

PU PLANT VAULT ROOM # 126

The Pu plant vault was used for storage of Pu oxide, Pu nitrate, and scrap material. After removal of the wall hangers, shelves, and cement block dividers, the floor covering was removed and the walls were grit blasted. After this initial decon, four spots on the floor were found that still exceeded release limits. We spot blasted these spots before our final release survey was started.

We used a Ludlum 2220 with a Ludlum 43-27 (large area detector for scan), 43-4 with P-10 gas for conduits and lights, and a 43-68 (floor, walls, ceiling, and door) for this release survey. all smears were taken on Whatman smear paper and counted in a Hewlett Packard 5560A (for background) automatic sample counter.

William A. Rogers
W.A. Rogers

Pu PLANT RELEASE SURVEY PLAN

1. For initial decontamination all surfaces will be scanned with an Eberline PRM-6 with a Radeco alpha scintillation probe. Background will be maintained at less than 100 CPM(200 dpm). All areas greater than twice background will be marked and reading will be taken with a release survey instrument to document contamination levels and random large area smears will be taken.
2. After these initial areas are decontaminated, all floor surfaces and the base of each wall will be completely surveyed with a digital readout release instrument and a Ludlum large area gas proportional alpha detector and random smear samples will be taken. Release instrumentation shall have a minimum detectable level of at least 50 dpm/100 cm².
3. All hot spots greater than or equal to 100 dpm/100 cm² identified will be decontaminated.
4. A random survey with a release instrument will be taken on the walls and ceiling to try to identify any other problem areas.
5. If no problems are identified, each room will be gridded off into approximately 2 meter on a side square on the walls and floor and five readings will be taken in each grid. Readings shall be taken in the center and at the midpoint from the center to each corner.
6. Each ceiling has closely spaced rafters that will not be easily divided into 2 meter squares. Because of this, we will take readings on the bottom of each rafter at 2 meter intervals and one reading centered on the ceiling between rafters. Readings on each rafter will be staggered one meter.
7. These release readings will be documented on a map that is drawn to approximately scale measurements in meters.
8. Data provided on each map:
 1. Survey block numbers, identifiable on a scale drawings.
 - a. room or area name or number.
 - b. surface surveyed.
 - c. type of measurement and units.
 2. Name of surveyor taking measurements, date of survey, and location.

3. Type, model number, calibration data, sensitivity limit, background, and source response of instruments used in survey.
4. When a block surveyed is below the sensitivity of the instrument, the fact that such a measurement was made should be included as significant data.
9. All release survey smears will be taken on Whatman smear paper and counted in the automatic sample counters. Each smear will cover approximately 100 cm².
10. There will be at least 30 survey blocks in each area to be released.
11. Piping and ductwork will be surveyed on all accessible sides at 2 meter intervals. If more than one line is running parallel in a pipe rack, readings shall be staggered at one meter intervals.
12. All readings taken that only cover part of a probe area will be corrected to dpm/100 cm².
13. No survey block will measure less than one meter on a side.
14. No survey block will measure more than 3 meters on a side.
15. All portable release survey instruments will be calibrated quarterly and all instruments in use will be source checked daily.

Table I-1. Acceptable surface contamination levels

Nuclides ^a	Average ^{b,c,f}	Maximum ^{b,d,f}	Removable ^{b,e,f}
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	1,000 dpm/100 cm ²	3,000 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 other noted above.	5,000 dpm βγ/100 cm ²	15,000 dpm βγ/100 cm ²	1,000 dpm βγ/100 cm ²

^aWhere surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

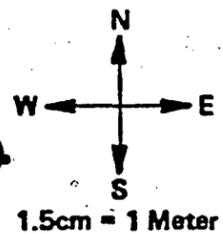
^bAs used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

^cMeasurements 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.

^dThe maximum contamination level applies to an area of not more than 100 cm².

^eThe amount of removable radioactive material per 100 cm² 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.

^fThe average and maximum radiation levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/hr at 1 cm and 1.0 mrad/hr at 1 cm, respectively, measured through not more than 7 milligrams per square centimeter of total absorber.



