JUN 15, 1989
44	89-016	10.00	2	20	0.20	2.00	560	56.00	12:09:15	THU JUN 15, 1989
45	89-016	10.00	1	26	0.10	2.60	616	61.60	12:19:30	THU JUN 15, 1989
46	89-016	10.00	0	19	0	1.90	584	58.40	12:29:44	THU JUN 15, 1989
47	89-016	10.00	1	10	0.10	1.00	633	63.30	12:39:59	THU JUN 15, 1989
48	89-016	10.00	0	9	0	0.90	578	57.80	12:50:14	THU JUN 15, 1989
49	89-016	10.00	0	9	0	0.90	595	59.50	13:00:28	THU JUN 15, 1989
50	89-016	10.00	2	5	0.20	0.50	608	60.80	13:10:43	THU JUN 15, 1989
51	89-016	10.00	0	10	0	1.00	627	62.70	13:20:58	THU JUN 15, 1989
52	89-016	10.00	2	14	0.20	1.40	611	61.10	13:31:12	THU JUN 15, 1989
53	89-016	10.00	2	13	0.20	1.30	601	60.10	13:41:27	THU JUN 15, 1989
54	89-016	10.00	2	11	0.20	1.10	592	59.20	13:51:42	THU JUN 15, 1989
55	89-016	10.00	3	7	0.30	0.70	626	62.60	14:01:57	THU JUN 15, 1989
56	89-016	10.00	1	20	0.10	2.00	624	62.40	14:12:12	THU JUN 15, 1989
57	89-016	10.00	2	4	0.20	0.40	565	56.50	14:22:26	THU JUN 15, 1989
58	89-016	10.00	2	13	0.20	1.30	635	63.50	14:32:41	THU JUN 15, 1989
59	89-016	10.00	4	9	0.40	0.90	581	58.10	14:42:56	THU JUN 15, 1989
60	89-016	10.00	0	13	0	1.30	640	64.00	14:53:11	THU JUN 15, 1989
61	89-016	10.00	1	9	0.10	0.90	555	55.50	15:03:26	THU JUN 15, 1989
62	89-016	10.00	2	7	0.20	0.70	592	59.20	15:13:40	THU JUN 15, 1989
63	89-016	10.00	4	19	0.40	1.90	624	62.40	15:23:55	THU JUN 15, 1989
64	89-016	10.00	1	8	0.10	0.80	597	59.70	15:34:10	THU JUN 15, 1989
65	89-016	10.00	0	8	0	0.80	627	62.70	15:44:24	THU JUN 15, 1989
66	89-016	10.00	1	15	0.10	1.50	578	57.80	15:54:39	THU JUN 15, 1989
67	89-016	10.00	3	6	0.30	0.60	591	59.10	16:04:54	THU JUN 15, 1989
68	89-016	10.00	0	9	0	0.90	643	64.30	16:15:08	THU JUN 15, 1989
69	89-016	10.00	3	23	0.30	2.30	585	58.50	16:25:23	THU JUN 15, 1989
70	89-016	10.00	3	12	0.30	1.20	576	57.60	16:35:38	THU JUN 15, 1989
71	89-016	10.00	2	9	0.20	0.90	569	56.90	16:45:53	THU JUN 15, 1989

TUE JUN 20, 1989 GROUP D SWIPES SIEBERT HALL 1-15-INST LAB, 16-25-VAULT, 26-35-FRIG LAB, 36-45-[illegible] LAB, 46-55 [illegible]

LWAYS

SN	SAMPLE CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
5	89-016	0	15:07:26	0.15	-0.06	0.86	0.42	-0.33	3.15
6	89-016	0	15:17:41	0.15	0.14	-7.24	0.42	0.79	-26.59
7	89-016	0	15:27:55	-0.05	0.64	-2.54	-0.14	3.61	-9.33
28	89-016	0	15:38:10	-0.05	0.04	4.66	-0.14	0.22	17.11
29	89-016	0	15:48:25	-0.15	0.94	-0.64	-0.42	5.31	-2.35
30	89-016	0	15:58:39	0.15	0.14	2.76	0.42	0.79	10.13
31	89-016	0	16:08:54	0.05	0.54	-0.84	0.14	3.05	-3.08
32	89-016	0	16:19:09	0.15	-0.06	2.36	0.42	-0.33	8.67
33	89-016	0	16:29:23	0.05	0.24	-3.74	0.14	1.35	-13.73
34	89-016	0	16:39:38	0.05	-0.56	0.06	0.14	-3.16	0.22
35	89-016	0	16:49:53	0.15	0.24	-2.14	0.42	1.35	-7.86
36	89-016	0	17:00:08	0.05	-0.06	-1.04	0.14	-0.33	-3.82
37	89-016	0	17:10:22	0.05	0.14	-1.04	0.14	0.79	-3.82
38	89-016	0	17:20:37	-0.05	0.84	1.96	-0.14	4.75	7.20
39	89-016	0	17:30:52	0.15	-0.26	0.16	0.42	-1.47	0.58
40	89-016	0	17:41:06	0.05	0.34	-4.94	0.14	1.92	-18.14
41	89-016	0	17:51:21	0.15	-0.46	0.66	0.42	-2.60	2.42
42	89-016	0	18:01:36	-0.05	0.04	1.66	-0.14	0.22	6.09
43	89-016	0	18:11:51	-0.05	-0.16	-3.94	-0.14	-0.90	-14.47
44	89-016	0	18:22:05	0.45	-0.06	-0.24	1.27	-0.33	-0.88
45	89-016	0	18:32:20	0.15	-0.06	-1.84	0.42	-0.33	-6.75
46	89-016	0	18:42:35	0.15	0.04	-3.54	0.42	0.22	-13.00
47	89-016	0	18:52:49	0.15	-0.16	2.06	0.42	-0.90	7.56
48	89-016	0	19:03:04	-0.05	0.14	-1.04	-0.14	0.79	-3.82
49	89-016	0	19:13:19	-0.15	0.44	-4.94	-0.42	2.48	-18.14
0	89-016	0	19:23:33	0.35	-0.46	0.36	0.99	-2.60	1.32
51	89-016	0	19:33:48	-0.05	0.44	1.96	-0.14	2.48	7.20
2	89-016	0	19:44:03	0.35	0.14	0.76	0.99	0.79	2.79
53	89-016	0	19:54:17	0.15	0.74	-2.14	0.42	4.18	-7.86
54	89-016	0	20:04:32	0.25	0.64	0.76	0.71	3.61	2.79
55	89-016	0	20:14:47	0.35	0.34	-3.94	0.99	1.92	-14.47
56	89-016	0	20:25:02	0.05	-0.26	4.26	0.14	-1.47	15.65
57	89-016	0	20:35:16	0.05	1.34	2.46	0.14	7.57	9.03
58	89-016	0	20:45:31	-0.05	0.24	-1.54	-0.14	1.35	-5.65
59	89-016	0	20:55:46	0.15	0.24	1.46	0.42	1.35	5.36
60	89-016	0	21:06:00	0.05	0.24	-0.24	0.14	1.35	-0.88
61	89-016	0	21:16:15	0.25	-0.16	-0.94	0.71	-0.90	-3.45
62	89-016	0	21:26:30	0.25	-0.26	-1.14	0.71	-1.47	-4.18
63	89-016	0	21:36:45	0.15	-0.06	1.46	0.42	-0.33	5.36
64	89-016	0	21:47:00	0.25	-0.16	1.16	0.71	-0.90	4.26
65	89-016	0	21:57:14	-0.15	0.04	-0.14	-0.42	0.22	-0.51
66	89-016	0	22:07:29	-0.15	-0.06	2.26	-0.42	-0.33	8.30
67	89-016	0	22:17:44	0.15	0.54	-1.54	0.42	3.05	-5.65
68	89-016	0	22:27:59	0.05	0.14	2.16	0.14	0.79	7.93
69	89-016	0	22:38:13	0.45	0.54	-2.14	1.27	3.05	-7.86
70	89-016	0	22:48:28	0.65	-0.16	0.06	1.84	-0.90	0.22
71	89-016	0	22:58:43	-0.05	0.24	-4.24	-0.14	1.35	-15.57
72	89-016	0	23:08:58	0.05	0.54	2.46	0.14	3.05	9.03
73	89-016	0	23:19:12	0.15	0.14	0.16	0.42	0.79	0.58
74	89-016	0	23:29:27	0.05	0.24	-3.44	0.14	1.35	-12.63
75	89-016	0	23:39:42	0.05	-0.36	1.66	0.14	-2.03	6.09

...S READY

This is statistical error.
For this month the α Bg was 1.82 dpm
Therefore this no. is within the ballpark
The Bg to date was 1.61 dpm.

F.

CONTAMINATION/RADIATION SURVEY REPORT	DATE	TIME START	TIME COMPL	PAGE 1 OF 2	SURVEY NO.	NO. OF SAMPLES
	14 July	0910	1015		89-017	80

LOCATION: Bldg 1081 Rad Labs

REASON FOR SURVEY: PROCEDURE NO. ____

☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☒ ROUTINE

SURVEYOR: Komp

REVIEWER: Komp
TITLE Hx

PHONE

☒ NO ACTION REQ'D ☐ CIRCLED READINGS - DECONTAMINATE/RESURVEY

PERMISSIBLE LEVELS

☒ ≤220 dpm/100 cm² ALPHA
☒ <2200 dpm 100 cm² BETA-GAMMA
☐ OTHER ____

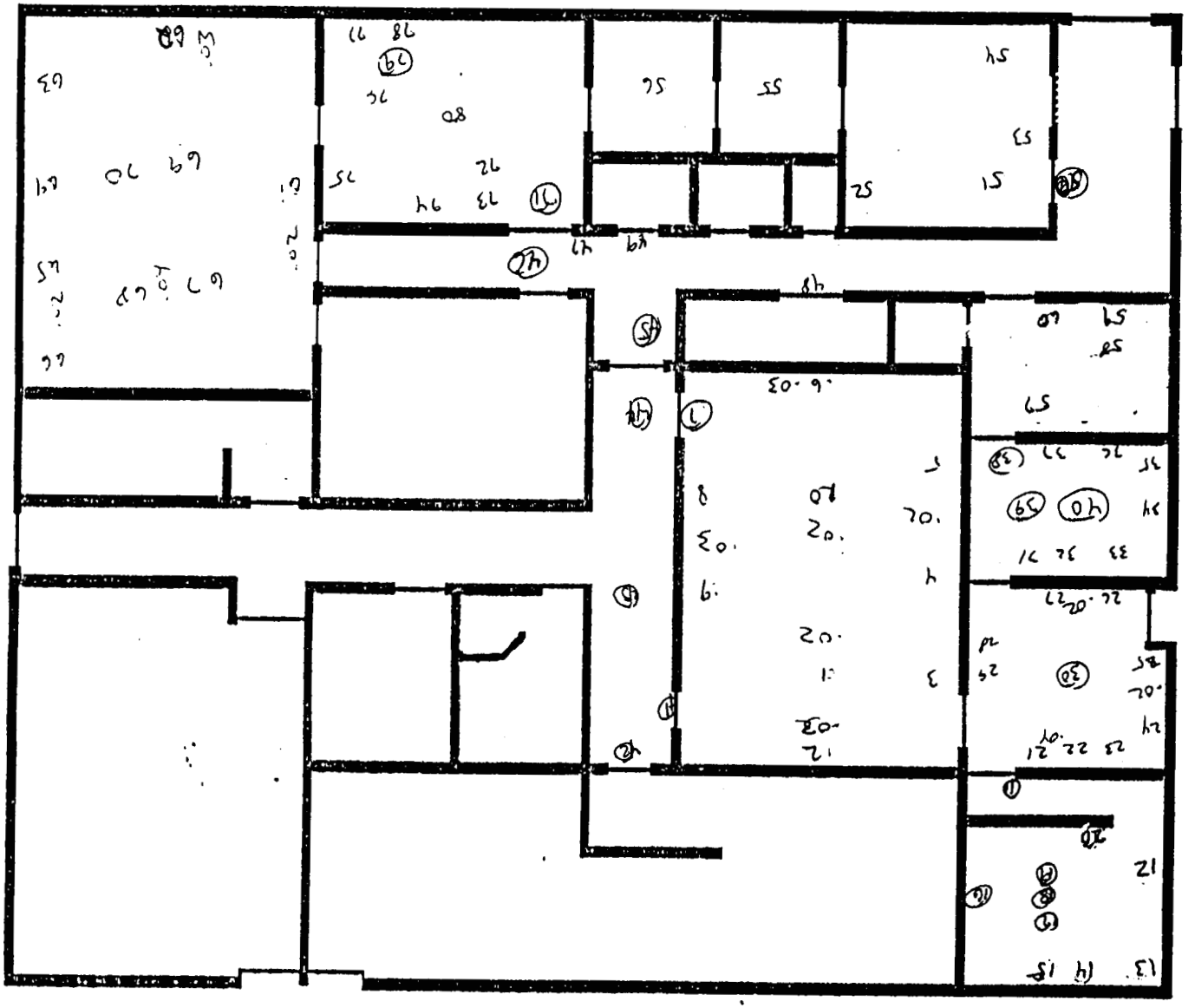
CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA
INSTRUMENT SURVEY E520	INSTRUMENT TAG NO 3712	ALPHA	BETA-GAMMA E520 #3812 / NEUTRON

SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION		
SOURCE ID	ALPHA	BETA-GAMMA	ALPHA	BETA-GAMMA	2 MINUTE COUNTS	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr	BG		
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr	LC		
INSTRUMENT EFFICIENCY	%	%	%	%	LD		
BACKGROUND	cpm	cpm	cpm	.02 mR/hr	LQ		
					5 MINUTE COUNTS	ALPHA	BETA-GAMMA
					BG		
					LC		
					LD		
					LQ		

REMARKS:
SEE monthly (July)
Eff / Bkg
See proj. Log. for instrument

	LLD cpm	dpm
α	.51	1.53
β	1.73	11.46
γ	9.77	42.10

SAMPLE	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER ____ GROSS	ALPHA ACTIVITY	BETA-GAMMA EQUIV ☒ Co-60 ☐ Cs-137 ☐ OTHER ____ GROSS	BETA-GAMMA ACTIVITY	MREM/hr ☒ UR/hr ☐ NEUTRON ☐ CPM ☐	ITEM OR LOCATION
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
1						
2						
3						
4						
5						
8						
9						
10						



Ft McCl FM 1561-R, REV 14 March 1989 PRE)DITION OBSOLETE

L 14, 1989 GROUP D SWIPES SIBERT HALL 1-LAB 1, 2-VAULT, 3-PREP, 4-HP, 5,6-HALLWAYS, 7- LAB 7, 8-INST STOR/MAINT

E	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
1	1	11:08:00	0.05	1.53	-1.20	0.14	8.66	-4.40
2	1	11:18:14	-0.15	-0.17	-3.60	-0.42	-0.96	-13.22
3	1	11:28:29	-0.15	0.43	-2.70	-0.42	2.43	-9.91
4	1	11:38:44	-0.05	0.33	2.10	-0.14	1.86	7.71
5	1	11:48:58	-0.05	0.33	-0.20	-0.14	1.86	-0.73
6	1	11:59:13	-0.05	-0.47	1.10	-0.14	-2.66	4.03
7	1	12:09:28	0.15	-0.07	-2.90	0.42	-0.39	-10.65
8	1	12:19:42	-0.05	-0.17	-3.50	-0.14	-0.96	-12.85
9	1	12:29:57	0.05	-0.17	0.60	0.14	-0.96	2.20
10	1	12:40:12	-0.15	0.13	-0.80	-0.42	0.73	-2.93
11	2	12:50:27	-0.15	-0.77	2.30	-0.42	-4.36	8.44
12	2	13:00:41	0.15	0.63	-3.90	0.42	3.56	-14.32
13	2	13:10:56	-0.15	0.13	3.60	-0.42	0.73	13.22
14	2	13:21:11	-0.05	-0.47	0.50	-0.14	-2.66	1.83
15	2	13:31:26	-0.05	0.03	-4.20	-0.14	0.16	-15.42
16	2	13:41:40	0.05	0.13	1.90	0.14	0.73	6.97
17	2	13:51:55	0.15	0.13	-2.50	0.42	0.73	-9.18
18	2	14:02:10	-0.05	0.73	-0.30	-0.14	4.13	-1.10
19	2	14:12:25	-0.15	-0.57	0.90	-0.42	-3.22	3.30
20	2	14:22:40	0.25	0.33	-0.30	0.70	1.86	-1.10
21	3	14:32:54	-0.05	-0.47	1.60	-0.14	-2.66	5.87
22	3	14:43:09	0.05	-0.17	0.80	0.14	-0.96	2.93
	3	14:53:24	0.25	0.23	-1.20	0.70	1.30	-4.40
	3	15:03:39	-0.05	-0.07	0.10	-0.14	-0.39	0.36
	3	15:13:54	-0.05	-0.27	-1.10	-0.14	-1.52	-4.03
26	3	15:24:09	-0.15	-0.37	3.10	-0.42	-2.09	11.38
27	3	15:34:24	0.05	-0.27	3.50	0.14	-1.52	12.85
28	3	15:44:38	-0.05	-0.27	1.80	-0.14	-1.52	6.61
29	3	15:54:53	-0.15	-0.37	0.90	-0.42	-2.09	3.30
30	3	16:05:08	-0.15	0.53	-5.10	-0.42	3.00	-18.72
31	4	16:15:23	-0.05	-0.27	-2.10	-0.14	-1.52	-7.71
32	4	16:25:38	-0.15	0.13	1.40	-0.42	0.73	5.14
33	4	16:35:53	-0.05	0.63	1.40	-0.14	3.56	5.14
34	4	16:46:07	0.15	-0.27	-0.10	0.42	-1.52	-0.36
35	4	16:56:22	-0.05	-0.37	-0.60	-0.14	-2.09	-2.20
36	4	17:06:37	-0.05	-0.37	-3.40	-0.14	-2.09	-12.48
37	4	17:16:52	0.05	-0.47	2.30	0.14	-2.66	8.44
38	4	17:27:07	-0.05	0.83	2.40	-0.14	4.69	8.81
39	4	17:37:22	-0.05	0.03	-1.00	-0.14	0.16	-3.67
40	4	17:47:37	0.15	-0.47	5.60	0.42	-2.66	20.56

OPERATION COMPLETE

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OPERATION COMPLETE

OPERATION COMPLETE

'L 15, 1989 GROUP D SWIPES SIBERT HALL 1-LAB 1, 2-VAULT, 3-PREP, 4-HP, 5,6-HALLWAYS, 7- LAB 7, 8-INST STOR/MAINT

ION CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
41	5	07:56:57	0.75	0.73	0.10	2.12	4.13	0.36
42	5	08:07:12	0.25	0.63	-0.90	0.70	3.56	-3.30
43	5	08:17:26	0.15	1.03	-2.40	0.42	5.83	-8.81
44	5	08:27:41	-0.05	0.03	-5.00	-0.14	0.16	-18.36
45	5	08:37:56	0.25	0.73	-3.20	0.70	4.13	-11.75
46	5	08:48:10	-0.15	0.13	1.90	-0.42	0.73	6.97
47	5	08:58:25	-0.05	-0.07	-0.80	-0.14	-0.39	-2.93
48	5	09:08:40	0.05	0.13	-1.80	0.14	0.73	-6.61
49	5	09:18:54	-0.05	-0.37	3.40	-0.14	-2.09	12.48
50	5	09:29:09	-0.05	-0.07	4.80	-0.14	-0.39	17.62
51	6	09:39:24	-0.05	-0.37	-2.70	-0.14	-2.09	-9.91
52	6	09:49:39	0.15	-0.57	1.20	0.42	-3.22	4.40
53	6	09:59:53	-0.05	-0.57	-5.00	-0.14	-3.22	-18.36
54	6	10:10:08	0.35	-0.37	2.10	0.99	-2.09	7.71
55	6	10:20:23	0.25	-0.17	-1.70	0.70	-0.96	-6.24
56	6	10:30:38	0.15	0.53	-6.00	0.42	3.00	-22.03
57	6	10:40:53	0.05	0.43	-2.80	0.14	2.43	-10.28
58	6	10:51:07	-0.15	-0.37	-1.10	-0.42	-2.09	-4.03
59	6	11:01:22	0.05	-0.17	-4.70	0.14	-0.96	-17.26
60	6	11:11:37	-0.05	0.23	5.00	-0.14	1.30	18.36
61	7	11:21:52	-0.05	-0.67	-3.90	-0.14	-3.79	-14.32
[illegible]	7	11:32:06	0.25	-0.07	-3.00	0.70	-0.39	-11.01
	7	11:42:21	-0.05	0.23	-0.90	-0.14	1.30	-3.30
	7	11:52:36	0.45	0.13	1.80	1.27	0.73	6.61
	7	12:02:51	0.05	-0.37	2.00	0.14	-2.09	7.34
66	7	12:13:06	-0.05	-0.37	1.80	-0.14	-2.09	6.61
67	7	12:23:21	-0.05	-0.37	-0.30	-0.14	-2.09	-1.10
68	7	12:33:36	-0.15	-0.07	2.20	-0.42	-0.39	8.07
69	7	12:43:51	0.05	-0.47	1.60	0.14	-2.66	5.87
70	7	12:54:06	0.05	0.13	0.70	0.14	0.73	2.57
71	8	13:04:21	-0.15	0.03	2.10	-0.42	0.16	7.71
72	8	13:14:36	0.05	0.03	1.20	0.14	0.16	4.40
73	8	13:24:50	0.25	0.03	0.70	0.70	0.16	2.57
74	8	13:35:05	-0.15	-0.07	0.70	-0.42	-0.39	2.57
75	8	13:45:20	0.35	-0.17	-1.20	0.99	-0.96	-4.40
76	8	13:55:34	0.05	-0.57	1.20	0.14	-3.22	4.40
77	8	14:05:49	0.25	-0.17	0.70	0.70	-0.96	2.57
78	8	14:16:04	0.05	-0.07	-0.70	0.14	-0.39	-2.57
79	8	14:26:19	0.15	-0.17	0.90	0.42	-0.96	3.30
80	8	14:36:33	0.45	0.53	-0.80	1.27	3.00	-2.93

OPERATION COMPLETE

CONTAMINATION/RADIATION SURVEY REPORT	DATE	TIME START	TIME COMPL	PAGE 1 OF 4	SURVEY NO.	NO. OF SAMPLES
	10 Aug 89	1300			89-020	80

TION	REASON FOR SURVEY: PROCEDURE NO. HPO SOP	SURVEYOR:
Idg 1081 1 Labs	☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☒ ROUTINE	SSG TORRES

REVIEWER: TITLE Rad Sp	PHONE	☒ NO ACTION REQ'D ☐ CIRCLED READINGS - DECONTAMINATE/RESURVEY

PERMISSIBLE LEVELS	CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	
☐ ≤220 dpm/100 cm² ALPHA ☐ <2200 dpm 100 cm² BETA-GAMMA ☐ OTHER _____	INSTRUMENT SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	NEUTRON

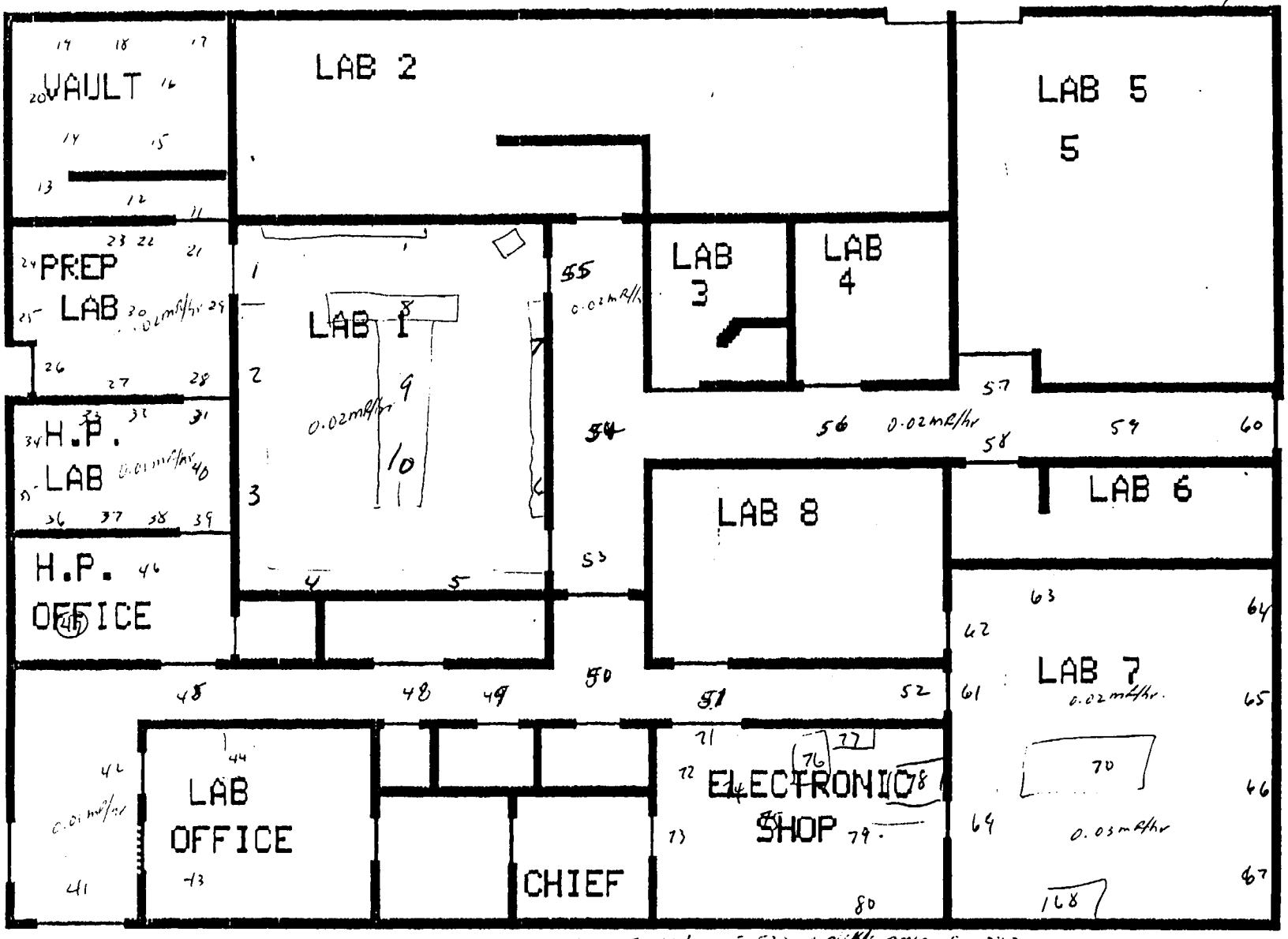
SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION	
SOURCE ID	ALPHA Po-210	BETA-GAMMA C-14 Cs-137	ALPHA	BETA-GAMMA	2 MINUTE COUNTS ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr	BG	
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr	LC	
INSTRUMENT EFFICIENCY	35.48 %	17.65 β 27.26 γ %	%	%	LD	
BACKGROUND	0.15 cpm	1.37 β 60.41 γ cpm	cpm	mR/hr	LQ	
					5 MINUTE COUNTS ALPHA	BETA-GAMMA
					BG	
					LC	
					LD	
					LQ	

REMARKS: Counted with LBS100 Automatic system, See request files for complete details on Calibration and efficiency for the system. Swipes Taken at the locations shown in Enclosed diagram of the LAB areas.

S. E	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER _____ GROSS	ALPHA ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ Cs-137 ☐ OTHER _____ GROSS	BETA-GAMMA ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM ☐	ITEM OR LOCATION
T						Lab areas + offices and Hallway
2						
3						
4						
5						
6						
7						
8						
9						
10						
1						
2						
3						
4						
8						
9						
10						

RAD LABS BLDG 1081

10 August 89.



Instrument used : E-520 w/ pickle probe Sn 3312

THU AUG 10. 1989 GROUP D SWIPES SIBERT HALL 1-LAB 1, 2-VAULT, 3-PREP, 4-HP, 5,6-HALLWAYS, 7- LAB 7, 8-INST STOR/MAINT

SN	SAMPLE CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
	89-020	1	08:39:25	0.15	0.43	-4.71	0.42	2.43	-17.27
	89-020	1	08:49:41	0.05	-0.07	2.39	0.14	-0.39	8.76
3	89-020	1	08:59:57	0.25	-0.07	2.59	0.70	-0.39	9.50
4	89-020	1	09:10:13	0.25	-0.37	-2.01	0.70	-2.09	-7.37
5	89-020	1	09:20:29	-0.05	-0.47	-3.31	-0.14	-2.66	-12.14
6	89-020	1	09:30:46	-0.05	0.03	-0.51	-0.14	0.16	-1.87
7	89-020	1	09:41:01	0.35	0.23	-2.61	0.98	1.30	-9.57
8	89-020	1	09:51:17	-0.15	1.53	3.59	-0.42	8.66	13.16
9	89-020	1	10:01:33	0.25	1.03	2.69	0.70	5.83	9.86
10	89-020	1	10:11:49	0.05	0.53	2.19	0.14	3.00	8.03
11	89-020	2	10:22:05	-0.05	-0.27	-3.51	-0.14	-1.52	-12.87
12	89-020	2	10:32:21	-0.05	0.03	0.49	-0.14	0.16	1.79
13	89-020	2	10:42:37	-0.15	-0.17	-5.61	-0.42	-0.96	-20.57
14	89-020	2	10:52:52	-0.15	0.33	1.09	-0.42	1.86	3.99
15	89-020	2	11:03:08	-0.05	-0.07	0.09	-0.14	-0.39	0.33
16	89-020	2	11:13:24	0.15	-0.27	-3.71	0.42	-1.52	-13.60
17	89-020	2	11:23:40	-0.05	0.23	-2.71	-0.14	1.30	-9.94
18	89-020	2	11:33:56	0.05	0.43	-0.21	0.14	2.43	-0.77
19	89-020	2	11:44:12	0.35	-0.17	0.19	0.98	-0.96	0.69
20	89-020	2	11:54:28	0.25	0.33	0.59	0.70	1.86	2.16
21	89-020	3	12:04:44	0.15	-0.17	-4.41	0.42	-0.96	-16.17
22	89-020	3	12:15:00	-0.15	0.53	0.89	-0.42	3.00	3.26
23	89-020	3	12:25:16	0.35	0.23	-2.11	0.98	1.30	-7.74
24	89-020	3	12:35:32	0.25	0.73	3.89	0.70	4.13	14.26
25	89-020	3	12:45:48	-0.05	0.23	-0.11	-0.14	1.30	-0.40
	89-020	3	12:56:04	0.05	-0.07	-0.71	0.14	-0.39	-2.60
	89-020	3	13:06:20	-0.05	0.53	-2.11	-0.14	3.00	-7.74
28	89-020	3	13:16:36	0.05	-0.37	3.09	0.14	-2.09	11.33
29	89-020	3	13:26:52	-0.05	-0.27	-0.61	-0.14	-1.52	-2.23
30	89-020	3	13:37:08	-0.05	0.13	-2.31	-0.14	0.73	-8.47
31	89-020	4	13:47:25	-0.05	0.03	0.39	-0.14	0.16	1.43
32	89-020	4	13:57:41	-0.15	-0.57	3.99	-0.42	-3.22	14.63
33	89-020	4	14:07:57	-0.15	0.33	-1.81	-0.42	1.86	-6.63
34	89-020	4	14:18:13	-0.15	-0.37	-1.91	-0.42	-2.09	-7.00
35	89-020	4	14:28:29	0.15	-0.17	2.79	0.42	-0.96	10.23
36	89-020	4	14:38:45	0.05	0.03	0.79	0.14	0.16	2.89
37	89-020	4	14:49:01	0.05	-0.17	1.29	0.14	-0.96	4.73
38	89-020	4	14:59:17	-0.15	-0.17	1.79	-0.42	-0.96	6.56
39	89-020	4	15:09:33	0.05	0.03	1.29	0.14	0.16	4.73
40	89-020	4	15:19:49	-0.05	-0.67	1.49	-0.14	-3.79	5.46
41	89-020	5	15:30:05	0.25	-0.57	4.59	0.70	-3.22	16.83
42	89-020	5	15:40:21	0.35	0.13	-0.91	0.98	0.73	-3.33
43	89-020	5	15:50:37	-0.15	-0.57	-1.81	-0.42	-3.22	-6.63
44	89-020	5	16:00:53	-0.05	-0.17	-1.01	-0.14	-0.96	-3.70
45	89-020	5	16:11:09	-0.15	0.23	-6.41	-0.42	1.30	-23.51
46	89-020	5	16:21:25	0.15	0.03	-2.11	0.42	0.16	-7.74
47	89-020	5	16:31:41	-0.15	0.23	-4.21	-0.42	1.30	-15.44
48	89-020	5	16:41:56	0.05	0.43	-1.11	0.14	2.43	-4.07
49	89-020	5	16:52:12	0.15	-0.37	-2.51	0.42	-2.09	-9.20
50	89-020	5	17:02:28	-0.15	0.13	-2.31	-0.42	0.73	-8.47
1	89-020	6	17:12:44	-0.05	-0.97	0.69	-0.14	-5.49	2.53
2	89-020	6	17:23:00	0.45	-0.37	-3.31	1.26	-2.09	-12.14
3	89-020	6	17:33:16	-0.05	-0.67	-0.21	-0.14	-3.79	-0.77
54	89-020	6	17:43:32	0.05	-0.07	2.49	0.14	-0.39	9.13
55	89-020	6	17:53:48	-0.05	-0.27	-3.81	-0.14	-1.52	-13.97
56	89-020	6	18:04:04	-0.05	-0.37	-1.51	-0.14	-2.09	-5.53
57	89-020	6	18:14:20	-0.05	-0.17	-0.41	-0.14	-0.96	-1.50
58	89-020	6	18:24:36	-0.15	-0.17	-2.11	-0.42	-0.96	-7.74

48	89-020	5	16:41:56	0.05	0.43	-1.11	0.14	2.43	-4.07
49	89-020	5	16:52:12	0.15	-0.37	-2.51	0.42	-2.09	-9.20
50	89-020	5	17:02:28	-0.15	0.13	-2.31	-0.42	0.73	-8.47
51	89-020	6	17:12:44	-0.05	-0.97	0.69	-0.14	-5.49	2.53
	020	6	17:23:00	0.45	-0.37	-3.31	1.26	-2.09	-12.14
	020	6	17:33:16	-0.05	-0.67	-0.21	-0.14	-3.79	-0.77
	020	6	17:43:32	0.05	-0.07	2.49	0.14	-0.39	9.13
	-020	6	17:53:48	-0.05	-0.27	-3.81	-0.14	-1.52	-13.97
56	89-020	6	18:04:04	-0.05	-0.37	-1.51	-0.14	-2.09	-5.53
57	89-020	6	18:14:20	-0.05	-0.17	-0.41	-0.14	-0.96	-1.50
58	89-020	6	18:24:36	-0.15	-0.17	-2.11	-0.42	-0.96	-7.74
59	89-020	6	18:34:52	0.05	0.13	-1.61	0.14	0.73	-5.90
60	89-020	6	18:45:08	-0.15	-0.07	-3.81	-0.42	-0.39	-13.97
61	89-020	7	18:55:24	0.05	-0.07	0.69	0.14	-0.39	2.53
62	89-020	7	19:05:40	0.35	0.63	-5.51	0.98	3.56	-20.21
63	89-020	7	19:15:56	0.15	0.03	0.99	0.42	0.16	3.63
64	89-020	7	19:26:12	0.25	-0.37	0.39	0.70	-2.09	1.43
65	89-020	7	19:36:28	-0.15	-0.47	-2.61	-0.42	-2.66	-9.57
66	89-020	7	19:46:44	0.15	-0.07	-2.71	0.42	-0.39	-9.94
67	89-020	7	19:57:00	0.45	0.33	-1.91	1.26	1.86	-7.00
68	89-020	7	20:07:16	-0.05	-0.07	-2.81	-0.14	-0.39	-10.30
69	89-020	7	20:17:32	0.05	-0.07	0.39	0.14	-0.39	1.43
70	89-020	7	20:27:48	-0.15	0.03	-0.21	-0.42	0.16	-0.77
71	89-020	8	20:38:04	-0.05	-0.57	-0.21	-0.14	-3.22	-0.77
72	89-020	8	20:48:20	-0.15	-0.07	6.39	-0.42	-0.39	23.44
73	89-020	8	20:58:36	-0.05	0.13	-4.71	-0.14	0.73	-17.27
74	89-020	8	21:08:52	-0.15	-0.27	0.29	-0.42	-1.52	1.06
75	89-020	8	21:19:08	-0.15	0.03	2.59	-0.42	0.16	9.50
76	89-020	8	21:29:24	0.05	0.23	1.29	0.14	1.30	4.73
77	89-020	8	21:39:40	0.05	-0.27	0.79	0.14	-1.52	2.89
	020	8	21:49:56	-0.15	0.63	-1.51	-0.42	3.56	-5.53
	-020	8	22:00:12	-0.05	-0.57	-1.21	-0.14	-3.22	-4.43
	-020	8	22:10:28	0.35	0.93	2.19	0.98	5.26	8.03

ERATION COMPLETE

CONTAMINATION/RADIATION SURVEY REPORT	DATE	TIME START	TIME COMPL	PAGE 1 OF 4	SURVEY NO.	NO. OF SAMPLES
	6 Sept 89	0811			89-024	80

LOCATION	REASON FOR SURVEY: PROCEDURE NO.	SURVEYOR:
Bldg 1081 Rad Labs	☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☒ ROUTINE	SSG Torres

REVIEWER: TITLE	PHONE	
Kemp IH		☑ NO ACTION REQ'D ☐ CIRCLED READINGS - DECONTAMINATE/RESURVEY

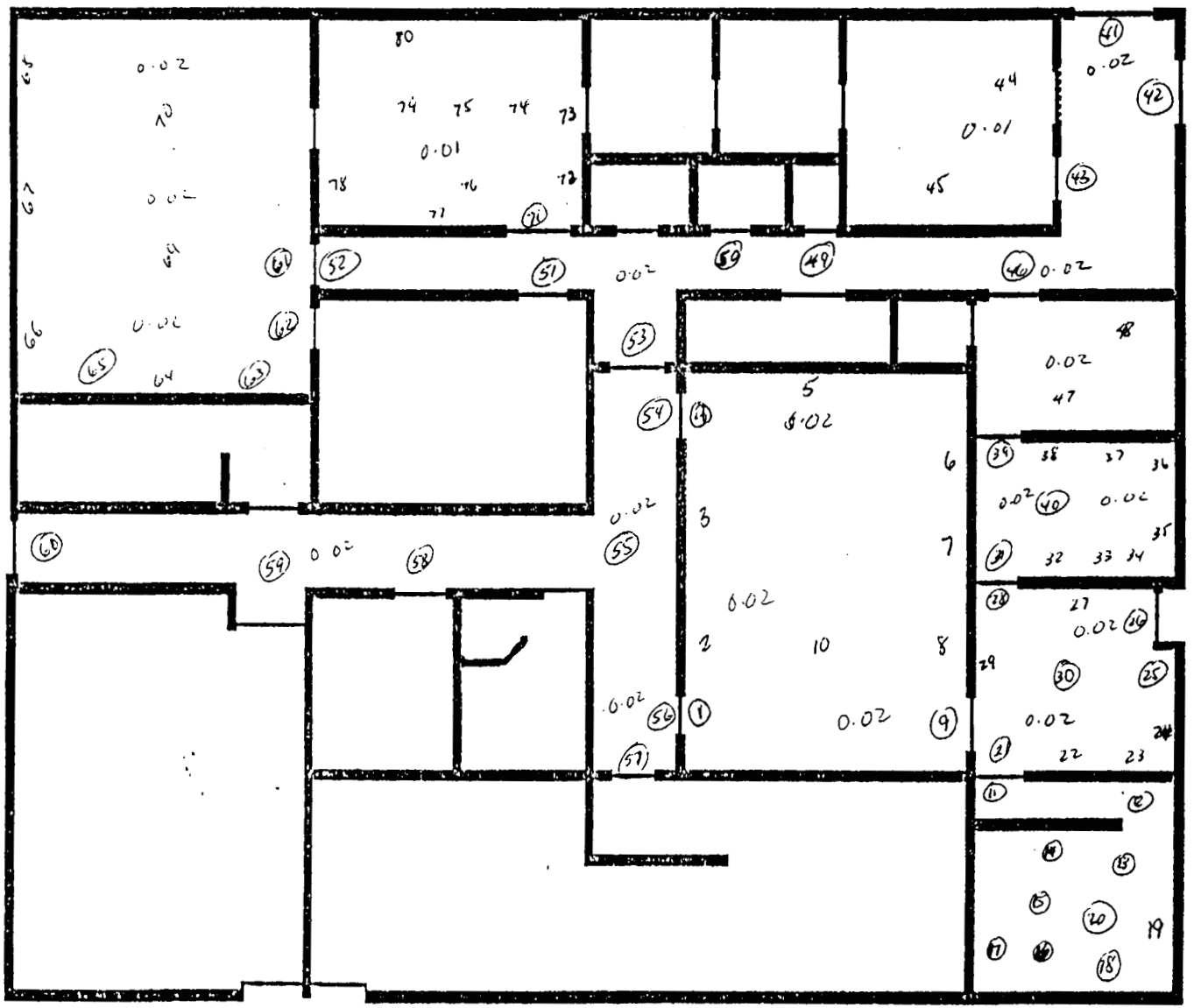
PERMISSIBLE LEVELS					
☐ <220 dpm/100 cm² ALPHA ☐ <2200 dpm 100 cm² BETA-GAMMA ☐ OTHER	CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	
	INSTRUMENT SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	NEUTRON

SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION		
SOURCE ID	ALPHA Po-210	BETA-GAMMA C-14 Cs-137	ALPHA	BETA-GAMMA	2 MINUTE COUNTS	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr	BG		
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr	LC		
INSTRUMENT EFFICIENCY	35.68 %	17.65 / 27.26 %	%	%	LD		
BACKGROUND	0.17 cpm	1.38 / 60.46 cpm	cpm	mR/hr	LQ		
					5 MINUTE COUNTS	ALPHA	BETA-GAMMA
					BG		
					LC		
					LD		
					LQ		

REMARKS: 1) Instrument survey was done with E-520 and pickle probe, instrument function was checked before use as HP procedures.
2) Swipes counted with LB5100 counting system. Calibration and instrument response can be found in the log for Sept 89 for the LB5100. 3) Swipe #17 was retaken and no additional readings were found. Swipe # 17 will be counted in the liquid Scint system

S E	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER GROSS	ALPHA ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ Cs-137 ☐ OTHER GROSS	BETA-GAMMA ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM	ITEM OR LOCATION
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

N.NN = mR/hr measured w/ E-520 and pic-ale probe
SN: 3812



t McCl FM 1561-R, REV 14 March 1989 PRF ITION OBSOLETE

WED SEP 06, 1989 GROUP D SWIPES SIBERT HALL 1-LAB 1, 2-VAULT, 3-PREP, 4-HP, 5,6-HALLWAYS, 7- LAB 7, 8-INST STOR/MAINT

SN	SAMPLE CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
	89-024	1	08:11:42	0.03	0.82	-3.96	0.08	4.64	-14.52
	89-024	1	08:21:58	-0.07	-0.68	-3.36	-0.19	-3.85	-12.32
	89-024	1	08:32:14	0.03	0.52	-0.46	0.08	2.94	-1.68
4	89-024	1	08:42:30	0.03	0.42	-4.26	0.08	2.37	-15.62
5	89-024	1	08:52:46	0.03	0.22	1.34	0.08	1.24	4.91
6	89-024	1	09:03:02	0.33	0.72	2.14	0.92	4.07	7.85
7	89-024	1	09:13:19	0.03	1.22	-3.96	0.08	6.91	-14.52
8	89-024	1	09:23:35	0.23	0.82	-2.66	0.64	4.64	-9.75
9	89-024	1	09:33:51	0.33	0.12	-2.96	0.92	0.67	-10.85
10	89-024	1	09:44:07	0.03	1.12	-5.16	0.08	6.34	-18.92
11	89-024	2	09:54:23	0.33	0.82	-1.76	0.92	4.64	-6.45
12	89-024	2	10:04:40	0.33	0.42	1.74	0.92	2.37	6.38
13	89-024	2	10:14:56	-0.07	0.32	-6.66	-0.19	1.81	-24.43
14	89-024	2	10:25:12	-0.17	0.42	1.64	-0.47	2.37	6.01
15	89-024	2	10:54:12	-0.07	-0.08	-0.76	-0.19	-0.45	-2.78
16	89-024	2	11:04:28	0.13	0.72	-2.56	0.36	4.07	-9.39
17	89-024	2	11:14:44	0.73	28.42	9.04	2.04	161.01	33.16
18	89-024	2	11:25:00	-0.17	0.32	-3.36	-0.47	1.81	-12.32
19	89-024	2	11:35:17	0.13	0.32	-1.56	0.36	1.81	-5.72
20	89-024	2	11:45:33	0.03	0.22	-0.96	0.08	1.24	-3.52
21	89-024	3	11:55:49	0.03	0.42	0.54	0.08	2.37	1.98
22	89-024	3	12:06:05	-0.07	0.42	-6.06	-0.19	2.37	-22.23
23	89-024	3	12:16:21	0.23	0.12	-3.36	0.64	0.67	-12.32
24	89-024	3	12:26:37	-0.07	0.02	-2.96	-0.19	0.11	-10.85
	89-024	3	12:36:53	0.13	-0.18	0.04	0.36	-1.01	0.14
	89-024	3	12:47:10	-0.07	0.52	-2.16	-0.19	2.94	-7.92
	89-024	3	12:57:26	0.03	0.62	-1.66	0.08	3.51	-6.08
	89-024	3	13:07:42	0.23	0.12	-4.56	0.64	0.67	-16.72
29	89-024	3	13:17:58	0.23	-0.08	-1.76	0.64	-0.45	-6.45
30	89-024	3	13:28:14	0.33	0.02	3.94	0.92	0.11	14.45
31	89-024	4	13:38:30	-0.07	-1.18	-0.96	-0.19	-6.68	-3.52
32	89-024	4	13:48:46	0.13	-0.28	2.94	0.36	-1.58	10.78
33	89-024	4	13:59:02	-0.17	-0.38	-1.46	-0.47	-2.15	-5.35
34	89-024	4	14:09:18	-0.17	0.32	1.04	-0.47	1.81	3.81
35	89-024	4	14:19:34	-0.07	0.52	0.34	-0.19	2.94	1.24
36	89-024	4	14:29:51	-0.17	0.12	-2.36	-0.47	0.67	-8.65
37	89-024	4	14:40:07	0.13	-0.18	2.64	0.36	-1.01	9.68
38	89-024	4	14:50:23	0.03	-0.28	0.14	0.08	-1.58	0.51
39	89-024	4	15:00:39	0.23	-0.08	-2.46	0.64	-0.45	-9.02
40	89-024	4	15:10:55	0.33	-0.18	4.34	0.92	-1.01	15.92
41	89-024	5	15:21:11	0.13	0.42	1.24	0.36	2.37	4.54
42	89-024	5	15:31:28	0.23	0.42	0.44	0.64	2.37	1.61
43	89-024	5	15:41:44	0.03	0.02	-0.66	0.08	0.11	-2.42
44	89-024	5	15:52:00	0.13	0.32	1.84	0.36	1.81	6.74
45	89-024	5	16:02:16	0.03	0.52	-3.16	0.08	2.94	-11.59
46	89-024	5	16:12:33	0.23	0.22	0.14	0.64	1.24	0.51
47	89-024	5	16:22:49	-0.07	-0.28	-2.16	-0.19	-1.58	-7.92
48	89-024	5	16:33:05	0.33	-0.68	-2.26	0.92	-3.85	-8.29
49	89-024	5	16:43:22	-0.07	-0.08	-4.66	-0.19	-0.45	-17.09
50	89-024	5	16:53:38	0.03	0.02	-1.86	0.08	0.11	-6.82
	89-024	6	07:27:58	0.03	1.22	-2.16	0.08	6.91	-7.92
	89-024	6	07:38:14	0.43	-0.18	0.44	1.20	-1.01	1.61
	89-024	6	07:48:31	0.13	0.62	-5.96	0.36	3.51	-21.86
54	89-024	6	07:58:47	0.23	0.32	-4.46	0.64	1.81	-16.36
55	89-024	6	08:09:03	0.83	0.02	1.14	2.32	0.11	4.18
56	89-024	6	08:19:19	0.13	0.02	0.04	0.36	0.11	0.14
57	89-024	6	08:29:35	0.13	0.32	-3.56	0.36	1.81	-13.05
58	89-024	6	08:39:51	0.43	0.62	-2.26	1.20	3.51	-8.29
59	89-024	6	08:50:07	0.13	0.42	1.66	0.36	2.37	6.08

55	89-024	6	08:09:03	0.83	0.02	1.14	2.32	0.11	4.18
56	89-024	6	08:19:19	0.13	0.02	0.04	0.36	0.11	0.14
57	89-024	6	08:29:35	0.13	0.32	-3.56	0.36	1.81	-13.05
58	89-024	6	08:39:51	0.43	0.62	-2.26	1.20	3.51	-8.29
	-024	6	08:50:07	0.13	0.42	-1.66	0.36	2.37	-6.08
	)24	6	09:00:23	0.13	-0.28	-1.36	0.36	-1.58	-4.98
	024	7	09:10:39	0.13	0.72	-0.26	0.36	4.07	-0.95
	024	7	09:20:55	-0.07	0.22	-6.36	-0.19	1.24	-23.33
63	89-024	7	09:31:11	-0.17	-0.38	1.54	-0.47	-2.15	5.64
64	89-024	7	09:41:27	0.13	0.42	-3.46	0.36	2.37	-12.69
65	89-024	7	09:51:44	-0.07	0.02	-5.26	-0.19	0.11	-19.29
66	89-024	7	10:02:00	-0.07	0.12	-1.26	-0.19	0.67	-4.62
67	89-024	7	10:12:16	-0.07	-0.08	-3.26	-0.19	-0.45	-11.95
68	89-024	7	10:22:32	-0.17	-0.18	-1.76	-0.47	-1.01	-6.45
69	89-024	7	10:32:48	0.03	0.52	-1.06	0.08	2.94	-3.88
70	89-024	7	10:43:04	-0.07	0.02	-1.86	-0.19	0.11	-6.82
71	89-024	8	10:53:20	0.03	-0.48	-4.06	0.08	-2.71	-14.89
72	89-024	8	11:03:36	0.13	0.32	-0.26	0.36	1.81	-0.95
73	89-024	8	11:13:52	0.23	0.12	-3.16	0.64	0.67	-11.59
74	89-024	8	11:24:08	0.23	-0.18	-7.26	0.64	-1.01	-26.63
75	89-024	8	11:34:25	-0.17	-0.18	-0.76	-0.47	-1.01	-2.78
76	89-024	8	11:44:41	-0.07	0.02	-0.26	-0.19	0.11	-0.95
77	89-024	8	11:54:57	0.13	1.22	-1.86	0.36	6.91	-6.82
78	89-024	8	12:05:13	0.13	0.22	4.84	0.36	1.24	17.75
79	89-024	8	12:15:29	-0.17	-0.08	-1.56	-0.47	-0.45	-5.72
80	89-024	8	12:25:45	0.03	-0.08	-3.16	0.08	-0.45	-11.59
17	89-024	2	09:22:17	0.93	27.12	3.24	2.60	153.65	11.88
17	89-024	2	09:50:36	0.83	29.52	7.04	2.32	167.25	25.82
18	89-024	2	10:00:52	-0.17	0.02	-3.16	-0.47	0.11	-11.59

→ Re Swipe of the same area

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CONTAMINATION/RADIATION SURVEY REPORT	DATE 4-5 Oct 89	TIME START	TIME COMPL	PAGE 1 OF 5	SURVEY NO. 89-027	NO. OF SAMPLES 80
TION RB. LABS dg 1081	REASON FOR SURVEY: PROCEDURE NO. HP.SOP ☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☒ ROUTINE				SURVEYOR: SSG Torres.	
REVIEWER: TITLE Kong HP	PHONE	☐ NO ACTION REQ'D ☒ CIRCLED READINGS - DECONTAMINATE/RESURVEY				

PERMISSIBLE LEVELS	CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA
☐ ≤220 dpm/100 cm² ALPHA ☐ ≤2200 dpm 100 cm² BETA-GAMMA ☐ OTHER	INSTRUMENT SURVEY	INSTRUMENT TAG NO	~~ALPHA~~ Ludlum →	BETA-GAMMA Ludlum ~~[illegible]~~ NEUTRON

SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION		
SOURCE ID	ALPHA Pb-210	BETA-GAMMA C-14 / Cs-137	ALPHA	BETA-GAMMA	2 MINUTE COUNTS ALPHA	BETA-GAMMA	
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr	~~BG~~		
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr	LC		
INSTRUMENT EFFICIENCY	35.83 %	1765 / 27.8 %	%	%	LD	0.61 cpm 1.70 cpm	177 cpm 10 dpm 11.4 cpm 4802 dpm
BACKGROUND	0.17 cpm	1.44 / 60.53 cpm	cpm	mR/hr	LQ		

5 MINUTE COUNTS	ALPHA	BETA-GAMMA
BG		
LC		
LD		
LQ		

REMARKS: Swipes counted with LB5100 automated system, see Oct 89 Background efficiency file.
Instrument performance check OK, logged in Log sheet
Ludlum with (GM) probe
LLD's

S	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER GROSS	ALPHA ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ Cs-137 ☐ OTHER GROSS	BETA-GAMMA ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM ☐	ITEM OR LOCATION
1						Swipe locations are marked
2						on attached Diagram.
3						
4						
5						
6						
7						
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1						
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4						
5						
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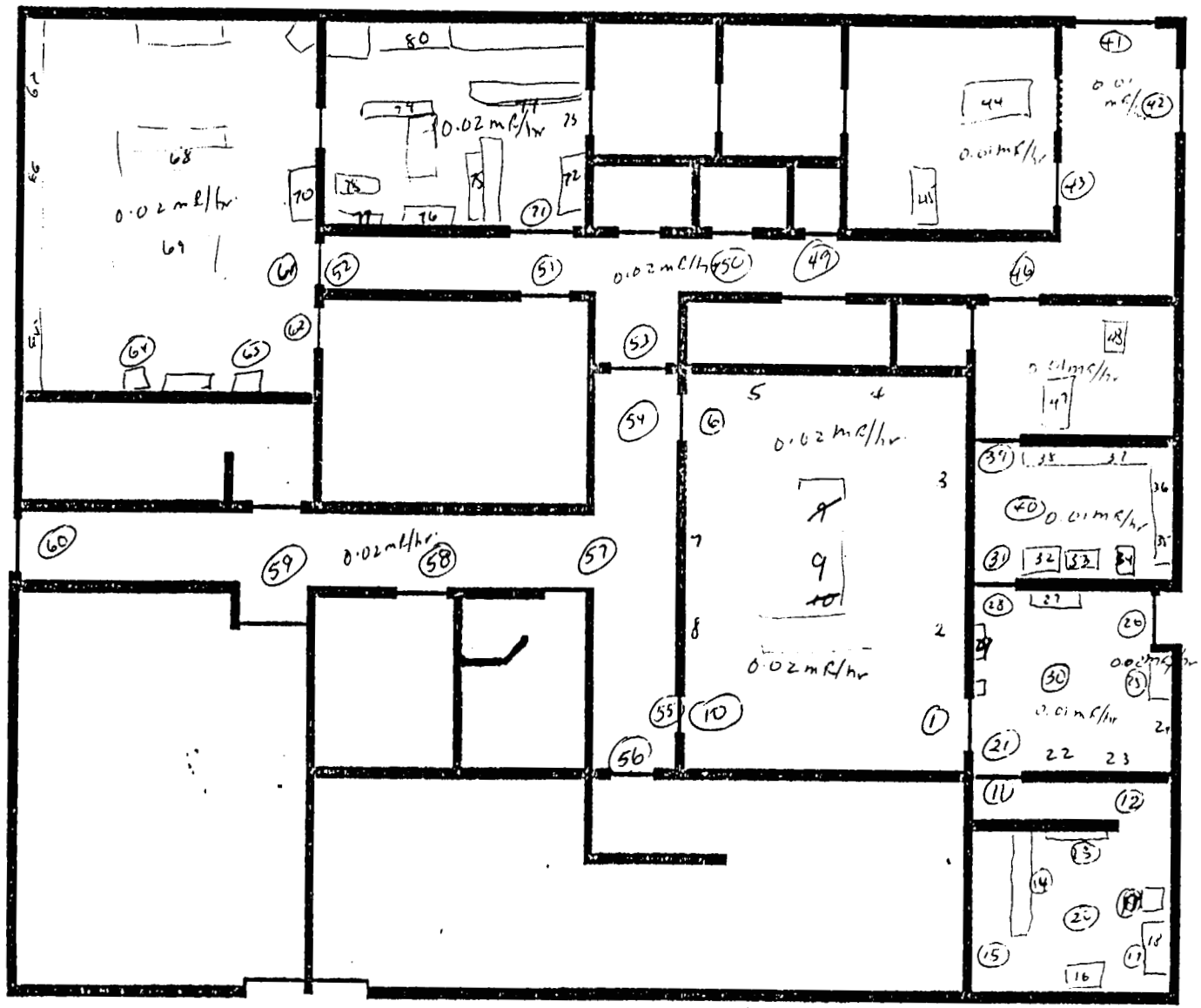
9						
10						

Ft. McCl. FM 3560

40 Oct 89



Ft McCl FM 1561-R, REV 14 March 1989 PREVIOUS EDITION OBSOLETE

WED OCT 04, 1989 GROUP D SWIPES SIBERT HALL 1-LAB 1, 2-VAULT, 3-PREP, 4-HP, 5,6-HALLWAYS, 7- LAB 7, 8-INST STOR/MAINT

SN	SAMPLE CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
1	89-027	2	07:52:19	0.03	-0.34	0.07	0.08	-1.92	0.25
	89-027	2	08:02:33	0.13	0.26	-2.33	0.36	1.47	-8.54
3	89-027	2	08:12:47	0.03	0.36	-0.73	0.08	2.03	-2.67
4	89-027	2	08:23:00	0.03	-0.04	1.97	0.08	-0.22	7.22
5	89-027	3	08:33:14	0.13	0.76	-1.83	0.36	4.30	-6.70
6	89-027	3	08:43:28	0.13	-0.34	1.87	0.36	-1.92	6.85
7	89-027	3	08:53:42	-0.07	0.26	-1.73	-0.19	1.47	-6.34
8	89-027	3	09:03:56	0.23	0.26	0.87	0.64	1.47	3.16
9	89-027	5	09:14:10	0.33	-0.44	-0.53	0.92	-2.49	-1.94
10	89-027	5	09:24:24	0.13	0.46	-2.53	0.36	2.60	-9.27
11	89-027	5	09:34:39	-0.07	0.96	-0.83	-0.19	5.43	-3.04
12	89-027	5	09:44:53	0.03	-0.44	0.67	0.08	-2.49	2.45
13	89-027	6	09:55:07	0.13	0.46	0.07	0.36	2.60	0.25
14	89-027	6	10:05:21	-0.07	0.76	1.97	-0.19	4.30	7.22
15	89-027	6	10:15:35	0.33	0.36	0.27	0.92	2.03	0.98
16	89-027	6	10:25:50	0.43	0.36	3.97	1.20	2.03	14.55
17	89-027	7	10:36:04	0.03	0.36	1.87	0.08	2.03	6.85
18	89-027	7	10:46:18	0.63	-0.54	-0.03	1.75	-3.05	-0.10
19	89-027	7	10:56:32	0.03	0.06	2.77	0.08	0.33	10.15
20	89-027	7	11:06:47	0.13	0.16	0.17	0.36	0.90	0.62
21	89-027	8	11:17:01	0.13	0.46	1.17	0.36	2.60	4.28
22	89-027	8	11:27:15	-0.07	0.66	0.97	-0.19	3.73	3.55
23	89-027	8	11:37:29	-0.07	0.06	-0.63	-0.19	0.33	-2.30
24	89-027	8	11:47:44	-0.07	-0.34	-2.23	-0.19	-1.92	-8.17
25	89-027	0	11:57:58	0.13	-0.04	-2.73	0.36	-0.22	-10.00
26	89-027	0	12:08:12	0.13	0.56	-0.63	0.36	3.17	-2.30
	89-027	0	12:18:26	-0.17	0.16	-2.93	-0.47	0.90	-10.74
28	89-027	0	12:28:40	-0.07	-0.34	4.87	-0.19	-1.92	17.85
29	89-027	3	12:38:55	-0.07	-0.64	-1.13	-0.19	-3.62	-4.14
30	89-027	3	12:49:09	-0.17	0.56	-2.33	-0.47	3.17	-8.54
31	89-027	4	12:59:23	0.23	0.56	-0.03	0.64	3.17	-0.10
32	89-027	4	13:09:37	0.03	-0.14	4.07	0.08	-0.79	14.91
33	89-027	4	13:19:51	0.13	-0.14	3.17	0.36	-0.79	11.62
34	89-027	4	13:30:05	0.03	-0.24	-4.83	0.08	-1.35	-17.70
35	89-027	4	13:40:19	0.13	-0.04	2.97	0.36	-0.22	10.88
36	89-027	4	13:50:33	-0.07	-0.04	2.67	-0.19	-0.22	9.78
37	89-027	4	14:00:47	-0.07	-0.04	2.37	-0.19	-0.22	8.68
38	89-027	4	14:11:01	0.43	-0.14	-2.23	1.20	-0.79	-8.17
39	89-027	4	14:21:15	0.03	-0.04	0.77	0.08	-0.22	2.82
40	89-027	4	14:31:29	-0.07	-0.04	-1.13	-0.19	-0.22	-4.14
41	89-027	5	14:41:43	-0.07	0.26	-0.33	-0.19	1.47	-1.20
42	89-027	5	14:51:57	0.03	-0.24	-1.13	0.08	-1.35	-4.14
43	89-027	5	15:02:11	0.13	-0.34	2.27	0.36	-1.92	8.32
44	89-027	5	15:12:25	-0.17	-0.54	-2.03	-0.47	-3.05	-7.44
45	89-027	5	15:22:39	0.13	-0.04	1.87	0.36	-0.22	6.85
46	89-027	5	15:32:54	-0.17	0.06	0.37	-0.47	0.33	1.35
47	89-027	5	15:43:08	-0.07	-0.54	0.27	-0.19	-3.05	0.98
48	89-027	5	15:53:22	0.13	0.16	2.07	0.36	0.90	7.58
49	89-027	5	16:03:36	0.13	0.56	1.87	0.36	3.17	6.85
50	89-027	5	16:13:50	0.23	-0.14	1.27	0.64	-0.79	4.65
51	89-027	6	16:24:04	-0.07	-0.24	0.37	-0.19	-1.35	1.35
52	89-027	6	16:34:18	-0.07	-0.84	-3.83	-0.19	-4.75	-14.03
53	89-027	6	16:44:33	0.23	-0.34	3.67	0.64	-1.92	13.45
54	89-027	6	16:54:47	0.33	-0.24	-1.03	0.92	-1.35	-3.77
55	89-027	6	17:05:01	0.33	-0.24	-2.43	0.92	-1.35	-8.90
56	89-027	6	17:15:15	0.33	0.16	1.07	0.92	0.90	3.92
57	89-027	6	17:25:30	0.03	-0.24	-0.03	0.08	-1.35	-0.10
58	89-027	6	17:35:44	-0.07	0.16	-1.23	-0.19	0.90	-4.50

37	89-027	4	14:00:47	-0.07	-0.04	2.37	-0.19	-0.22	8.66
38	89-027	4	14:11:01	0.43	-0.14	-2.23	1.20	-0.79	-8.17
39	89-027	4	14:21:15	0.03	-0.04	0.77	0.08	-0.22	2.82
40	89-027	4	14:31:29	-0.07	-0.04	-1.13	-0.19	-0.22	-4.14
	027	5	14:41:43	-0.07	0.26	-0.33	-0.19	1.47	-1.20
	)27	5	14:51:57	0.03	-0.24	-1.13	0.08	-1.35	-4.14
	'27	5	15:02:11	0.13	-0.34	2.27	0.36	-1.92	8.32
	,27	5	15:12:25	-0.17	-0.54	-2.03	-0.47	-3.05	-7.44
45	89-027	5	15:22:39	0.13	-0.04	1.87	0.36	-0.22	6.85
46	89-027	5	15:32:54	-0.17	0.06	0.37	-0.47	0.33	1.35
47	89-027	5	15:43:08	-0.07	-0.54	0.27	-0.19	-3.05	0.98
48	89-027	5	15:53:22	0.13	0.16	2.07	0.36	0.90	7.58
49	89-027	5	16:03:36	0.13	0.56	1.87	0.36	3.17	6.85
50	89-027	5	16:13:50	0.23	-0.14	1.27	0.64	-0.79	4.65
51	89-027	6	16:24:04	-0.07	-0.24	0.37	-0.19	-1.35	1.35
52	89-027	6	16:34:18	-0.07	-0.84	-3.83	-0.19	-4.75	-14.03
53	89-027	6	16:44:33	0.23	-0.34	3.67	0.64	-1.92	13.45
54	89-027	6	16:54:47	0.33	-0.24	-1.03	0.92	-1.35	-3.77
55	89-027	6	17:05:01	0.33	-0.24	-2.43	0.92	-1.35	-8.90
56	89-027	6	17:15:15	0.33	0.16	1.07	0.92	0.90	3.92
57	89-027	6	17:25:30	0.03	-0.24	-0.03	0.08	-1.35	-0.10
58	89-027	6	17:35:44	-0.07	0.16	-1.23	-0.19	0.90	-4.50
59	89-027	6	17:45:58	0.03	-0.64	1.07	0.08	-3.62	3.92
60	89-027	6	17:56:12	0.13	1.16	1.87	0.36	6.57	6.85
61	89-027	7	18:06:26	0.23	0.46	0.37	0.64	2.60	1.35
62	89-027	7	18:16:40	-0.17	-1.04	4.37	-0.47	-5.89	16.01
63	89-027	7	18:26:55	0.03	-0.44	-0.43	0.08	-2.49	-1.57
64	89-027	7	18:37:09	0.23	0.26	4.67	0.64	1.47	17.11
65	89-027	7	18:47:23	0.13	-0.44	2.27	0.36	-2.49	8.32
66	89-027	7	18:57:37	0.13	-0.14	-0.43	0.36	-0.79	-1.57
	)27	7	19:07:51	-0.07	-0.24	0.27	-0.19	-1.35	0.98
	027	7	19:18:06	-0.07	-0.24	1.77	-0.19	-1.35	6.48
	)27	7	19:28:20	0.03	-0.34	0.37	0.08	-1.92	1.35
70	89-027	7	19:38:34	0.03	-0.24	-1.13	0.08	-1.35	-4.14
71	89-027	8	19:48:48	0.23	0.16	0.37	0.64	0.90	1.35
72	89-027	8	19:59:02	0.13	0.16	4.67	0.36	0.90	17.11
73	89-027	8	20:09:16	0.03	-0.04	-1.93	0.08	-0.22	-7.07
74	89-027	8	20:19:31	0.23	-0.24	1.27	0.64	-1.35	4.65
75	89-027	8	20:29:45	-0.17	-0.04	1.27	-0.47	-0.22	4.65
76	89-027	8	20:39:59	0.33	0.46	-1.33	0.92	2.60	-4.67
77	89-027	8	20:50:13	0.13	-0.74	1.97	0.36	-4.19	7.22
78	89-027	8	21:00:27	-0.07	0.16	-0.73	-0.19	0.90	-2.67
79	89-027	8	21:10:41	0.13	-0.14	-1.43	0.36	-0.79	-5.24
80	89-027	8	21:20:55	1.53	3.26	2.47	4.27	18.47	9.05

)OS READY

'MAND

TENNELEC LB 5100 ALPHA/BETA/GAMMA SYSTEM

;t SAMPLE OF EACH GROUP AS BKG?

CHI SQUARE?

;T 05, 1989 GROUP D SWIPES SIBERT HALL 1-LAB 1, 2-VAULT, 3-PREP, 4-HP, 5
LWAYS, 7- LAB 7, 8-INST STOR/MAINT

LE	LOCATION	TIME	ALPHA	BETA	GAMMA	ALPHA	BETA
G							
L	LAB		CPM	CPM	CPM	DPM	DPM
P							
89-027	3	16:03:39	-0.07	0.26	-0.33	-0.19	?
	-1.20						
89-027	8	16:14:14	-0.17	0.46	1.87	-0.47	
	6.85						

ION COMPLETE

nter (ON) F2-Capture(OFF) F3-Send F4-Receive F5-Directory F6-Quit F7-SetUp

CONTAMINATION/RADIATION SURVEY REPORT	DATE	TIME START	TIME COMPL	PAGE 1 OF 4	SURVEY NO.	NO. OF SAMPLES
	16 Nov 89				89-026	80

LOCATION	REASON FOR SURVEY:	PROCEDURE NO.	SURVEYOR:
Bldg 1051, Rad Labs	☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☒ ROUTINE	HPO SOP	SSG Torres

REVIEWER: TITLE	PHONE	
[illegible] NS		☒ NO ACTION REQ'D ☐ CIRCLED READINGS · DECONTAMINATE/RESURVEY

PERMISSIBLE LEVELS	CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	
☐ ≤220 dpm/100 cm² ALPHA ☐ <2200 dpm 100 cm² BETA-GAMMA ☐ OTHER _____				E-520 Sn 3813	
	INSTRUMENT SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	NEUTRON

SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION		
SOURCE ID	ALPHA Po-210	BETA-GAMMA C-14 - Cs-137	ALPHA	BETA-GAMMA	2 MINUTE COUNTS	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr	BG		
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr	LC		
INSTRUMENT EFFICIENCY	35.89 %	17.65/27.25 %	%	%	LD		
BACKGROUND	0.17 cpm	1.90/66.32 cpm	cpm	mR/hr	LQ		
					5 MINUTE COUNTS	ALPHA	BETA-GAMMA
					BG		
					LC		
					LD		
					LQ		

REMARKS: Samples were counted w/ LB 5100 according to HP SOP.
LLD for Nov 89, α = 1.69 dpm, β = 9.88 dpm γ = 42.00 dpm.
Swipes Locations are pointed out on the enclosed diagram.

E	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER _____ GROSS	ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ Cs-137 ☐ OTHER _____ GROSS	ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM ☐	ITEM OR LOCATION
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
1						
2						
3						
4						
8						
9						
10						

LLD dpm

α 1.69 dpm

β 9.88 dpm

γ 42.0 dpm

THU NOV 16, 1989 GROUP D SWIPES SIBERT HALL 1-LAB 1, 2-VAULT, 3-PREP, 4-HP, 5,6-HALLWAYS, 7- LAB 7, 8-INST STOR/MAINT

SN	SAMPLE CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
1	89-029	1	12:53:47	-0.07	0.60	-0.92	-0.19	3.39	-3.37
2	89-029	1	13:04:01	0.23	0.60	1.58	0.65	3.39	5.80
1	89-029	1	13:18:11	0.03	0.20	-0.22	0.08	1.13	-0.80
2	89-029	1	13:28:25	0.03	0.60	-9.42	0.08	3.39	-34.58
3	89-029	1	13:38:39	0.33	-0.20	-3.32	0.94	-1.13	-12.18
4	89-029	1	13:48:53	0.43	0.50	-5.22	1.22	2.83	-19.16
5	89-029	1	13:59:08	0.03	0.70	-3.92	0.08	3.96	-14.39
6	89-029	1	14:09:22	-0.07	0.10	-3.12	-0.19	0.56	-11.45
7	89-029	1	14:19:36	0.13	-0.40	-2.52	0.37	-2.26	-9.25
8	89-029	1	14:29:50	0.13	-0.40	-2.52	0.37	-2.26	-9.25
9	89-029	1	14:40:04	-0.17	0.60	-1.02	-0.48	3.39	-3.74
10	89-029	1	14:50:18	-0.07	0.70	-1.32	-0.19	3.96	-4.84
11	89-029	2	15:00:33	0.13	0.20	-2.42	0.37	1.13	-8.88
'2	89-029	2	15:10:47	-0.07	0	-2.72	-0.19	0	-9.98
3	89-029	2	15:21:01	0.13	-0.20	3.78	0.37	-1.13	13.87
	89-029	2	15:31:16	-0.07	-0.40	-4.82	-0.19	-2.26	-17.69
	89-029	2	15:41:30	0.03	-0.30	-0.12	0.08	-1.69	-0.44
16	89-029	2	15:51:44	-0.17	-0.30	-4.02	-0.48	-1.69	-14.75
17	89-029	2	16:01:58	0.13	0	-1.02	0.37	0	-3.74
18	89-029	2	16:12:12	0.33	1.00	-4.82	0.94	5.66	-17.69
19	89-029	2	16:22:26	-0.07	0.60	0.48	-0.19	3.39	1.76
20	89-029	2	16:32:40	0.53	0.80	1.98	1.51	4.53	7.26
21	89-029	3	16:42:55	0.33	-0.20	-1.72	0.94	-1.13	-6.31
22	89-029	3	16:53:09	0.23	0.40	-0.42	0.65	2.26	-1.54
23	89-029	3	17:03:23	-0.07	-0.20	-4.52	-0.19	-1.13	-16.59
24	89-029	3	17:13:37	-0.07	0.30	2.18	-0.19	1.69	8.00
25	89-029	3	17:23:52	0.03	-0.40	0.78	0.08	-2.26	2.86
26	89-029	3	17:34:06	-0.07	0.10	-2.22	-0.19	0.56	-8.14
27	89-029	3	17:44:20	0.23	0.40	-1.02	0.65	2.26	-3.74
28	89-029	3	17:54:34	0.23	-0.50	-1.72	0.65	-2.83	-6.31
29	89-029	3	18:04:48	0.03	0	2.08	0.08	0	7.63
30	89-029	3	18:15:02	-0.17	-0.20	-2.12	-0.48	-1.13	-7.78
31	89-029	4	18:25:17	0.13	0	-3.02	0.37	0	-11.08
32	89-029	4	18:35:31	-0.17	0.70	2.58	-0.48	3.96	9.47
33	89-029	4	18:45:45	0.23	0.40	-1.72	0.65	2.26	-6.31
34	89-029	4	18:55:59	0.33	0.10	0.48	0.94	0.56	1.76
35	89-029	4	19:06:13	0.13	-0.50	-4.82	0.37	-2.83	-17.69
36	89-029	4	19:16:28	0.13	0.30	-3.32	0.37	1.69	-12.18
37	89-029	4	19:26:42	0.13	-0.70	-3.42	0.37	-3.96	-12.55
9	89-029	4	19:36:56	0.13	0.30	-0.02	0.37	1.69	-0.07
	89-029	4	19:47:10	0.33	-0.10	4.48	0.94	-0.56	16.44
	89-029	4	19:57:25	-0.17	-0.30	-2.82	-0.48	-1.69	-10.35
41	89-029	5	20:07:39	0.23	0.10	-1.72	0.65	0.56	-6.31
42	89-029	5	20:17:53	0.13	0.70	-6.32	0.37	3.96	-23.20
43	89-029	5	20:28:07	0.23	0.70	-2.12	0.65	3.96	-7.78
44	89-029	5	20:38:22	-0.03	-0.10	-0.02	0.08	-0.56	-0.07
45	89-029	5	20:48:36	0.03	0.30	-1.12	0.08	1.69	-4.11

28 89-029	3	17:54:34	0.23	-0.30	-1.72	0.65	-2.83	-6.31
29 89-029	3	18:04:48	0.03	0	2.08	0.08	0	7.63
30 89-029	3	18:15:02	-0.17	-0.20	-2.12	-0.48	-1.13	-7.78
31 89-029	4	18:25:17	0.13	0	-3.02	0.37	0	-11.08
-029	4	18:35:31	-0.17	0.70	2.58	-0.48	3.96	9.47
029	4	18:45:45	0.23	0.40	-1.72	0.65	2.26	-6.31
29	4	18:55:59	0.33	0.10	0.48	0.94	0.56	1.76
29	4	19:06:13	0.13	-0.50	-4.82	0.37	-2.83	-17.69
36 89-029	4	19:16:28	0.13	0.30	-3.32	0.37	1.69	-12.18
37 89-029	4	19:26:42	0.13	-0.70	-3.42	0.37	-3.96	-12.55
38 89-029	4	19:36:56	0.13	0.30	-0.02	0.37	1.69	-0.07
39 89-029	4	19:47:10	0.33	-0.10	4.48	0.94	-0.56	16.44
40 89-029	4	19:57:25	-0.17	-0.30	-2.82	-0.48	-1.69	-10.35
41 89-029	5	20:07:39	0.23	0.10	-1.72	0.65	0.56	-6.31
42 89-029	5	20:17:53	0.13	0.70	-6.32	0.37	3.96	-23.20
43 89-029	5	20:28:07	0.23	0.70	-2.12	0.65	3.96	-7.78
44 89-029	5	20:38:22	0.03	-0.10	-0.02	0.08	-0.56	-0.07
45 89-029	5	20:48:36	0.03	0.30	-1.12	0.08	1.69	-4.11
46 89-029	5	20:58:50	0.03	0.30	-0.52	0.08	1.69	-1.90
47 89-029	5	21:09:05	-0.17	-0.30	-2.82	-0.48	-1.69	-10.35
48 89-029	5	21:19:19	0.03	0	-2.12	0.08	0	-7.78
49 89-029	5	21:29:34	0.13	0.20	0.08	0.37	1.13	0.29
50 89-029	5	21:39:48	-0.07	0	-5.32	-0.19	0	-19.53
51 89-029	6	21:50:02	0.33	-0.70	-3.62	0.94	-3.96	-13.28
52 89-029	6	22:00:17	0.13	0.10	-2.42	0.37	0.56	-8.88
53 89-029	6	22:10:31	0.13	-0.50	-0.52	0.37	-2.83	-1.90
54 89-029	6	22:20:46	0.13	-0.40	-3.92	0.37	-2.26	-14.39
55 89-029	6	22:31:00	-0.07	0.10	-3.42	-0.19	0.56	-12.55
56 89-029	6	22:41:14	0.13	0.20	-0.12	0.37	1.13	-0.44
-029	6	22:51:28	0.23	-0.30	-0.92	0.65	-1.69	-3.37
029	6	23:01:43	0.23	-0.10	1.68	0.65	-0.56	6.16
029	6	23:11:57	0.03	0.40	-3.72	0.08	2.26	-13.65
29	6	23:22:11	0.03	0.40	-1.52	0.08	2.26	-5.58
61 89-029	7	23:32:26	0.03	0.90	-2.72	0.08	5.09	-9.98
62 89-029	7	23:42:40	0.03	0.50	1.08	0.08	2.83	3.96
63 89-029	7	23:52:54	0.23	0.10	1.48	0.65	0.56	5.43
64 89-029	7	00:03:08	0.23	0.30	-2.32	0.65	1.69	-8.51
65 89-029	7	00:13:23	0.23	0.10	-0.42	0.65	0.56	-1.54
66 89-029	7	00:23:37	0.13	-0.30	-7.12	0.37	-1.69	-26.13
67 89-029	7	00:33:51	-0.17	-0.40	-0.12	-0.48	-2.26	-0.44
68 89-029	7	00:44:05	-0.07	-0.20	1.08	-0.19	-1.13	3.96
69 89-029	7	00:54:20	-0.07	0.40	-3.92	-0.19	2.26	-14.39
70 89-029	7	01:04:34	0.13	0.20	-4.82	0.37	1.13	-17.69
71 89-029	8	01:14:48	0.33	0.50	-2.52	0.94	2.83	-9.25
72 89-029	8	01:25:03	0.13	0.60	0.08	0.37	3.39	0.29
73 89-029	8	01:35:17	0.23	0.10	-0.12	0.65	0.56	-0.44
74 89-029	8	01:45:31	-0.17	1.10	-0.22	-0.48	6.23	-0.80
75 89-029	8	01:55:46	0.23	-0.30	2.58	0.65	-1.69	9.47
76 89-029	8	02:06:00	0.13	0.70	0.68	0.37	3.96	2.49
77 89-029	8	02:16:14	0.43	0.20	0.18	1.22	1.13	0.66
78 89-029	8	02:26:28	0.43	-0.10	-1.42	1.22	-0.56	-5.21
79 89-029	8	02:36:43	0.03	0.60	0.18	0.08	3.39	0.66
80 89-029	8	02:46:57	0.43	2.30	-0.62	1.22	13.03	-2.27

Recounted.

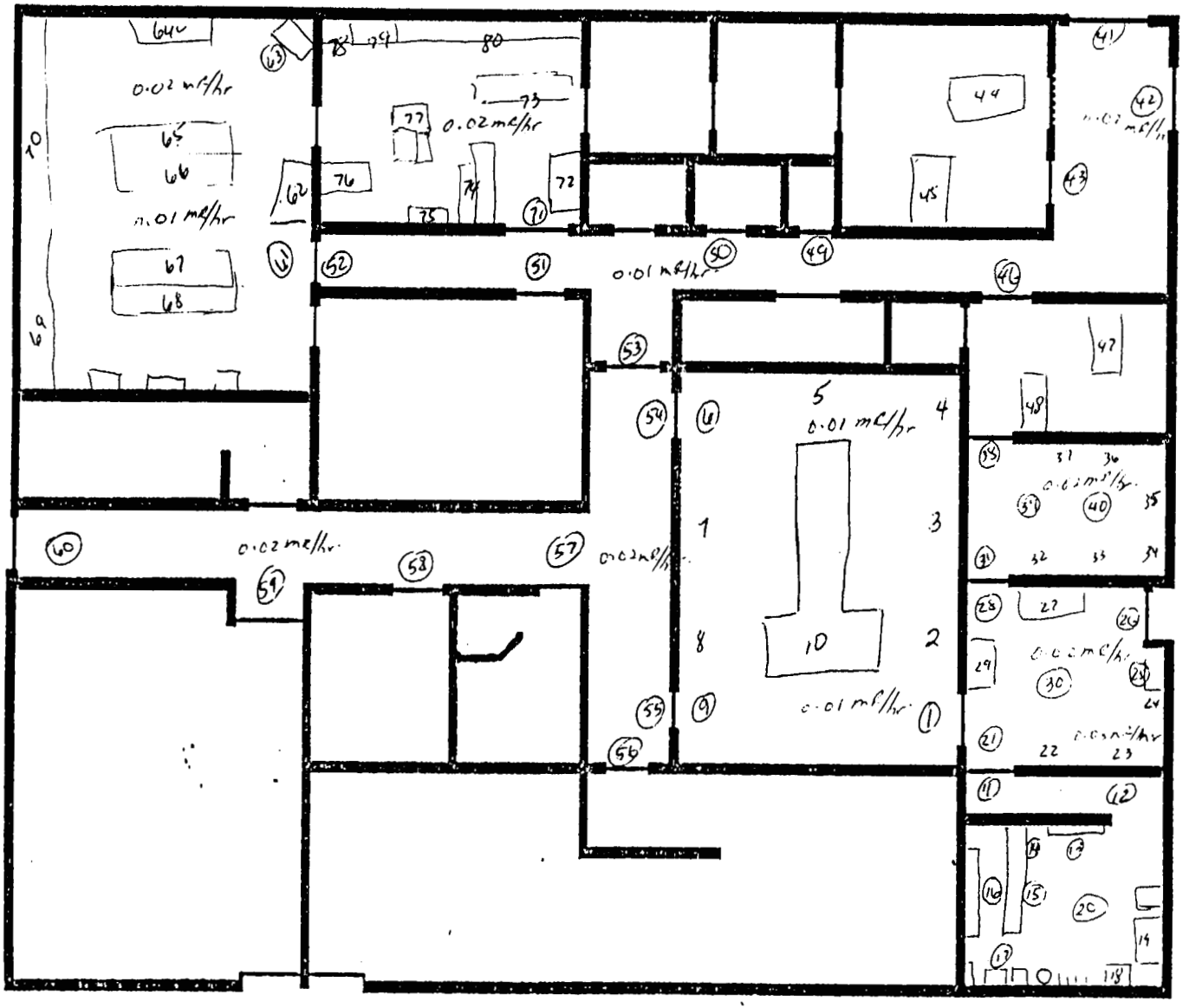
FRI NOV 17, 1989 GROUP D SWIPES SIBERT HALL 1-LAB 1, 2-VAULT, 3-PREP, 4-HP, 5,6-HALLWAYS, 7- LAB 7, 8-INST STOR/MAINT

SN	SAMPLE CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
80	89-029	8	09:21:51	0.03	0.30	-0.52	0.08	1.69	-1.90

exrate readings with E-520 & pickle probe.

