Pu Plant Final Release Survey Non Production Area-Office Area

When decommissioning started in this office area, four areas of concern were identified with an Eberline PRM-6 and Radeco alpha scintilation detector.

These areas were:

1. Men's change room sinks - 400 dpm/100 cm^2 fixed- sinks removed
2. H.P. decon room shower and sink - 2000 dpm/100 cm^2 fixed-shower and sink removed.
3. Floor under the laundry washers and dryer - 300 dpm/100 cm^2 fixed - Paint removed from floor.
4. The attic above the Health Physics hall and decon room where the slot box exhaust, glove box exhaust, and SX exhaust ducts entered this attic area and turned up to exhaust fan room -1000 dpm/100 cm^2 fixed on supply duct-supply duct removed.

Our initial clean-up of this area consisted of removing the suspended ceiling tiles from the lunch room, office area 101, and office area 102. These ceiling tiles were surveyed and released to clean trash because they were in such poor condition. We removed a portion of the sheetrock ceiling above the H.P. decon room and the hallway just north of the H.P. decon room that was under the exhaust duct runs. This sheetrock averaged approximately 100 dpm/100 cm^2 direct and 10 dpm/100 cm^2 smearable, but had a maximum of 450 dpm/100 cm^2 direct. This sheetrock was drummed as LSA waste. We then vacuumed this entire area.

We used a Ludlum 2220 with a Ludlum 43-27, 43-68, or 43-4 detector with P-10 gas for our release surveys. Our initial scan of floor and walls to two meters indentified two contaminated areas on Men's change room floor and one on west wall of Men's change room. All three areas were less than 500 cm^2 in area and less than 300 dpm/100 cm^2. These three spots were deconed. For the entire survey of 3775 direct readings, we initially found 76 direct readings greater than 100 dpm/100 cm^2 but less than 300 dpm/100 cm^2. We surveyed around each reading greater then 100 dpm/100 cm^2 and then after extent of contamination was identified, attempted to decon. On our final release survey maps , we have three readings that are greater than 100 dpm/100 cm^2. Since these places meet release limits, no further decon was attempted on these spots. Of the 3733 smears taken, no results were found to be greater than 20 dpm/100 cm^2. All smears were taken on Whatman smear paper and counted in a Hewlett-Packard 5560A (Low background) automatic sample counter. Our maps included instrument used, detector, background, source responce, and MDA.

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 digitial 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 cm^2.

3. All hot spots greater than or equal to 100 dpm/100 cm^2 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 squares 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 on a side squares. Because of this, we will take readings on the bottom and each side 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 drawing,

        a. room or area name or number.
        b. surfaces 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 cm^2.

10. There will be at least 30 survey blocks in each area to be released.

11. Piping and ductwork will be surveyed on all accessable 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 cm^2.

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. In the laboratory and office areas all wall surfaces will be included in the floor area because the walls are only 3 meters in height.

16. In all other areas except the laboratory and offices the bottom 2 meters of wall area will be included in floor data.

17. All portable release survey instruments will be calibrated quarterly and all instruments in use will be source checked daily.

18. Release limits shall be (see attached sheet).

TABLE I

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	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 $\beta\gamma$/100 cm^2	15,000 dpm $\beta\gamma$/100 cm^2	1000 dpm $\beta\gamma$/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 contamination 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.