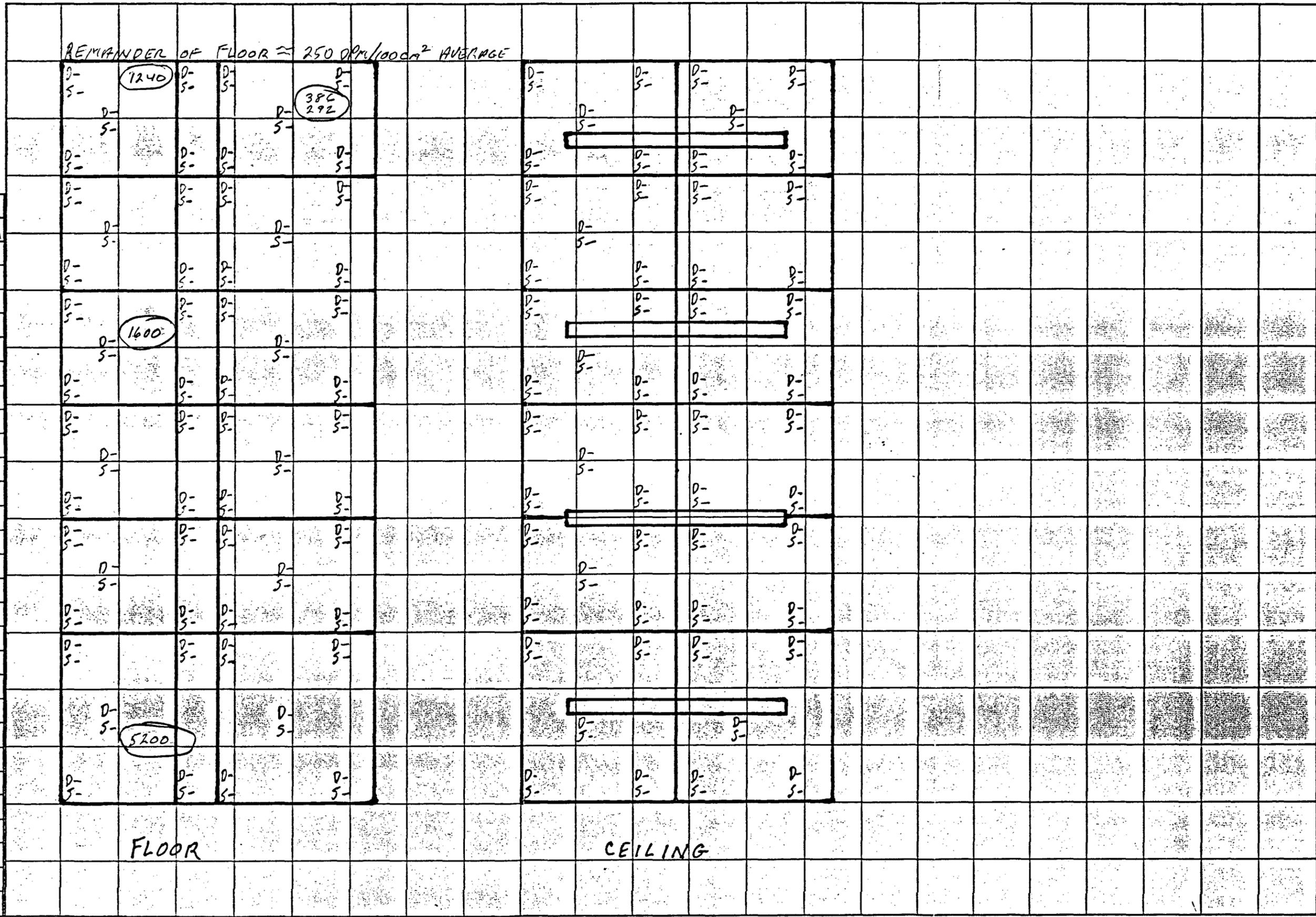
AREA ROOM 126 - VAULT FLOOR TYPE OF SURVEY DIRECT
 BEFORE GRIT BLASTING TYPE OF INSTRUMENT LUOLUM 1220 / DET. 43
 SERIAL NUMBER 58318 / floor monitor