(N) = floor.

N = over surface



CONTAMINATION/RADIATION SURVEY REPORT	DATE	TIME START	TIME COMPL	PAGE 1 OF 3	SURVEY NO.	NO. OF SAMPLES
	12 Dec 89				89-033	80

TION	REASON FOR SURVEY: PROCEDURE NO. HPO SOP	SURVEYOR:
D LABS	☐ SOIL ☒ WIPE ☐ SOURCE ☐ SPECIAL ☒ ROUTINE	SSG TORRES

REVIEWER: TITLE	PHONE	
Kemp	4987	☒ NO ACTION REQ'D ☐ CIRCLED READINGS - DECONTAMINATE/RESURVEY

PERMISSIBLE LEVELS					
☐ ≤220 dpm/100 cm² ALPHA ☐ <2200 dpm 100 cm² BETA-GAMMA ☐ OTHER ____	CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	
	INSTRUMENT SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA E-520	NEUTRON

SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION		
SOURCE ID	ALPHA Po-210	BETA-GAMMA C-14 / Cs-137	ALPHA	BETA-GAMMA	2 MINUTE COUNTS	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr	BG		
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr	LC		
INSTRUMENT EFFICIENCY	35.78 %	17.35 / 27.33 %	%	%	LD		
BACKGROUND	0.18 cpm	1.43 / 60.31 cpm	cpm	mR/hr	LQ		
					5 MINUTE COUNTS	ALPHA	BETA-GAMMA
					BG		
					LC		
					LD		
					LQ		

REMARKS: Counted with LB5100.

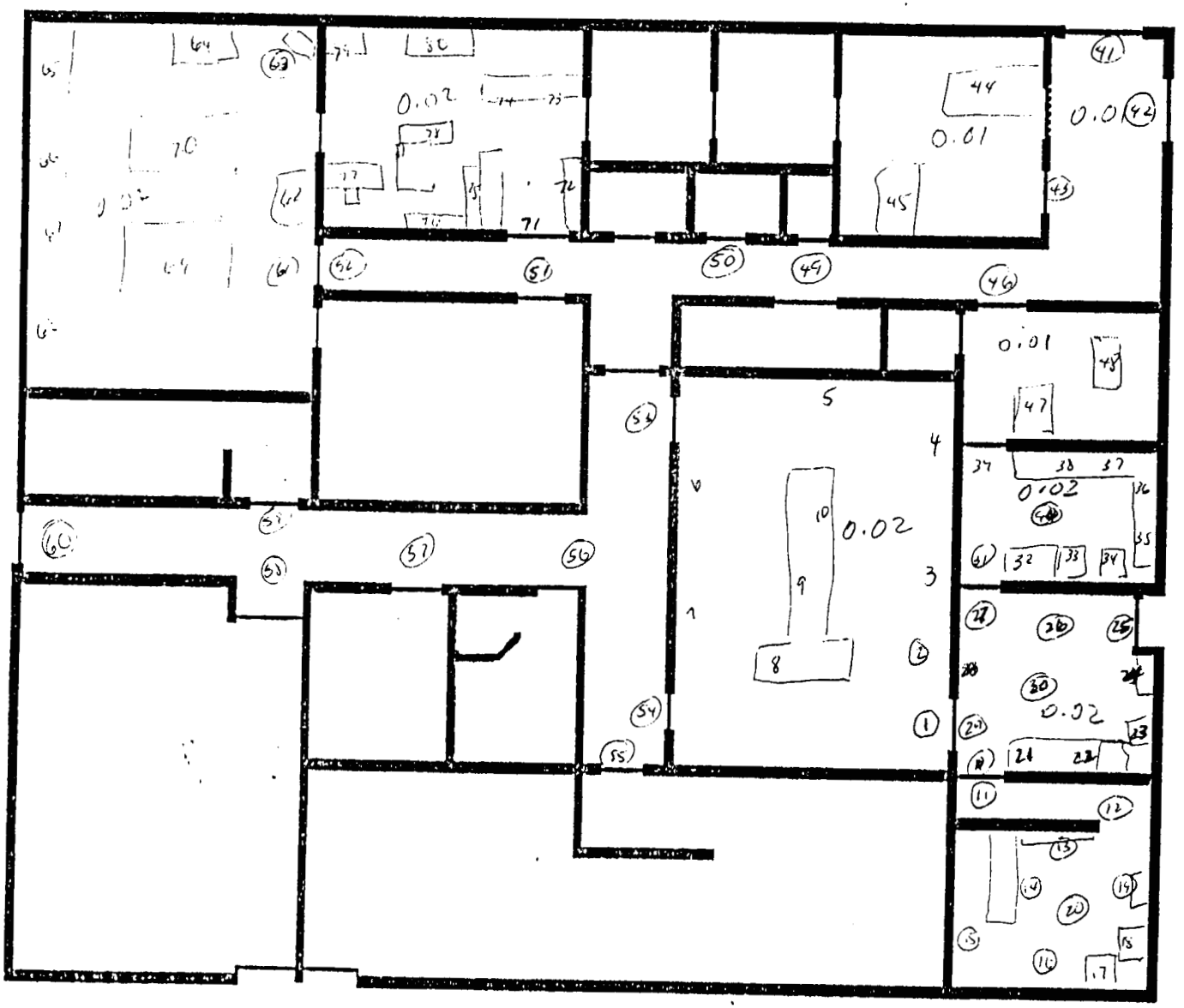
Lower Limits of detection

$LLD_\alpha = 1.75$ dpm $LLD_\beta = 9.95$ dpm $LLD_\gamma = 411.98$ dpm

See attached diagram for instrument survey readings and swipe locations

S.	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER ____ GROSS	ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ Cs-137 ☐ OTHER ____ GROSS	ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM ☐	ITEM OR LOCATION
1						1-10 Lab 1
2						11-20 Vault
3						21-30 Prep Lab.
4						31-40 HPO Lab
5						41-50 Hallway
6						51-60 Hallway
7						61-70 Lab 7
8						71-80 Instrument Repair
9						Shop.
10						
1						
2						
3						
4						
8						

11 Dec 84.



DEC 12, 1989 GROUP D SWIPES SIBERT HALL 1-LAB 1, 2-VAULT, 3-PREP, 4-HP, 5,6-HALLWAYS, 7- LAB 7, 8-INST STOR/MAINT

PLE CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
1 89-033	1	08:27:59	0.12	-0.12	-4.11	0.33	-0.68	-15.07
2 89-033	1	09:33:52	0.02	-0.42	-3.31	0.05	-2.38	-12.14
3 89-033	1	09:44:07	0.02	0.08	-2.61	0.05	0.45	-9.57
4 89-033	1	09:54:22	0.22	-0.12	-3.81	0.61	-0.68	-13.97
5 89-033	1	10:04:36	0.02	0.48	2.99	0.05	2.72	10.96
6 89-033	1	10:14:51	-0.08	0.18	-4.31	-0.22	1.02	-15.81
7 89-033	1	10:25:05	0.02	0.88	0.89	0.05	4.99	3.26
8 89-033	1	10:35:20	-0.08	1.58	-1.41	-0.22	8.96	-5.17
9 89-033	1	10:45:35	0.02	0.68	-3.11	0.05	3.85	-11.40
10 89-033	1	10:55:49	-0.18	0.08	3.99	-0.50	0.45	14.63
11 89-033	2	11:06:04	-0.08	0.18	0.19	-0.22	1.02	0.69
12 89-033	2	11:16:18	-0.18	0.38	-4.61	-0.50	2.15	-16.91
13 89-033	2	11:26:33	0.02	0.58	-6.81	0.05	3.29	-24.98
14 89-033	2	11:36:47	-0.18	-0.02	-1.31	-0.50	-0.11	-4.80
15 89-033	2	11:47:02	-0.08	-0.52	0.59	-0.22	-2.95	2.16
16 89-033	2	11:57:17	0.12	0.08	-2.91	0.33	0.45	-10.67
17 89-033	2	12:07:31	-0.08	0.58	-2.41	-0.22	3.29	-8.84
18 89-033	2	12:17:46	0.12	-0.22	1.89	0.33	-1.24	6.93
19 89-033	2	12:28:00	0.12	0.18	-1.81	0.33	1.02	-6.63
20 89-033	2	12:38:14	-0.08	0.38	1.29	-0.22	2.15	4.73
21 89-033	3	12:48:29	0.02	-1.02	-1.21	0.05	-5.78	-4.43
22 89-033	3	12:58:43	-0.18	0.08	2.79	-0.50	0.45	10.23
89-033	3	13:08:58	0.02	-0.12	-3.61	0.05	-0.68	-13.24
89-033	3	13:19:12	0.22	-0.12	-1.21	0.61	-0.68	-4.43
89-033	3	13:29:27	0.32	0.18	1.09	0.89	1.02	3.99
26 89-033	3	13:39:41	0.22	-0.32	-0.31	0.61	-1.81	-1.13
27 89-033	3	13:49:56	-0.18	0.28	0.89	-0.50	1.58	3.26
28 89-033	3	14:00:10	0.12	-0.82	4.69	0.33	-4.65	17.20
29 89-033	3	14:10:25	0.02	-0.42	-2.51	0.05	-2.38	-9.20
30 89-033	3	14:20:39	0.12	0.08	0.99	0.33	0.45	3.63
31 89-033	4	14:30:54	0.02	0.18	2.99	0.05	1.02	10.96
32 89-033	4	14:41:09	0.12	-0.52	-2.11	0.33	-2.95	-7.74
33 89-033	4	14:51:23	0.02	0.28	-0.61	0.05	1.58	-2.23
34 89-033	4	15:01:38	-0.08	0.18	2.09	-0.22	1.02	7.66
35 89-033	4	15:11:52	0.12	0.28	-2.51	0.33	1.58	-9.20
36 89-033	4	15:22:07	-0.18	-0.12	-5.01	-0.50	-0.68	-18.37
37 89-033	4	15:32:22	0.02	0.08	-4.11	0.05	0.45	-15.07

E 2, 1989 15:38:23
WER UP - TENNELEC LB5100 SERIES II REV 2.43
PYRIGHT 1986,1987,1988,1989
E DEC 12, 1989 15:38:24

38	89-033	4	15:38:27	-0.18	0.12	-1.47	-0.50	0.70	-5.41
39	89-033	4	15:48:42	0.22	-0.42	2.59	0.61	-2.38	9.50
40	89-033	4	15:58:56	0.02	0.58	2.29	0.05	3.29	8.40
41	89-033	5	16:09:11	0.02	0.68	-1.41	0.05	3.85	-5.17
42	89-033	5	16:19:26	-0.08	-0.22	-2.31	-0.22	-1.24	-8.47
43	89-033	5	16:29:40	0.22	-0.12	-2.91	0.61	-0.68	-10.67
44	89-033	5	16:39:55	0.22	0.28	-1.41	0.61	1.58	-5.17
45	89-033	5	16:50:09	0.12	-0.32	-2.41	0.33	-1.81	-8.84
46	89-033	5	17:00:24	-0.18	-0.32	-2.41	-0.50	-1.81	-8.84
47	89-033	5	17:10:38	0.02	-0.22	-1.11	0.05	-1.24	-4.07
48	89-033	5	17:20:53	0.02	-0.12	-4.61	0.05	-0.68	-16.91
49	89-033	5	17:31:08	0.12	-0.52	0.39	0.33	-2.95	1.43
50	89-033	5	17:41:22	0.02	0.58	0.79	0.05	3.29	2.89
51	89-033	6	17:51:37	-0.08	0.38	-0.51	-0.22	2.15	-1.87
52	89-033	6	18:01:51	0.12	-0.12	-0.61	0.33	-0.68	-2.23
53	89-033	6	18:12:06	0.02	0.08	-0.71	0.05	0.45	-2.60
54	89-033	6	18:22:21	0.22	-0.12	-1.51	0.61	-0.68	-5.53
55	89-033	6	18:32:35	-0.08	-0.42	-1.81	-0.22	-2.38	-6.63
	-033	6	18:42:50	0.12	0.08	-4.31	0.33	0.45	-15.81
	033	6	18:53:04	-0.18	0.68	-3.31	-0.50	3.85	-12.14
	033	6	19:03:19	0.02	0.38	-2.61	0.05	2.15	-9.57
	033	6	19:13:33	0.22	0.18	3.89	0.61	1.02	14.26
60	89-033	6	19:23:48	0.12	-0.22	-8.11	0.33	-1.24	-29.75
61	89-033	7	19:34:02	0.02	-0.32	1.49	0.05	-1.81	5.46
62	89-033	7	19:44:17	-0.18	-0.22	-7.41	-0.50	-1.24	-27.18
63	89-033	7	19:54:31	0.22	-0.12	-2.91	0.61	-0.68	-10.67
64	89-033	7	20:04:46	-0.08	-0.12	-1.41	-0.22	-0.68	-5.17
65	89-033	7	20:15:00	-0.18	-0.22	0.29	-0.50	-1.24	1.06
66	89-033	7	20:25:15	-0.18	-0.42	-1.01	-0.50	-2.38	-3.70
67	89-033	7	20:35:30	-0.08	-0.22	-1.61	-0.22	-1.24	-5.90
68	89-033	7	20:45:44	0.02	0.08	-2.61	0.05	0.45	-9.57
69	89-033	7	20:55:59	0.12	-0.32	-4.51	0.33	-1.81	-16.54
70	89-033	7	21:06:13	0.22	0.08	-1.31	0.61	0.45	-4.80
71	89-033	8	21:16:28	0.02	-0.02	1.19	0.05	-0.11	4.36
72	89-033	8	21:26:42	-0.18	-0.22	-2.81	-0.50	-1.24	-10.30
73	89-033	8	21:36:57	0.12	0.18	-0.91	0.33	1.02	-3.33
74	89-033	8	21:47:12	-0.18	-0.52	0.39	-0.50	-2.95	1.43
75	89-033	8	21:57:26	-0.08	0.28	4.89	-0.22	1.58	17.93
76	89-033	8	22:07:41	0.12	-0.62	-0.01	0.33	-3.51	-0.03
77	89-033	8	22:17:55	0.12	-0.32	-0.31	0.33	-1.81	-1.13
78	89-033	8	22:28:10	0.02	-0.62	-3.51	0.05	-3.51	-12.87
79	89-033	8	22:38:25	0.02	-0.62	-6.01	0.05	-3.51	-22.04
80	89-033	8	22:48:39	0.32	0.58	-0.91	0.89	3.29	-3.33

OP I COMPLETE

MONTHLY WIPE SURVEY SAMPLE ANALYSIS OF 2 DEC 98 FOR ERB LABORATORIES
MAIN HALLWAY, HP LAB, PREP LAB & VAULT

INSTRUMENT

Contamination Survey
Tennelec LB5100, S/N 64169

	Alpha	Beta	Gamma
at 2 PI Efficiency	58.00%	16.15%	25.37%
at 2 PI Bkg CPM	0.20	17.70	56.00

Instrument Survey
Meter: Eberline E-520, S/N 3813
Probe: Eberline HP-270 SN 2813
Cal Due: 23-Dec-98
Background: as noted in mR/hr

Sensitivity (CPM)	L_C	LLD	L_D	L_Q
Alpha	0.33	0.66	3.37	100.28
Beta	3.10	6.20	8.90	102.59
Gamma	5.51	11.03	13.71	104.53

SURVEYOR: SSG DEGUMBIA
REVIEWED BY: HEALTH PHYSICS MANAGER

DISPOSITION

[ ] HIGHLIGHTED READINGS RESURVEYED
ALPHA > LLD/100 cm^2
BETA/GAMMA > LLD/100 cm^2

[ ] NO ACTION REQUIRED

#	LOCATION	AREA (cm^2)	Dose Rate (mR/hr)	Gross CPM			Net CPM			Net DPM/100 cm^2		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
1	Hallway Entr. to Adj. Hallway	100	0.01	0.20	17.70	56.00	0.0	0.0	0.0	0.0	0.0	0.0
2	Hallway Entr. to Outside	100	0.01	0.00	17.20	55.40	-0.2	-0.5	-0.6	-0.3	-3.1	-2.4
3	Hallway to Health Physics Ofc.	100	0.01	0.30	19.20	58.40	0.1	1.5	2.4	0.2	9.3	9.5
4	Hallway Entr. to Instructor's Ofc.	100	0.01	0.00	16.40	55.00	-0.2	-1.3	-1.0	-0.3	-8.0	-3.9
5	Instructor,s Computer Station Top	100	0.01	0.20	19.00	55.70	0.0	1.3	-0.3	0.0	8.0	-1.2
6	Instructor,s Desk	100	0.01	0.00	18.90	54.00	-0.2	1.2	-2.0	-0.3	7.4	-7.9
7	Floor Entr. to RM 1010A	100	0.01	0.00	18.40	59.40	-0.2	0.7	3.4	-0.3	4.3	13.4
8	Computer Work Station Top RM 1010A	100	0.01	0.00	17.10	53.00	-0.2	-0.6	-3.0	-0.3	-3.7	-11.8
9	Instructor's Desk RM 1010A	100	0.01	0.20	17.50	60.90	0.0	-0.2	4.9	0.0	-1.2	19.3
10	Floor RM 1010A Entr. to Chief's Ofc.	100	0.01	0.00	17.60	60.20	-0.2	-0.1	4.2	-0.3	-0.6	16.6
11	Computer Work Station Top Chief's	100	0.01	0.20	17.00	58.90	0.0	-0.7	2.9	0.0	-4.3	11.4
12	Chief's Desk	100	0.01	0.00	19.10	56.20	-0.2	1.4	0.2	-0.3	8.7	0.8
13	Floor Chief's Ofc. Entr. Electron Shp	100	0.01	0.40	15.80	55.80	0.2	-1.9	-0.2	0.3	-11.8	-0.8
14	Floor Electronic Shop Entr. Lab 7	100	0.01	0.60	21.00	56.00	0.4	3.3	0.0	0.7	20.4	0.0
15	Desk, Electronic Shop	100	0.01	0.30	16.50	56.90	0.1	-1.2	0.9	0.2	-7.4	3.5
16	Floor Electronic Shop Entr. Hallway	100	0.01	0.10	19.50	55.30	-0.1	1.8	-0.7	-0.2	11.1	-2.8
17	Hallway Floor Entr. Lab 7	100	0.01	0.00	16.80	55.80	-0.2	-0.9	-0.2	-0.3	-5.6	-0.8
18	Hallway Floor Entr. Lab 8	100	0.01	0.10	18.80	53.10	-0.1	1.1	-2.9	-0.2	6.8	-11.4
19	Hallway Floor Entr. to Lab Hallway	100	0.01	0.50	19.00	56.60	0.3	1.3	0.6	0.5	8.0	2.4
20	Hallway Floor Entr. Janitor Rm	100	0.01	0.00	15.70	57.60	-0.2	-2.0	1.6	-0.3	-12.4	6.3
21	Hallway Floor Entr. Men's Rm	100	0.01	0.00	18.50	53.40	-0.2	0.8	-2.6	-0.3	5.0	-10.2
22	Hallway Floor Entr. Storage Rm	100	0.01	0.00	18.50	54.60	-0.2	0.8	-1.4	-0.3	5.0	-5.5
23	Hallway Floor Entr. Women's Rm	100	0.01	0.00	16.50	56.60	-0.2	-1.2	0.6	-0.3	-7.4	2.4
24	Hallway Floor Entr. HP Ofc	100	0.01	0.00	18.40	51.90	-0.2	0.7	-4.1	-0.3	4.3	-16.2
25	HP Office Storage Rm	100	0.01	0.00	19.00	58.30	-0.2	1.3	2.3	-0.3	8.0	9.1
26	HP NCOIC's Desk	100	0.01	0.00	19.00	54.80	-0.2	1.3	-1.2	-0.3	8.0	-4.7

27	HP NCC Computer Table Top	100	0.01	0.00	17.00	50.00	-0.2	-0.7	4.0	-0.3	-4.3	15.8
28	RPO,s Desk Top	100	0.01	0.00	17.90	58.40	-0.2	0.2	2.4	-0.3	1.2	9.5
29	HP Tech's Computer Table Top	100	0.01	0.10	15.90	53.60	-0.1	-1.8	-2.4	-0.2	-11.1	-9.5
30	HP Tech's Desk	100	0.01	0.00	17.30	54.20	-0.2	-0.4	-1.8	-0.3	-2.5	-7.1
31	Floor HP Ofc. Entr. HP Lab.	100	0.01	0.00	19.10	51.40	-0.2	1.4	-4.6	-0.3	8.7	-18.1
32	HP Office Door & Knob to HPO Lab	100	0.01	0.30	16.60	51.50	0.1	-1.1	-4.5	0.2	-6.8	-17.7
33	HP Lab Door & Knob to HPO Offices	100	0.01	0.10	17.90	55.70	-0.1	0.2	-0.3	-0.2	1.2	-1.2
34	HP Lab Floor Exit HP Ofc.	100	0.01	0.00	16.90	58.50	-0.2	-0.8	2.5	-0.3	-5.0	9.9
35	HP Lab Light Switch	100	0.01	0.20	18.70	58.40	0.0	1.0	2.4	0.0	6.2	9.5
36	HP Lab Counter Top	100	0.01	0.00	16.00	58.10	-0.2	-1.7	2.1	-0.3	-10.5	8.3
37	HP Lab Door & Knob to Prep Lab.	100	0.01	0.00	18.10	54.90	-0.2	0.4	-1.1	-0.3	2.5	-4.3
38	HP Lab. Floor Entr. Prep. Lab.	100	0.01	0.40	17.50	55.00	0.2	-0.2	-1.0	0.3	-1.2	-3.9
39	HP Lab Light Switch	100	0.01	0.00	18.70	57.40	-0.2	1.0	1.4	-0.3	6.2	5.5
40	HP Lab LSC Top	100	0.01	0.20	18.30	57.70	0.0	0.6	1.7	0.0	3.7	6.7
41	HP Lab Computer Work Station Top	100	0.01	0.10	19.30	61.70	-0.1	1.6	5.7	-0.2	9.9	22.5
42	HP Lab Tennelec Top	100	0.01	0.30	16.60	56.10	0.1	-1.1	0.1	0.2	-6.8	0.4
43	HP Lab Counter Top	100	0.01	0.10	15.40	53.30	-0.1	-2.3	-2.7	-0.2	-14.2	-10.6
44	HP Lab Counter Top	100	0.01	0.00	17.40	56.30	-0.2	-0.3	0.3	-0.3	-1.9	1.2
45	HP Lab Floor	100	0.01	0.00	18.80	57.60	-0.2	1.1	1.6	-0.3	6.8	6.3
46	HP Lab Counter Top	100	0.01	0.40	17.30	55.30	0.2	-0.4	-0.7	0.3	-2.5	-2.8
47	Prep Lab Door & Knob to HP Lab.	100	0.01	0.10	16.10	52.00	-0.1	-1.6	-4.0	-0.2	-9.9	-15.8
48	Prep Lab Floor Entrance to HP Lab	100	0.01	0.00	17.00	56.30	-0.2	-0.7	0.3	-0.3	-4.3	1.2
49	Prep Lab Light Switch	100	0.01	0.10	16.40	57.00	-0.1	-1.3	1.0	-0.2	-8.0	3.9
50	Prep Lab Counter Top	100	0.01	0.20	17.80	58.60	0.0	0.1	2.6	0.0	0.6	10.2
51	Prep Lab Sink	100	0.01	0.10	17.00	57.40	-0.1	-0.7	1.4	-0.2	-4.3	5.5
52	Prep Lab Trash Container	100	0.01	0.00	18.70	58.20	-0.2	1.0	2.2	-0.3	6.2	8.7
53	Prep Lab Door & Knob To Lab 1	100	0.01	0.20	17.30	58.20	0.0	-0.4	2.2	0.0	-2.5	8.7
54	Prep Lab Floor Entrance Lab 1	100	0.01	0.20	17.70	53.70	0.0	0.0	-2.3	0.0	0.0	-9.1
55	Prep Lab Door & Knob to Vault	100	0.01	0.30	18.60	54.60	0.1	0.9	-1.4	0.2	5.6	-5.5
56	Prep Lab Floor to Vault	100	0.01	0.00	20.50	55.70	-0.2	2.8	-0.3	-0.3	17.3	-1.2
57	Prep Lab Counter Top	100	0.01	0.30	18.70	52.10	0.1	1.0	-3.9	0.2	6.2	-15.4
58	Prep Lab Counter Top	100	0.01	0.50	17.30	54.50	0.3	-0.4	-1.5	0.5	-2.5	-5.9
59	Prep Lab Fume Hood Ledge	100	0.02	0.20	17.70	53.30	0.0	0.0	-2.7	0.0	0.0	-10.6
60	Prep Lab Floor at Fume Hood	100	0.01	0.40	17.40	57.10	0.2	-0.3	1.1	0.3	-1.9	4.3
61	Prep Lab Doors to Load Dock (L)	100	0.01	0.40	18.80	52.10	0.2	1.1	-3.9	0.3	6.8	-15.4
62	Prep Lab Doors to Load Dock (R)	100	0.01	0.10	19.90	55.50	-0.1	2.2	-0.5	-0.2	13.6	-2.0
63	Prep Lab Floor Ent Load Dock	100	0.01	0.20	16.00	56.40	0.0	-1.7	0.4	0.0	-10.5	1.6
64	Prep Lab Door Locker	100	0.01	0.10	17.70	61.00	-0.1	0.0	5.0	-0.2	0.0	19.7
65	Prep Lab File Cabinet Top	100	0.01	0.30	19.60	56.50	0.1	1.9	0.5	0.2	11.8	2.0
66	Vault Door & Knob	100	0.03	0.40	18.90	58.60	0.2	1.2	2.6	0.3	7.4	10.2
67	Vault Floor at Entrance	100	0.03	0.20	17.30	53.30	0.0	-0.4	-2.7	0.0	-2.5	-10.6

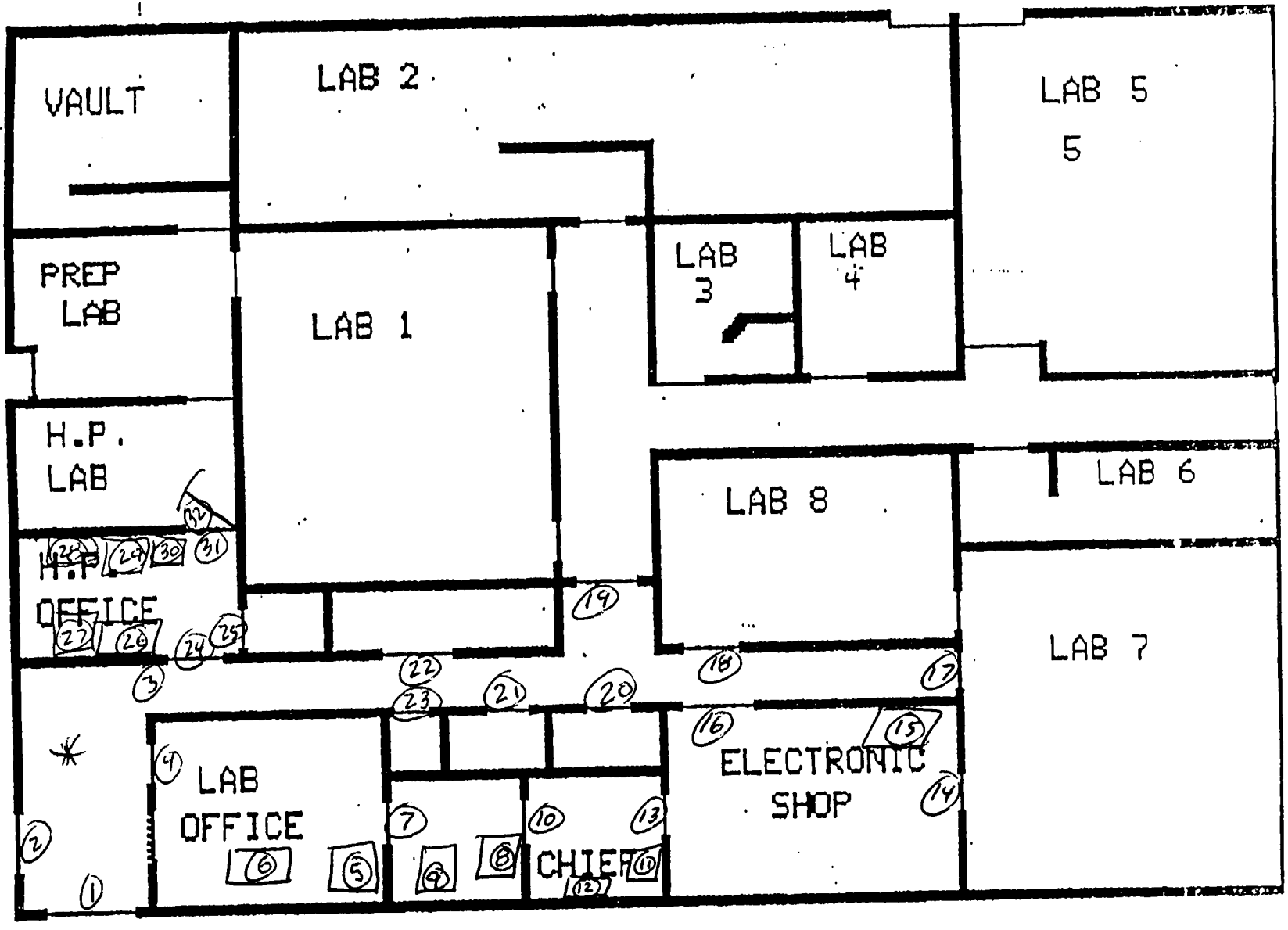
68	Vault L[illegible]witch	100	0.03	0.00	16.3[illegible]	[illegible].50	-0.2	-1.4	-1.5	-0.3	-8.[illegible]	-5.9
69	Vault Floor	100	0.03	0.20	18.80	57.50	0.0	1.1	1.5	0.0	6.8	5.9
70	Vault, Yellow Shipping Box Top	100	0.11	0.00	16.40	55.40	-0.2	-1.3	-0.6	-0.3	-8.0	-2.4
71	Vault, Yellow Shipping Box Top	100	0.19	0.10	18.20	56.30	-0.1	0.5	0.3	-0.2	3.1	1.2
72	Vault, Top Old Safe	100	1.00	0.50	18.00	55.80	0.3	0.3	-0.2	0.5	1.9	-0.8
73	Vault Counter Top	100	0.14	0.10	16.60	55.20	-0.1	-1.1	-0.8	-0.2	-6.8	-3.2
74	Vault Counter Top	100	0.19	0.10	16.90	57.50	-0.1	-0.8	1.5	-0.2	-5.0	5.9
75	Vault, Top Leaded Glass Shield	100	0.15	0.10	16.60	55.80	-0.1	-1.1	-0.2	-0.2	-6.8	-0.8
76	Vault Cart	100	0.18	0.20	14.00	56.70	0.0	-3.7	0.7	0.0	-22.9	2.8
77	Vault, Top Blue Shielded Box	100	0.19	0.50	14.70	55.10	0.3	-3.0	-0.9	0.5	-18.6	-3.5
78	Vault, Top Orange Container	100	1.10	0.20	17.20	55.30	0.0	-0.5	-0.7	0.0	-3.1	-2.8
79	Vault Floor	100	0.30	0.20	17.50	56.30	0.0	-0.2	0.3	0.0	-1.2	1.2
80	Vault Yellow Cabinet Door	100	1.50	0.00	18.40	58.10	-0.2	0.7	2.1	-0.3	4.3	8.3
81	Vault Yellow Cabinet Door	100	0.10	0.10	17.70	60.00	-0.1	0.0	4.0	-0.2	0.0	15.8
82	Vault, # 1 Waste Barrel	100	0.07	0.20	19.10	55.60	0.0	1.4	-0.4	0.0	8.7	-1.6
83	Vault, # 2 Waste Barrel	100	0.04	0.10	15.60	58.10	-0.1	-2.1	2.1	-0.2	-13.0	8.3
84	Vault, # 3 Waste Barrel	100	0.04	0.40	18.10	59.10	0.2	0.4	3.1	0.3	2.5	12.2
85	Vault, No # Waste Barrel	100	0.05	1.10	18.00	57.30	0.9	0.3	1.3	1.6	1.9	5.1
86	Vault Red Waste Container	100	0.04	0.40	17.20	57.30	0.2	-0.5	1.3	0.3	-3.1	5.1
87	Vault Yellow Waste Container	100	0.04	0.40	16.20	55.90	0.2	-1.5	-0.1	0.3	-9.3	-0.4
88	Vault Blue Cabinet Door	100	0.13	0.00	18.40	58.20	-0.2	0.7	2.2	-0.3	4.3	8.7
89	Vault, Floor Front of Blue Cabinet	100	0.11	0.00	2.60	59.00	-0.2	-15.1	3.0	-0.3	-93.5	11.8
90	Vault Floor Around Drain	100	0.11	0.10	1.30	51.10	-0.1	-16.4	-4.9	-0.2	-101.5	-19.3
91	Vault, Shelf # 1 B	100	0.20	0.00	1.10	52.40	-0.2	-16.6	-3.6	-0.3	-102.8	-14.2
92	Vault, Shelf # 2 B	100	1.50	0.20	2.20	55.20	0.0	-15.5	-0.8	0.0	-96.0	-3.2
93	Vault, Shelf # 3 B	100	1.40	0.60	3.50	48.80	0.4	-14.2	-7.2	0.7	-87.9	-28.4

NOTE: On 3 DEC 98 SSG DeGumbia performed a monthly survey on the RAD LAB & HPO Offices Hallways and LABS.
Of the 95 samples analyzed, only sample # 85 was initially determined to be above background and LLD in the Alpha channel by 0.24 cpm.
That one sample was recounted on 3 DEC 98, under title 99026. After this recounted sample was realyzed, it was determined to be free of contamination.
No further action required.

RONALD DEGUMBIA
SSG, US ARMY
Health Physics Technician

CONCUR/~~NONCONCUR~~
Health Physics Manger

I - 98



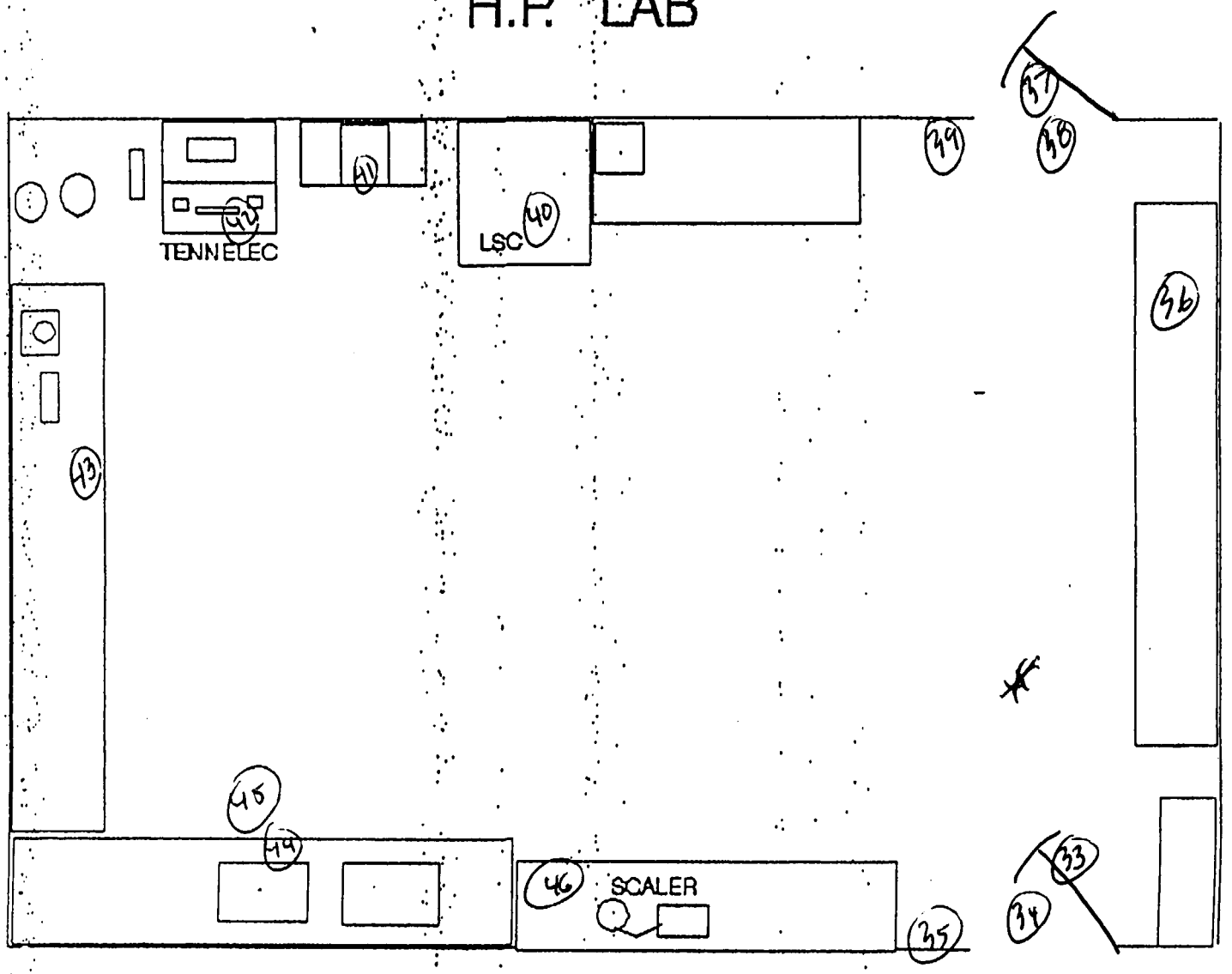
* BKG = 0.01 mR/Hr

2 DEC 98 @ 0800 HRS

EBERLINE E-520 SN 381.
HP 270 SN 2813.
CAL DUE DATE 23 DEC

SMEARS (1-32)