[f] The 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	DIRECT					SMEAR			
	TOTAL DPM	#READINGS	AVG. DPM/100cm²	MAX. READING	MDA DPM/100cm²	TOTAL DPM	#SMEARS	AVG. DPM/100cm²	MAX. READING
PU PLANT LOBBY ENTIRE ROOM	304	44	6.91	24	15.68	105	44	2.39	15
PU PLANT GUARD SHACK ENTIRE ROOM	220	34	6.47	28	15.68	75	34	2.21	9
PU PLANT ENTRANCE HALL ENTIRE ROOM	144	25	5.76	20	15.68	45	25	1.80	6
PU PLANT BREAK ROOM									
SINK AND CABINET WATER FOUNTAIN	1012	68	14.88	40	15.68	66	59	1.12	9
PU PLANT LUNCHROOM WALLS	420	55	7.64	24	15.68	99	55	1.80	9
LUNCH ROOM FLOOR	420	30	14.0	28	15.68	51	30	1.70	6
PU PLANT OFFICE #101 WALLS	1120	85	13.18	32	15.68	189	85	2.22	9
OFFICE #101 FLOOR AND PARTITIONS	964	69	12.97	28	15.68	168	69	2.43	9
PU PLANT ROOM #102 ENTIRE ROOM	536	60	8.93	32	11.04	87	60	1.45	6
PU PLANT OFFICE AREA CEILING REAR	884	53	16.68	40	15.68	60	53	1.13	9
PU PLANT OFFICE AREA CEILING	800	60	13.33	36	15.68	99	60	1.65	6
PU PLANT OFFICE AREA ATTIC WALLS	1324	85	15.50	36	15.68	177	85	2.08	9
AHU ABOVE LUNCH ROOM	836	39	21.44	44	15.68	111	40	2.78	9
PU PLANT OFFICE AREA AIR DUCT	2310	162	14.26	88	27.44	282	162	1.74	6
OFFICE AREA WATER LINES FOR AHU	1666	106	15.72	63	33.61	219	98	2.23	9
MENS CHANGE ROOM FLOOR AND CEILING	1604	137	11.71	68	22.19	162	137	1.82	9
MENS CHANGE ROOM WALLS	1844	90	20.49	96	15.68	168	90	1.87	12
MENS CHANGE ROOM SOUTH SHOWER	736	34	21.65	68	23.52	39	34	1.15	6
MENS CHANGE ROO NORTH SHOWER	670	30	22.33	90	23.52	57	30	1.9	9
MENS CHANGE TOILET STALLS	308	49	6.29	24	15.68	120	49	2.45	9
MENS AIR LOCK ENTIRE ROOM	632	30	21.07	60	15.68	66	30	2.2	6
WOMANS CHANGE ROOM FLOOR AND CEILING	1004	83	12.10	32	15.68	156	83	1.88	9
WOMANS CHANGE ROOM WALLS	592	68	8.71	32	15.68	210	68	3.09	9
WOMANS CHANGE ROOM SHOWERS	514	34	15.12	36	23.52	60	34	1.76	9
WOMANS CHANGE ROOM TOILET STALLS	416	49	8.49	28	15.68	117	49	2.39	9
WOMANS AIR LOCK ENTIRE ROOM	560	50	11.2	48	15.68	135	50	2.7	9
PU PLANT LAUNDRY ROOM ENTIRE ROOM	1352	99	14.07	120	19.20	177	89	1.92	9
PU PLANT JANITORS CLOSET ENTIRE ROOM	456	39	16.82	48	15.68	75	39	1.92	9
CEILING BEAMS OVER MENS AND WOMANS CHANGE ROOM.	744	48	15.50	44	22.17	66	48	1.38	12
CEILING OVER MEN AND WOMANS CHANGE ROOM.	590	40	14.75	40	22.17	78	40	1.95	7
OVER MENS HALLS WOMENS CHANGE ROOM FLOOR	2,152	99	21.74	76	22.17	184	99	1.91	15
MEN AND WOMANS CHANGE ROOM ATTIC WALLS	1,528	110	13.89	48	22.20	99	110	0.90	6
AIR DUCT ATTIC AREA OVER MENS AND WOMANS CHANGE ROOM	1236	109	11.34	44	22.20	254	109	2.33	7
PLUMBING ACCESS WELLS-WALLS OVER MENS AND WOMANS CHANGE ROOM	730	48	15.21	32	15.68	45	20	2.25	9
PLUMBING ACCESS WELLS OVER MENS AND WOMANS CHANGE ROOM	584	29	20.14	36	11.04	69	29	2.38	12
ATTIC WATER LINES OVER MCR+WCR	3156	69	45.74	96	23.52	177	69	2.57	9
PU PLANT HP HALL WAYS WALLS	1520	135	11.26	24	15.68	328	135	1.49	9
TOTALS									