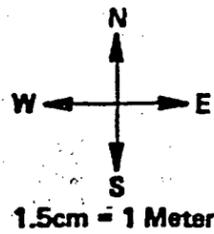
COMPLETION DATE 9-30-88
 H.P. SIGNATURE W.A. Rogers
 AUTO. SAMPLE COUNTER #: N/A

SURVEY UNITS
DPM / 515 cm²

F - FLOOR
 C - CEILING
 N - NORTH WALL
 S - SOUTH WALL
 E - EAST WALL
 W - WEST WALL
 SOURCE #: 1832 VALUE: 342 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE /M	BKGD C/M
9-29-88	126	2
9-29-88	132	3
9-30-88	116	3
9-30-88	119	4





AREA ROOM 126 - VAULT

TYPE OF SURVEY DIRECT & SMEAR

COMPLETION DATE 9-23-88

SURVEY UNITS

FINAL GRID

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

H.P. SIGNATURE W.A. Rogers

DPM/100cm²

SERIAL NUMBER 58308, 37807, 47957, 44487
48395, 50069 / 46172, 46173

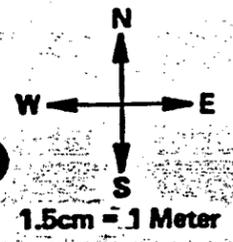
AUTO. SAMPLE COUNTER #1 83600115, #2 83600108

F - FLOOR D - DIRECT
C - CEILING S - SMEAR
N - NORTH WALL
S - SOUTH WALL MDA = 11.09
E - EAST WALL DPM/100cm²
W - WEST WALL FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M	BKGD C/M
9-22-88	219 50069	0
9-22-88	205 48395	0
9-22-88	207 50069	0
9-22-88	196 48395	0
9-23-88	187 48395	0
9-23-88	200 50069	0
10-18-88	234 58308	1
10-18-88	238 37807	1
ASC #1		
9-23-88	34	.3
10-18-88	33	0
ASC #2		
9-23-88	27	.2

SOUTH				NORTH					
D-12 S-0	D-12 S-12	D-0 S-0	D-28 S-3	D-4 S-0	D-4 S-0	D-0 S-0	D-12 S-6		
D-8 S-3			D-24 S-3		D-8 S-0		D-8 S-0		
D-4 S-0	D-32 S-0	D-24 S-0	D-32 S-15	D-0 S-0	D-0 S-0	D-16 S-6	D-4 S-3		
D-24 S-3	D-8 S-0	D-4 S-0	D-20 S-0	D-12 S-3	D-8 S-0	D-0 S-0	D-4 S-0		
D-12 S-0			D-8 S-0		D-8 S-12		D-4 S-3	TOTAL DPM	1740
D-12 S-6	D-52 S-0	D-24 S-0	D-12 S-0	D-8 S-0	D-4 S-3	D-4 S-0	D-8 S-0	# READINGS	120
D-12 S-0	D-12 S-0	D-36 S-9	D-16 S-3	D-4 S-0	D-4 S-0	D-20 S-3	D-8 S-3	AUG DPM/100cm ²	14.5
D-16 S-0			D-8 S-0					MAX DPM/100cm ²	56
D-20 S-3	D-16 S-0	D-4 S-0	D-12 S-3	D-4 S-0	D-12 S-9	D-12 S-0	D-4 S-6		
D-32 S-0	D-4 S-3	D-8 S-0	D-16 S-3	D-16 S-6	D-8 S-0	D-8 S-0	D-8 S-3		
D-20 S-0			D-20 S-0		D-16 S-0		D-4 S-3		
D-40 S-0	D-12 S-0	D-16 S-3	D-20 S-0	D-16 S-0	D-8 S-0	D-8 S-6	D-8 S-3		
D-8 S-0	D-12 S-3	D-56 S-3	D-28 S-0	D-24 S-6	D-12 S-6	D-4 S-3	D-8 S-3		
D-12 S-3			D-32 S-0		D-16 S-0		D-16 S-0		
D-12 S-3	D-36 S-0	D-40 S-3	D-16 S-3	D-8 S-0	D-24 S-3	D-20 S-0	D-12 S-0		
D-8 S-3	D-32 S-0	D-12 S-3	D-12 S-0	D-16 S-0	D-12 S-0	D-16 S-6	D-16 S-0		
D-28 S-0			D-44 S-0		D-8 S-3		D-16 S-3		
D-24 S-3	D-24 S-0	D-20 S-0	D-16 S-3	D-0 S-3	D-8 S-0	D-20 S-6	D-12 S-0		
FLOOR				CEILING					