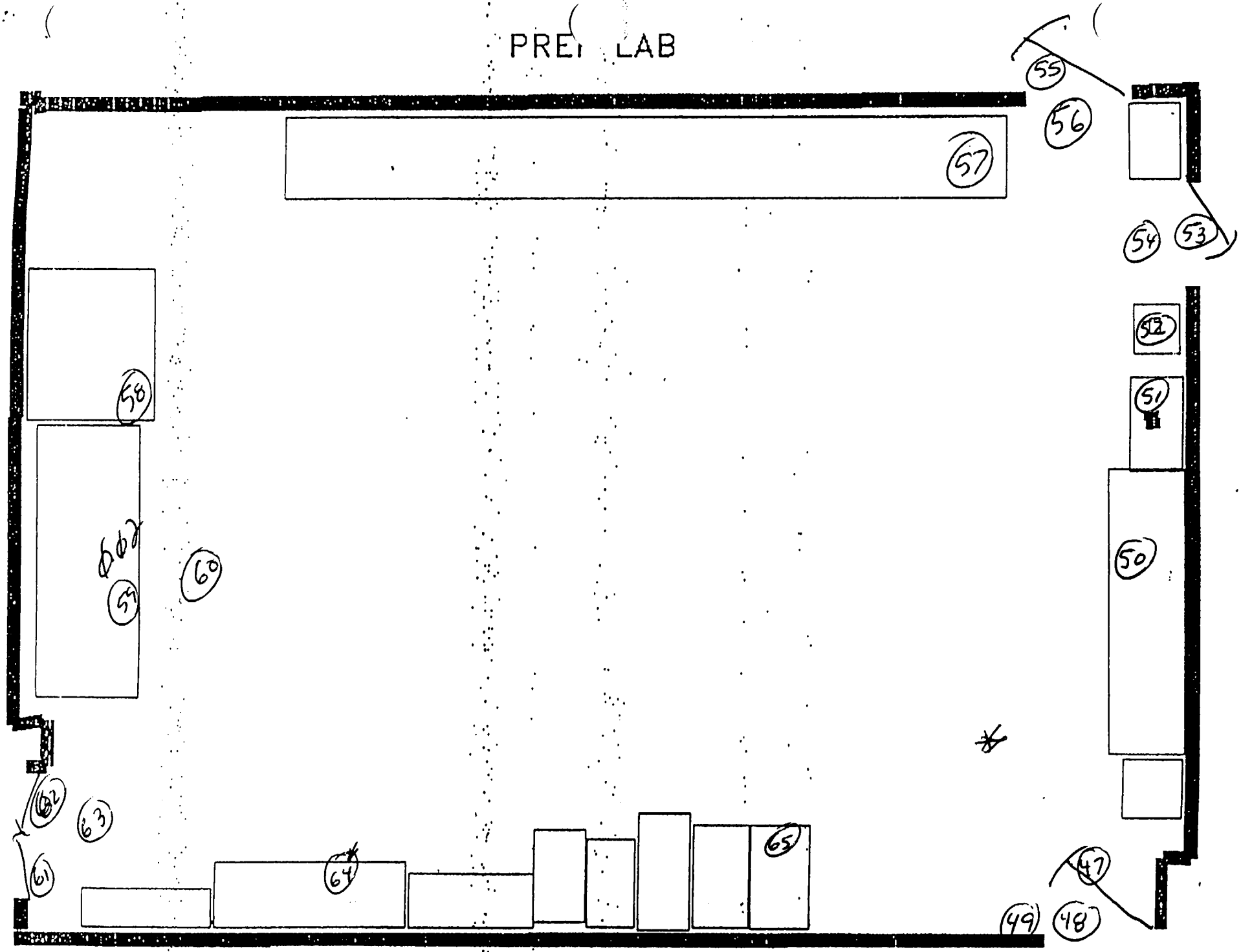
H.P. LAB



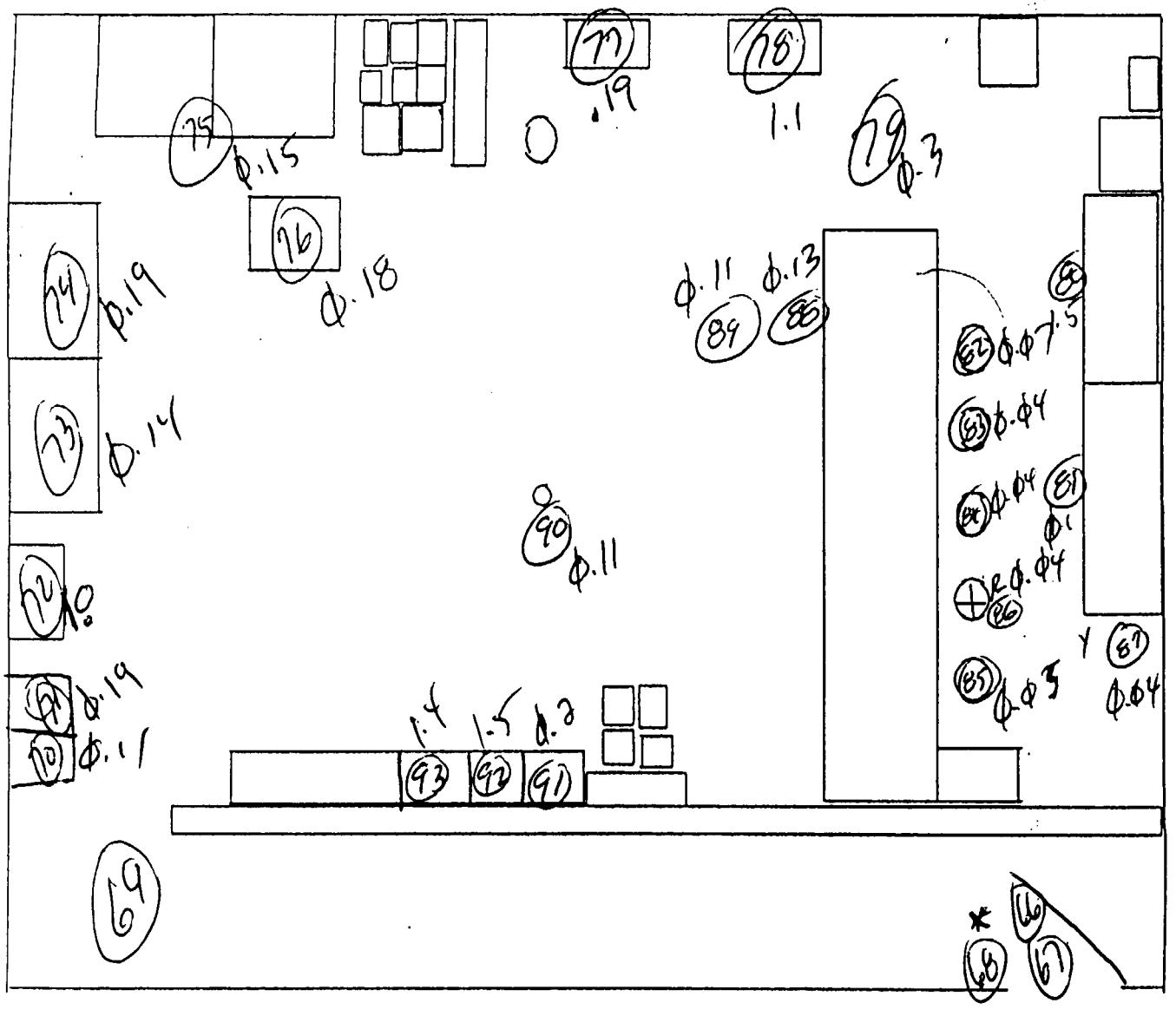
* BKG = 0.01 mR/hr

2 DEC 98 @ 0915 Hr

SMEARS (33 - 46)



SMEARS (47 - 65) * BKG = 0.01 mR/hr 2 DEC 98 @ 1030 Hrs



VAULT

SMEARS (66-93)

* = BKG Φ.Φ3 mR/hr

21 DEC 98 @ 1415 HRS

MONTHLY WIPE SURVEY SAMPLE ANALYSIS ... DEC 98 FOR ERB LABORATORIES
LAB 1, LAB 2, LAB 5 & LAB 7

INSTRUMENT							DISPOSITION
Contamination Survey				Instrument Survey			[ ] HIGHLIGHTED READINGS RESURVEYED
Tennelec LB5100, S/N 64169				Meter:	Eberline E-520, S/N 3813		ALPHA > LLD/100 cm²
	Alpha	Beta	Gamma	Probe:	Eberline HP-270, S/N 2813		BETA/GAMMA > LLD/100 cm²
at 2 PI Efficiency	58.00%	16.15%	25.37%	Cal Due:	23-Dec-98		
at 2 PI BKG CPM	0.20	16.80	55.00	Background:	as noted	mR/hr	[*] NO ACTION REQUIRED
Sensitivity (CPM)	L_C	LLD	L_D	L_Q	SURVEYOR:	SSG DEGUMBIA	
Alpha	0.33	0.66	3.37	100.28			
Beta	3.02	6.04	8.74	102.53	REVIEWED BY:		
Gamma	5.46	10.93	13.62	104.49		HEALTH PHYSICS MANAGER	

#	LOCATION	AREA (cm²)	Dose Rate (mR/hr)	Gross CPM			Net CPM			Net DPM/100 cm²		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
85R	Vault, No # Waste Barrell	100	0.01	0.40	2.30	50.50	0.2	-14.5	-4.5	0.3	-89.8	-17.7
1	Lab 1 Door & Knob to PREP Lab	100	0.01	0.10	3.00	55.60	-0.1	-13.8	0.6	-0.2	-85.4	2.4
2	Lab 1 Floor Near Exit Prep Lab	100	0.01	0.30	2.30	50.20	0.1	-14.5	-4.8	0.2	-89.8	-18.9
3	Lab 1 Trash Container	100	0.01	0.00	1.70	52.30	-0.2	-15.1	-2.7	-0.3	-93.5	-10.6
4	Lab 1 Sink 1	100	0.01	0.10	5.70	51.80	-0.1	-11.1	-3.2	-0.2	-68.7	-12.6
5	Lab 1 Sink 2	100	0.01	0.20	1.90	52.90	0.0	-14.9	-2.1	0.0	-92.3	-8.3
6	Lab 1 Sink 3	100	0.01	0.10	1.80	51.90	-0.1	-15.0	-3.1	-0.2	-92.9	-12.2
7	Lab 1 Counter Top	100	0.01	0.20	1.40	56.30	0.0	-15.4	1.3	0.0	-95.4	5.1
8	Lab 1 Cabinet Door	100	0.01	0.10	2.40	53.60	-0.1	-14.4	-1.4	-0.2	-89.2	-5.5
9	Lab 1 Floor Near Cabinet	100	0.01	0.20	1.40	50.50	0.0	-15.4	-4.5	0.0	-95.4	-17.7
10	Lab 1 Counter Top	100	0.01	0.10	1.40	50.50	-0.1	-15.4	-4.5	-0.2	-95.4	-17.7
11	Lab 1 Counter Top	100	0.01	0.00	1.80	53.40	-0.2	-15.0	-1.6	-0.3	-92.9	-6.3
12	Lab 1 Counter Top	100	0.01	0.20	2.40	53.70	0.0	-14.4	-1.3	0.0	-89.2	-5.1
13	Lab 1 Counter Top	100	0.01	0.00	3.00	55.80	-0.2	-13.8	0.8	-0.3	-85.4	3.2
14	Lab 1 Door & Knob Far Exit	100	0.01	0.70	3.90	53.40	0.5	-12.9	-1.6	0.9	-79.9	-6.3
15	Lab1 Floor Near Far Exit Hallway	100	0.01	0.10	2.00	49.20	-0.1	-14.8	-5.8	-0.2	-91.6	-22.9
16	Lab 1 Light Switch	100	0.01	0.20	2.30	50.90	0.0	-14.5	-4.1	0.0	-89.8	-16.2
17	Lab 1 Counter Top	100	0.01	0.10	1.40	51.30	-0.1	-15.4	-3.7	-0.2	-95.4	-14.6
18	Lab 1 Counter Top	100	0.01	0.00	1.90	54.60	-0.2	-14.9	-0.4	-0.3	-92.3	-1.6
19	Lab 1 Counter Top	100	0.01	0.60	4.00	49.70	0.4	-12.8	-5.3	0.7	-79.3	-20.9
20	Lab 1 Counter Top	100	0.01	0.10	2.20	56.90	-0.1	-14.6	1.9	-0.2	-90.4	7.5
21	Lab 1 Counter Top	100	0.01	0.00	2.10	51.60	-0.2	-14.7	-3.4	-0.3	-91.0	-13.4
22	Lab 1 Door & Knob Near Exit	100	0.01	0.00	2.10	51.30	-0.2	-14.7	-3.7	-0.3	-91.0	-14.6
23	Lab 1 Floor At Near Exit	100	0.01	0.00	1.00	53.50	-0.2	-15.8	-1.5	-0.3	-97.8	-5.9
24	Lab 1 Light Switch	100	0.01	0.30	2.20	49.80	0.1	-14.6	-5.2	0.2	-90.4	-20.5
25	Lab 1 Foot Monitor	100	0.01	0.00	1.70	49.70	-0.2	-15.1	-5.3	-0.3	-93.5	-20.9

26	Lab 1 [illegible] Monitor	100	0.01	0.00	1.90	[illegible]	-0.2	-14.9	-1.1	-0.3	-92.3	[illegible]
27	Lab 1 Counter Top	100	0.01	0.10	2.60	51.70	-0.1	-14.2	-3.3	-0.2	-87.9	-13.0
28	Lab 1 Cabinet Door	100	0.01	0.10	1.80	46.00	-0.1	-15.0	-9.0	-0.2	-92.9	-35.5
29	Lab 1 Floor Near Cabinet	100	0.01	0.00	1.80	57.50	-0.2	-15.0	2.5	-0.3	-92.9	9.9
30	Lab 2 Floor At Entrance	100	0.01	0.50	19.50	59.90	0.3	2.7	4.9	0.5	16.7	19.3
31	Lab 2 Door & Knob at Entrance	100	0.01	0.03	17.90	58.10	-0.2	1.1	3.1	-0.3	6.8	12.2
32	Lab 2 Light Switch	100	0.01	0.20	18.30	53.80	0.0	1.5	-1.2	0.0	9.3	-4.7
33	Lab 2, Floor	100	0.01	0.10	18.50	56.40	-0.1	1.7	1.4	-0.2	10.5	5.5
34	Lab 2 Counter Top	100	0.01	0.30	17.70	59.90	0.1	0.9	4.9	0.2	5.6	19.3
35	Lab 2 Counter Top	100	0.01	0.00	19.00	53.10	-0.2	2.2	-1.9	-0.3	13.6	-7.5
36	Lab 2 Counter Top	100	0.01	0.00	17.20	55.80	-0.2	0.4	0.8	-0.3	2.5	3.2
37	Lab 2 Counter Top	100	0.01	0.20	17.10	56.90	0.0	0.3	1.9	0.0	1.9	7.5
38	Lab 2 Counter Top	100	0.01	0.00	17.90	64.60	-0.2	1.1	9.6	-0.3	6.8	37.8
39	Lab 2 Counter Top	100	0.01	0.40	18.40	58.40	0.2	1.6	3.4	0.3	9.9	13.4
40	Lab 2 Counter Top	100	0.01	0.00	17.60	54.20	-0.2	0.8	-0.8	-0.3	5.0	-3.2
41	Lab 2 Counter Top	100	0.01	0.10	17.20	58.20	-0.1	0.4	3.2	-0.2	2.5	12.6
42	Lab 2 Counter Top	100	0.01	0.10	19.50	58.70	-0.1	2.7	3.7	-0.2	16.7	14.6
43	Lab 2 Counter Top	100	0.01	0.00	17.60	56.50	-0.2	0.8	1.5	-0.3	5.0	5.9
44	Lab 2 Counter Top	100	0.01	0.20	16.70	55.80	0.0	-0.1	0.8	0.0	-0.6	3.2
45	Lab 2 Counter Top	100	0.01	0.00	18.60	58.10	-0.2	1.8	3.1	-0.3	11.1	12.2
46	Lab 2 Counter Top	100	0.01	0.10	17.80	58.40	-0.1	1.0	3.4	-0.2	6.2	13.4
47	Lab 2 Counter Top	100	0.01	0.10	18.40	57.60	-0.1	1.6	2.6	-0.2	9.9	10.2
48	Lab 2 Counter Top	100	0.01	0.10	15.70	54.30	-0.1	-1.1	-0.7	-0.2	-6.8	-2.8
49	Lab 2 Back Ledge on UDM-1a	100	0.07	0.00	19.70	55.60	-0.2	2.9	0.6	-0.3	18.0	2.4
50	Lab 2 Floor Back of UDM-1a	100	0.01	0.00	17.10	54.50	-0.2	0.3	-0.5	-0.3	1.9	-2.0
51	Lab 2 Front Ledge of UDM-1a	100	0.70	0.10	16.50	55.50	-0.1	-0.3	0.5	-0.2	-1.9	2.0
52	Lab 2 Floor Front of UDM-1a	100	0.01	0.20	17.00	56.40	0.0	0.2	1.4	0.0	1.2	5.5
53	Lab 2 Calibration Stand	100	0.01	0.00	16.50	52.80	-0.2	-0.3	-2.2	-0.3	-1.9	-8.7
54	Lab 5 Door & Knob at Entrance	100	0.01	0.00	19.40	56.70	-0.2	2.6	1.7	-0.3	16.1	6.7
55	Lab 5 Floor Near Entrance	100	0.01	0.10	17.80	62.40	-0.1	1.0	7.4	-0.2	6.2	29.2
56	Lab 5 Light Switch	100	0.01	0.00	15.30	58.70	-0.2	-1.5	3.7	-0.3	-9.3	14.6
57	Lab 5 Counter Top	100	0.01	0.20	18.80	55.20	0.0	2.0	0.2	0.0	12.4	0.8
58	Lab 5 Cart Top	100	0.01	0.10	16.70	56.10	-0.1	-0.1	1.1	-0.2	-0.6	4.3
59	Lab 5 Counter Top	100	0.01	0.20	20.70	55.70	0.0	3.9	0.7	0.0	24.1	2.8
60	Lab 5 Counter Top	100	0.01	0.10	15.60	55.50	-0.1	-1.2	0.5	-0.2	-7.4	2.0
61	Lab 5 Cabinet Door	100	0.01	0.10	17.30	60.10	-0.1	0.5	5.1	-0.2	3.1	20.1
62	Lab 5, Floor Near Cabinet	100	0.01	0.10	15.20	57.20	-0.1	-1.6	2.2	-0.2	-9.9	8.7
63	Lab 5 Counter Top	100	0.01	0.10	18.00	54.50	-0.1	1.2	-0.5	-0.2	7.4	-2.0
64	Lab 5 Door to Outside	100	0.01	0.00	18.70	56.00	-0.2	1.9	1.0	-0.3	11.8	3.9
65	Lab 5 Floor Exit Outdoors	100	0.01	0.00	17.20	58.10	-0.2	0.4	3.1	-0.3	2.5	12.2
66	Lab 5 Counter Top	100	0.01	0.20	15.70	57.80	0.0	-1.1	2.8	0.0	-6.8	11.0

67	Lab 5 Counter Top	100	0.01	0.00	16.50	56.30	-0.2	-0.3	0.3	-0.3	-1.9	1.2
68	Lab 5 Floor	100	0.01	0.10	18.00	60.00	-0.1	1.2	5.0	-0.2	7.4	19.7
69	Lab 5 Counter Top	100	0.01	0.10	19.00	52.80	-0.1	2.2	-2.2	-0.2	13.6	-8.7
70	Lab 5 Counter Top	100	0.01	0.60	18.10	57.00	0.4	1.3	2.0	0.7	8.0	7.9
71	Lab 5 Floor	100	0.01	0.10	18.30	57.40	-0.1	1.5	2.4	-0.2	9.3	9.5
72	Lab 5 Counter Top	100	0.01	0.00	18.00	54.70	-0.2	1.2	-0.3	-0.3	7.4	-1.2
73	Lab 5 Counter Top	100	0.01	0.00	19.10	55.40	-0.2	2.3	0.4	-0.3	14.2	1.6
74	Lab 5 Table Top	100	0.01	0.00	18.70	59.60	-0.2	1.9	4.6	-0.3	11.8	18.1
75	Lab 7 Door & Knob to Hallway	100	0.01	0.10	17.10	56.70	-0.1	0.3	1.7	-0.2	1.9	6.7
76	Lab 7 Floor at Main Entrance	100	0.01	0.10	15.70	55.50	-0.1	-1.1	0.5	-0.2	-6.8	2.0
77	Lab 7 Light Switch	100	0.01	0.20	19.20	55.40	0.0	2.4	0.4	0.0	14.9	1.6
78	Lab 7 Counter Top	100	0.01	0.00	16.40	57.60	-0.2	-0.4	2.6	-0.3	-2.5	10.2
79	Lab 7 Door & Knob to Elect Lab	100	0.01	0.20	17.50	61.30	0.0	0.7	6.3	0.0	4.3	24.8
80	Lab 7 Floor at Exit to Elect Lab	100	0.01	0.10	18.90	52.00	-0.1	2.1	-3.0	-0.2	13.0	-11.8
81	Lab 7 Cabinet Door	100	0.07	0.20	19.10	55.00	0.0	2.3	0.0	0.0	14.2	0.0
82	Lab 7 Floor Near Cabinet	100	0.01	0.00	19.50	57.60	-0.2	2.7	2.6	-0.3	16.7	10.2
83	Lab 7 Counter Top	100	0.01	0.20	19.20	55.30	0.0	2.4	0.3	0.0	14.9	1.2
84	Lab 7 Counter Top	100	0.01	0.00	19.10	58.00	-0.2	2.3	3.0	-0.3	14.2	11.8
85	Lab 7 Counter Top	100	0.01	0.20	16.90	54.80	0.0	0.1	-0.2	0.0	0.6	-0.8
86	Lab 7 Counter Top	100	0.01	0.10	17.30	50.00	-0.1	0.5	-5.0	-0.2	3.1	-19.7
87	Lab 7 Counter Top	100	0.01	0.10	17.50	56.80	-0.1	0.7	1.8	-0.2	4.3	7.1
88	Lab 7 Counter Top	100	0.01	0.00	16.50	53.90	-0.2	-0.3	-1.1	-0.3	-1.9	-4.3
89	Lab 7 Counter Top	100	0.01	0.00	17.70	57.40	-0.2	0.9	2.4	-0.3	5.6	9.5
90	Lab 7 Door & Knob to Lab 8	100	0.01	0.00	17.80	58.00	-0.2	1.0	3.0	-0.3	6.2	11.8
91	Lab 7 Floor at Exit to Lab 8	100	0.01	0.10	16.80	59.10	-0.1	0.0	4.1	-0.2	0.0	16.2
92	Lab 7 Counter Top	100	0.01	0.10	17.30	52.80	-0.1	0.5	-2.2	-0.2	3.1	-8.7
93	Lab 7 Counter Top	100	0.01	0.10	17.00	57.90	-0.1	0.2	2.9	-0.2	1.2	11.4
94	Lab 7 Floor	100	0.01	0.00	16.40	61.50	-0.2	-0.4	6.5	-0.3	-2.5	25.6
95	Lab 7 Floor	100	0.01	0.50	21.60	57.30	0.3	4.8	2.3	0.5	29.7	9.1

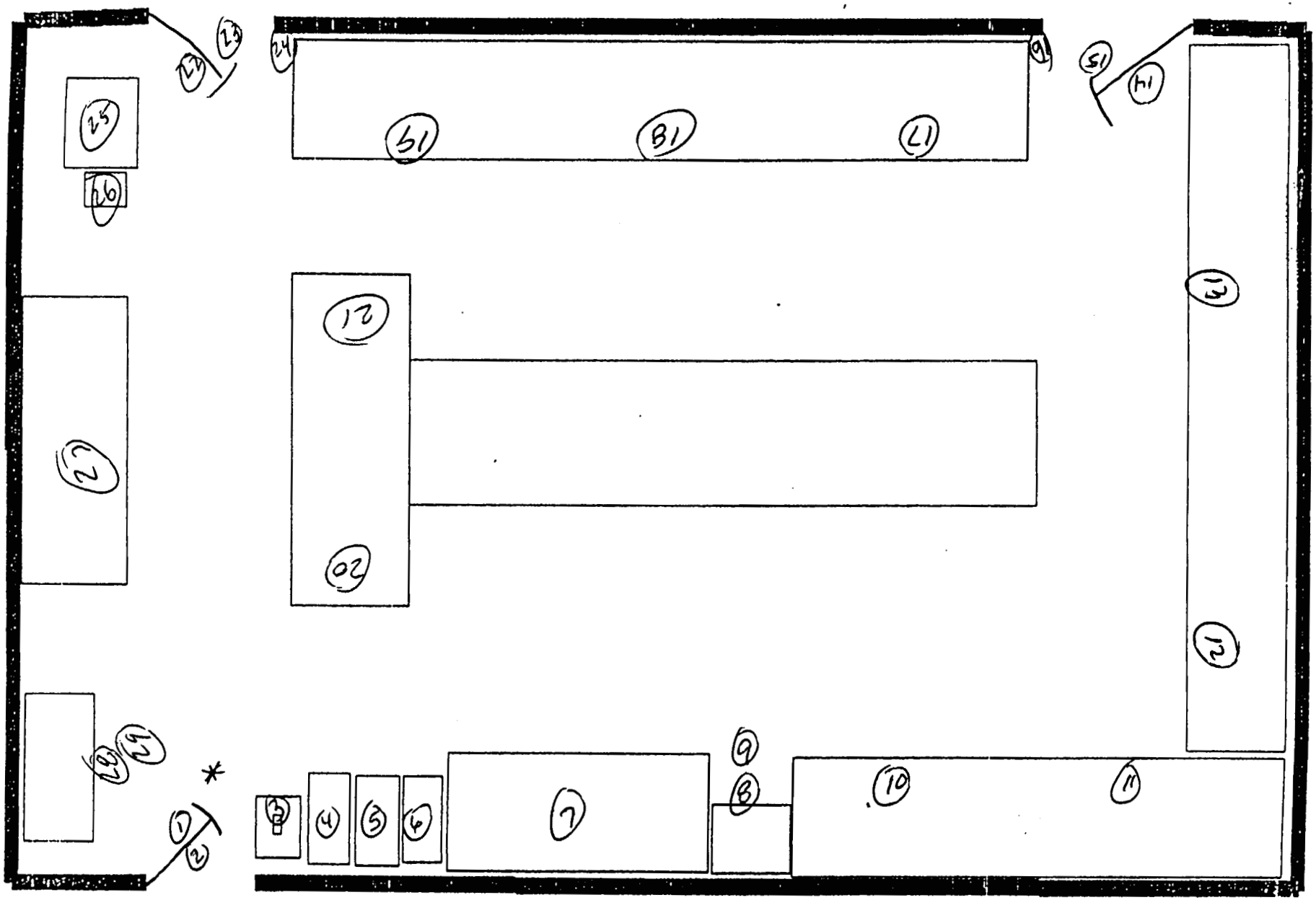
NOTE: Sample # 85R "Vault, No # Waste Barrel" was initially determined to be above BKG + LLD in the Alpha Channelfor run titled 99026. It was recounted on 3 DEC 98 and determined to be free of detectable activity. On 3 DEC 98 at 0730 Hrs, SSG DeGumbia performed a monthly smear survey of Labs 1, 2, 5 & 7. All 95 samples were determined to be free of removeable contamination. No further action required.

CONCUR/~~NONCONCUR~~
Health Physics Manger

RONALD DEGUMBIA
SSG, US ARMY
Health Physics Technician

3 DEC 98 @ 0739

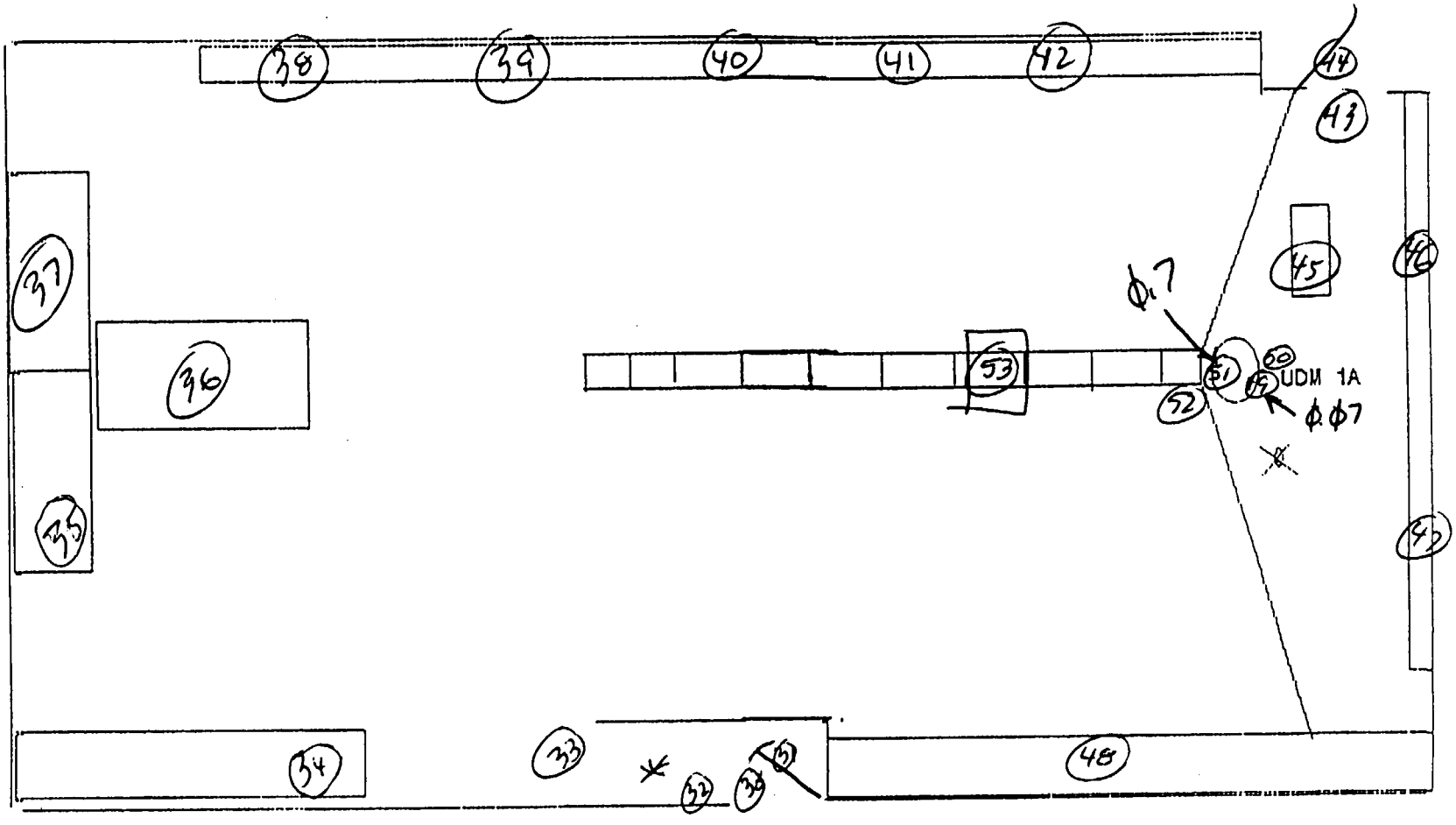
LAB 1



* BKG = 0.01 mR/hr

SAMPLES 1-29

3 Dec 98 @ 0945



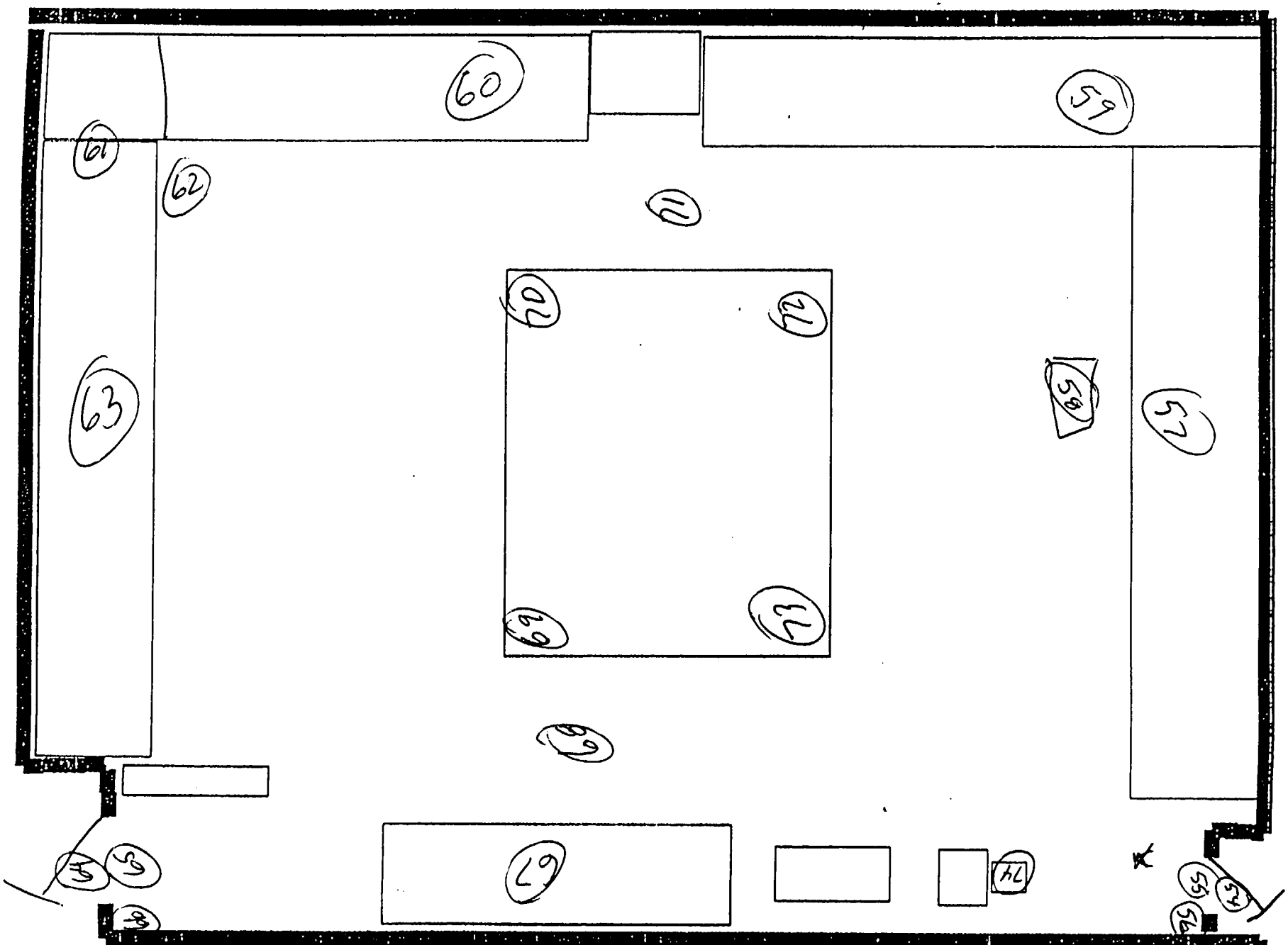
* BKG = ΦΦ1 mR/hr.

LAB 2

SAMPLE 30 - 53

5 DEC 84 11054

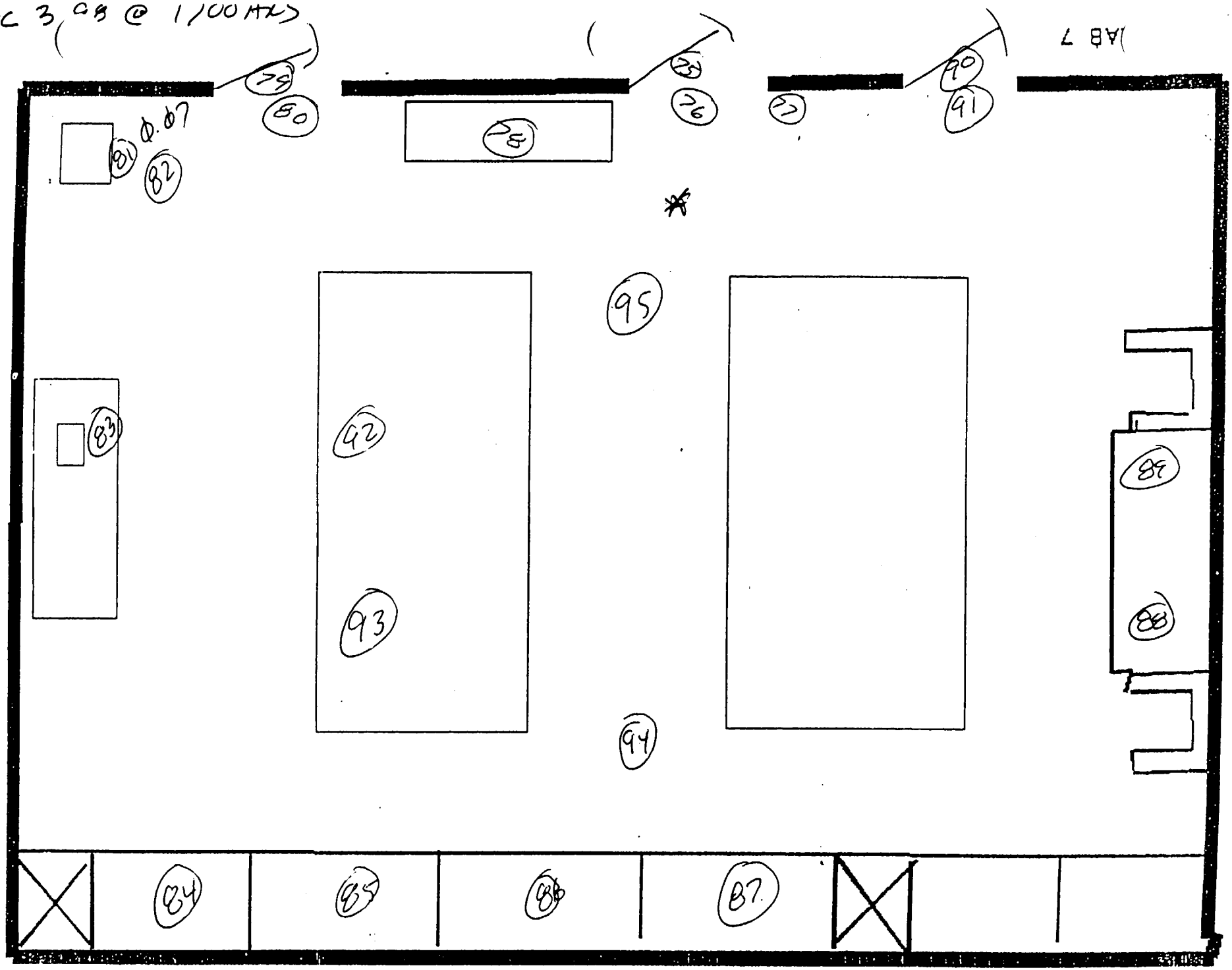
LAB 5



SAMPLES 54 - 74

* BKG - 0.01 mR/hr.