AREA	DIRECT					SMEAR				
	TOTAL DPM	#READINGS	AVG. DPM/100cm²	MAX. READING	MDA DPM/100cm²	TOTAL DPM	#SMEARS	AVG. DPM/100cm²	MAX. READING	
PUPLERIT HP HALLWAYS FLOOR	484	54	8.96	28	15.68	93	54	1.72	6	
HP HALLWAYS CEILING	452	44	10.27	32	15.68	66	44	1.50	9	
ROOM 108 ENTIRE ROOM	416	50	8.32	24	15.68	99	50	1.98	9	
ROOM 109 ENTIRE ROOM	464	50	9.28	36	15.68	135	50	2.70	9	
ROOM 110 ENTIRE ROOM	384	50	7.68	24	15.68	109	50	2.11	9	
ROOM 114 ENTIRE ROOM	592	35	16.91	72	11.09	63	35	1.98	9	
ATTIC CEILING OVER HP OFFICES	784	65	12.06	48	19.30	93	65	1.47	9	
CEILING BEAMS OVER HP OFFICES	1523	102	15.02	96	22.17	150	103	1.46	9	
ATTIC WALLS OVER HP OFFICES 1&2	1740	170	10.24	56	22.17	270	170	1.59	9	
HP OFFICES FLOOR IN ATTIC	1668	119	14.14	52	22.17	306	119	2.57	9	
HP OFFICE SUPPLY AIR DUCT	2108	175	12.05	100	22.20	279	175	1.59	9	
OFFICE AREA LIGHT CONDUIT	2194	47	46.47	91	62.41	117	47	2.49	9	
NON-PRO. ARE ELEC. CONDUIT	1008	27	37.33	84	38.81	39	27	1.44	6	
H.P. ATTIC ELEC. CONDUIT	4152	96	43.27	108	66.52	189	96	1.97	9	
NON PRO ARE LIGHT FIXTURES	2284	248	9.21	76	19.30	423	248	1.71	9	
TOTALS	54,240	3,775	14.90			7,010	3733	1.88		

M.D.A. = $1.96\sqrt{28}$ X CORRECT FACTOR

M.D.A. SMEAR = 4.55 DPM/100cm²

12 of 52

PLANT PU AREA GUARD SHACK LOBBY

SURVEYED BY J Black

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 178-192 BKG. 1

DATE: 3-2-99 SOURCE #: 7272 VALUE: 8500 DPM

ASC # 1SN 83160015

CTD. BY Dennis Ford

SOURCE CK. AVG. 32

BKG. .3

DATE: 3-3-99

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
GS WINDOW AREA	0	0	12
TOP	3	12	0
BOTTOM	3	12	6
LEFT	2	8	3
RIGHT	4	16	3
RELAY CABENIT IN SIDE			
UNDERNEATH	14	56	AFTER DECON 3
FLOOR	13	52	AFTER DECON 0
	8	32	AFTER DECON
	18	72	AFTER DECON
BACK NO EMPTY SPACE WIRES			
LEFT SIDE	11	44	3
RIGHT SIDE	5	20	0
TOP	3	12	0
OUT SIDE OF DOOR			
1	2	8	6
2	3	12	0
3	3	12	6
INSIDE OF DOOR			
1	12	48	0
2	3	12	0
3	1	4	3
DIRECT		SMEAR	
432 TOTAL DPM	45	TOTAL DPM	
18 READINGS	16	SMEARS	
24.0 DPM/100 cm^2 AVG	2.81	DPM/100 cm^2 AVG	
72 MAX DPM/100 cm^2	12	MAX DPM/100 cm^2	

AREA Pu PLANT LOBBY
FINAL GRID

TYPE OF SURVEY α DIRECT & SMEAR

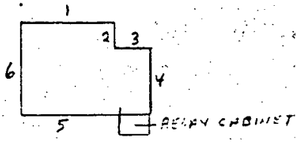
TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 3-3-89