AREA ROOM 126 - VAULT

TYPE OF SURVEY α DIRECT & SMEAR

COMPLETION DATE 10-17-88

SURVEY UNITS
DPM/100cm²

TYPE OF INSTRUMENT Ludlum 2220/DET. 43-68

H.P. SIGNATURE W.A. Angelo

SERIAL NUMBER 48395, 50069 / 46172, 46173

AUTO. SAMPLE COUNTER #1: 83600115, #2: 83600108

F - FLOOR
C - CEILING
N - NORTH WALL
S - SOUTH WALL
E - EAST WALL
W - WEST WALL

D-DIRECT
S-SMEAR
MOA = 15.68
DPM/100cm²
FIXED

SOURCE # 7272 VALUE: 850 DPM

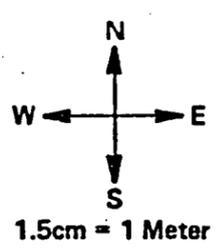
INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD %
9-22-88	219 50069	0
9-22-88	205 48395	0
9-22-88	207 50069	0
9-22-88	196 48395	0
9-23-88	187 48395	0
9-23-88	200 50069	0
10-17-88	239 58308	2
ASC #1		
9-23-88	34	.3
ASC #2		
9-23-88	27	.2
10-17-88	32	.3

NORTH WALL						SOUTH WALL						EAST WALL						WEST WALL																				
D-8 S-0	D-16 S-3	D-28 S-3	D-12 S-3	D-16 S-3		D-16 S-0	D-4 S-0	D-12 S-0	D-4 S-9			D-8 S-6	D-20 S-0	D-8 S-3			D-8 S-0	D-4 S-3	D-8 S-0	D-8 S-0	D-8 S-0	D-16 S-0	D-0 S-3	D-8 S-0	D-12 S-0	D-16 S-0	D-4 S-3	D-8 S-3										
D-24 S-3	D-24 S-3	D-8 S-3	D-12 S-3	D-28 S-3		D-4 S-3	D-12 S-3	D-12 S-6	D-12 S-0	D-12 S-0		D-12 S-0	D-16 S-0	D-20 S-0	D-8 S-3		D-12 S-0	D-16 S-0	D-12 S-0																			
D-16 S-0	D-8 S-0	D-12 S-0	D-16 S-0	D-4 S-0		D-12 S-3	D-0 S-0	D-16 S-3	D-60 S-0	D-8 S-0		D-12 S-0	D-16 S-0	D-20 S-0	D-8 S-3		D-12 S-0	D-16 S-0	D-12 S-0																			
D-24 S-3	D-4 S-0	D-8 S-0	D-4 S-0	D-4 S-0		D-4 S-3	D-16 S-0	D-168 S-6	D-12 S-3																													
NORTH WALL						SOUTH WALL						EAST WALL						WEST WALL																				
D-4 S-6	D-0 S-0	D-20 S-0	D-4 S-0	D-12 S-0	D-20 S-3	D-12 S-3	D-8 S-0	D-28 S-3	D-4 S-3	D-20 S-0	D-8 S-0	D-32 S-3	D-12 S-6	D-4 S-0	D-12 S-6	D-36 S-0	D-12 S-6	D-12 S-3	D-28 S-3	D-12 S-9	D-24 S-0	D-12 S-0	D-32 S-0	D-0 S-3	D-12 S-0	D-12 S-3	D-36 S-3	D-28 S-0	D-16 S-0	D-12 S-3	D-28 S-0	D-24 S-0	D-4 S-3	D-8 S-3	D-12 S-0	D-16 S-9	D-12 S-0	
D-12 S-3	D-20 S-0	D-8 S-0	D-8 S-0	D-8 S-0	D-8 S-3	D-4 S-3	D-28 S-0	D-24 S-0	D-4 S-0	D-8 S-3	D-12 S-0	D-16 S-0	D-8 S-0	D-4 S-0	D-12 S-0	D-32 S-3	D-16 S-9	D-12 S-0	D-16 S-0	D-12 S-0	D-12 S-0	D-12 S-0	D-12 S-0	D-12 S-0	D-20 S-0	D-8 S-0	D-8 S-0	D-8 S-0	D-16 S-0	D-0 S-3	D-8 S-0	D-12 S-0						
D-12 S-0	D-24 S-0	D-4 S-0	D-16 S-3	D-24 S-0	D-12 S-0	D-32 S-0	D-4 S-3	D-12 S-0	D-24 S-0	D-16 S-0	D-32 S-0																											
NORTH WALL						SOUTH WALL						EAST WALL						WEST WALL																				
D-8 S-0	D-4 S-3	D-8 S-0	D-8 S-3	D-8 S-0	D-16 S-0	D-0 S-3	D-8 S-0	D-12 S-0	D-16 S-0	D-4 S-3	D-8 S-3	D-20 S-0	D-8 S-3	D-24 S-0	D-36 S-0	D-12 S-6	D-12 S-6	D-12 S-3	D-20 S-3	D-12 S-0	D-20 S-3	D-40 S-0	D-12 S-0															
D-12 S-0	D-8 S-0	D-16 S-0	D-12 S-0	D-0 S-0	D-0 S-0	D-20 S-3	D-4 S-0	D-28 S-3	D-20 S-0	D-12 S-0	D-12 S-0	D-4 S-0	D-60 S-3	D-12 S-0	D-4 S-0	D-20 S-0	D-60 S-3	D-12 S-0																				
D-4 S-0	D-24 S-0	D-20 S-0	D-32 S-0	D-16 S-3	D-16 S-0	D-12 S-0	D-16 S-0	D-20 S-3	D-12 S-0	D-0 S-0	D-12 S-0	D-4 S-0	D-12 S-0																									
NORTH WALL						SOUTH WALL						EAST WALL						WEST WALL																				