DEC 3 '08 @ 1100 HRS



SAMPLES 75–95

* BKG = 0.01 mR/hr

WIPE SURVEY SAMPLE ANALYSIS OF 9 FEB 98 FOR ERB LABORATORIES
MAIN HALLWAY, HP LAB, PREP LAB & VAULT

INSTRUMENT

Contamination Survey
Tennelec LB5100, S/N 64169

	Alpha	Beta	Gamma
Efficiency	57.90%	16.59%	22.11%
Bkg CPM	0.20	16.50	11.20

Sensitivity (CPM)	L_c	LLD	L_D	L_Q
Alpha	1.04	2.08	4.79	100.89
Beta	9.46	18.93	21.60	107.55
Gamma	7.80	15.60	18.27	106.30

Instrument Survey
Meter: Eberline E-520, S/N 3813
Probe: Eberline HP-270 SN 2813
Cal Due: 16-Mar-98
Background: as noted in mR/hr

DISPOSITION

[ ] HIGHLIGHTED READINGS RESURVEYED
ALPHA > 220 DPM/100 cm^2
BETA/GAMMA > 2200 DPM/100 cm^2

[X] NO ACTION REQUIRED

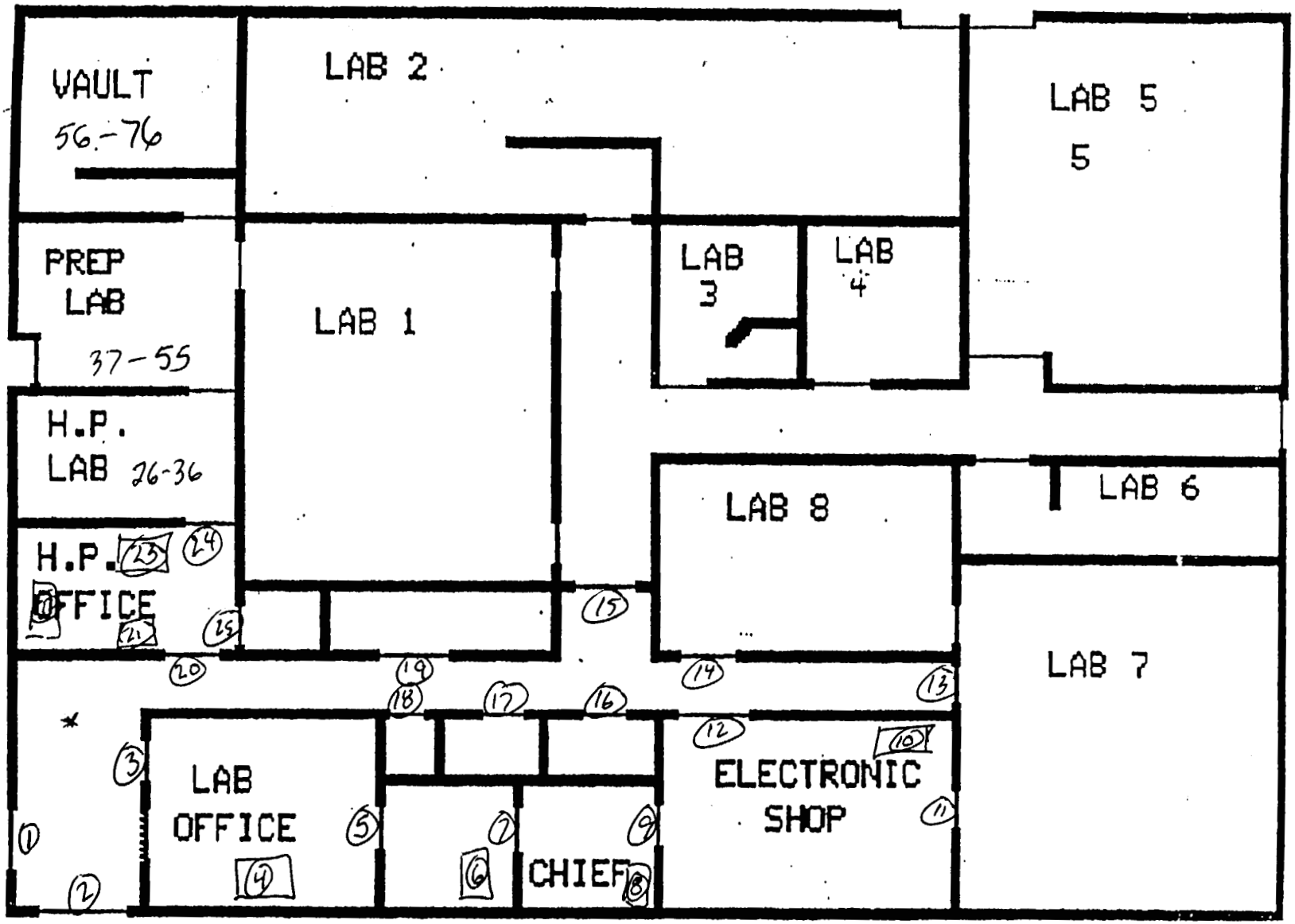
SURVEYOR: SSG DEGUMBIA

REVIEWED BY: HEALTH PHYSICS MANAGER

#	LOCATION	AREA (cm^2)	Dose Rate (mR/hr)	Gross CPM			Net CPM			Net DPM/100 cm^2		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
1	Hallway Entr. to Outside	100	0.02	0.00	17.70	9.70	-0.2	1.2	-1.5	-0.3	7.2	-6.8
2	Hallway Entr. to Adj. Hallway	100	0.02	0.20	18.20	9.30	0.0	1.7	-1.9	0.0	10.2	-8.6
3	Hallway Entr. to Lab. Office	100	0.02	0.00	18.00	5.30	-0.2	1.5	-5.9	-0.3	9.0	-26.7
4	Lab. Office Tech's Desk	100	0.02	0.00	19.30	2.30	-0.2	2.8	-8.9	-0.3	16.9	-40.3
5	Lab. Floor Entr. to RM 1010A	100	0.02	0.30	18.60	9.80	0.1	2.1	-1.4	0.2	12.7	-6.3
6	Instructor's Desk RM 1010A	100	0.02	0.50	19.00	7.50	0.3	2.5	-3.7	0.5	15.1	-16.7
7	Floor RM 1010A Entr. to Chief's Ofc.	100	0.02	0.10	18.10	8.20	-0.1	1.6	-3.0	-0.2	9.6	-13.6
8	Chief's Desk	100	0.02	0.00	22.40	5.00	-0.2	5.9	-6.2	-0.3	35.6	-28.0
9	Floor Chief's Ofc. Entr. Electron Shp	100	0.02	0.10	19.80	7.80	-0.1	3.3	-3.4	-0.2	19.9	-15.4
10	Desk Electronic Shop	100	0.02	0.00	19.50	5.70	-0.2	3.0	-5.5	-0.3	18.1	-24.9
11	Floor Electronic Shop Entr. Lab 7	100	0.02	0.00	17.50	1.50	-0.2	1.0	-9.7	-0.3	6.0	-43.9
12	Floor Electronic Shop Entr. Hallway	100	0.02	0.20	19.10	5.30	0.0	2.6	-5.9	0.0	15.7	-26.7
13	Hallway Floor Entr. Lab 7	100	0.02	0.00	18.90	9.00	-0.2	2.4	-2.2	-0.3	14.5	-10.0
14	Hallway Floor Entr. Lab 8	100	0.02	0.10	18.00	7.60	-0.1	1.5	-3.6	-0.2	9.0	-16.3
15	Hallway Floor Entr. Lab Hallway	100	0.02	0.20	18.00	6.50	0.0	1.5	-4.7	0.0	9.0	-21.3
16	Hallway Floor Entr. Janitor Rm	100	0.02	0.10	17.00	10.40	-0.1	0.5	-0.8	-0.2	3.0	-3.6
17	Hallway Floor Entr. Men's Rm	100	0.02	0.00	17.00	6.70	-0.2	0.5	-4.5	-0.3	3.0	-20.4
18	Hallway Floor Entr. Women's Rm	100	0.02	0.00	19.90	7.30	-0.2	3.4	-3.9	-0.3	20.5	-17.6
19	Hallway Floor Entr. Storage Rm	100	0.02	0.10	19.60	3.60	-0.1	3.1	-7.6	-0.2	18.7	-34.4
20	Hallway Floor Entr. HP Ofc	100	0.02	0.10	19.50	8.30	-0.1	3.0	-2.9	-0.2	18.1	-13.1
21	HP NCOIC's Desk	100	0.02	0.10	18.50	10.40	-0.1	2.0	-0.8	-0.2	12.1	-3.6
22	RPO'S Desk	100	0.02	0.20	20.50	7.10	0.0	4.0	-4.1	0.0	24.1	-18.5
23	HP Tech's Desk	100	0.02	0.10	17.30	7.70	-0.1	0.8	-3.5	-0.2	4.8	-15.8

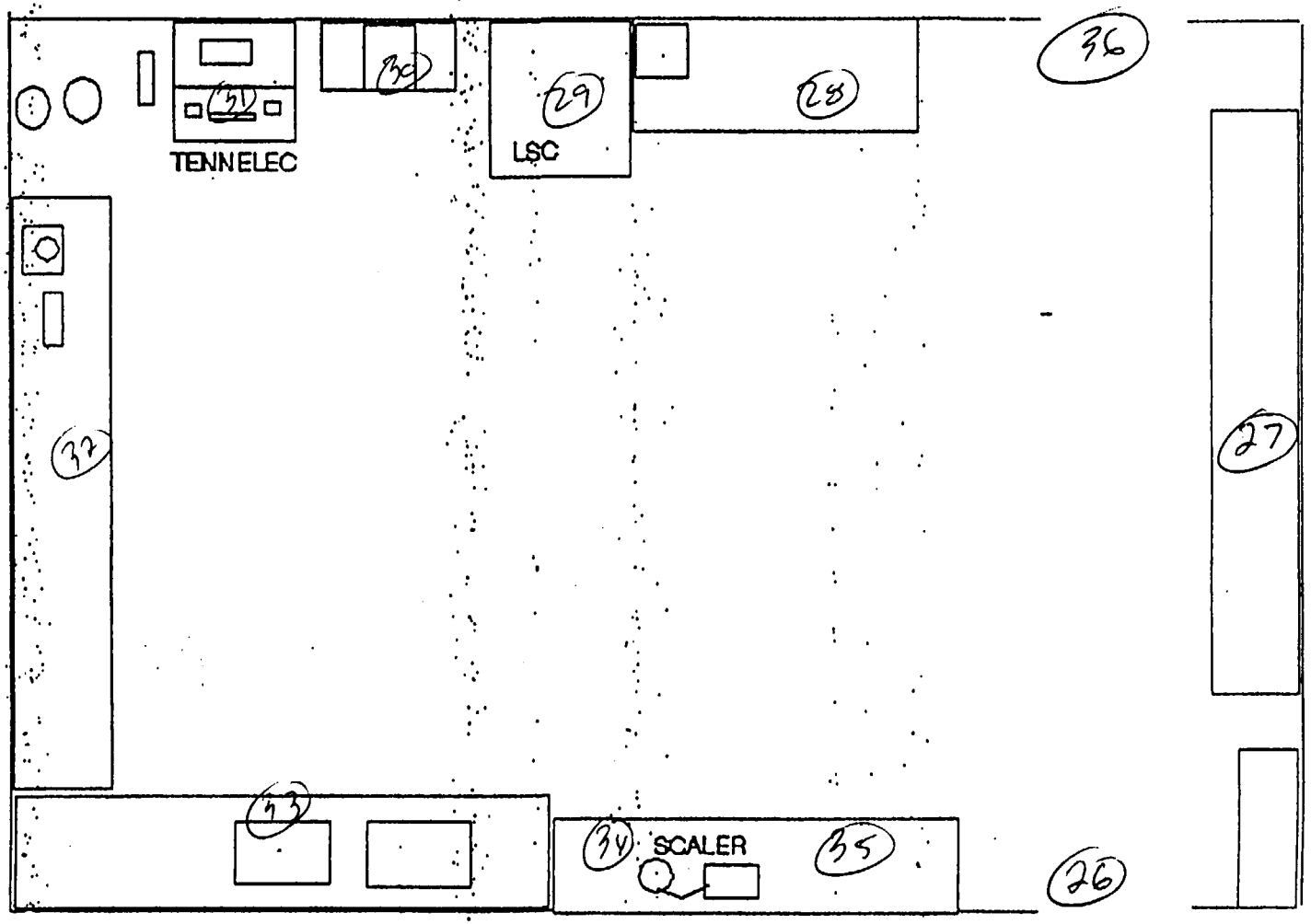
24	Floor HP Ofc. Entr. HP Lab.	100	0.02	0.10	18.80	3.00	-0.1	2.3	-8.2	-0.2	13.9	-37.1
25	Floor HP Ofc. Entr. Prep. Lab.	100	0.02	0.10	20.50	3.90	-0.1	4.0	-7.3	-0.2	24.1	-33.0
26	HP Lab Floor Entr. HP Ofc.	100	0.02	0.20	16.50	11.20	0.0	0.0	0.0	0.0	0.0	0.0
27	HP Lab Counter Top	100	0.02	0.10	19.30	7.70	-0.1	2.8	-3.5	-0.2	16.9	-15.8
28	HP Lab Computor Table Top	100	0.02	0.20	20.30	5.10	0.0	3.8	-6.1	0.0	22.9	-27.6
29	HP Lab LSC Top	100	0.02	0.10	17.10	7.80	-0.1	0.6	-3.4	-0.2	3.6	-15.4
30	HP Lab Work Station Top	100	0.02	0.10	16.90	5.50	-0.1	0.4	-5.7	-0.2	2.4	-25.8
31	HP Lab Tennelec Top	100	0.02	0.00	17.10	3.50	-0.2	0.6	-7.7	-0.3	3.6	-34.8
32	HP Lab Counter Top	100	0.02	0.20	15.10	4.10	0.0	-1.4	-7.1	0.0	-8.4	-32.1
33	HP Lab Counter Top	100	0.02	0.20	15.00	2.70	0.0	-1.5	-8.5	0.0	-9.0	-38.4
34	HP Lab Counter Top	100	0.02	0.10	17.10	6.00	-0.1	0.6	-5.2	-0.2	3.6	-23.5
35	HP Lab Counter Top	100	0.02	0.00	15.70	4.70	-0.2	-0.8	-6.5	-0.3	-4.8	-29.4
36	HP Lab Floor Exit Prep Lab	100	0.01	0.20	18.70	5.50	0.0	2.2	-5.7	0.0	13.3	-25.8
37	Prep Lab Floor Entr. to HP Lab	100	0.01	0.20	18.10	8.80	0.0	1.6	-2.4	0.0	9.6	-10.9
38	Prep Lab Counter Top	100	0.01	0.00	17.20	1.00	-0.2	0.7	-10.2	-0.3	4.2	-46.1
39	Prep Lab Sink	100	0.01	0.00	16.80	4.20	-0.2	0.3	-7.0	-0.3	1.8	-31.7
40	Prep Lab Trash Can	100	0.01	0.00	20.50	11.30	-0.2	4.0	0.1	-0.3	24.1	0.5
41	Prep Lab Floor Entrance Lab 1	100	0.01	0.10	18.80	7.40	-0.1	2.3	-3.8	-0.2	13.9	-17.2
42	Prep Lab Cabinet Door	100	0.01	0.00	16.20	6.20	-0.2	-0.3	-5.0	-0.3	-1.8	-22.6
43	Prep Lab Floor Vault Entrance	100	0.01	0.10	16.90	5.10	-0.1	0.4	-6.1	-0.2	2.4	-27.6
44	Prep Lab Counter Top	100	0.01	0.20	18.70	6.90	0.0	2.2	-4.3	0.0	13.3	-19.4
45	Prep Lab Counter Top	100	0.01	0.00	18.90	4.70	-0.2	2.4	-6.5	-0.3	14.5	-29.4
46	Prep Lab Counter Top	100	0.01	0.10	16.20	0.50	-0.1	-0.3	-10.7	-0.2	-1.8	-48.4
47	Prep Lab Floor	100	0.01	0.10	18.40	10.90	-0.1	1.9	-0.3	-0.2	11.5	-1.4
48	Prep Lab Inside Fume Hood	100	0.01	0.20	16.80	6.10	0.0	0.3	-5.1	0.0	1.8	-23.1
49	Prep Lab Door Ent Load Dock	100	0.01	0.10	18.60	2.70	-0.1	2.1	-8.5	-0.2	12.7	-38.4
50	Prep Lab Floor Ent Load Dock	100	0.01	0.00	19.30	5.50	-0.2	2.8	-5.7	-0.3	16.9	-25.8
51	Prep Lab Door Locker	100	0.01	0.10	16.10	9.30	-0.1	-0.4	-1.9	-0.2	-2.4	-8.6
52	Prep Lab Door Cabinet	100	0.01	0.00	17.70	7.20	-0.2	1.2	-4.0	-0.3	7.2	-18.1
53	Prep Lab File Cabinet Top	100	0.01	0.00	19.50	7.70	-0.2	3.0	-3.5	-0.3	18.1	-15.8
54	Prep Lab Cabinet Door	100	0.01	0.00	16.80	3.50	-0.2	0.3	-7.7	-0.3	1.8	-34.8
55	Prep Lab Cabinet Door	100	0.01	0.40	18.60	10.30	0.2	2.1	-0.9	0.3	12.7	-4.1
56	Vault Floor Entr.	100	0.03	0.00	17.20	4.20	-0.2	0.7	-7.0	-0.3	4.2	-31.7
57	Vault Floor	100	0.04	0.00	19.30	8.80	-0.2	2.8	-2.4	-0.3	16.9	-10.9
58	Top Old Safe	100	0.05	0.00	17.30	4.90	-0.2	0.8	-6.3	-0.3	4.8	-28.5
59	Vault Counter Top	100	0.18	0.10	15.60	8.80	-0.1	-0.9	-2.4	-0.2	-5.4	-10.9
60	Vault Counter Top	100	0.11	0.10	16.90	7.00	-0.1	0.4	-4.2	-0.2	2.4	-19.0

61	Top Blue Shielded Box	100	0.90	0.10	20.40	6.30	-0.1	3.9	-4.9	-0.2	23.5	-22.2
62	Vault Cart Top	100	0.90	0.20	17.30	6.30	0.0	0.8	-4.9	0.0	4.8	-22.2
63	Top Orange Container	100	0.70	0.10	18.20	2.40	-0.1	1.7	-8.8	-0.2	10.2	-39.8
64	Vault Blue Container	100	4.50	0.00	17.50	9.60	-0.2	1.0	-1.6	-0.3	6.0	-7.2
65	Vault Wooden Crate	100	0.04	0.20	16.60	4.40	0.0	0.1	-6.8	0.0	0.6	-30.8
66	Vault Yellow Cabinet Door	100	0.50	0.60	19.50	5.10	0.4	3.0	-6.1	0.7	18.1	-27.6
67	Vault Yellow Cabinet Door	100	0.06	0.10	18.90	6.60	-0.1	2.4	-4.6	-0.2	14.5	-20.8
68	Vault 55 Gallon #1 Drum	100	0.60	0.10	14.60	10.20	-0.1	-1.9	-1.0	-0.2	-11.5	-4.5
69	Vault 55 Gallon #3 Drum	100	1.80	0.50	16.40	8.40	0.3	-0.1	-2.8	0.5	-0.6	-12.7
70	Vault Red Waste Container	100	0.80	0.30	18.60	11.50	0.1	2.1	0.3	0.2	12.7	1.4
71	Vault Floor	100	0.40	0.00	18.10	11.70	-0.2	1.6	0.5	-0.3	9.6	2.3
72	Vault Blue Cabinet Door	100	1.10	0.00	17.60	7.60	-0.2	1.1	-3.6	-0.3	6.6	-16.3
73	Vault Blue Cabinet Door	100	0.70	0.00	18.10	2.90	-0.2	1.6	-8.3	-0.3	9.6	-37.5
74	Vault Blue Cabinet Door	100	2.5	0.10	18.20	7.00	-0.1	1.7	-4.2	-0.2	10.2	-19.0
75	Vault Blue Cabinet Door	100	2.5	0.20	17.90	7.80	0.0	1.4	-3.4	0.0	8.4	-15.4
76	Vault Floor Around Drain	100	0.8	0.40	18.30	5.50	0.2	1.8	-5.7	0.3	10.8	-25.8

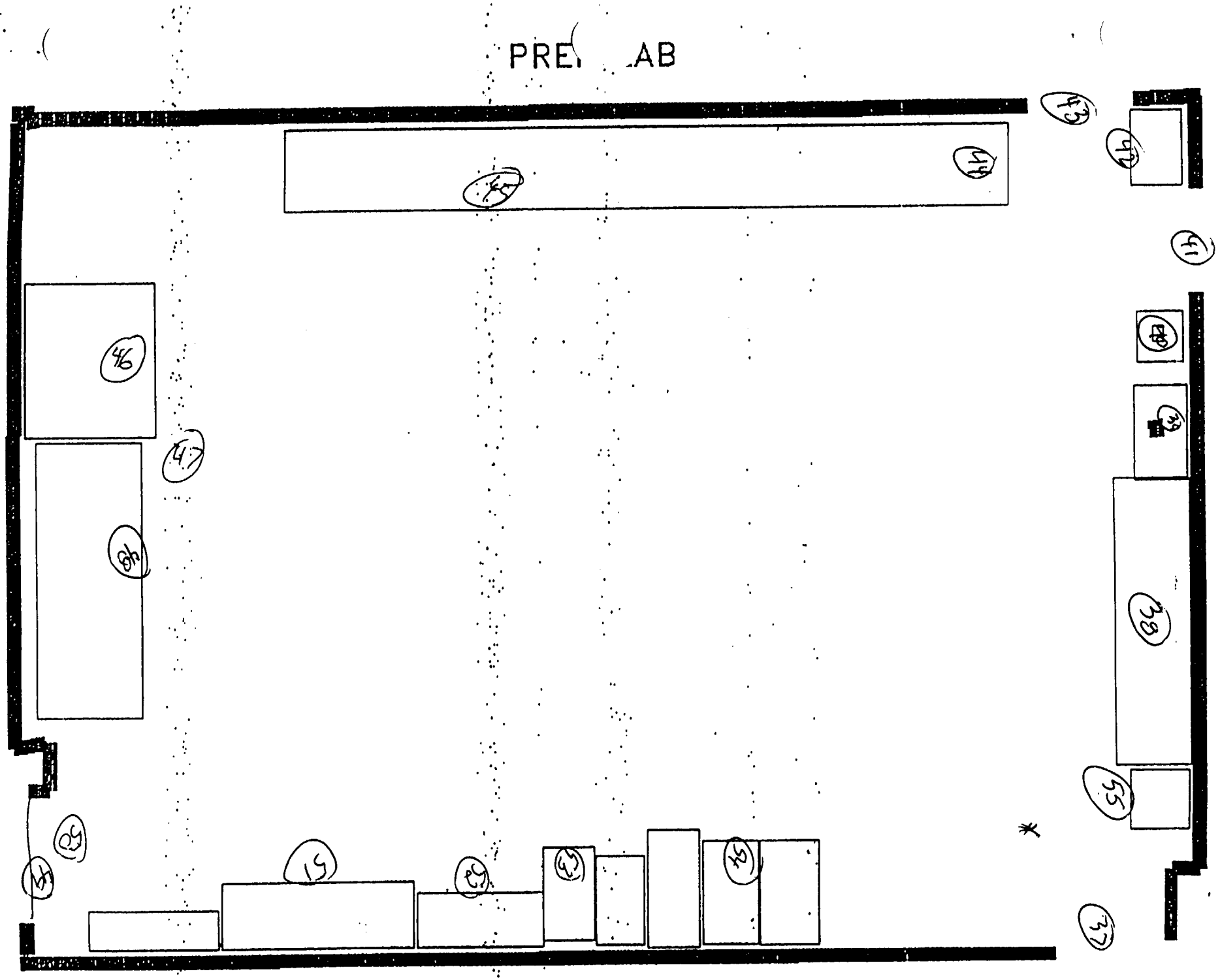


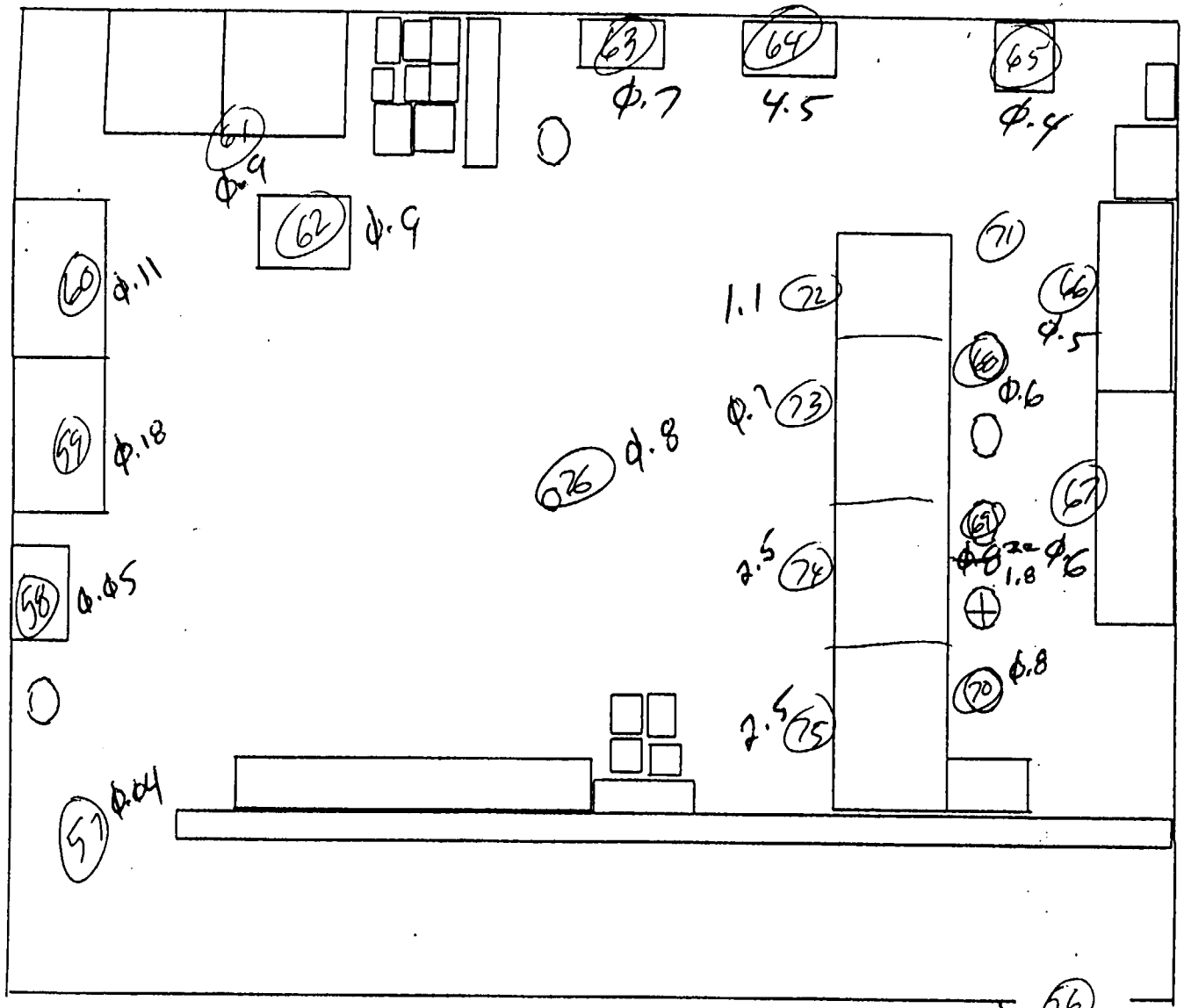
NOTE 8*13KG = Φ.Φ2 mR/hr

H.P. LAB



NOTE 8 * BKG = 0.02 mR/hr


PRE LAB
Note: * BKG - Ø.Ø1 mR/hr



VAULT

NOTES * BKG = Φ.Φ3 mR/hr.

WIPE SURVEY SAMPLE ANALYSIS OF 10 FEB 98 FOR ERB LABORATORIES
LAB 1, LAB 2, LAB 5 & LAB 7

INSTRUMENT

Contamination Survey
Tennelec LB5100, S/N 64169

	Alpha	Beta	Gamma
Efficiency	57.90%	16.59%	22.11%
Bkg CPM	0.10	20.60	8.60

Instrument Survey
Meter: Eberline E-520, S/N 3813
Probe: Eberline HP-270, S/N 2813
Cal Due: 16-Mar-98
Background: as noted in mR/hr

Sensitivity (CPM)	L_c	LLD	L_D	L_Q
Alpha	0.74	1.47	4.18	100.63
Beta	10.58	21.15	23.82	108.38
Gamma	6.83	13.67	16.35	105.56

SURVEYOR: SSG DEGUMBIA
REVIEWED BY:
HEALTH PHYSICS MANAGER

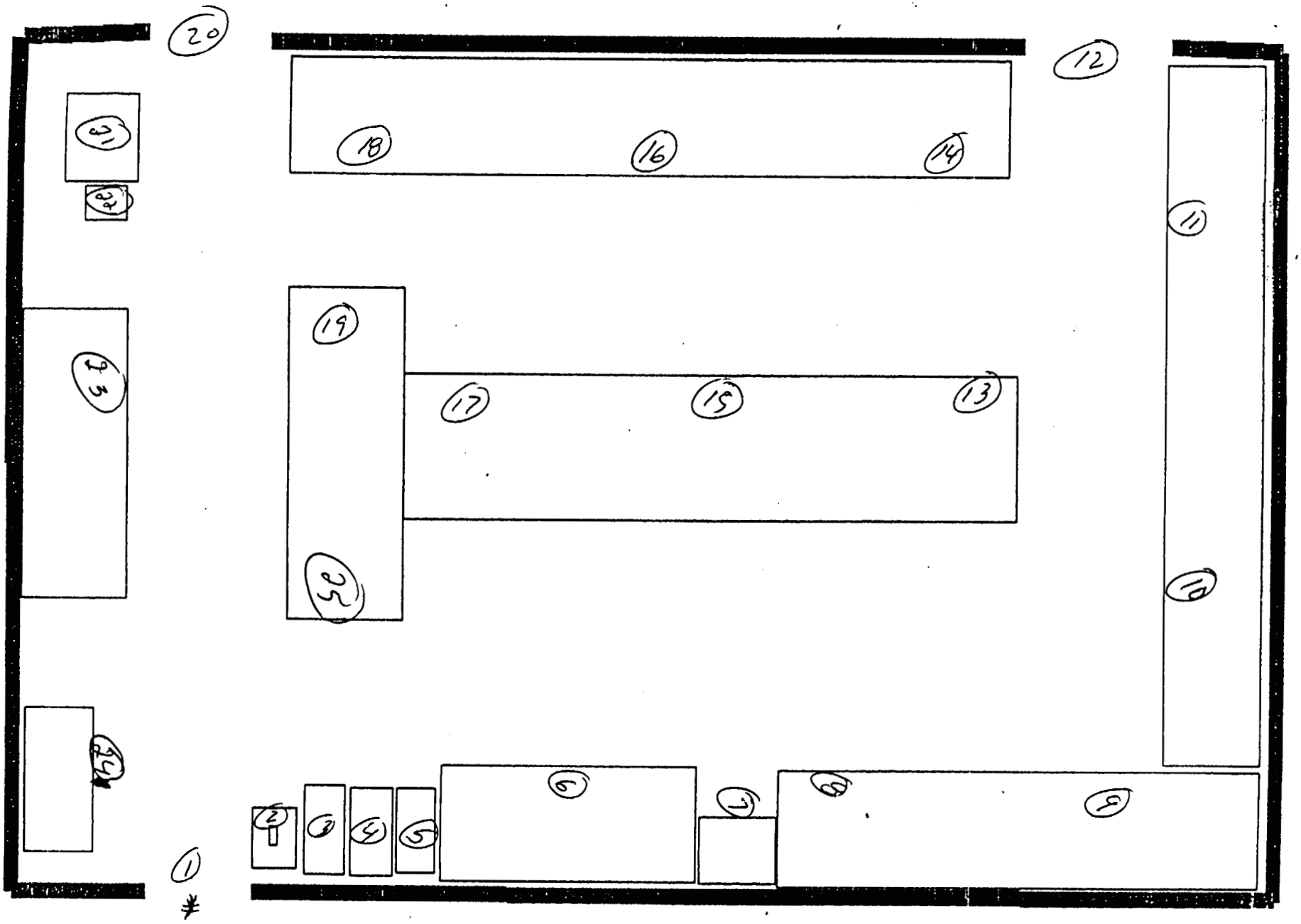
DISPOSITION
[ ] HIGHLIGHTED READINGS RESURVEYED
ALPHA > 220 DPM/100 cm²
BETA/GAMMA > 2200 DPM/100 cm²
[X] NO ACTION REQUIRED

#	LOCATION	AREA (cm²)	Dose Rate (mR/hr)	Gross CPM			Net CPM			Net DPM/100 cm²		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
1	Lab 1 Floor Near Entrance	100	0.02	0.10	18.30	4.90	0.0	-2.3	-3.7	0.0	-13.9	-16.7
2	Lab 1 Trash Container	100	0.02	0.20	18.60	5.50	0.1	-2.0	-3.1	0.2	-12.1	-14.0
3	Lab 1 Sink 1	100	0.02	0.30	18.20	8.70	0.2	-2.4	0.1	0.3	-14.5	0.5
4	Lab 1 Sink 2	100	0.02	0.20	18.60	6.10	0.1	-2.0	-2.5	0.2	-12.1	-11.3
5	Lab 1 Sink 3	100	0.02	0.10	17.40	0.40	0.0	-3.2	-8.2	0.0	-19.3	-37.1
6	Lab1 Counter Top	100	0.02	0.10	17.40	1.20	0.0	-3.2	-7.4	0.0	-19.3	-33.5
7	Lab1 Cabinet Door	100	0.03	0.20	18.00	5.40	0.1	-2.6	-3.2	0.2	-15.7	-14.5
8	Lab1 Counter Top	100	0.03	0.00	18.50	4.30	-0.1	-2.1	-4.3	-0.2	-12.7	-19.4
9	Lab1 Counter Top	100	0.03	0.10	19.00	3.90	0.0	-1.6	-4.7	0.0	-9.6	-21.3
10	Lab1 Counter Top	100	0.02	0.20	18.90	7.50	0.1	-1.7	-1.1	0.2	-10.2	-5.0
11	Lab1 Counter Top	100	0.02	0.10	17.10	6.60	0.0	-3.5	-2.0	0.0	-21.1	-9.0
12	Lab1 Floor Near Far Exit Hallway	100	0.02	0.20	17.70	5.10	0.1	-2.9	-3.5	0.2	-17.5	-15.8
13	Lab1 Counter Top	100	0.03	0.00	18.40	5.00	-0.1	-2.2	-3.6	-0.2	-13.3	-16.3
14	Lab1 Counter Top	100	0.02	0.00	20.00	4.50	-0.1	-0.6	-4.1	-0.2	-3.6	-18.5
15	Lab1 Counter Top	100	0.03	0.10	18.20	8.80	0.0	-2.4	0.2	0.0	-14.5	0.9
16	Lab1 Counter Top	100	0.02	0.20	19.90	6.20	0.1	-0.7	-2.4	0.2	-4.2	-10.9
17	Lab1 Counter Top	100	0.03	0.30	16.40	8.90	0.2	-4.2	0.3	0.3	-25.3	1.4
18	Lab1 Counter Top	100	0.02	0.10	19.30	7.40	0.0	-1.3	-1.2	0.0	-7.8	-5.4
19	Lab1 Counter Top	100	0.02	0.00	19.10	4.70	-0.1	-1.5	-3.9	-0.2	-9.0	-17.6
20	Lab 1 Floor At Near Exit	100	0.02	0.10	18.00	1.50	0.0	-2.6	-7.1	0.0	-15.7	-32.1
21	Lab1 Foot Monitor	100	0.03	0.30	16.40	4.90	0.2	-4.2	-3.7	0.3	-25.3	-16.7
22	Lab1 Foot Monitor	100	0.03	0.10	17.10	7.70	0.0	-3.5	-0.9	0.0	-21.1	-4.1
23	Lab1 Counter Top	100	0.02	0.00	17.60	7.10	-0.1	-3.0	-1.5	-0.2	-18.1	-6.8

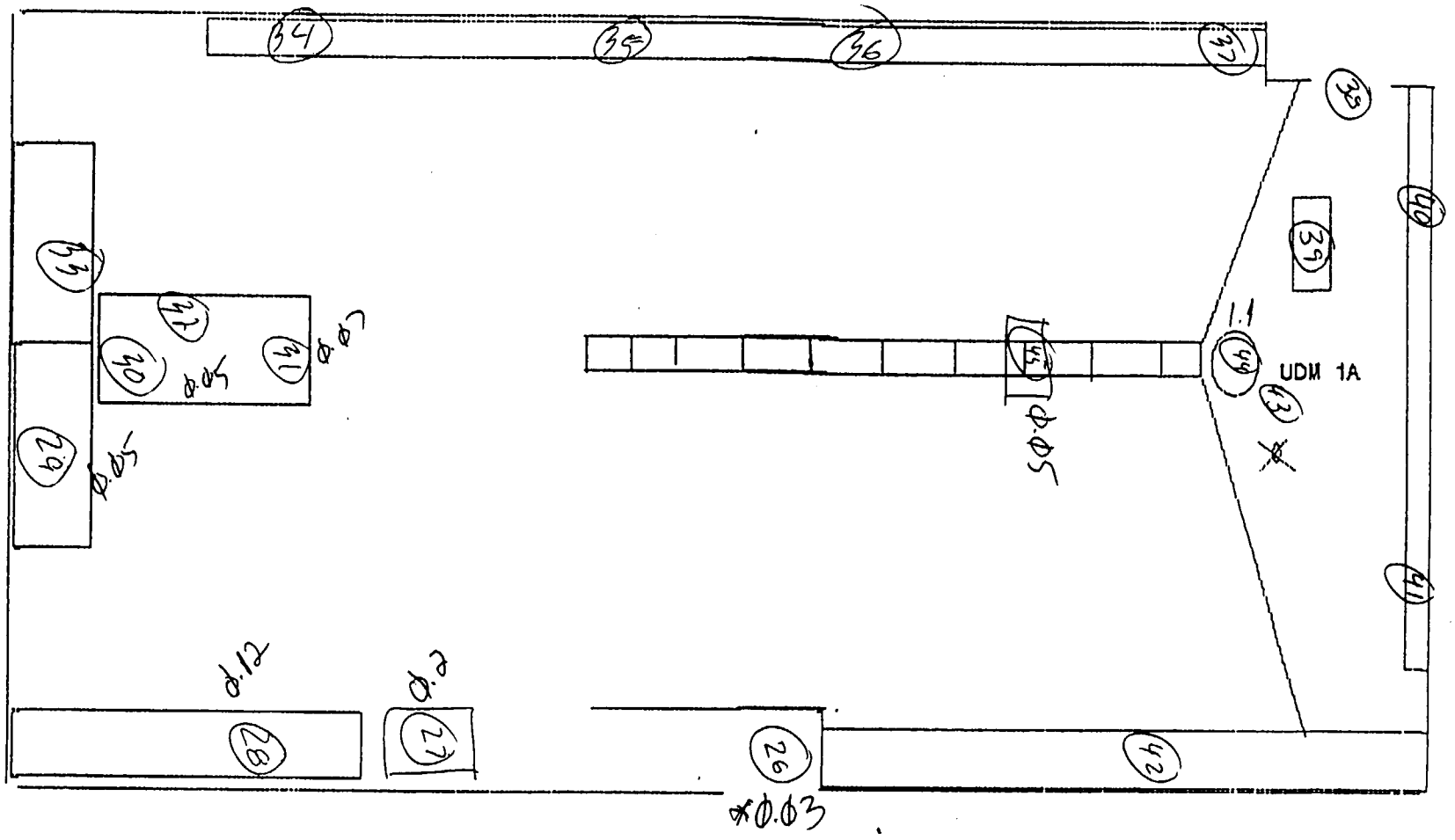
24	Lab1 Cabinet Door	100	0.02	0.00	18.60	9.20	-0.1	-2.0	0.6	-0.2	-12.1	2.7
25	Lab1 Counter Top	100	0.03	0.00	20.00	9.90	-0.1	-0.6	1.3	-0.2	-3.6	5.9
26	Lab 2 Floor At Entr.	100	0.03	0.00	18.00	9.00	-0.1	-2.6	0.4	-0.2	-15.7	1.8
27	Lab 2 Cart Top	100	0.20	0.00	19.20	5.80	-0.1	-1.4	-2.8	-0.2	-8.4	-12.7
28	Lab 2 Counter Top	100	0.12	0.00	17.00	7.20	-0.1	-3.6	-1.4	-0.2	-21.7	-6.3
29	Lab 2 Counter Top	100	0.05	0.10	19.00	4.20	0.0	-1.6	-4.4	0.0	-9.6	-19.9
30	Lab 2 Counter Top	100	0.05	0.00	18.00	7.40	-0.1	-2.6	-1.2	-0.2	-15.7	-5.4
31	Lab 2 Counter Top	100	0.07	0.00	18.70	2.50	-0.1	-1.9	-6.1	-0.2	-11.5	-27.6
32	Lab 2 Counter Top	100	0.02	0.10	22.00	6.90	0.0	1.4	-1.7	0.0	8.4	-7.7
33	Lab 2 Counter Top	100	0.03	0.20	19.00	1.40	0.1	-1.6	-7.2	0.2	-9.6	-32.6
34	Lab 2 Counter Top	100	0.03	0.20	17.70	4.50	0.1	-2.9	-4.1	0.2	-17.5	-18.5
35	Lab 2 Counter Top	100	0.03	0.00	18.70	6.80	-0.1	-1.9	-1.8	-0.2	-11.5	-8.1
36	Lab 2 Counter Top	100	0.03	0.00	18.70	5.40	-0.1	-1.9	-3.2	-0.2	-11.5	-14.5
37	Lab 2 Counter Top	100	0.03	0.00	18.00	6.10	-0.1	-2.6	-2.5	-0.2	-15.7	-11.3
38	Lab 2 Floor Exit Outdoors	100	0.03	0.10	18.00	6.10	0.0	-2.6	-2.5	0.0	-15.7	-11.3
39	Lab 2 Table Top	100	0.03	0.00	17.70	11.00	-0.1	-2.9	2.4	-0.2	-17.5	10.9
40	Lab 2 Counter Top	100	0.03	0.10	18.30	2.40	0.0	-2.3	-6.2	0.0	-13.9	-28.0
41	Lab 2 Counter Top	100	0.03	0.10	17.70	5.60	0.0	-2.9	-3.0	0.0	-17.5	-13.6
42	Lab 2 Counter Top	100	0.03	0.30	20.20	8.60	0.2	-0.4	0.0	0.3	-2.4	0.0
43	Lab 2 Floor Near UDM-1a	100	0.03	0.10	20.30	1.80	0.0	-0.3	-6.8	0.0	-1.8	-30.8
44	Lab 2 Ledge on UDM-1a	100	0.03	0.00	18.50	8.00	-0.1	-2.1	-0.6	-0.2	-12.7	-2.7
45	Lab 2 Calibration Stand	100	0.05	0.10	19.50	4.80	0.0	-1.1	-3.8	0.0	-6.6	-17.2
46	Lab 5 Floor Near Entrance	100	0.02	0.20	16.60	1.90	0.1	-4.0	-6.7	0.2	-24.1	-30.3
47	Lab 5 Counter Top	100	0.02	0.40	19.40	7.70	0.3	-1.2	-0.9	0.5	-7.2	-4.1
48	Lab 5 Counter Top	100	0.02	0.10	16.00	5.10	0.0	-4.6	-3.5	0.0	-27.7	-15.8
49	Lab 5 Counter Top	100	0.02	0.40	17.70	6.90	0.3	-2.9	-1.7	0.5	-17.5	-7.7
50	Lab 5 Cabinet Door	100	0.02	0.00	17.00	8.00	-0.1	-3.6	-0.6	-0.2	-21.7	-2.7
51	Lab 5 Counter Top	100	0.02	0.30	19.30	1.60	0.2	-1.3	-7.0	0.3	-7.8	-31.7
52	Lab 5 Microwave Cart Top	100	0.02	0.00	16.50	7.80	-0.1	-4.1	-0.8	-0.2	-24.7	-3.6
53	Lab 5 Floor Exit Outdoors	100	0.02	0.20	19.10	5.20	0.1	-1.5	-3.4	0.2	-9.0	-15.4
54	Lab 5 Counter Top	100	0.02	0.20	19.50	2.60	0.1	-1.1	-6.0	0.2	-6.6	-27.1
55	Lab 5 Counter Top	100	0.02	0.00	19.10	7.60	-0.1	-1.5	-1.0	-0.2	-9.0	-4.5
56	Lab 5 Counter Top	100	0.02	0.00	17.50	7.10	-0.1	-3.1	-1.5	-0.2	-18.7	-6.8
57	Lab 5 Counter Top	100	0.02	0.20	19.90	8.50	0.1	-0.7	-0.1	0.2	-4.2	-0.5
58	Lab 5 Counter Top	100	0.02	0.00	17.80	9.90	-0.1	-2.8	1.3	-0.2	-16.9	5.9
59	Lab 5 Foot Monitor	100	0.02	0.00	18.90	9.10	-0.1	-1.7	0.5	-0.2	-10.2	2.3
60	Lab 5 Foot Monitor	100	0.02	0.10	16.50	3.70	0.0	-4.1	-4.9	0.0	-24.7	-22.2