H.P. SIGNATURE Claudia Thompson

SURVEY UNITS DPM/100cm² WAR



N
W E
S

1.5cm = 1 Meter

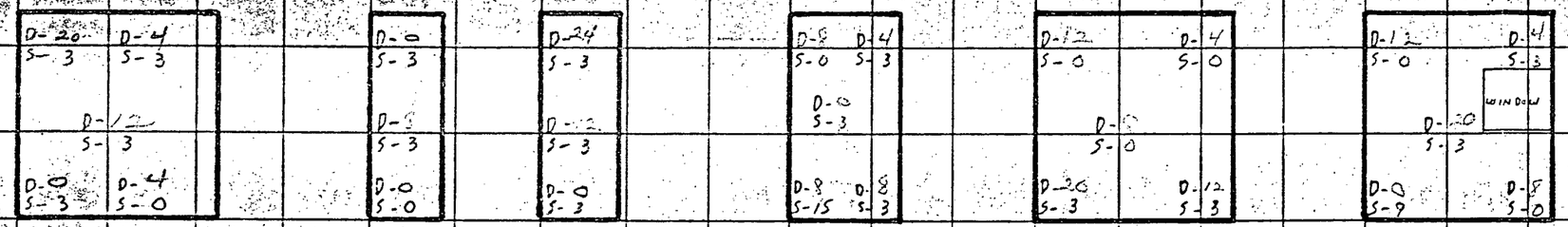
D-DIRECT
S-SMEAR

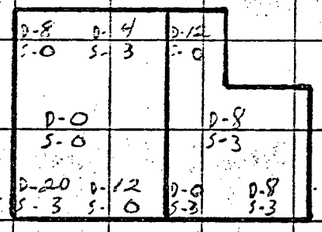
F — FLOOR
C — CEILING
N — NORTH WALL
S — SOUTH WALL
E — EAST WALL
W — WEST WALL

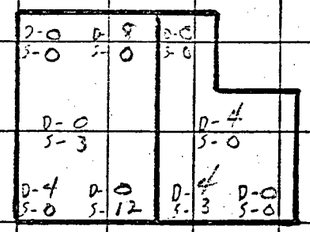
MDA 15.68 DPM/100cm²
FIXED

SOURCE #: 7272 VALUE: 850DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-2-89 pm	178 + 192	1
3-3-89 am	177 + 193	2
	ASC#1	
3-3-89	32	.3







DIRECT

304 TOTAL DPM

44 READINGS

6.91 DPM/100cm²

24 MAX DPM/100cm²

SMEAR

105 TOTAL DPM

44 SMEARS

2.39 DPM/100cm² AVERAGE

115 MAX DPM/100cm²

PLANT PU AREA GUARD SHACK DESK AM HARKM PANEL CABENET

SURVEYED BY L Black

INST. LUDLUM 2220 # 50069 DET. 4348

SOURCE CK 206-908 BKG. 2

DATE: 3-2-89 SOURCE #: 7272 VALUE: 950 DPM

ASC # 1 SM23600115

CTD. BY Dennis F-P

SOURCE CK. AVG. 35

BKG. 3

DATE: 3-2-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
TOP OF DESK	1	1	4	0
TOP DRAWER	2	1	12	3
BOTTOM LEFT DRAWER	3	4	16	0
BOTTOM RIGHT DRAWER	4	2	8	3
BOTTOM SHELF	5	6	24	3
PANEL OPENINGS				
LEFT TOP	1	2	8	0
BOTTOM	2	4	16	0
SIDE	3	2	8	0
BACK	4	1	4	0
MIDDLE TOP	5	1	4	0
BOTTOM	6	3	12	0
BACK	7	1	4	0
RIGHT TOP	8	1	4	3
BOTTOM	9	0	0	0
BACK	10	0	0	3
SIDE	11	1	4	0

DIRECT 24 MAX DPM/100 cm^2

128 TOTAL DPM

16 READINGS

8.0 DPM/100 cm^2 AVG.

SMEAR 3 MAX DPM/100 cm^2

15 TOTAL DPM

16 SMEARS

.94 DPM/100 cm^2 AVG

W
S N
E

AREA Pu-PLANT GUARD SHACK
FINAL GRID

TYPE OF SURVEY α DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 3-2-89

H.P. SIGNATURE Claude M. Thompson

AUTO. SAMPLE COUNTER#: SN 83600115

SURVEY UNITS DPM/100cm² WGR

1.5cm = 1 Meter

D-DIRECT
S-SMEAR

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

MDA 15.68 DPM/100cm² FIXED

SOURCE#: 7272 VALUE: 950 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE C/M	BKGD C/M
3-2-89	2067208	2
	ASC#1	
3-2-89	35	.3

DIRECT	SMEAR
220 TOTAL DPM	75 TOTAL DPM
34 READINGS	34 SMEARS
6.47 DPM/100cm² AVERAGE	2.21 DPM/100cm² AVERAGE
28 MAX DPM/100cm²	9 MAX DPM/100cm²

N / W / E / S

AREA Pu-PLANT ENTRANCE HALL TYPE OF SURVEY α DIRECT & SMEAR COMPLETION DATE 3-3-89 SURVEY UNITS DPM/100cm²

FINAL GRID TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68 H.P. SIGNATURE Claude M Thompson WAR

SERIAL NUMBER 50069 AUTO. SAMPLE COUNTER #: SA836000115

1.5cm = 1 Meter

D-DIRECT
S-SMEAR

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

7MDA 15.68 DPM/100cm² FIXED

SOURCE #: 7271 VALUE: 9470 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE C/M	BKGD C/M
3-3-89 AM	177 & 193	2
	FSCF1	
3-3-89	32	.3