DOOR FRAME

DIRECT
2588 TOTAL DPM
168 READINGS
1540 DPM/100cm² AVG
168 MAX DPM/100cm²

SMEAR
243 TOTAL DPM
168 SMEARS
1145 DPM/100cm² AVG
9 MAX DPM/100cm²



AREA MOOM 126 - VAULT
LIGHT FIXTURES

TYPE OF SURVEY DIRECT & SMEAR
 TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-4
 SERIAL NUMBER 50058, 50064

COMPLETION DATE 9-21-88
 H.P. SIGNATURE Claude M. Thompson
 AUTO. SAMPLE COUNTER# #1 83600115
 SURVEY UNITS DPM/100cm²
W.O.A

D - DIRECT
S - SMEAR
F - FLOOR
C - CEILING
N - NORTH WALL MDA = 28.81
S - SOUTH WALL DPM/100cm²
E - EAST WALL
W - WEST WALL

SOURCE# 112 VALUE: 1113 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
9-19-88	292 50058	2
9-20-88	277 50058	2
9-20-88	283 50058	2
9-21-88	292 50058	1
9-21-88	264 50064	3
9-21-88	265 50058	2
9-21-88	249 50064	1
ASC #1		
9-20-88	33	.2
9-21-88	33	.2
DIRECT		
2297 TOTAL DPM		
221 READINGS		
10.94 DPM/100cm ² AVERAGE		
60 MAX DPM/100cm ²		
SMEAR		
438 TOTAL DPM		
221 SMEARS		
1.98 DPM/100cm ² AVERAGE		
12 MAX DPM/100cm ²		