61	Lab 5 Trash Can	100	0.02	0.20	15.80	5.10	0.1	-4.8	-3.5	0.2	-28.9	-15.8
62	Lab 5 Shipping Container	100	0.02	0.20	18.30	9.20	0.1	-2.3	0.6	0.2	-13.9	2.7
63	Lab 5 Floor	100	0.02	0.30	19.60	5.10	0.2	-1.0	-3.5	0.3	-6.0	-15.8
64	Lab 5 Floor	100	0.02	0.00	16.60	5.60	-0.1	-4.0	-3.0	-0.2	-24.1	-13.6
65	Lab 5 Floor	100	0.02	0.10	18.80	5.50	0.0	-1.8	-3.1	0.0	-10.8	-14.0
66	Lab 7 Counter Top	100	0.02	0.30	17.80	6.60	0.2	-2.8	-2.0	0.3	-16.9	-9.0
67	Lab 7 Floor Entr to Electronic RM	100	0.02	0.20	18.90	5.20	0.1	-1.7	-3.4	0.2	-10.2	-15.4
68	Lab 7 Cabinet Door	100	0.05	0.10	19.90	2.70	0.0	-0.7	-5.9	0.0	-4.2	-26.7
69	Lab 7 Counter Top	100	0.02	0.20	18.70	4.30	0.1	-1.9	-4.3	0.2	-11.5	-19.4
70	Lab 7 Counter Top	100	0.02	0.10	17.60	6.10	0.0	-3.0	-2.5	0.0	-18.1	-11.3
71	Lab 7 Counter Top	100	0.02	0.00	20.60	9.40	-0.1	0.0	0.8	-0.2	0.0	3.6
72	Lab 7 Counter Top	100	0.02	0.00	18.10	8.50	-0.1	-2.5	-0.1	-0.2	-15.1	-0.5
73	Lab 7 Counter Top	100	0.02	0.00	18.70	7.50	-0.1	-1.9	-1.1	-0.2	-11.5	-5.0
74	Lab 7 Floor Entr. to Lab 8	100	0.02	0.10	18.90	6.00	0.0	-1.7	-2.6	0.0	-10.2	-11.8
75	Lab 7 Floor Entr. to Hallway	100	0.02	0.00	17.40	6.50	-0.1	-3.2	-2.1	-0.2	-19.3	-9.5
76	Lab 7 Counter Top	100	0.02	0.00	19.80	7.10	-0.1	-0.8	-1.5	-0.2	-4.8	-6.8
77	Lab 7 Counter Top	100	0.02	0.00	17.90	6.50	-0.1	-2.7	-2.1	-0.2	-16.3	-9.5
78	Lab 7 Counter Top	100	0.02	0.10	18.10	7.20	0.0	-2.5	-1.4	0.0	-15.1	-6.3
79	Lab 7 Counter Top	100	0.02	0.00	20.50	12.00	-0.1	-0.1	3.4	-0.2	-0.6	15.4
80	Lab 7 Counter Top	100	0.02	0.00	18.20	9.80	-0.1	-2.4	1.2	-0.2	-14.5	5.4
81	Lab 7 Counter Top	100	0.02	0.00	17.90	6.40	-0.1	-2.7	-2.2	-0.2	-16.3	-10.0
82	Lab 7 Counter Top	100	0.02	0.10	18.30	8.10	0.0	-2.3	-0.5	0.0	-13.9	-2.3
83	Lab 7 Counter Top	100	0.02	0.00	18.30	11.60	-0.1	-2.3	3.0	-0.2	-13.9	13.6

LAB 1



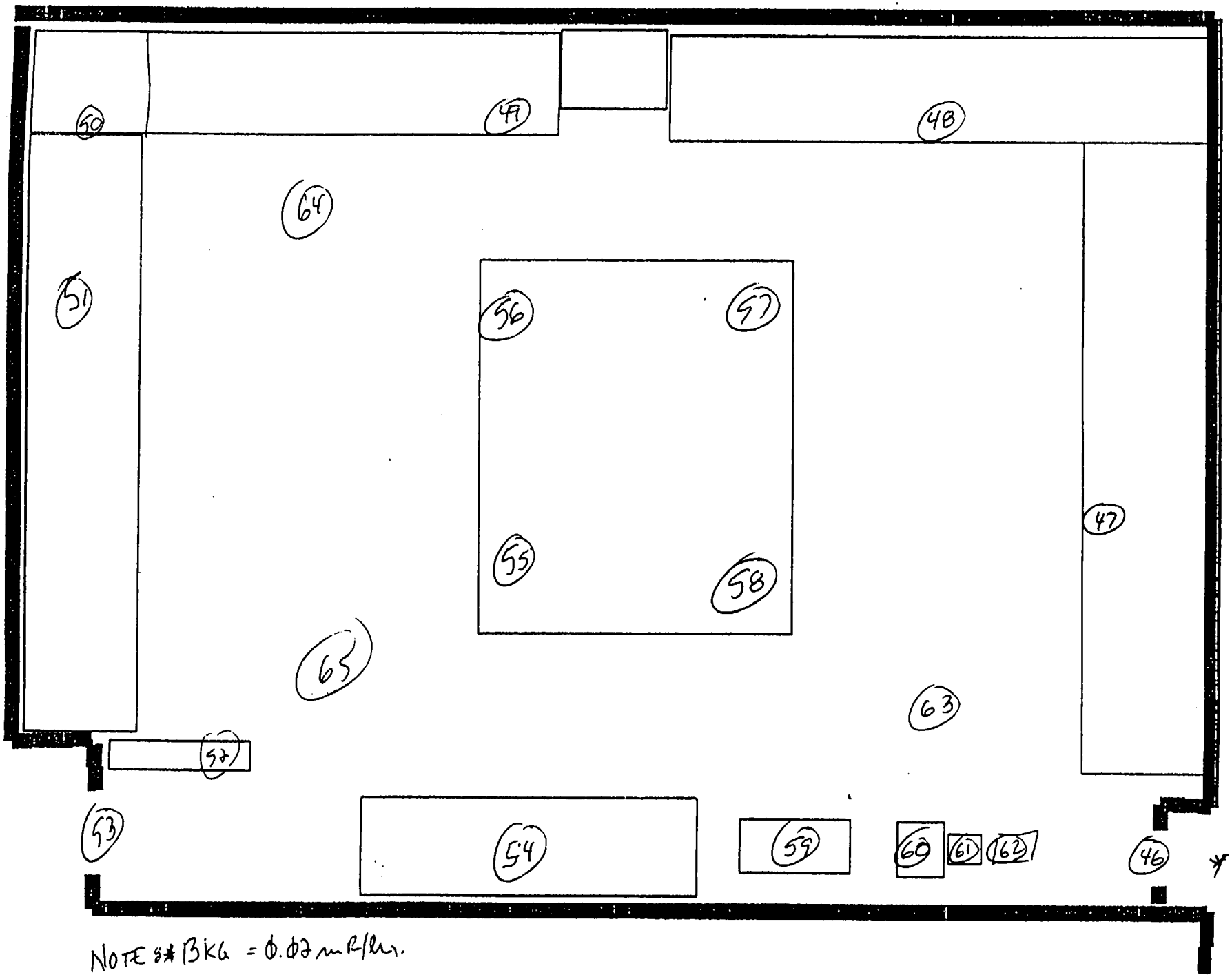
NOTE: * BKG = ϕ.03 mR/hr



LAB 2

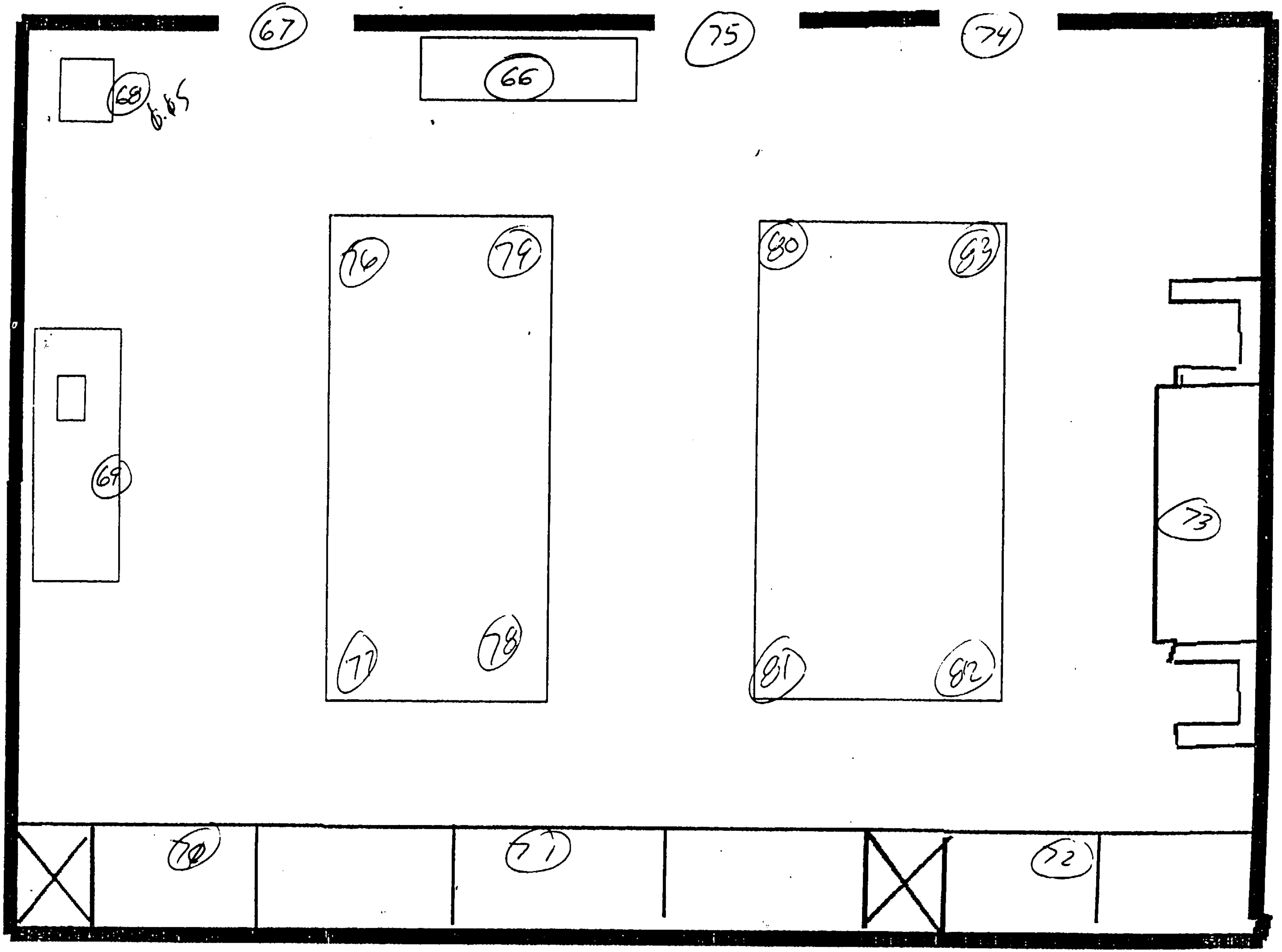
NOTE : * BKG Φ.03 mR/hr.

LA



NOTE 8# BKG = 0.02 mR/hr.

LAB 7



WIPE SURVEY SAMPLE ANALYSIS - 5 August 1997
ERB LAB SURVEY - HP Lab, Prep Lab, Vault

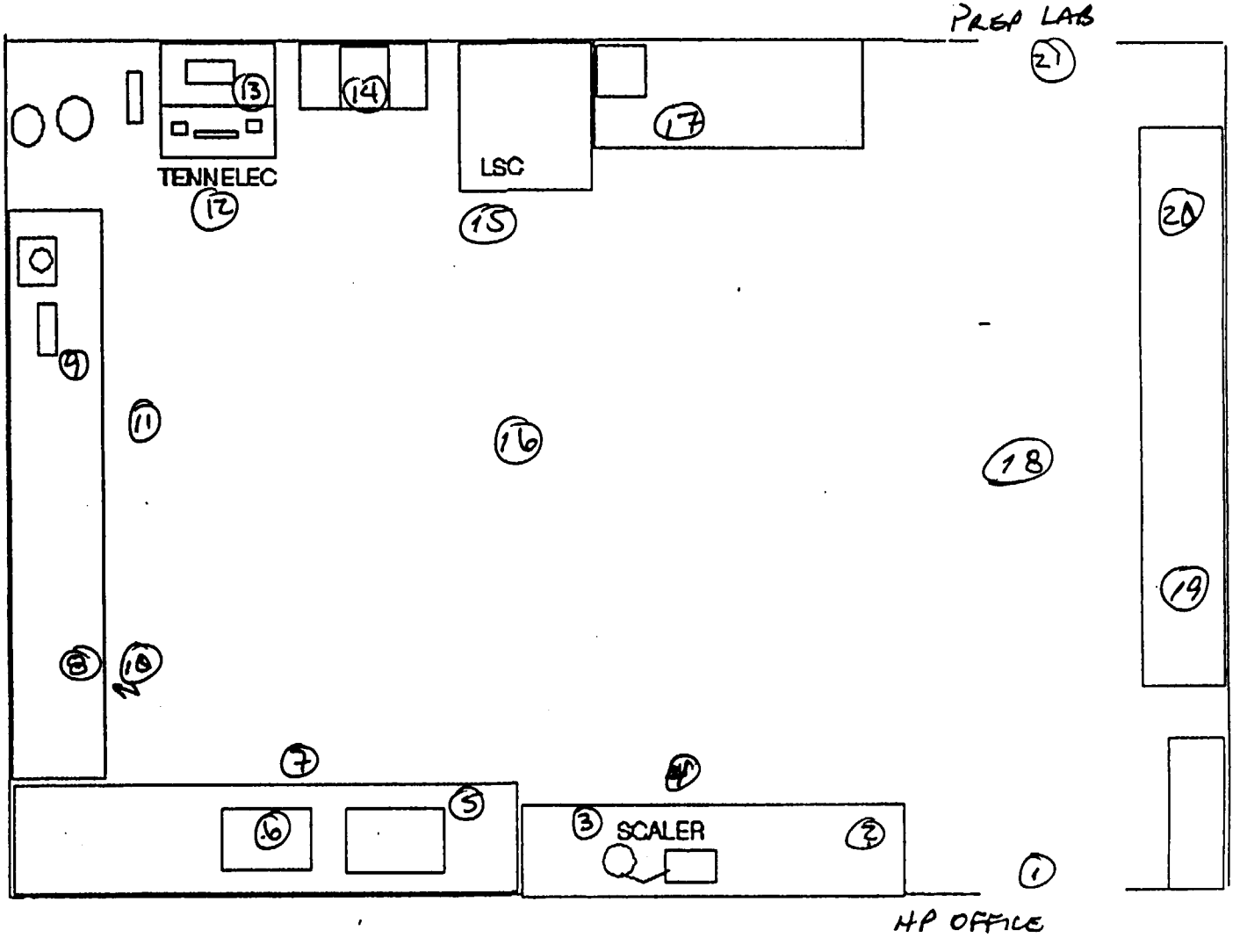
INSTRUMENT								DISPOSITION
Contamination				Instrument Survey				[ ] HIGHLIGHTED READINGS RESURVEYED
Tennelec LB5100, S/N 64169				Meter:	Eberline E-520, S/N 1282			ALPHA > 220 DPM/100 cm²
	Alpha	Beta	Gamma	Probe:	Eberline HP-260			BETA/GAMMA > 2200 DPM/100 cm²
Efficiency	51.70%	14.48%	22.20%	Cal Due:	28-Sep-97			
Bkg CPM	0.10	1.70	57.60	Background:		0.02	mR/hr	[X] NO ACTION REQUIRED
Sensitivity (CPM)	L_c	LLD	L_D	L_q	SURVEYOR:		SFC Aperans JEA	No Samples > LLD
Alpha	0.74	1.47	4.18	100.63				
Beta	3.04	6.08	8.77	102.54	REVIEWED BY:			
Gamma	17.68	35.37	38.00	113.39			HEALTH PHYSICS MANAGER	

#	LOCATION	AREA (cm²)	Dose Rate (mR/hr)	Gross CPM			Net CPM			Net DPM/100 cm²		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
1	HP LAB @ HP OFFICE	100	0.03	0.20	1.40	54.50	0.1	-0.3	-3.10	0.2	-2.1	-14.0
2	SCALER WORKBENCH	100	0.04	0.10	3.10	53.30	0.0	1.4	-4.30	0.0	9.7	-19.4
3	WORKBENCH @ SCALER	100	0.02	0.10	1.80	53.30	0.0	0.1	-4.30	0.0	0.7	-19.4
4	FLOOR @ SCALER	100	0.03	0.20	2.50	54.80	0.1	0.8	-2.80	0.2	5.5	-12.6
5	SAMPLE WORKBENCH	100	0.03	0.20	2.60	54.30	0.1	0.9	-3.30	0.2	6.2	-14.9
6	SAMPLE TRAY	100	0.09	0.10	1.70	52.70	0.0	0.0	-4.90	0.0	0.0	-22.1
7	FLOOR @ SAMPLE BENCH	100	0.03	0.10	2.20	51.90	0.0	0.5	-5.70	0.0	3.5	-25.7
8	WORKBENCH	100	0.05	0.30	2.50	55.70	0.2	0.8	-1.90	0.4	5.5	-8.6
9	WORKBENCH	100	0.04	0.40	2.60	51.60	0.3	0.9	-6.00	0.6	6.2	-27.0
10	SOURCE CABINET	100	0.08	0.20	2.10	55.10	0.1	0.4	-2.50	0.2	2.8	-11.3
11	FLOOR @ WORKBENCH	100	0.03	0.20	2.60	48.90	0.1	0.9	-8.70	0.2	6.2	-39.2
12	FLOOR @ TENNELEC	100	0.02	0.20	2.40	53.60	0.1	0.7	-4.00	0.2	4.8	-18.0
13	TOP OF TENNELEC	100	0.04	0.10	2.90	55.40	0.0	1.2	-2.20	0.0	8.3	-9.9
14	TENNELEC DESKTOP	100	0.02	0.10	1.40	55.80	0.0	-0.3	-1.80	0.0	-2.1	-8.1
15	FLOOR @ LSC	100	0.03	0.00	2.10	53.20	-0.1	0.4	-4.40	-0.2	2.8	-19.8
16	CENTER OF FLOOR	100	0.04	0.10	2.00	54.00	0.0	0.3	-3.60	0.0	2.1	-16.2
17	DESKTOP	100	0.03	0.20	1.70	51.50	0.1	0.0	-6.10	0.2	0.0	-27.5
18	FLOOR @ WORKBENCH	100	0.03	0.30	1.20	53.10	0.2	-0.5	-4.50	0.4	-3.5	-20.3
19	WORKBENCH	100	0.02	0.20	1.90	52.10	0.1	0.2	-5.50	0.2	1.4	-24.8
20	WORKBENCH	100	0.02	0.40	1.90	52.80	0.3	0.2	-4.80	0.6	1.4	-21.6
21	FLOOR @ PREP LAB	100	0.03	0.10	2.00	52.90	0.0	0.3	-4.70	0.0	2.1	-21.2
22	FLOOR @ HP LAB	100	0.04	0.00	2.70	53.20	-0.1	1.0	-4.40	-0.2	6.9	-19.8
23	WALL CABINET	100	0.03	0.20	1.90	54.10	0.1	0.2	-3.50	0.2	1.4	-15.8

#	LOCATION	AREA (cm^2)	Dose Rate (mR/hr)	Gross CPM			Net CPM			Net DPM/100 cm^2		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
24	WORKBENCH	100	0.04	0.00	1.90	54.40	-0.1	0.2	-3.20	-0.2	1.4	-14.4
25	WORKBENCH	100	0.02	0.00	2.40	51.30	-0.1	0.7	-6.30	-0.2	4.8	-28.4
26	SHOWER PAD	100	0.05	0.10	1.20	53.10	0.0	-0.5	-4.50	0.0	-3.5	-20.3
27	SINK BASIN	100	0.03	0.10	1.90	53.50	0.0	0.2	-4.10	0.0	1.4	-18.5
28	FLOOR	100	0.02	0.30	3.00	57.80	0.2	1.3	0.20	0.4	9.0	0.9
29	FLOOR	100	0.04	0.30	1.50	48.60	0.2	-0.2	-9.00	0.4	-1.4	-40.5
30	FLOOR	100	0.02	0.10	1.60	50.90	0.0	-0.1	-6.70	0.0	-0.7	-30.2
31	FLOOR	100	0.02	0.10	2.40	51.40	0.0	0.7	-6.20	0.0	4.8	-27.9
32	FLOOR @ WALL LOCKERS	100	0.03	0.10	2.30	49.70	0.0	0.6	-7.90	0.0	4.1	-35.6
33	FLOOR	100	0.04	0.00	2.00	54.90	-0.1	0.3	-2.70	-0.2	2.1	-12.2
34	FLOOR @ LOADING DOCK	100	0.05	0.00	1.60	50.30	-0.1	-0.1	-7.30	-0.2	-0.7	-32.9
35	FLOOR @ FUME HOOD	100	0.03	0.30	1.80	52.90	0.2	0.1	-4.70	0.4	0.7	-21.2
36	FUME HOOD FRONT	100	0.04	0.10	1.60	51.90	0.0	-0.1	-5.70	0.0	-0.7	-25.7
37	FUME HOOD	100	0.08	0.00	1.20	48.80	-0.1	-0.5	-8.80	-0.2	-3.5	-39.6
38	WORKBENCH	100	0.03	0.10	2.20	50.60	0.0	0.5	-7.00	0.0	3.5	-31.5
39	FLOOR @ WORKBENCH	100	0.03	0.30	1.40	56.60	0.2	-0.3	-1.00	0.4	-2.1	-4.5
40	WORKBENCH	100	0.05	0.20	2.10	51.10	0.1	0.4	-6.50	0.2	2.8	-29.3
41	WORKBENCH	100	0.02	0.20	2.00	55.30	0.1	0.3	-2.30	0.2	2.1	-10.4
42	FLOOR @ LAB 1	100	0.03	0.00	2.50	48.30	-0.1	0.8	-9.30	-0.2	5.5	-41.9
43	WORKBENCH	100	0.02	0.00	1.30	55.10	-0.1	-0.4	-2.50	-0.2	-2.8	-11.3
44	VAULT DOORKNOB	25	0.05	0.00	1.40	52.60	-0.1	-0.3	-5.00	-0.8	-8.3	-90.1
45	VAULT ENTRANCE	100	0.05	0.20	2.60	51.70	0.1	0.9	-5.90	0.2	6.2	-26.6
46	VAULT FLOOR	100	0.07	0.40	1.80	52.20	0.3	0.1	-5.40	0.6	0.7	-24.3
47	VAULT FLOOR	100	0.15	0.00	2.60	53.10	-0.1	0.9	-4.50	-0.2	6.2	-20.3
48	TOP OF SAFE	100	4.00	0.10	2.00	49.00	0.0	0.3	-8.60	0.0	2.1	-38.7
49	FLOOR @ SAFE	100	0.35	0.10	2.10	50.60	0.0	0.4	-7.00	0.0	2.8	-31.5
50	TABLETOP	100	0.20	0.30	1.90	51.50	0.2	0.2	-6.10	0.4	1.4	-27.5
51	SHIELDED WORK TABLE	100	0.08	0.20	2.40	52.00	0.1	0.7	-5.60	0.2	4.8	-25.2
52	FLOOR @ SHIELDED TABLE	100	0.10	0.00	1.20	56.20	-0.1	-0.5	-1.40	-0.2	-3.5	-6.3
53	FLOOR @ DRAIN	100	0.30	0.20	1.30	53.80	0.1	-0.4	-3.80	0.2	-2.8	-17.1
54	SHELF A6	100	0.15	0.20	1.80	54.60	0.1	0.1	-3.00	0.2	0.7	-13.5
55	SHELF B3	100	0.35	0.70	2.10	51.60	0.6	0.4	-6.20	1.2	2.8	-27.9
56	FLOOR @ SHELF	100	0.30	0.10	2.30	51.40	0.0	0.6	-8.00	0.0	4.1	-36.0
57	FLOOR @ FIRE CABINET	100	1.30	0.10	1.50	49.60	0.0	-0.2	-2.10	0.0	-1.4	-9.5
58	UDM-2 STORAGE SHELF	100	13.00	0.20	2.00	55.50	0.1	0.3	-5.80	0.2	2.1	-26.1

#	LOCATION	AREA (cm^2)	Dose Rate (mR/hr)	Gross CPM			Net CPM			Net DPM/100 cm^2		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
59	UDM-6 STORAGE SHELF	100	1.20	0.00	2.30	51.80	-0.1	0.6	-0.70	-0.2	4.1	-3.2
60	SOURCE STORAGE SHELF	100	0.60	0.20	1.80	56.90	0.1	0.1	-5.30	0.2	0.7	-23.9
61	FLOOR @ STORAGE CAB.	100	0.70	0.10	2.30	52.30	0.0	0.6	-6.00	0.0	4.1	-27.0
62	FLOOR @ CIV DEF PIG	100	0.30	0.00	1.90	51.60	-0.1	0.2	-5.40	-0.2	1.4	-24.3
63	SIDE OF MC-1 BOX	100	5.00	0.30	2.00	52.20	0.2	0.3	-3.70	0.4	2.1	-16.7
64	FLOOR @ BARRELS	100	0.60	0.10	1.70	53.90	0.0	0.0	-2.80	0.0	0.0	-12.6
65	TOP OF BARREL #2	100	0.30	0.00	1.60	54.80	-0.1	-0.1	-4.20	-0.2	-0.7	-18.9
66	FLOOR @ U-233 PLATES	100	0.70	0.20	2.00	53.40	0.1	0.3	#REF!	0.2	2.1	#REF!

H.P. LAB


PREP LAB
21
TENN ELEC
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LSC
17
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4
5
6
3
SCALER
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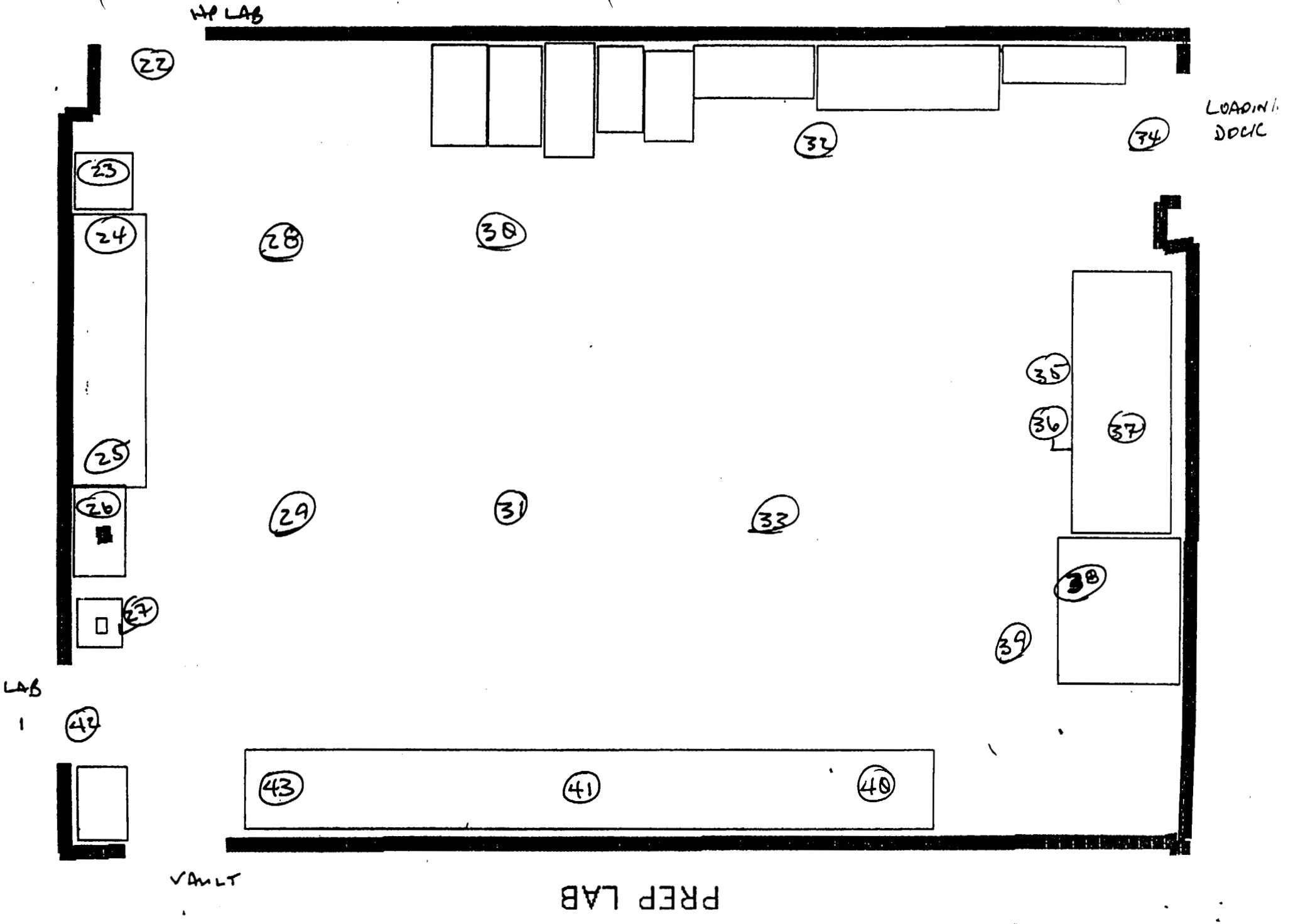
1
H.P OFFICE


WP LAB
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LOADING DOCK
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LAB 1
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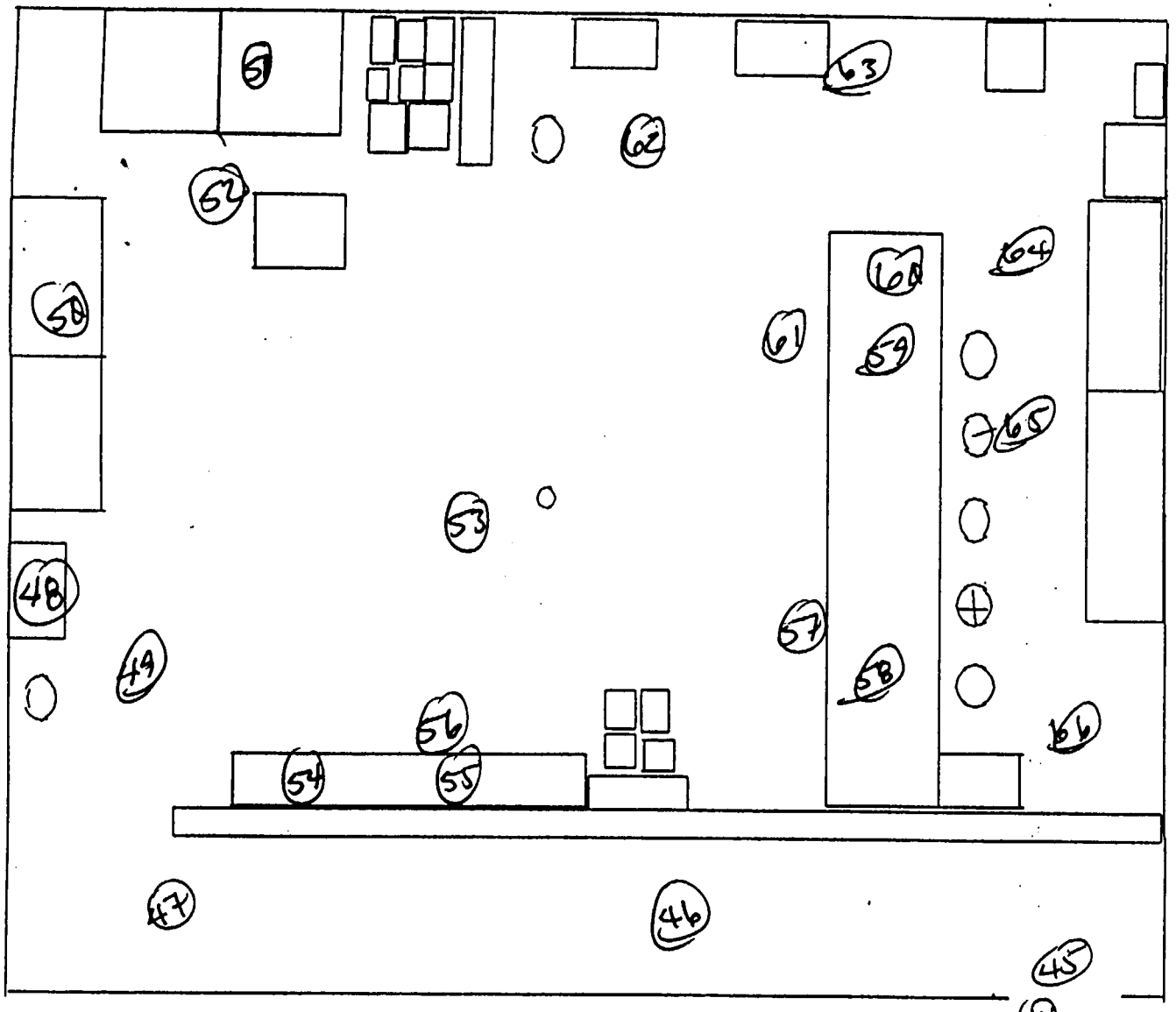
43
41
40
VAULT
PREP LAB



VAULT

CONTAMINATION/RADIATION SURVEY REPORT	DATE	TIME START	TIME COMPL	PAGE 2 OF 2	SURVEY NO.	NO. OF SAMPLES
	12 July 95	1523	0219		95-048	64

LOCATION	REASON FOR SURVEY: PROCEDURE NO. Monthly	SURVEYOR:
Rad Labs USACMLS	☐ SOIL ☐ WIPE ☐ SOURCE ☐ SPECIAL ☑ ROUTINE	SSG Baugh

REVIEWER: TITLE Health Physics Manager	PHONE 5-5737	☑ NO ACTION REQ'D ☐ CIRCLED READINGS - DECONTAMINATE/RESURVEY

PERMISSIBLE LEVELS	CONTAMINATION SURVEY	INSTRUMENT TAG NO	ALPHA	BETA-GAMMA	
☑ <220 dpm/100 cm² ALPHA ☑ <2200 dpm 100 cm² BETA-GAMMA ☐ OTHER			LB5100	LB5100	
	INSTRUMENT SURVEY	INSTRUMENT TAG NO 3813	ALPHA	BETA-GAMMA E-520	NEUTRON

SOURCE CHECK DATA	CONTAMINATION SURVEYS		INSTRUMENTS SURVEY		LOWER LIMITS OF DETECTION		
SOURCE ID	ALPHA	BETA-GAMMA	ALPHA	BETA-GAMMA	2 MINUTE COUNTS	ALPHA	BETA-GAMMA
SOURCE STRENGTH	dpm	dpm	dpm	mR/hr	BG		
INSTRUMENT RESPONSE	cpm	cpm	cpm	mR/hr	LC		
INSTRUMENT EFFICIENCY	%	%	%	%	LD		
BACKGROUND	cpm	cpm	cpm	mR/hr	LQ		
					5 MINUTE COUNTS	ALPHA	BETA-GAMMA
					BG		
					LC		
					LD		
					LQ		

REMARKS: LLD for 10 min Counts

	α	β-	γ
cpm	0.68	2.17	10.93
dpm	1.11	13.57	43.48

S/ E	ALPHA EQUIV ☐ Am 241 ☐ U-235 ☐ OTHER GROSS	ALPHA ACTIVITY	BETA-GAMMA EQUIV ☐ Co-60 ☐ Cs-137 ☐ OTHER GROSS	BETA-GAMMA ACTIVITY	MREM/hr ☐ UR/hr ☐ NEUTRON ☐ CPM ☐	ITEM OR LOCATION
						See ATTACHED
2						
3						
4						
5						
6						
7						
8						
9						
10						
1						
2						
3						
4						
5						
6						
8						
9						
10						

WED JUL 12, 1995 GROUP B SURVEY OF THE RAD LABS FOR JUNE 95

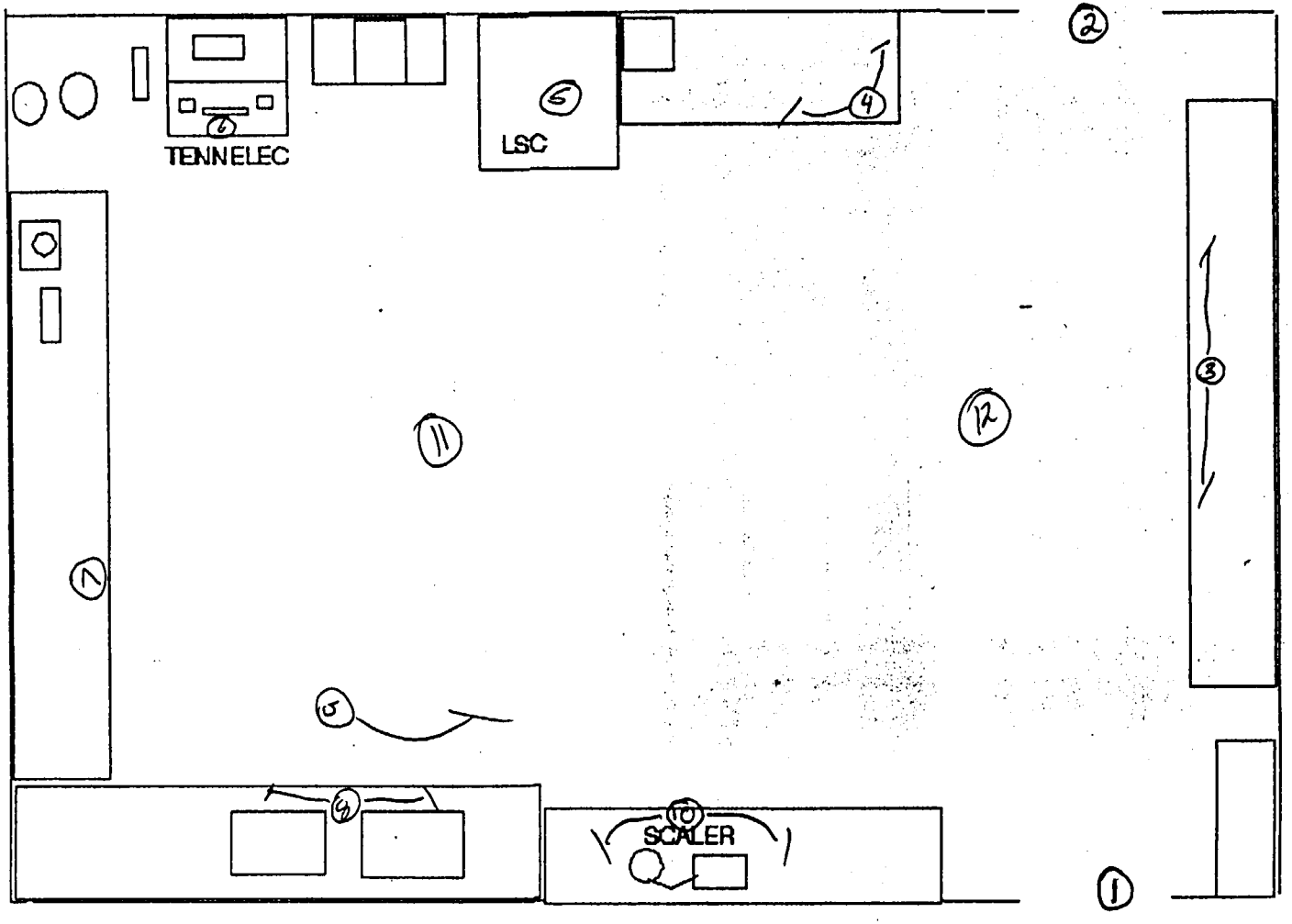
SN	SAMPLE CODE	LOCATION LAB	TIME	ALPHA CPM	BETA CPM	GAMMA CPM	ALPHA DPM	BETA DPM	GAMMA DPM
1	95-048	0	15:33:57	-0.18	0.50	1.56	-0.21	3.39	6.68
	95-048	0	15:44:12	-0.12	0.70	1.56	-0.21	4.74	6.33
3	95-048	0	15:54:26	0.08	1.60	1.86	0.14	12.21	7.96
4	95-048	0	16:04:41	-0.22	1.50	0.86	-0.39	10.17	3.68
5	95-048	0	16:14:55	-0.22	1.10	-2.04	-0.39	7.46	-8.73
6	95-048	0	16:25:10	-0.22	0.70	1.66	-0.39	4.74	7.10
7	95-048	0	16:35:24	-0.02	1.10	1.86	-0.03	7.46	7.96
8	95-048	0	16:45:39	-0.12	0.90	1.16	-0.21	6.10	4.96
9	95-048	0	16:55:53	-0.22	1.50	0.86	-0.39	12.69	3.68
10	95-048	0	17:06:08	0.08	1.60	1.86	0.14	10.85	7.96
11	95-048	0	17:16:22	-0.02	1.20	-6.24	-0.03	8.14	-26.72
12	95-048	0	17:26:37	-0.12	0.60	-3.74	-0.21	5.42	-16.01
13	95-048	0	17:36:51	-0.22	1.30	2.66	-0.39	8.81	12.24
14	95-048	0	17:47:06	0.28	1.50	2.26	0.49	10.17	9.67
15	95-048	0	17:57:20	-0.22	1.50	-0.04	-0.39	10.17	-0.17
16	95-048	0	18:07:35	-0.22	1.80	3.06	-0.39	12.21	13.10
17	95-048	0	18:17:49	-0.22	1.20	-2.14	-0.39	8.14	-9.16
18	95-048	0	18:28:04	-0.12	0.50	-0.64	-0.21	6.10	-2.74
19	95-048	0	18:38:18	-0.12	1.10	-1.94	-0.21	7.46	-8.30
20	95-048	0	18:48:33	-0.22	1.10	0.76	-0.39	7.46	3.25
21	95-048	0	18:58:47	-0.12	1.60	3.76	-0.21	12.21	16.10
22	95-048	0	19:09:02	-0.22	1.10	-1.04	-0.39	7.46	-4.45
23	95-048	0	19:19:16	-0.22	0.90	2.96	-0.39	6.10	12.67
24	95-048	0	19:29:30	-0.02	1.50	2.76	-0.03	10.17	11.82
25	95-048	0	19:39:45	-0.02	1.00	-0.14	-0.03	6.78	-0.59
26	95-048	0	19:49:59	0.08	0.90	-3.34	0.14	6.10	-14.30
7	95-048	0	20:00:13	-0.02	1.00	-0.14	-0.03	6.78	-0.59
28	95-048	0	20:10:28	0.18	1.40	2.76	0.31	9.49	11.82
29	95-048	0	20:20:42	-0.22	1.30	-3.54	-0.39	8.81	-15.16
30	95-048	0	20:30:57	-0.12	1.50	-1.34	-0.21	10.17	-5.73
31	95-048	0	20:41:11	-0.02	1.20	-0.94	-0.03	8.14	-4.02
32	95-048	0	20:51:26	-0.12	1.00	-1.64	-0.21	6.78	-7.02
33	95-048	0	21:01:40	-0.22	1.00	-0.54	-0.39	6.78	-2.31
34	95-048	0	21:11:54	-0.22	1.60	1.06	-0.39	10.85	4.53
35	95-048	0	21:22:09	-0.12	0.80	2.26	-0.21	5.42	9.67
36	95-048	0	21:32:23	-0.12	0.40	0.96	-0.21	2.71	4.11
37	95-048	0	21:42:38	-0.22	1.00	4.26	-0.39	6.78	18.24
38	95-048	0	21:52:52	-0.12	0.50	-0.84	-0.21	3.39	-3.59
39	95-048	0	22:03:07	-0.22	0.70	-0.84	-0.39	4.74	-3.59
40	95-048	0	22:13:21	-0.22	0.30	2.16	-0.39	2.03	9.25
41	95-048	0	22:23:36	0.08	2.00	-3.84	0.14	13.56	-16.44
42	95-048	0	22:33:50	-0.22	0.70	-1.44	-0.39	4.74	-6.16
43	95-048	0	22:44:05	-0.22	0.60	0.76	-0.39	4.07	3.25
44	95-048	0	22:54:19	-0.12	0.90	0.96	-0.21	6.10	4.11
45	95-048	0	23:04:34	-0.22	1.50	-0.64	-0.39	10.17	-2.74
46	95-048	0	23:14:48	-0.12	1.00	0.56	-0.21	6.78	2.39
47	95-048	0	23:25:03	-0.12	1.50	1.26	-0.21	10.17	5.39
48	95-048	0	23:35:17	-0.12	1.40	2.36	-0.21	9.49	10.10
49	95-048	0	23:45:32	-0.12	1.10	0.26	-0.21	7.46	1.11
50	95-048	0	23:55:46	0.08	1.00	2.56	0.14	6.78	10.96
51	95-048	0	00:06:01	-0.22	-0.20	2.86	-0.39	-1.35	12.24
52	95-048	0	00:16:15	-0.02	0.90	1.26	-0.03	6.10	5.39
53	95-048	0	00:26:30	-0.12	1.30	2.16	-0.21	8.81	9.25
54	95-048	0	00:36:45	0.08	1.30	0.36	0.14	8.81	1.54
55	95-048	0	00:46:59	-0.02	1.20	-0.54	-0.03	8.14	-2.31
56	95-048	0	00:57:14	-0.22	0.80	3.96	-0.39	5.42	16.95

57	95-048	0	01:07:28	-0.22	1.20	0.36	-0.39	8.14	1.54
58	95-048	0	01:17:43	-0.02	1.30	-4.14	-0.03	8.81	-17.73
59	95-048	0	01:27:58	-0.02	0.90	4.66	-0.03	6.10	19.95
60	95-048	0	01:38:12	-0.02	1.20	-2.14	-0.03	8.14	-9.16
61	95-048	0	01:48:27	-0.12	0.60	-2.84	-0.21	4.07	-12.16
62	95-048	0	01:58:42	-0.12	1.20	-0.14	-0.21	8.14	-0.59
63	95-048	0	02:08:57	-0.12	0.20	-0.14	-0.21	1.35	-0.59
64	95-048	0	02:19:11	-0.02	1.70	0.96	-0.03	11.53	4.11

OPERATION COMPLETE

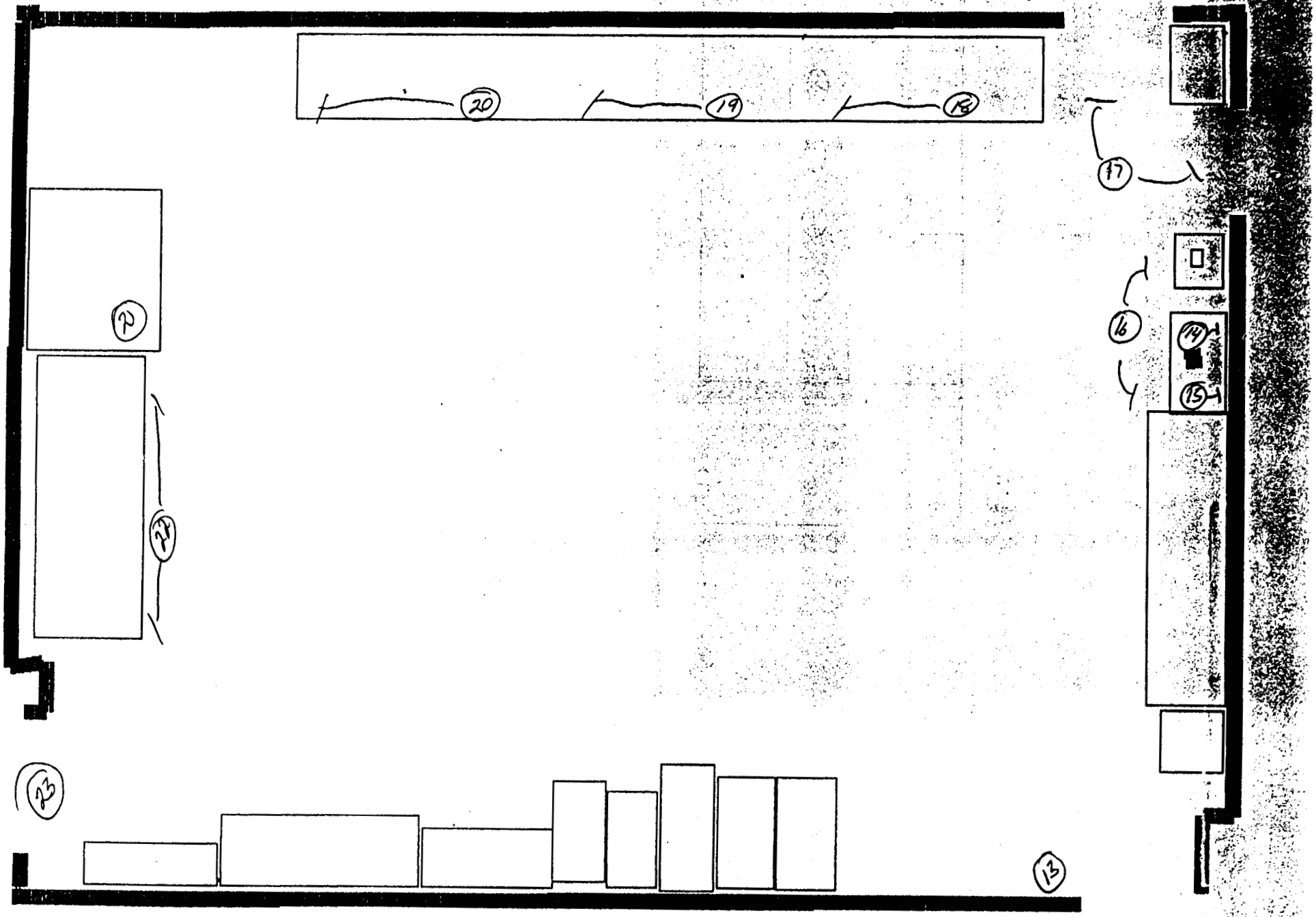
1/42 - Night Switch

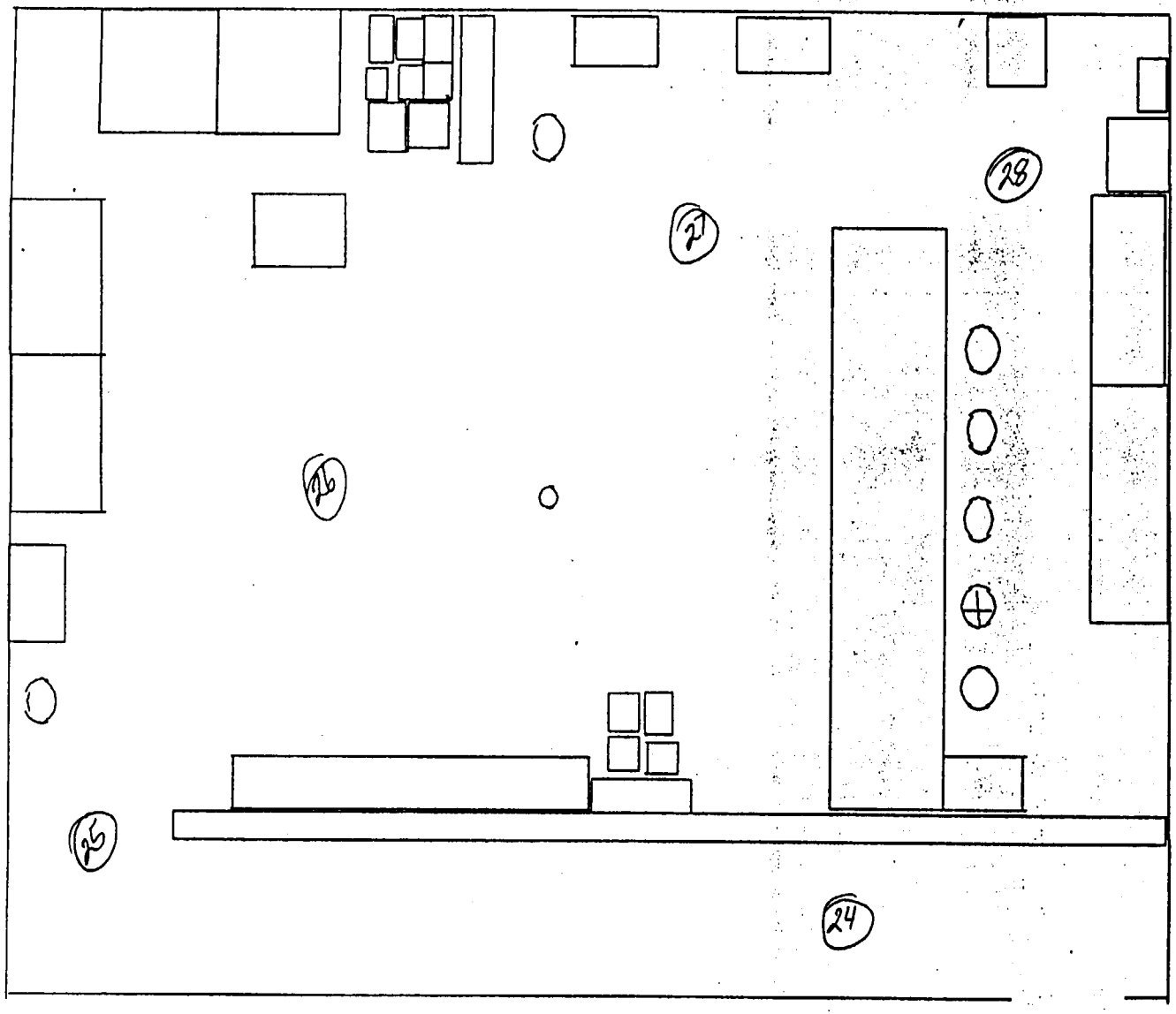
H.P. LAB



PREP LAB

13 - Light switch
14 - Hot water
15 - cold water
23 - Door handle

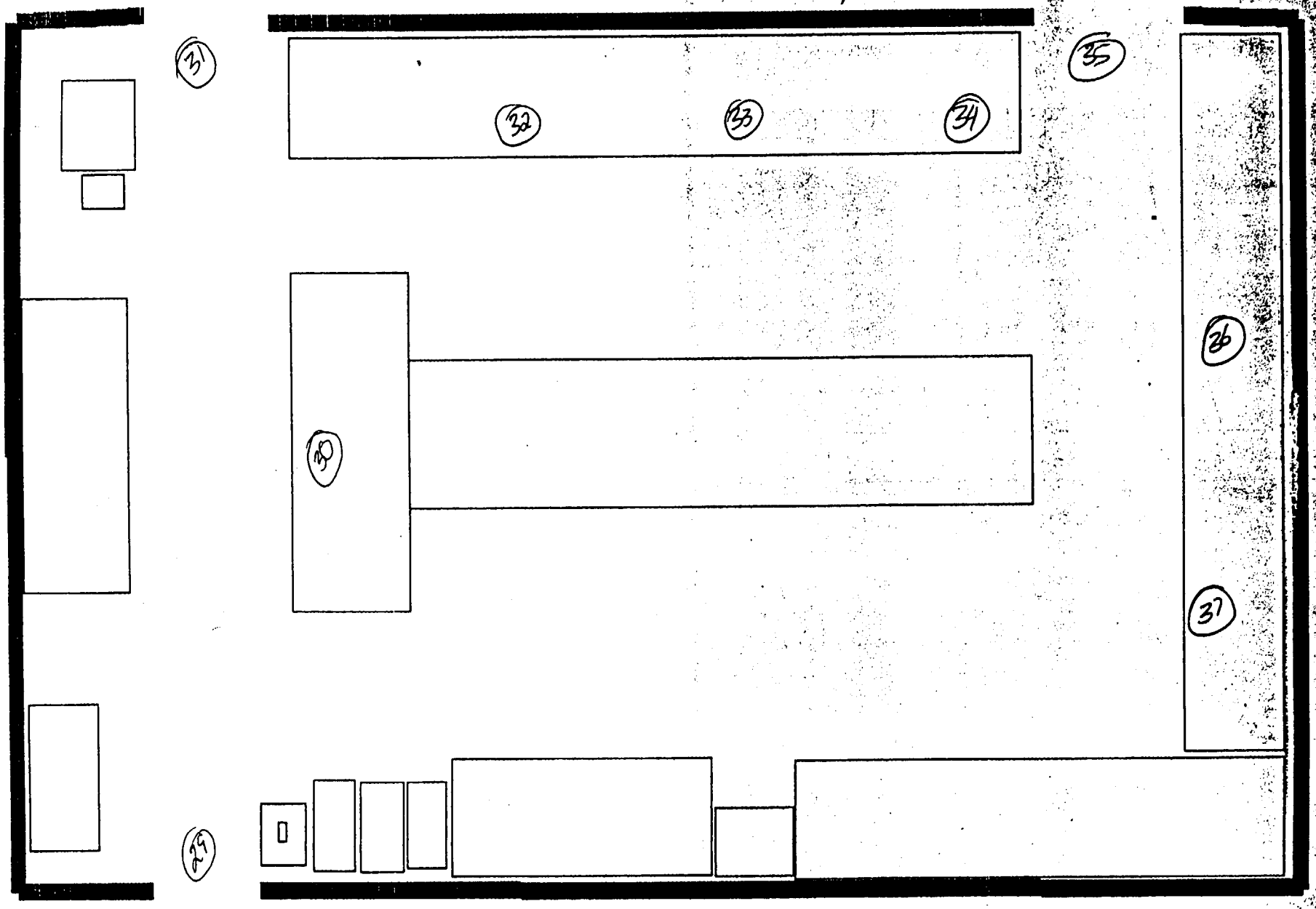


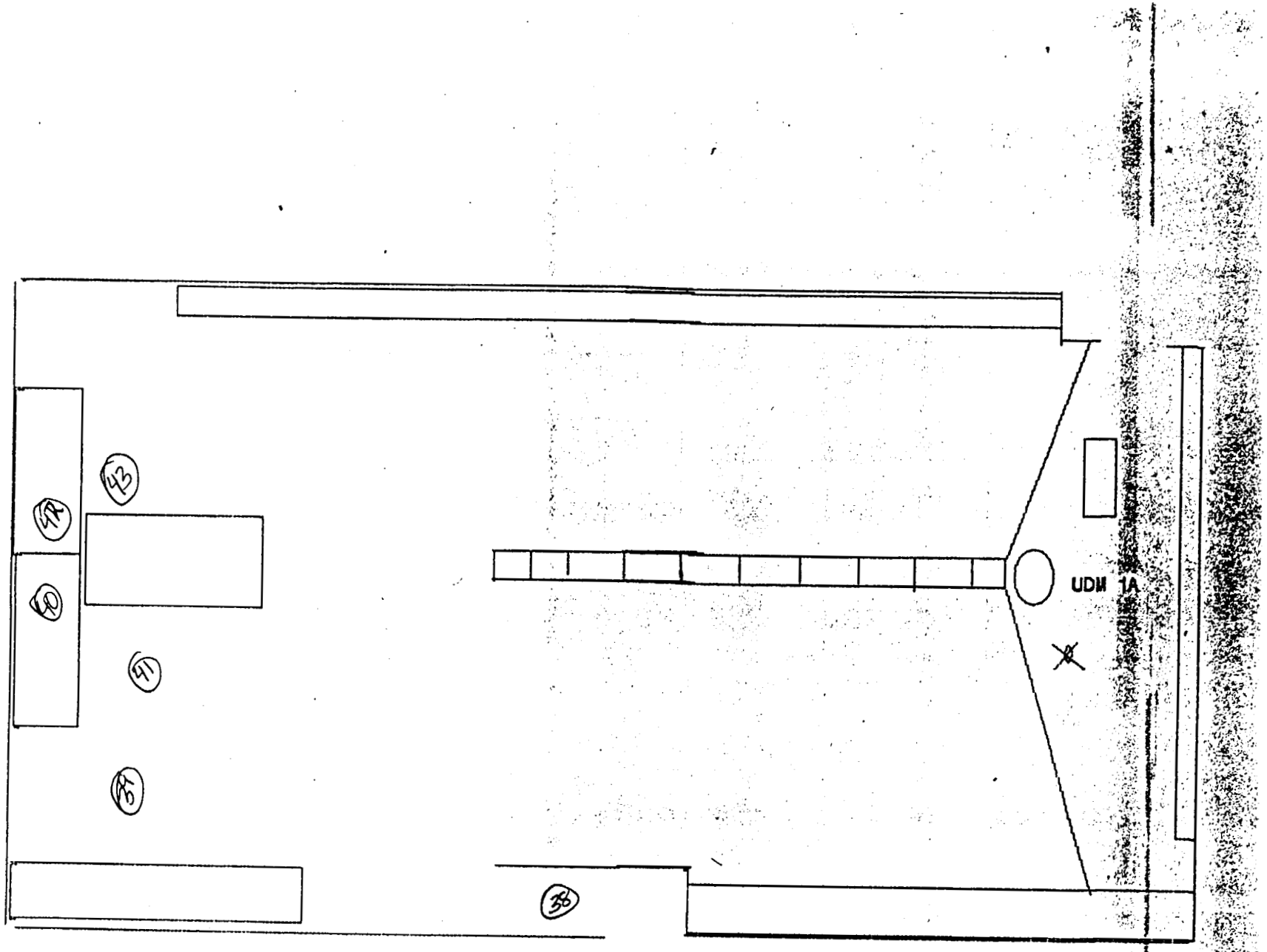


VAULT

31 & 35 - door, Knob

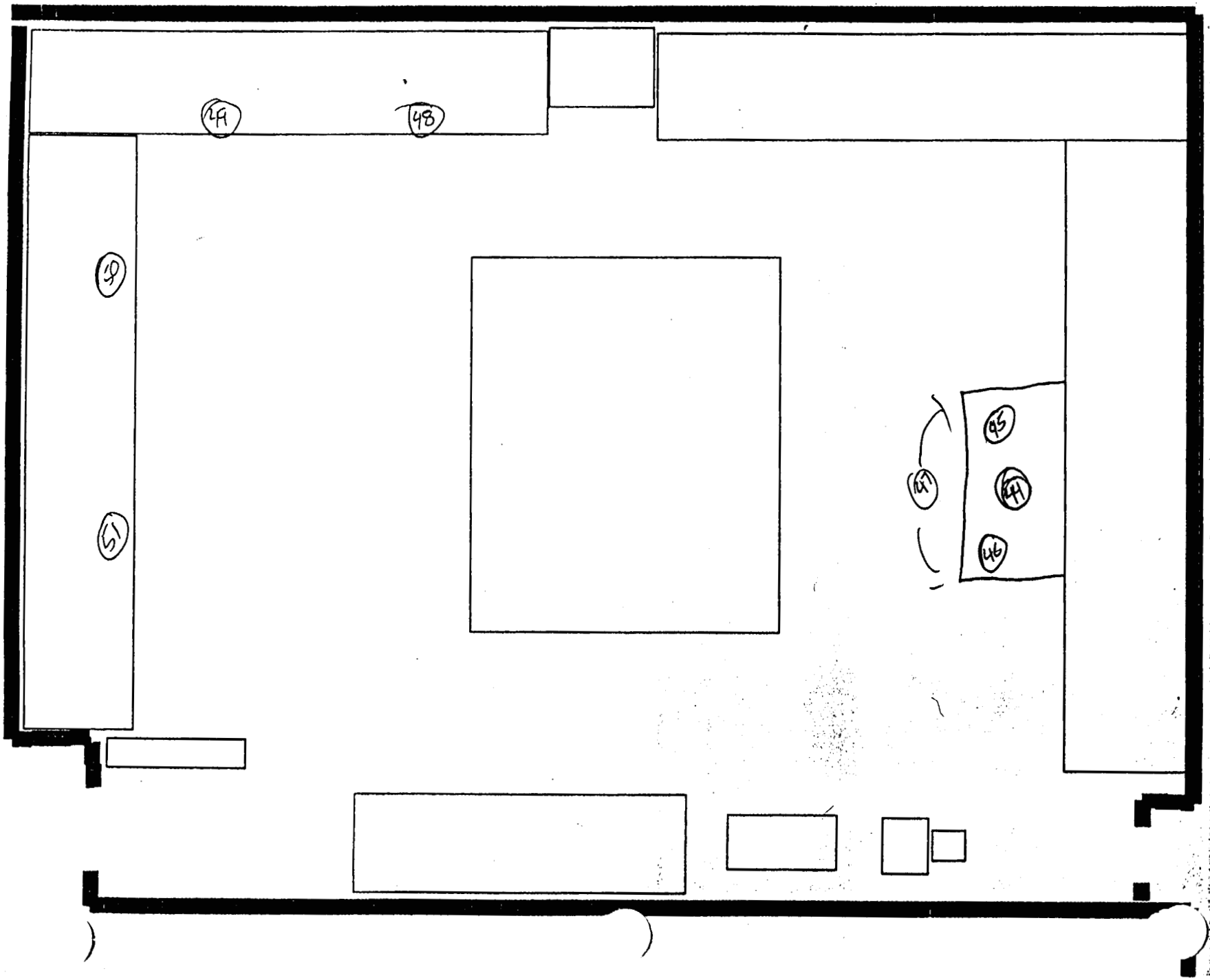
LAB 1

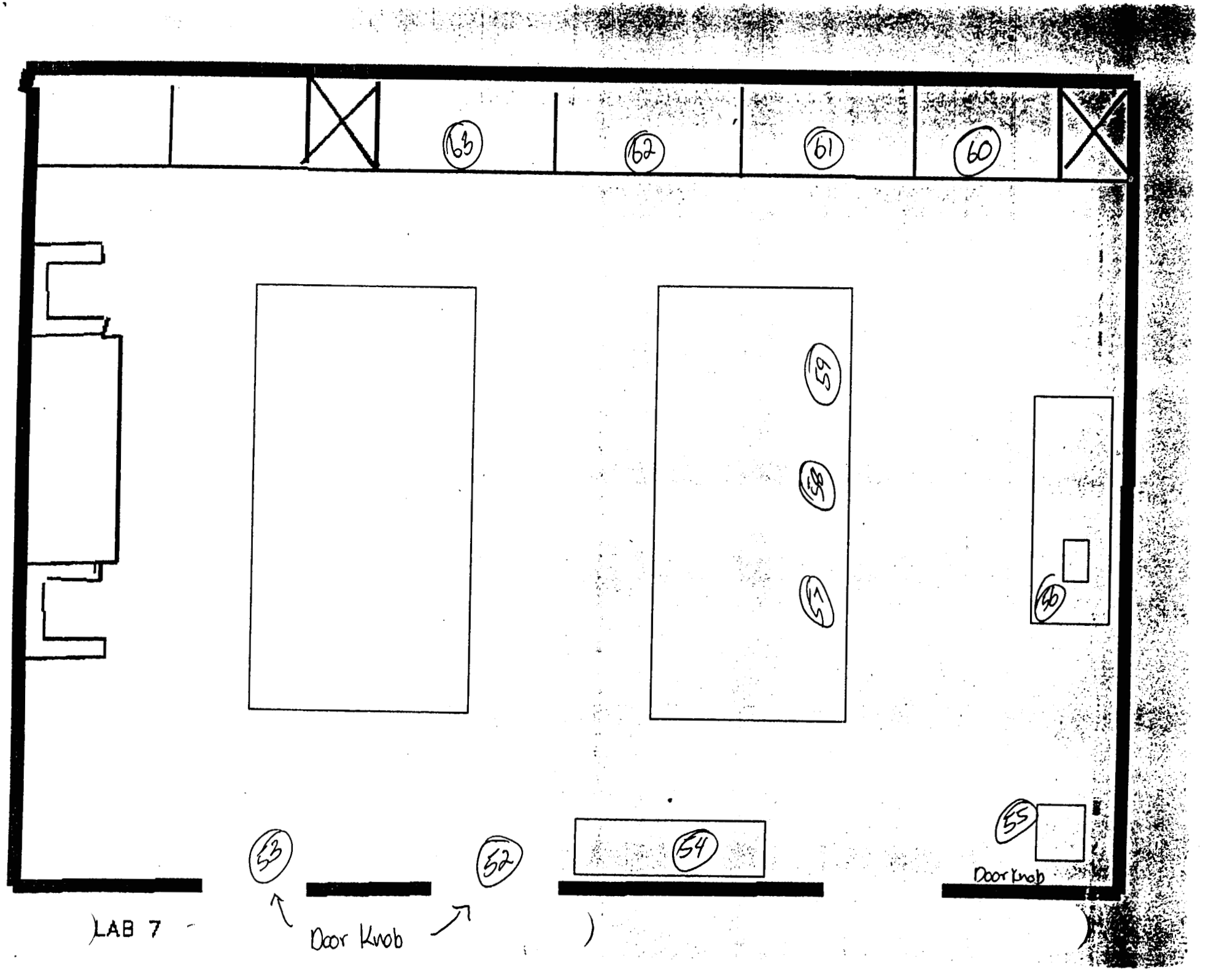




LAB 2

LAB 5




63
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52
Door Knob
Door Knob
LAB 7

Attachment 4

TABLE I

ACCEPTABLE SURFACE CONTAMINATION LEVELS

NUCLIDE[a]	AVERAGE[b c]	MAXIMUM[b d]	REMOVABLE[b e]
U-nat, U-235, U-238, and associated decay products	5,000 dpm α/100 cm^2	15,000 dpm α/100 cm^2	1,000 dpm α/100 cm^2
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm^2	300 dpm/100 cm^2	20 dpm/100 cm^2
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1000 dpm/100 cm^2	3000 dpm/100 cm^2	200 dpm/100 cm^2
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5000 dpm β-γ/100 cm^2	15,000 dpm β-γ/100 cm^2	1000 dpm β-γ/100 cm^2

[a]Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

[b]As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

[c]Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such object.

[d]The maximum cor tamination level applies to an area of not more than 100 cm^2.

[e]The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

Attachment 5

ERB CLOSEOUT SURVEY FOR AREA O FLOOR, RM 1011A, HEALTH PHYSICS LABORATORY, DATED , AT HOURS

	EFFICIENCY %		BKGRND(cpm)		INSTRUMENT/EQUIPMENT INFORMATION
	at 2 Pi	at 4 Pi	at 2 Pi	at 4 Pi	
ALPHA		NA		NA	(2 Pi) Tennelec LB5100, S/N 64169
H-3 BETA 1	NA	varies	NA		(4 Pi) LSC Packard 1900CA, S/N 102105
C-14 BETA 2	NA	varies	NA		
GAMMA		NA		NA	Meter Type: BICRON micro rem, S/N C162C
		SENSITIVITY (cpm)			Calib.Due: ; Background urem/hr

	L_C	LLD	L_D	L_Q
ALPHA				
H-3 BETA 1				
C-14 BETA 2				
GAMMA				

LSC Computations for Each Individual Sample

tSIE	Beta 1	%	tSIE	Beta 2	%
	equals			equals	
sample	unkwn	x	sample	unkwn	x
	equals			equals	

DISPOSITION

[ ] **ELEVATED SAMPLE RESULTS HIGHLIGHTED**

ALPHA > LLD/100 cm^2 for SAMPLE # :

BETA > LLD/100 cm^2 for SAMPLE # :

GAMMA > LLD/100 cm^2 for SAMPLE # :

[ ] **RECOUNTED ON: UNDER TITLE:**

[ ] **DECONTAMINATION & RESURVEY TO BE PERFORMED**

[ ] **NO ACTION REQUIRED**

SURVEYED BY: SSG RONALD DEGUMBIA
Health Physics Technician. DATED:

REVIEWED BY: JOHN W. MAY
Health Physics Manager. DATED:

seq	DIGIT CODE					AREA	doserate	Gross CPM				Net CPM				LSC BETA 1 DATA			LSC BETA 2 DATA			Net DPM/100 cm^2				Sample
#	1	2	3	4	5	cm^2	urem/hr	Alpha	Beta 1	Beta 2	Gamma	Alpha	Beta 1	Beta 2	Gamma	tSIE	Xstrap	Eff/Vial	tSIE	Xstrap	Eff/Vial	Alpha	Beta 1	Beta 2	Gamma	Remark
1	O	F	4	D	1	100																				
2	O	F	4	D	2	100																				
3	O	F	4	D	3	100																				
4	O	F	4	D	4	100																				
5	O	F	4	E	1	100																				
6	O	F	4	E	2	100																				
7	O	F	4	E	3	100																				
8	O	F	4	E	4	100																				
9	O	F	4	F	1	100																				
10	O	F	4	F	2	100																				
11	O	F	4	F	3	100																				
12	O	F	4	F	4	100																				
13	O	F	4	G	1	100																				
14	O	F	4	G	2	100																				
15	O	F	4	G	3	100																				
16	O	F	4	G	4	100																				
17	O	F	4	H	1	100																				
18	O	F	4	H	2	100																				
19	O	F	4	H	3	100																				
20	O	F	4	H	4	100																				
21	O	F	4	I	1	100																				
22	O	F	4	I	2	100																				
23	O	F	4	I	3	100																				
24	O	F	4	I	4	100																				
25	O	F	4	J	1	100																				
26	O	F	4	J	2	100																				

90	O	F	7	J	3	100
91	O	F	7	J	4	100
92	O	F	7	K	1	100
93	O	F	7	K	3	100

NOTE: FIRST DIGIT = AREA CODE: (O), ROOM 1011A, HEALTH PHYSICS LABORATORY
SECOND DIGIT = SURFACE BEING SURVEYED: FLOOR
THIRD DIGIT = Y AXIS QUADRANT: 4 THRU 7
FOURTH DIGIT = X AXIS QUADRANT: D THRU K
FIFTH DIGIT = SMEAR LOCATION IN QUADRANT: 1 THRU 4
TOP TO BOTTOM THEN LEFT TO RIGHT: 1 = TOP LEFT; 2 = TOP RIGHT; 3 = BOTTOM LEFT; & 4 = BOTTOM RIGHT

LEGEND: R4 = RECOUNT FOR; A = ALPHA; B1 = BETA 1; B2 = BETA 2; AND G = GAMMA
DIGITS 1, 2, & 4 ARE LETTERS ONLY. DIGIT 3 & 5 ARE NUMBERS ONLY.

RONALD DEGUMBIA
SSG, US ARMY
Health Physics Technician

CONCUR/NONCONCUR
Health Physics Manager

WIPE SURVEY SAMPLE ANALYSIS RECORD

PURPOSE: [ ] SPECIAL [ ] SCHEDULED [ ] OTHER (SPECIFY)

DATE:	SURVEY #:	LOCATION:

INSTRUMENT

Contamination			
Tennelec LB5100, S/N 64169			
	Alpha	Beta	Gamma
Efficiency			
Bkg CPM			

Instrument Survey			
Meter:			
Probe:		Cal Due:	
Background:		(mR/hr)(CPM)(μR/hr)	

DISPOSITION

[ ] **HIGHLIGHTED READINGS RESURVEYED**
ALPHA > 220 DPM/100 cm²
BETA/GAMMA > 2200 DPM/100 cm²

[ ] **NO ACTION REQUIRED**

Sensitivity (CPM)	L_C	LLD	L_D	L_Q
Alpha				
Beta				
Gamma				

SURVEYOR:

REVIEWED BY:
HEALTH PHYSICS MANAGER

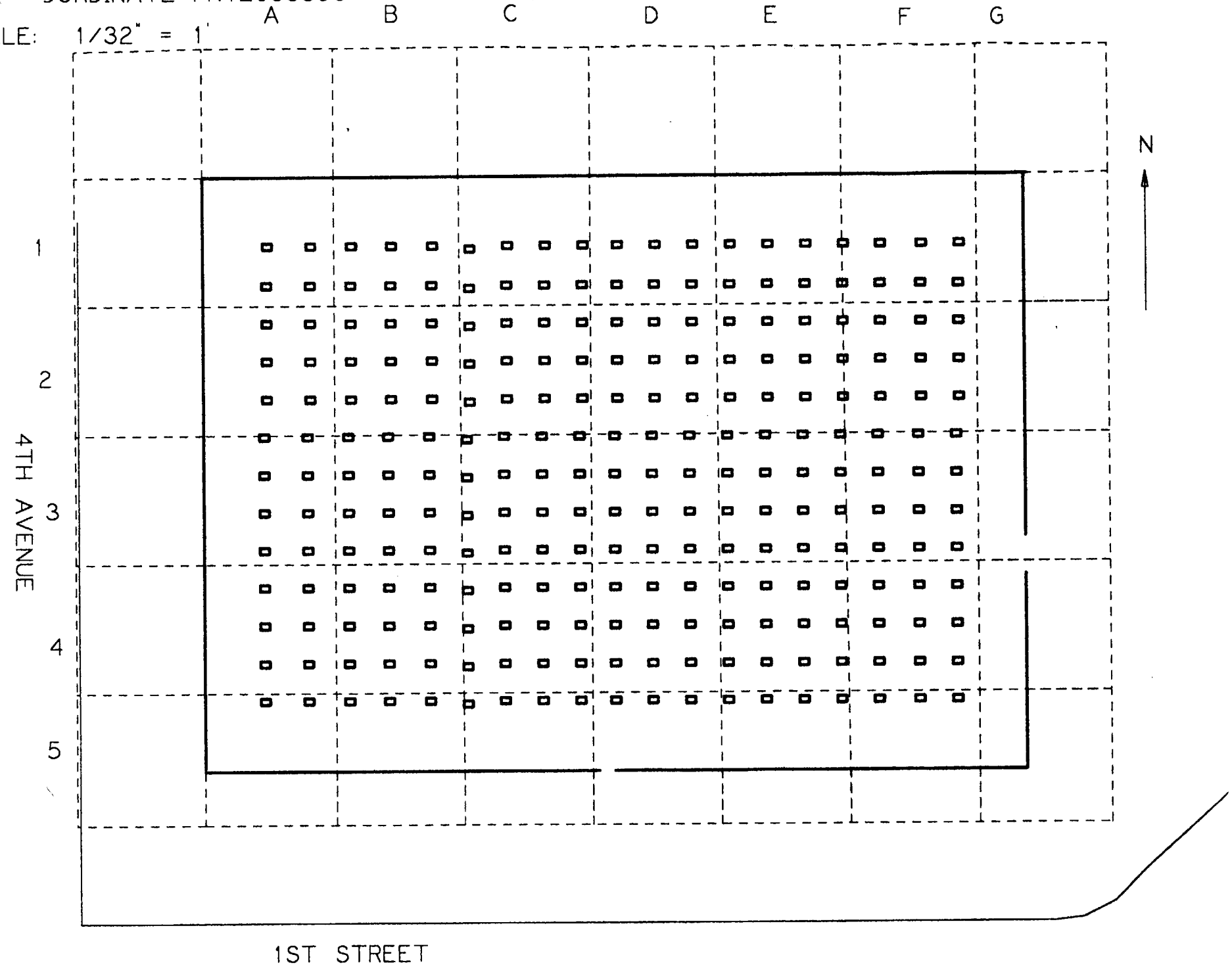
#	LOCATION	AREA (cm²)	Dose Rate	Gross CPM			Net CPM			Net DPM/100 cm²		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
1												
2												
3												
4												
5												
6												
7												
8												
9												
0												

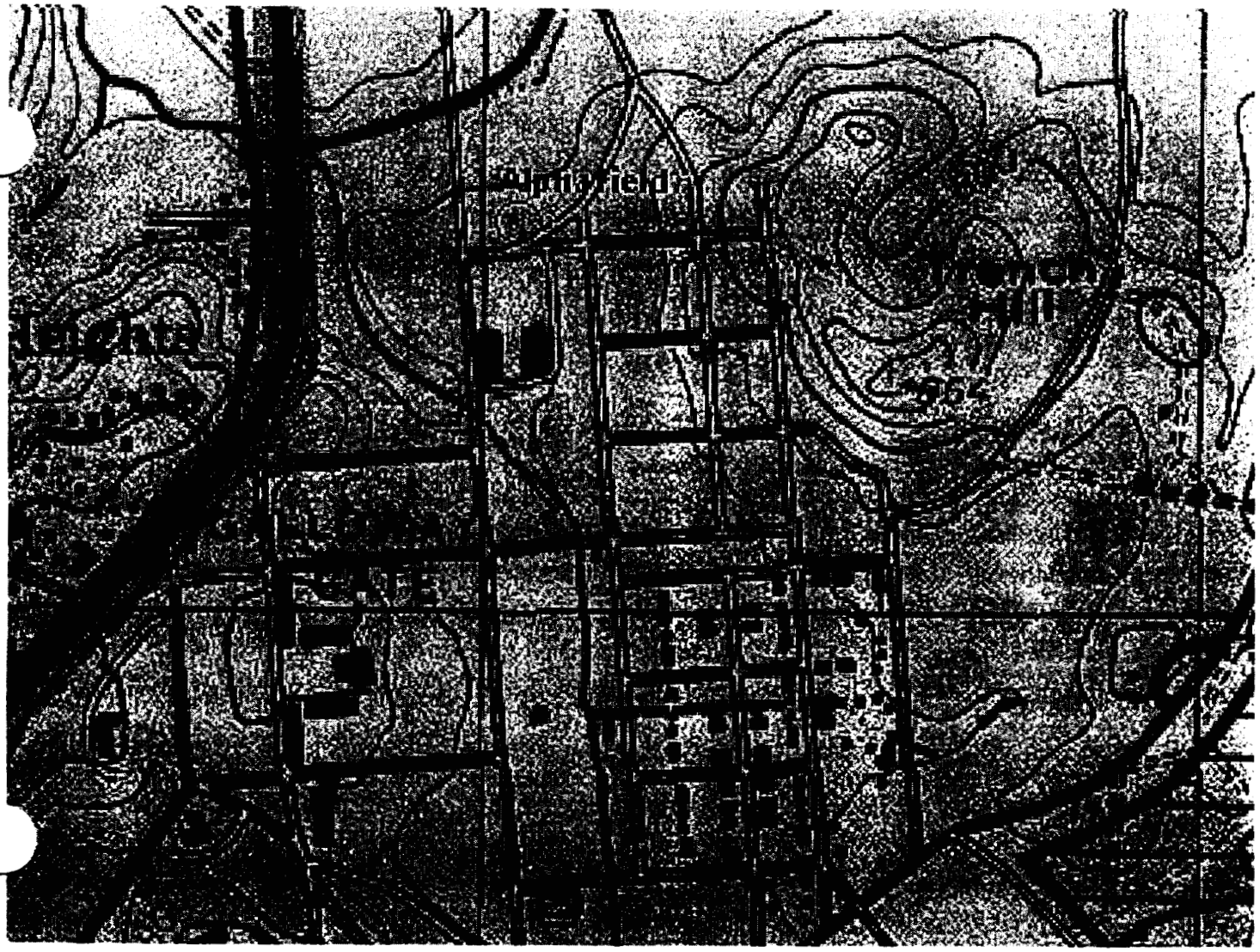
Attachment 6

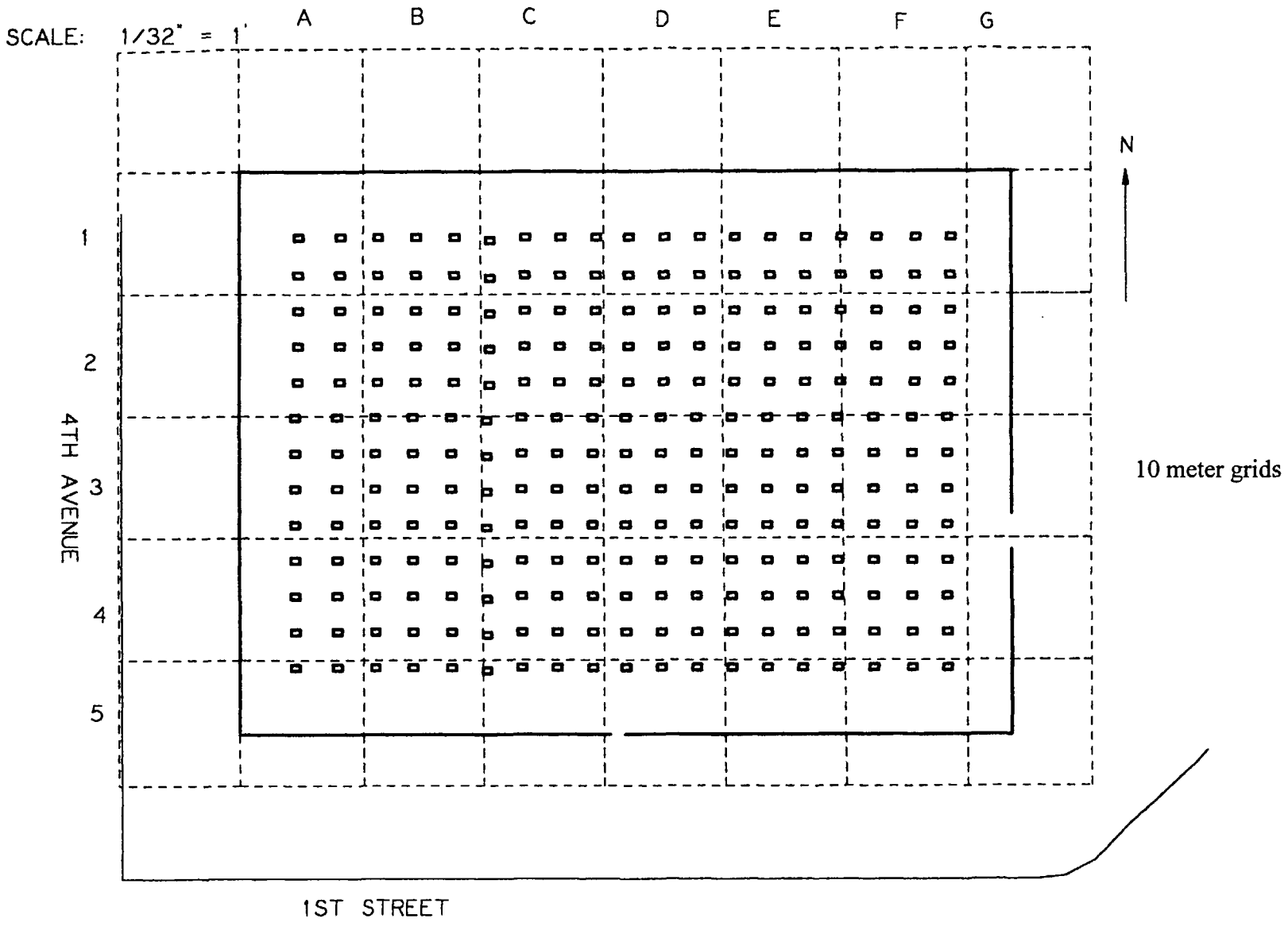
US ARMY CHEMICAL SCHOOL ALPHA FIELD

GRID COORDINATE FN12033356

SCALE: 1/32" = 1'







U.S. Army Chemical School Alpha Field

Grid Coordinates FN12033356

Attachment 7

Survey Number: X5-132

RECORD OF HEALTH PHYSICS SURVEY
(OCSR 385-2)

Date Started: 4 June 85

Date Completed: 12 June 85

Survey of: ALPHA FIELD USACMLS, 1st St. Ft McCl.