	D-5 S-3	D-10 S-0	D-5 S-6	D-0 S-0	D-5 S-0	D-10 S-0	D-5 S-0	D-15 S-15	D-5 S-0			D-5 S-3	D-0 S-0	D-0 S-0	D-20 S-0	D-15 S-0	D-10 S-3	D-5 S-6	D-15 S-3	D-5 S-0	
	D-5 S-6	D-10 S-0	D-10 S-6	D-20 S-3	D-10 S-6	D-30 S-6	D-60 S-3		D-5 S-0	#1		D-5 S-0	D-0 S-6	D-0 S-0	D-10 S-0	D-20 S-6	D-10 S-6	D-50 S-3	D-10 S-3	D-0 S-12	
	D-0 S-6	D-5 S-0	D-5 S-0	D-10 S-9	D-5 S-3	D-0 S-0	D-0 S-3	D-15 S-3	D-0 S-0			D-20 S-0	D-5 S-0	D-0 S-0	D-20 S-0	D-20 S-3	D-10 S-3	D-10 S-0	D-10 S-3	D-30 S-3	
	D-5 S-0	D-10 S-6	D-5 S-6	D-5 S-3	D-10 S-12	D-5 S-0	D-20 S-0	D-20 S-0	D-20 S-0			D-0 S-0	D-0 S-3	D-6 S-3	D-6 S-3	D-0 S-3	D-0 S-0	D-0 S-3	D-0 S-0	D-0 S-3	
	D-0 S-3	D-5 S-0	D-10 S-3	D-5 S-0	D-10 S-0	D-10 S-0	D-15 S-3	D-20 S-0	D-20 S-3	D-30 S-0	D-15 S-0	#2	D-0 S-6	D-0 S-0	D-0 S-0	D-0 S-3	D-0 S-0	D-6 S-3	D-0 S-9	D-12 S-3	D-18 S-0
	D-5 S-9	D-0 S-6	D-5 S-3	D-5 S-3	D-10 S-0	D-5 S-0	D-20 S-0	D-15 S-6	D-20 S-0			D-0 S-0	D-18 S-3	D-6 S-0	D-12 S-0	D-0 S-0	D-12 S-0	D-0 S-0	D-12 S-3	D-6 S-3	
	D-15 S-0	D-10 S-0	D-15 S-0	D-10 S-3	D-15 S-0	D-15 S-0	D-20 S-0	D-30 S-0	D-10 S-0			D-0 S-0	D-5 S-6	D-0 S-0	D-5 S-0	D-0 S-0	D-10 S-0	D-0 S-3	D-5 S-3	D-5 S-6	
	D-20 S-0	D-30 S-3	D-30 S-0	D-40 S-0	D-10 S-3	D-20 S-3	D-20 S-3	D-20 S-6	D-20 S-3	D-40 S-0	D-40 S-0	#3	D-0 S-0	D-5 S-0	D-0 S-0	D-15 S-0	D-15 S-3	D-10 S-0	D-0 S-0	D-5 S-0	D-10 S-0
	D-15 S-3	D-15 S-0	D-20 S-9	D-10 S-0	D-10 S-3	D-10 S-0	D-20 S-3	D-20 S-0	D-5 S-0			D-10 S-0	D-6 S-0	D-15 S-3	D-0 S-9	D-0 S-3	D-20 S-0	D-15 S-0	D-5 S-3	D-10 S-0	
	D-20 S-0	D-10 S-0	D-20 S-0	D-20 S-0	D-50 S-12	D-5 S-3	D-0 S-0	D-5 S-3	D-5 S-0			D-0 S-0	D-12 S-0	D-12 S-6	D-24 S-0	D-6 S-6	D-0 S-0	D-20 S-6	D-10 S-3	D-15 S-0	
	D-10 S-0	D-30 S-0	D-30 S-3	D-0 S-0	D-5 S-3	D-20 S-6	D-0 S-0	D-0 S-0	D-5 S-0	D-0 S-3	D-20 S-0	#4	D-12 S-3	D-0 S-6	D-0 S-0	D-12 S-3	D-0 S-0	D-18 S-3	D-15 S-3	D-5 S-0	D-0 S-0
	D-20 S-0	D-20 S-0	D-0 S-0	D-5 S-3	D-5 S-3	D-10 S-0	D-10 S-0	D-5 S-3	D-40 S-0			D-0 S-0	D-0 S-6	D-0 S-0	D-0 S-6	D-0 S-0	D-6 S-6	D-20 S-0	D-5 S-0	D-15 S-0	

OUTSIDE

INSIDE

RM 126

VAULT DOOR

LUDLUM 2220
#58318, 43-4

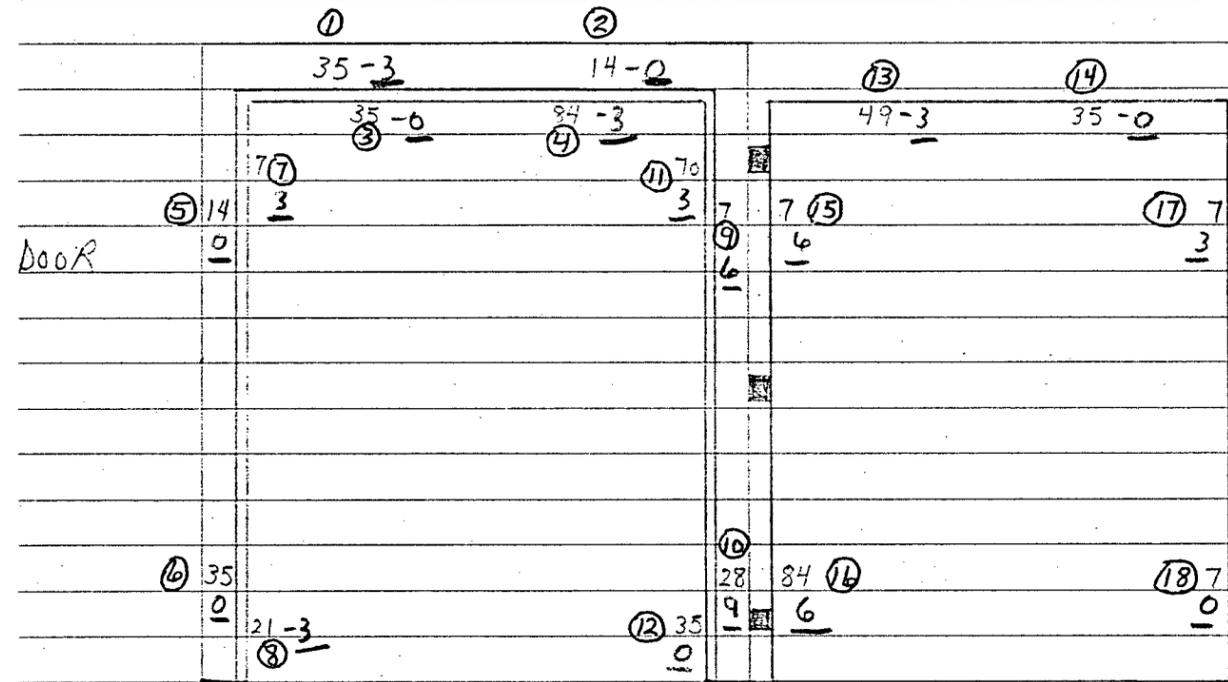
SOURCE #1868, 10-5 dph
SOURCE CK!

277-267, BKG-3 (AM)

266-278, BKG-2 (PM)