Surveyor: SP5 Juan A. Torres Number of Samples: 148

Type of Survey: ✓ Area Wipe Test, ___ Instrument Survey, ___ Source Leak Test;

Environmental Sample: ___ Air, ___ Water, ___ Soil.

Portable Instrument Data: ___ Alpha Instrument, ___ Beta-Gamma Instrument;

Model: _____ Serial: _____ Surveyor: _____

Laboratory Instrument Data:

Beta: Model: _____, SN: _____, Eff: ___%, Volts: _____

Beta-Gamma: Model: MS-2, SN: 623, Eff: ___% (0.705% Cs-137), Volts: 900 V.

Gamma: _____, SN: _____, Eff: ___%, Volts: _____

Alpha: SAC 4, SN: 533, Eff: ___& (82.25% U-235), Volts: _____

Counted by: SP5 Torres / SP5 Barnes USAR. Reviewer's Init: _____

Action: ___ None, ___ On Back of Sheet, ___ See Attached Sheets

Ft McCl Fm 1560-R
(8 Aug 80)

HEALTH PHYSICS SURVEY WORKSHEET

BACKGROUND: (10 Min Count)
0.7 CPM Alpha
25.6 CPM Beta/Gamma

BG+1.96$\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 1985

Surveyer: SP5 Torres

NO	LOCATION	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
	Background Swipes From The ALPHA Field							
1	4th St.	3/2 = 1.5	0.8		845/2 = 21.5	0		
2	1st St. (See MAP)	2/2 = 1	0.3		54/2 = 27	1.4		
3	1st St. (See Sketch)	2/2 = 1	0.3		42/2 = 21	0		
4	1st St "	0/2 = 0	0		60/2 = 30	4.4		
5	1st St. "	1/2 = 0.5	0		53/2 = 26.5	0.9		
6	1st St. "	0/2 = 0	0		42/2 = 21	0		
7	1st St "	0/2 = 0	0		42/2 = 21	0		
8	1st St. "	0/2 = 0	0		47/2 = 23.5	0		
9	1st St. "	0/2 = 0	0		41/2 = 20.5	0		
10	1st St. "	2/2 = 1	0.3		58/2 = 29	3.4		
11	Landfill Rd (See Sketch)	1/2 = 0.5	0		46/2 = 23	0		
12	" "	1/2 = 0.5	0		47/2 = 23.5	0		
13	" "	0/2 = 0	0		49/2 = 24.5	0		
14	Cement Pad In Front of Field	1/2 = 0.5	0		48/2 = 24	0		
15	ENTRANCE TO THE PAD "	3/2 = 1.5	0.8		53/2 = 26.5	0.9		
16	Dirt Rd (See Sketch)	1/2 = 0.5	0		40/2 = 20	0		
17	"	1/2 = 0.5	0		34/2 = 17	0		
18	"	1/2 = 0.5	0		35/2 = 17.5	0		
19	"	0/2 = 0	0		45/2 = 22.5	0		
20	Decontamination Area	1/2 = 0.5	0		49/2 = 24.5	0		
21	"	0/2 = 0	0		62/2 = 31	5.4		
22	"	1/2 = 0.5	0		52/2 = 26.5	0.9		
23	"	1/2 = 0.5	0		58/2 = 29	3.4		
24	Blisters at Decon Area	0/2 = 0	0		39/2 = 19.5	0		
	" " "	0/2 = 0	0		46/2 = 23	0		

HEALTH PHYSICS SURVEY WORKSHEET

BACKGROUND: (10 Min Count)
0.7 CPM Alpha
25.6 CPM Beta/Gamma

$BG+1.96\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 85

Surveyer: SP5 Torres

NO	LOCATION (ALPHA FIELD)	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
26	From Corner LEFT ON NORTH side of Range Base #2	0/2 = 0	0		51/2 = 25.5	0		
27	Base No. 4 (See Attached Diagram)	0/2 = 0	0		44/2 = 22	0		
28	Base No. 6	0/2 = 0	0		35/2 = 17.5	0		
29	Base No. 8	1/2 = 0.5	0		49/2 = 24.5	0		
30	Base No. 10	0/2 = 0	0		44/2 = 22	0		
31	Base No. 12	1/2 = 0.5	0		62/2 = 31	5.4		
32	Base No. 14	1/2 = 0.5	0		61/2 = 30.5	4.9		
33	Base No. 16	3/2 = 1	0.3		46/2 = 23	0		
34	Base No. 18	0/2 = 0	0		55/2 = 27.5	1.9		
35	Base No. 20	1/2 = 0.5	0		41/2 = 20.5	0		
36	Base No. 22	1/2 = 0.5	0		56/2 = 28	2.4		
37	Base No. 24	0/2 = 0	0		59/2 = 29.5	3.9		
38	Base No. 26	1/2 = 0.5	0		36/2 = 18	0		
39	Base No. 28	0/2 = 0	0		31/2 = 15.5	0		
40	Base No. 30	0/2 = 0	0		46/2 = 23	0		
41	Base No. 32	0/2 = 0	0		62/2 = 31	5.4		
42	Base No. 34	3/2 = 1	0.3		43/2 = 21.5	0		
43	Base No. 36	3/2 = 1	0.3		62/2 = 31	5.4		
44	Base No. 38	1/2 = 0.5	0		50/2 = 25	0		
45	Base No. 40	1/2 = 0.5	0		51/2 = 25.5	0		
46	Base No. 42	1/2 = 0.5	0		47/2 = 23.5	0		
47	Base No. 44	3/2 = 1	0.3		49/2 = 24.5	0		
48	Base No. 46	1/2 = 0.5	0		45/2 = 21.5	0		
49	Base No. 48	1/2 = 0.5	0		42/2 = 21	0		
50	Base No. 50	0/2 = 0	0		47/2 = 23.5	0		

HEALTH PHYSICS SURVEY WORKSHEET

BACKGROUND: (0.8 Min Count)
0.7 CPM Alpha
25.6 CPM Beta/Gamma

BG+1.96$\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 85

Surveyer: SP5 Torres

NO	LOCATION (ALPHA FIELD)	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
51	Base #52	0/2=0	0		47/2=23.5	0		
52	Base #54	0/2=0	0		44/2=22	0		
53	Base #56	3/2=1.5	0.8		57/2=28.5	2.9		
54	Base #58	2/2=1	0.3		37/2=18.5	0		
55	Base #60	0/2=0	0		45/2=22.5	0		
56	Base #62	0/2=0	0		40/2=20	0		
57	Base #64	1/2=0.5	0		45/2=22.5	0		
58	Base #66	1/2=0.5	0		52/2=26	0.4		
59	Base #69	1/2=0.5	0		45/2=22.5	0		
60	Base #70	1/2=0.5	0		49/2=24.5	0		
61	Base #72	1/2=0.5	0					DISCARDED AFTER α COUNTS
62	Base #74	0/2=0	0					"
63	Base #76	0/2=0	0					"
64	Base #78	1/2=0.5	0					"
65	Base #80	3/2=1.5	0.8					"
66	Base #82	1/2=0.5	0					"
67	Base #84	2/2=1	0.3					"
68	Base #86	1/2=0.5	0		47/2=23.5	0		
69	Base #88	0/2=0	0		42/2=21	0		
70	Base #90	2/2=1	0.3		30/2=15	0		
71	Base #92	1/2=0.5	0		51/2=25.5	0		
72	Base #94	1/2=0.5	0		44/2=22	0		
73	Base #96	3/2=1.5	0.8		42/2=21	0		
74	Base #98	2/2=1	0.3		48/2=24	0		
	Base #100	3/2=1.5	0.8		52/2=26	0.4		

HEALTH PHYSICS SURVEY WORKSHEET

BACKGROUND: (10 Min Count)
0.8 CPM Alpha
25.6 CPM Beta/Gamma

BG+1.96$\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 85

Surveyer: SPS Torres

NO	ALPHA Field LOCATION	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
76	Base # 102	0/2 = 0	0		37/2 = 18.5	0		
77	Base # 104	1/2 = 0.5	0		60/2 = 30	4.4		
78	Base # 106	2/2 = 1	0.2		66/2 = 33	7.4		
79	Ground 108	0/2 = 0	0		45/2 = 22.5	0		
80	Base # 110	3/2 = 1.5	0.7		46/2 = 23	0		
81	Base # 112	0/2 = 0	0		55/2 = 27.5	1.9		
82	Base # 114	4/2 = 2	1.2		49/2 = 24.5	0		
83	Base # 116	0/2 = 0	0		38/2 = 19	0		
84	Base # 118	2/2 = 1	0.2		38/2 = 19	0		
85	Base # 120	1/2 = 0.5	0		48/2 = 24	0		
86	Base # 122	1/2 = 0.5	0		53/2 = 26	0.4		
87	Base # 124	0/2 = 0	0		39/2 = 19.5	0		
88	Base # 126	1/2 = 0.5	0		— missing	Lost in ~~flash~~ can after counts		
89	Ground 128	0/2 = 0	0		— missing	"	"	" "
90	Base # 130	1/2 = 0.5	0		53/2 = 26.5	0.9		
91	Base # 132	0/2 = 0	0		49/2 = 24.5	0		
92	Base # 134	2/2 = 1	0.2		55/2 = 27.5	1.9		
93	Base # 136	2/2 = 1	0.2		47/2 = 23.5	0		
94	Base # 138	4/2 = 2	1.2		54/2 = 27	1.4		
95	Base # 140	1/2 = 0.5	0		58/2 = 29	3.4		
96	Base # 142	1/2 = 0.5	0		46/2 = 23	0		
97	Base # 144	0/2 = 0	0		46/2 = 23	0		
98	Base # 146	0/2 = 0	0		43/2 = 21.5	0		
99	Base # 148	2/2 = 1	0.2		46/2 = 23	0		
100	Base # 150	1/2 = 0.5	0		40/2 = 20	0		

HEALTH PHYSICS SURVEY WORKSHEET

BACKGROUND: (10 Min Count)
0.8 CPM Alpha
25.4 CPM Beta/Gamma

BG+1.96$\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 85

Surveyer: SP5 Torres.

NO	ALPHA Field LOCATION	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
101	Base # 152	1/2 = 0.5	.0		47/2 = 23.5	0		
102	Base # 154	1/2 = 0.5	0		39/2 = 19.5	0		
103	Base # 156	0/2 = 0	0		50/2 = 25	0		
104	Base # 158	1/2 = 0.5	0		46/2 = 23	0		
105	Base # 160	0/2 = 0	0		44/2 = 22	0		
106	Base # 162	1/2 = 0.5	0		40/2 = 20	0		
107	Base # 164	1/2 = 0.5	0		42/2 = 21	0		
108	Base # 166	1/2 = 0.5	0		54/2 = 27	1.4		
109	Base # 168	0/2 = 0	0		53/2 = 26	0.4		
110	Base # 170	2/2 = 1	0.2		46/2 = 23	0		
111	Base # 172	1/2 = 0.5	0		45/2 = 22.5	0		
112	Base # 174	2/2 = 1	0.2		54/2 = 27	1.4		
113	Base # 176	1/2 = 0.5	0		57/2 = 28.5	2.9		
114	Base # 178	3/2 = 1.5	0.7		38/2 = 19	0		
115	Base # 180	0/2 = 0	0		46/2 = 23	0		
116	Base # 182	0/2 = 0	0		36/2 = 18	0		
117	Base # 184	3/2 = 1.5	0.7		46/2 = 23	0		
118	Base # 186	1/2 = 0.5	0		57/2 = 28.5	2.9		
119	Base # 188	3/2 = 1.5	0.7		51/2 = 25.5	0		
120	Base # 190	0/2 = 0	0		59/2 = 29.5	3.9		
121	Base # 192	0/2 = 0	0		46/2 = 23	0		
122	Base # 194	1/2 = 0.5	0		48/2 = 24	0		
123	Base # ~~190~~ 196	0/2 = 0	0		52/2 = 26	0.4		
124	Base # ~~190~~ 198	0/2 = 0	0		72/2 = 36	10.4		
125	Base # ~~200~~ 200	0/2 = 0	0		36/2 = 18	0		

HEALTH PHYSICS SURVEY WORKSHEET

BACKGROUND: (10 Min Count)
0.8 CPM Alpha
25.6 CPM Beta/Gamma

BG+1.96$\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 85

Surveyer: SP5 Torres

NO	ALPHA FIELD LOCATION	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
126	Base # 202	0/2 = 0	0		56/2 = 28	2.4		
127	Base # 204	2/2 = 1	0.2		51/2 = 25.5	0		
128	Base # 206	1/2 = 0.5	0		44/2 = 22	0		
129	Base # 208	2/2 = 1	0.2		— missing AFTER of count			
130	Base # 210	1/2 = 0.5	0		41/2 = 20.5	0		
131	Base # 212	0/2 = 0	0		43/2 = 21.5	0		
132	Base # 214	1/2 = 0.5	0		37/2 = 18.5	0		
133	Base # 216	0/2 = 0	0		37/2 = 18.5	0		
134	Base # 218	0/2 = 0	0		42/2 = 21	0		
135	Base # 220	3/2 = 1.5	0.7		45/2 = 22.5	0		
136	Base # 222	1/2 = 0.5	0		43/2 = 21.5	0		
137	Base # 224	0/2 = 0	0		51/2 = 25.5	0		
138	Base # 226	1/2 = 0.5	0		55/2 = 27.5	1.9		
139	Base # 228	1/2 = 0.5	0		54/2 = 27	1.4		
140	Base # 230	1/2 = 0.5	0		53/2 = 26.5	0.9		
141	Base # 232	1/2 = 0.5	0		49/2 = 24.5	0		
142	Base # 234	3/2 = 1.5	0.7		44/2 = 22	0		
143	Base # 236	1/2 = 0.5	0		42/2 = 21	0		
144	Base # 238	1/2 = 0.5	0		40/2 = 24	0		
145	Base # 240	0/2 = 0	0		41/2 = 20.5	0		
146	Base # 242	1/2 = 0.5	0		46/2 = 23	0		
147	Base # 244	0/2 = 0	0		60/2 = 30	4.4		
148	Base # 246	2/2 = 1	0.2		— missing AFTER of count.			
149								
150								

Date 17 June 85

ROUTING AND TRANSMITTAL SLIP

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. Dr Chioppola		
2.		
3.		
4.		
5.		

	Action		File		Note and Return
	Approval		For Clearance		Per Conversation
	As Requested		For Correction		Prepare Reply
	Circulate		For Your Information		See Me
	Comment		Investigate		Signature
	Coordination		Justify		

REMARKS

This are the reports for the said samples and swipes from the alpha field

I will be back probably a little late after lunch.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
Juan, HPO	Phone No.

5041-102

☆ U.S. G.P.O. 1982-387-346

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

Survey Number: SS 133

RECORD OF HEALTH PHYSICS SURVEY
(OCSR 385-2)

Date Started: 7 June 85

Date Completed: 13 June 85

Survey of: Soil Samples From USACMLS ALPHA FIELD, 1st St Ft. McCl.

Surveyor: SP5 Juan A. Torres Number of Samples: 45

Type of Survey: ___Area Wipe Test, ___Instrument Survey, ___Source Leak Test;

Environmental Sample: ___Air, ___Water, ___Soil.

Portable Instrument Data: ___Alpha Instrument, ___Beta-Gamma Instrument;

Model: _____ Serial: _____ Surveyor: _____

Laboratory Instrument Data:

Beta: Model: _____, SN: _____, Eff: ___%, Volts: _____

Beta-Gamma: Model: _____, SN: _____, Eff: ___%, Volts: _____

Gamma: TN 7200, SN: 383317, Eff: ___% as shown inside, Volts: 1100 Volts 600 to.

Alpha: _____, SN: _____, Eff: ___&, Volts: _____

Counted by: SP5 Juan A. Torres Reviewer's Init: _____

Action: ___None, ___On Back of Sheet, ___See Attached Sheets

Ft McCl Fm 1560-R
(8 Aug 80)

SPS Juan A. Torres. 11 June 1985

Soil Samples From alpha Field.

① Limits of detection at the different regions:

(a) Limit of Detection: $(1.96\sqrt{Bg}) + \bar{x}$ or (b) $1.96\sqrt{Bg} = 1.96(SD)$, $\bar{x}$ = Bg in that region

	(a)	(b)
Region 1	6398.9	154.9
Region 2	492	41.6
Region 3	343.5	34.5
Region 4	237.3	28.3

② Actual activities of Calibration sources:

(a) Cs-137, 1.06 μCi @ 20 May 77, $t = 8.06$ yrs.

$\lambda = 0.0231\ yrs^{-1}$, actual activity = 0.879 μCi = 1951380 dpm.

1951380 dpm × (0.85 γ) = 1658673 dpm γ

1658673 dpm γ = 27644.5 γ dps

(b) Co-60, 1.06 μCi @ 20 MAY 77, $t = 8.06$ yrs

$\lambda = .1317\ yrs^{-1}$ actual activity = 0.367 μCi = 814056.2 dpm

(100%)ea 814056.2 dpm γ = 1628112.4 dpm γ → for the two peaks of Co-60

1628112.4 dpm = 27135.21 γ psec for the two peaks.

For only one of the peaks it should be ≈ 13567.6 γ psec.

③ Efficiencies For The different Regions:

(a) Region 1 is the ENTIRE spectrum

(b) Region 2: Cs-137,

$\frac{250311\ cts}{60\ secs} = 4171.85$ dps

$\frac{4171.85}{27644.5} = 0.1509 \times 100 = 15.09\%$ Efficiency.

SP5 Jum A. Torres 11 June 85

Soil Samples From alpha Field

③ © Region 3 : Co-60

$\frac{47946}{60\ sec} = 799.1$ dps

$\frac{799.1}{13567.6} = 0.0589 = 5.89\%$ EFFICIENCY

ⓓ Region 4 : Co-60

$\frac{47946}{13567.6} = 0.0589 = 5.89\%$ EFFICIENCY

④ Minimum detectable Activity in each Region : (MDA)

Take the 1.96(SD) an divide it by the EFFICIENCY of that region. Then divide that NO. by the counting time in secs. This yields dps, change to dpm and then to Ci's

ⓐ Minimum detectable activity For Region # 2. Cs-137

$\frac{41.6}{.1509} = 275.68$, $275.68/300\ secs = 0.9189$ dps

0.9189 dps $\times 60\ sec/min = 55.14$ dpm $= 0.000024837\ \mu Ci's =$

$= 2.4837 \times 10^{-5}\ \mu Ci's = 24.837\ pCi's$ MDA Cs-137

ⓑ Minimum detectable Activity For Region #3 Co-60 FIRST peak

$\frac{34.5}{0.0589} = 585.74$, $585.74/300 = 1.95$ dps

1.95 dps $\times 60\ sec/min = 117.15$ dpm $= 0.000052769\ \mu Ci's =$

$5.2769 \times 10^{-5}\ \mu Ci's = 52.769\ pCi's$ = MDA

© Minimum detectable Activity For Region #4 Co-60 second peak.

$\frac{28.3}{0.0589} = 480.48$, $480.48/300 = 1.6$ dps.

1.6 dps $\times 60\ sec/min = 96.1$ dpm $= 0.000043286\ \mu Ci's =$

$4.3286 \times 10^{-5}\ \mu Ci's = 43.286\ pCi's$ MDA

SPS Juan A Torres.

ALPHA FIELD SOIL SAMPLES

11 June 85

Activities Region # II cont. Bg = 450 cts / 300 secs = 1.5 cts/sec MDA = 56.4 dpm, 8.3 cpm, 24.837 pCi's

ple # / ight	Gross cts	cps	corrected cps	cpm	dpm	Activity pCi	Spec ACT pCi/gr.	
8								
7	497	1.66	0.16	9.6	63.6	28.7	0.042.	
9								
1.7	754	2.513	1.013	60.8	402.9	181.5	0.264	
0								
43	516	1.72	0.22	13.2	87.48	39.40	0.0613	
1								
8 *	819	2.73	1.23	73.8	489.1	220.3	0.3298	*
2								
7.3	795	2.65	1.15	69	457.3	205.97	0.289	
3								
5.4	664	2.213	0.713	42.8	283.6	127.76	0.2076	
1								
6.4	664	2.213	0.713	42.8	283.6	127.76	0.1835	
5								
49	793	2.643	1.143	68.58	454.5	204.72	0.2733	
6								
38.6 *	1294	4.313	2.813	168.8	1118.62	503.88	0.682	*
7								
	695	2.32	0.82	49.2	326.04	146.87	0.2675	
9								
86	800	2.667	1.167	70.02	464.01	209.0	0.2659	
9								
70	810	2.7	1.2	72	477.14	214.9	0.2791	

* showed some Cs-137 peak in the multichannel analyzer. JAT

#		1	1P	2	2P	3	3P	4	4P
7		7037	243 58	504	647 23				
8		7285	229 58	502	653 26				
9	cs	9113	682 92	1490	682 92				
10		7070	241 62	642	656 29				
18		6579	246 53	455	644 24				
11		7264	246 58	544	623 30				
12		7273	232 70	512	626 26				
13		7206	243 81	459	617 24				
14		7472	232 67	549	629 30				
15		7044	238 66	519	623 35				
16		7178	238 67	492	647 25				
17		6827	243 53	491	688 25				
19		6506	243 57	469	659 21				
20		7107	238 60	519	647 25				
21	cs	9977	241 126	925	638 43	3.38	1160 21		
23	cs	9031	232 102	712	623 39				
24		8665	238 118	736	667 36				
27		7366	246 72	615	664 35				
28		7529	238 82	623	626 32				
29		7109	243 66	566	620 29				
30		7288	235 65	596	679 31				
31		7986	238 77	702	703 32				
32		7275	238 67	573	617 28				
	cs	9486	235 115	802	662 44				
34		8008	241 87	658	667 32				
35		7712	235 91	639	688 34				
36		7598	235 85	755	656 38				
38		7167	238 74	497	629 26				
39		8188	238 96	754	667 41				
40		7339	232 79	516	647 26				
41	cs	8794	238 120	819	670 42				
4		10028	235 127	795	629 41				
43		8620	229 95	664	700 30				
44		8170	229 86	664	673 37				
45		9936	243 121	793	650 37				

Sample	1	1P	2	2P	3	3P	4	4P
46 Cs-	11382	243 115	1294	664 65				
47	8458	241 90	695	423 34				
48	9463	241 123	800	664 38				
49	9135	235 46	810	670 38				
		Bldg 2281						
Prep Lab	6093	238 50	444	673 22	292	1201 14	227	1275 13
PHA LAB	6182	258 42	433	617 24	284	1148 14	237	1364 14
[illegible] LAB	6065	285 46	436	653 21	305	1124 14	223	1343 12
[illegible]IAL LAB	6193	238 50	419	647 23	292	1201 15	226	1376 12
[illegible]on LAB	6178	241 47	465	620 24	291	1171 15	206	1361 11
[illegible]	6005	229 46	401	682 23	271	1124 16	206	1278 14

11 June 85

10 June 85

ROI [1]	229	TO	512 / 1747	CHN
ROI [2]	131 / 617	TO	161 / 706	
ROI [3]	300 / 1118	TO	336 / 1225	
ROI [4]	353 / 1275	TO	391 / 1388	

HOT cell

Source	1	1P	2	2P	3	3P	4	4P
	← entire spectrum →		← Cs-137 →		← Co-60 →			
Background 5 mins	622309	662 / 14632	250311	662 / 14632	47946	1168 / 2193	47946	1332 / 1816
Background 5 mins	6244	232 / 44	450	664 / 21	309	1204 / 16	209	1385 / 12
Sample #1 in Hot Cell 5 mins	35131	1192 Co-60 / 264	2115	697 / 93	5566	1192 / 264	4608	1352 / 217
Sample #2 in Hot Cell 5 mins	12085	235 / 67	765	676 / 38	Co-60 / 1417	1174 / 66	1154	1352 / 56
Sample #3 in Hot Cell 5 mins	29376	1201 Sr-90 / 230	1784	641 / 73	4562	1201 / 230	3579	1352 / 173
Sample #4 in Hot Cell 5 mins	119656	1198 Sr-90 / 1023	7036	664 / 276	20912	1198 / 1023	17694	1358 / 866
		ALPHA FIELD						
#1 Alpha Field 5 mins	7397	238 / 60	577	641 / 29	—	—	—	—
#2	6595	238 / 49	507	632 / 25	—	—	—	—
#3	6525	243 / 56	473	635 / 23	—	—	—	—
#4	7326	235 / 67	554	647 / 34	—	—	—	—
#5	7577	241 / 88	632	685 / 32				
#6	7382	238 / 68	617	673 / 32				

Survey Number: 85-134

RECORD OF HEALTH PHYSICS SURVEY
(OCSR 385-2)

Date Started: 7 June 85

Date Completed: 13 June 85

Survey of: Soil Sample from USAMLS ALPHA Field, 1st St Ft. McCl.

Surveyor: SP5 Juan A. Torres Number of Samples: 45

Type of Survey: ___Area Wipe Test, ___Instrument Survey, ___Source Leak Test;

Environmental Sample: ___Air, ___Water, ✓Soil.

Portable Instrument Data: ___Alpha Instrument, ___Beta-Gamma Instrument;

Model: _____ Serial: _____ Surveyor: _____

Laboratory Instrument Data:

Beta: Model: _____, SN: _____, Eff: ___%, Volts: _____

Beta-Gamma: Model: _____, SN: _____, Eff: ___%, Volts: _____

Gamma: _____, SN: _____, Eff: ___%, Volts: _____

Alpha: SAC 4, SN: 533, Eff: U-235 82.25%, Volts: —

Counted by: SP5 Torres / SP5 Barnes USAR. Reviewer's Init: _____

Action: ___None, ___On Back of Sheet, ___See Attached Sheets

Ft McCl Fm 1560-R
(8 Aug 80)

1

EFFICIENCY = 82.25% 2π ≈ 41.12 % π

SPS Torrel

SAMPLE #	Plate wt	wt Plate + sample	sample Net wt	Gross cpm	NET cpm	NET DPM	ACTIVITY pCi	SPECIFIC ACTIVITY pCi/gr.
1	2.15	6.55	4.40	$\frac{20}{5}=4.$	3.6	8.75	3.943	0.896
2	2.2	9.65	7.45	$\frac{12}{5}=2.4$	2.0	4.864	2.19	0.294
3	2.2	7.5	5.3	$\frac{7}{5}=1.4$	1.0	2.432	1.095	0.206
4	2.2	7.85	5.65	$\frac{9}{5}=1.8$	1.4	3.4	1.533	0.271
5	2.2	5.7	3.5	$\frac{12}{5}=2.4$	2.0	4.864	2.19	0.625
6	2.3	5.25	2.95	$\frac{5}{5}=1.0$	0.6	1.46	0.657	0.222
7	2.2	7.6	5.4	$\frac{8}{5}=1.6$	1.2	2.92	0.1314	0.243
8	2.1	5.1	3.0	$\frac{22}{5}/\frac{26}{10}=2.6$	2.2	4.84	2.18	0.756
9	2.4	5.4	3.0	$\frac{22}{5}/\frac{23}{10}=2.3$	1.9	4.62	2.08	0.693
10	2.35	6.75	4.40	$\frac{32}{10}=3.2$	2.8	7.84	3.531	0.802
11	2.2	5.00	2.8	$\frac{28}{10}=2.8$	2.4	5.84	2.63	0.938
12	2.3	6.4	4.1	$\frac{29}{10}=2.9$	2.5	6.08	2.74	0.667
	2.4	6.0	3.6	$\frac{31}{10}=3.1$	2.7	7.29	3.283	0.912
14	2.2	5.7	3.5	$\frac{27}{10}=2.7$	2.3	5.6	2.519	0.719
15	2.4	6.4	4.0	$\frac{19}{10}=1.9$	1.5	3.65	1.643	0.041
16	2.2	7.4	5.2	$\frac{17}{10}=1.7$	1.3	3.16	1.424	0.273
17	2.2	6.0	3.8	$\frac{23}{10}=2.3$	1.9	4.62	2.081	0.547
18	2.2	6.7	4.5	$\frac{17}{10}=1.7$	1.3	3.16	1.424	0.316
19	2.15	9.55	7.4	$\frac{17}{10}=1.7$	1.3	3.16	1.424	0.192
20	2.1	7.1	5.0	$\frac{26}{10}=2.6$	1.2	2.92	1.314	0.262
21	2.1	6.2	4.1	$\frac{30}{10}=3.0$	2.6	6.32	2.848	0.694
~~22~~	~~2.2~~	—		—	—	—	—	—
23	2.25	7.15	4.90	$\frac{40}{10}=4.0$	3.6	12.96	5.837	1.191
24	2.2	6.65	4.45	$\frac{27}{10}=2.7$	2.3	5.6	2.52	0.566
	~~2.3~~	—		—	—	—	—	—
~~26~~	~~2.2~~	—			—	—	—	—
27	2.3	7.3	5.0	$\frac{8}{10}=8.0$	7.6	18.48	8.325	1.665
28	2.2	6.8	4.6	$\frac{19}{10}=1.9$	1.5	3.65	1.643	0.357
29	2.2	8.1	5.9	$\frac{10}{10}=1.0$	0.6	1.46	0.657	0.111
30	2.05	6.8	4.75	$\frac{28}{10}=2.8$	2.2	5.35	2.409	0.507
31	2.2	6.7	4.5	$\frac{25}{10}=2.5$	2.1	5.11	2.3	0.511
32	2.15	6.95	4.8	$\frac{20}{10}=2.0$	1.6	3.89	1.752	0.365
	2.1	8.00	5.9	$\frac{24}{10}=2.4$	2.0	4.86	2.19	0.371
34	2.15	7.4	5.25	$\frac{23}{10}=2.3$	1.9	4.62	2.081	0.396
35	2.2	7.35	5.15	$\frac{19}{10}=1.9$	1.5	3.65	1.643	0.319

SPS Juan A. Torres.

III ALPHA FIELD Soil Samples 11 June 85

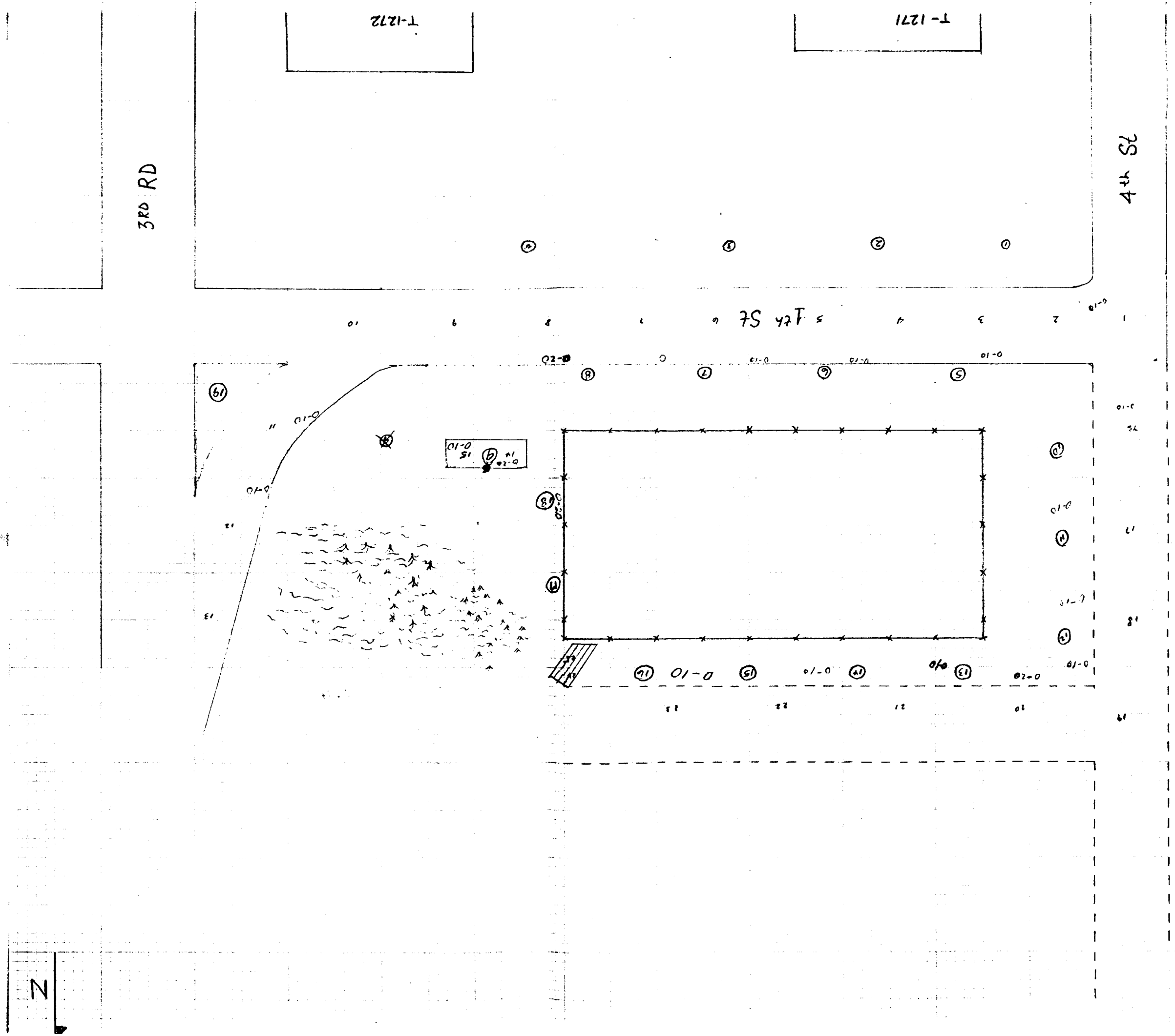
Activities Region II. BG = 450 cts/300 sec = 1.5 cts/sec, MDA = 24.837 pCi = 55.14 dpm

Sample # (Plot Ov)	Gross CTS	CPS	Corrected CTS	cpm	dpm	Activity pCi	Spec. Act. pCi/gr.		MDA = 8.3 pCi
5	577	1.923	0.423	25.38	168.2	75.761	0.3030		
1	507	1.69	0.19	11.4	75.55	34.03	0.19001		
6	473	1.58	0.08	4.8	31.8	< MDA	—		
0	554	1.847	0.347	20.8	137.8	62.1	0.2050		
1	632	2.11	0.61	36.4	241.2	108.7	0.5484		
7	617	2.06	0.56	33.4	221.3	99.7	0.3563		
8	504	1.68	0.18	10.8	71.4	32.2	0.14597		
2	502	1.67	0.17	10.4	68.92	31.04	0.1093		
2	1490	4.97	3.47	208	1378.4	626.5	2.919	*	
1	642	2.14	0.64	38.4	254.5	114.63	0.5384		
8.9	544	1.81	0.31	18.8	124.6	56.12	0.2452		
1	512	1.71	0.21	12.4	82.17	37.02	0.123		
9.7	459	1.53	0.03	1.8	< MDA	—	—		
4.1	549	1.83	0.33	19.8	131.2	59.10	0.2080		
5	519	1.73	0.23	13.8	91.45	41.19	0.2112		
3.8	492	1.64	0.14	8.4	55.67	25.1	0.1051		
7.5	491	1.64	0.14	8.41	55.67	25.1	0.170		
3.1	455	1.52	0.02	1.2	< MDA	—	—		
3.9	469	1.56	0.06	3.6	< MDA	—	—		
9	519	1.73	0.23	13.8	91.45	41.2	0.0598		
3.8	925	3.083	1.583	95	629.6	283.6	0.3839	*	
	712	2.37	0.87	52.2	345.9	155.82	0.219	*	
3.8	736	2.45	0.95	57	377.7	170.15	0.223		
4	615	2.05	0.55	33	218.7	98.51	0.1361		
.6	623	2.08	0.58	34.8	230.6	103.84	0.12799		
0	566	1.89	0.39	23.4	155.1	69.85	0.082		
7.6	596	1.99	0.49	29.4	194.8	87.76	0.1158		
16.6	702	2.34	0.84	50.4	333.99	150.45	0.1842		
8	573	1.91	0.41	24.6	163.02	73.43	0.107		
8	802	2.673	1.173	70.4	466.5	210.15	0.277	*	
74	658	2.193	0.693	41.6	275.7	124.18	0.184		
8.9	639	2.13	0.63	37.8	250.5	112.84	0.1687		
20	755	2.52	1.02	61.2	405.6	182.7	0.3045		

Samples From ALPHA Field Counted For ALPHA contamination 12 June 85
Continuation:

SPS Tonnes

Sample No.	Plate wt.	wt plate + sample	sample NET wt	Gross cpm	NET cpm	NET DPM	ACTIVITY p.C.i	Specific Activity pCi/gr
36	2.2	7.3	5.1	$\frac{13}{10} = 1.3$	0.9	2.189	0.985	0.193
~~37~~	~~2~~							
38	2.2	8.15	5.95	$\frac{17}{10} = 1.7$	1.3	3.16	1.424	0.239
39	2.5	7.4	4.9	$\frac{19}{10} = 1.9$	1.5	3.65	1.643	0.335
40	2.2	7.4	5.2	$\frac{23}{10} = 2.3$	1.9	4.62	2.081	0.40
41	2.3	8.25	5.95	$\frac{23}{10} = 2.3$	1.9	4.62	2.081	0.349
42	2.2	7.8	5.6	$\frac{26}{10} = 2.6$	2.2	5.35	2.409	0.43
43	2.4	8.05	5.65	$\frac{28}{10} = 2.8$	2.4	5.84	2.63	0.465
44	2.5	7.95	5.45	$\frac{10}{10} = 1.0$	0.6	1.459	0.657	0.12
45	2.45	7.45	5.00	$\frac{30}{10} = 3.0$	2.6	6.32	2.874	0.574
46	2.3	8.0	5.7	$\frac{31}{10} = 3.1$	2.9	7.05	3.176	0.557
47	2.35	7.0	4.65	$\frac{24}{10} = 2.4$	2.0	4.86	2.19	0.471
48	2.4	8.0	5.6	$\frac{16}{10} = 1.6$	1.2	2.92	1.314	0.243
49	2.2	8.05	5.85	$\frac{24}{10} = 2.4$	2.0	4.864	2.19	0.374
50								


T-1272
T-1271
3RD RD
4th St
N

N

11th ST.