7-7-89

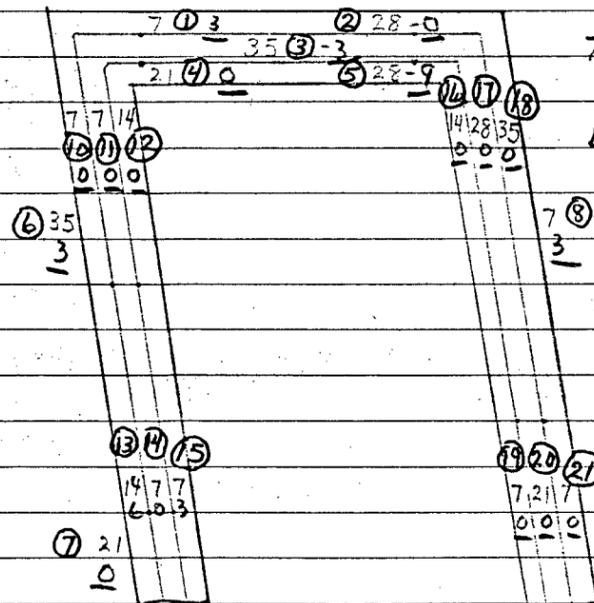
ILP



IDENTIFICATION

CIRCLED
SMears UNDERLINED
IN RED

FRAME



DIRECT SMears

TOTAL DPM	952	81
READINGS	39	39
DPM/100cm ² AVG	24.41	2.08
MAX DPM/100cm ²	84	9

MOA 33.61
DPM/100cm²
FIXED

LINE NUMBER 321 DATE 10-29-88
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064
 DETECTOR 43-4 OPERATOR Jamb + S.G.
 SOURCE NUMBER AND VALUE #112 - 1113 cpm
 SOURCE RESPONSE AND BACKGROUND AM 263 + 265 - 0 Bkg
 SOURCE RESPONSE AND BACKGROUND PM 2824 260 1 "

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable			
				cpm	dpm/100cm ²				
Starts on North wall From electrical outlet about one foot from floor up wall to ceiling and from ceiling to fluorescent light fixture going south.	Aluminum Conduit	1/2"	0 meters E	7	77	3			
			W	7	77				
			2 meters E	3	33	0			
			W	2	22				
			4 meters E	8	88	6			
			W	8	88				
			5 meters E	9	99	0			
			W	6	66				
			Direct						
			Total DPM				1881		
# Readings				36					
Ave. DPM/100cm ²				52.25					
Max DPM/100cm ²				99					
Smear									
Total DPM				72					
# Readings				18					
Ave DPM/100cm ²				4.0					
Max DPM/100cm ²				9.0					
MOA =				21.56	DPM/100 cm ²				

LINE NUMBER 322 DATE 10-29-88
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064
 DETECTOR 43-4 OPERATOR Jamb + S.G.
 SOURCE NUMBER AND VALUE ~~112~~ 112 - 1113 dpm
 SOURCE RESPONSE AND BACKGROUND AM 263 + 265 - 0 Bkg
 SOURCE RESPONSE AND BACKGROUND PM 2824 260 1 "

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm ²	
Starts from fluorescent light fixture on ceiling north and goes all the way across ceiling to south wall and ends in junction box on south wall.	Aluminum Conduit	1/2"	0 meters E	4	44	0
			W	2	22	
			2 meters E	7	77	6
			W	2	22	
			4 meters E	5	55	3
			W	5	55	
			6 meters E	5	55	9
			W	4	44	
			8 meters E	5	55	6
			W	7	77	
			10 meters E	5	55	6
			W	4	44	
			11 meters E	7	77	0
			W	5	66	

LINE NUMBER 324 DATE 10-28-88
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064
 DETECTOR 43-4 OPERATOR JMB + D.J.
 SOURCE NUMBER AND VALUE 112 - 1113 dpm
 SOURCE RESPONSE AND BACKGROUND AM 263 + 265 - 0 Bkg
 SOURCE RESPONSE AND BACKGROUND PM 282 + 260 - 1 "

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm ²	
Starts in Junction box on south wall and ends in plug in on south wall.	Aluminum	3/4"	0 meters S	4	44	9
	Conduit		B	4	44	
			T	7	77	0
			B	7	77	
			E	3	33	6
			W	4	44	

LINE NUMBER 323 DATE 10-28-88
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064
 DETECTOR 43-4 OPERATOR JMB + D.J.
 SOURCE NUMBER AND VALUE 112 - 1113 dpm
 SOURCE RESPONSE AND BACKGROUND AM 263 + 265 - 0 Bkg
 SOURCE RESPONSE AND BACKGROUND PM 282 + 260 - 1 "

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm ²	
Starts in Junction box on south wall and ends on west wall in plug in box.	Aluminum	3/4"	0 meters E	2	22	3
	Conduit		W	2	22	
			T	2	22	3
			B	2	22	
			T	5	55	3
			B	6	66	
			T	1	11	9
			B	4	44	