NORTH WALL

D-4 S-0 | D-8 S-0
D-4 S-0
D-12 S-3 | D-4 S-3

EAST WALL

D-4 S-6 | D-0 S-0
D-0 S-6
D-4 S-6 | D-12 S-6

FLOOR

D-0 S-0 | D-0 S-0
D-8 S-0
D-12 S-6 | D-4 S-0

SOUTH WALL

D-20 S-3 | D-16 S-0
D-4 S-3
D-0 S-0 | D-8 S-0

WEST WALL

D-0 S-3 | D-8 S-3
D-8 S-0
D-4 S-3 | D-0 S-0

CEILING
REMOVED

D- S- | D- S-
D- S-
D- S- | D- S-

DIRECT

144 TOTAL DPM

25 READINGS

5.76 DPM/100cm² AVERAGE

20 MAX DPM/100cm²

SMEARS

45 TOTAL DPM

25 SMEARS

1.80 DPM/100cm² AVERAGE

6 MAX DPM/100cm²

PLANT PH AREA SINK AND CABENIT BREAK ROOM
SURVEYED BY J DUCAN
INST. LUDLUM 2220 S/N 48395 DET. 4368
SOURCE CK 204-183 BKG. 2
DATE: 3-8-89 SOURCE #:7272 VALUE: 850 DPM

ASC # 2 SP 83600108
CTD. BY Dennis Ford
SOURCE CK. AVG. 33
BKG. 1
DATE: 5-3-89

READINGS IN DPH/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
#2 TOP DRAWER INSIDE				
	A	4	16	0
	B	7	28	9
#2 TOP DRAWER OUTSIDE	A	8	32	0
	B	1	4	0
#3 SHELF INSIDE				
TOP	A	3	12	0
	B	5	20	0
BOTTOM				
	A	1	4	3
	B	2	8	0
UNDER SINK				
TOP	A	4	16	3
	B	4	16	6
BOTTOM	A	5	20	0
	B	10	40	0
LEFT	A	3	12	0
	B	4	16	0
RIGHT	A	2	8	0
	B	4	16	0
BACK	A	3	12	3
	B	4	16	0
INSIDE DOOR #6	A	2	8	0
	B	4	16	3
#7 SINK	A	4	16	0
INSIDE SINK	B	2	8	0
	C	5	20	0
	D	7	28	0
	E	1	4	0
	F	3	12	0

PLANT PH AREA SINK & CABINET BREAK ROOM
SURVEYED BY J Ducan
INST. LUDLUM 2220 S/N 48395 DET. 4368
SOURCE CK 204-183 BKG. 2
DATE: 3-9-89 SOURCE #:7272 VALUE: 850 DPM

ASC # 2 SP 83600108
CTD. BY Dennis Ford
SOURCE CK. AVG. 33
BKG. 1
DATE: 5-3-89

READINGS IN DPH/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
#1 CABENIT OUTSIDE				
TOP	A	1	4	0
	B	3	12	3
	C	10	40	3
	D	1	4	0
RIGHT SIDE	A	4	16	0
	B	4	16	3
	C	5	20	0
	D	5	20	6
#4 DOOR LEFT OUTSIDE				
	A	3	12	0
	B	1	4	3
#5 DOOR RIGHT OUTSIDE	A	3	12	0
	B	2	8	0
INSIDE CABENIT				
TOP	A	1	4	0
	B	4	16	0
LEFT	A	4	16	0
	B	2	8	0
RIGHT	A	2	8	0
	B	0	0	0
BACK	A	1	4	3
	B	2	8	0
BOTTOM	A	1	4	0
	B	5	20	0
LEFT DOOR #4	A	3	12	0
	B	1	4	0
RIGHT DOOR #5	A	0	0	0
	B	1	4	0

PLANT PK AREA BROKE ROOM WATER FOUNTAIN

SURVEYED BY D Dixon

INST. LUDLUM 2220 # 48795 DET. 43-68

SOURCE CK 187-170 BKG. 2

DATE: 3-8-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SNP 3600105

CTD. BY [illegible]

SOURCE CK. AVG. 33

BKG. 1

DATE: 5-3-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
WATER FOUNTAIN				
TOP		4	16	0
RIGHT INSIDE	A	4	16	
LEFT INSIDE	B	7	28	
FRONT INSIDE	C	3	12	
	D	6	24	
BOTTOM OUTSIDE	E	8	32	3
COVER				
OUT SIDE	A	5	20	3
	B	8	32	3
	C	4	16	0
	D	3	12	6
	E	6	24	3
INSIDE	1	5	20	
	2	6	24	
	3	6	24	
	4	2	8	
	5	5	20	
DIRECT	SMEAR			
1012 TOTAL DPM	TOTAL DPM		66	
68 READINGS	SMEARS		59	
14.88 DPM/100cm^2 AVG.	DPM/100cm^2 AVG			1.12
40 MAX DPM/100cm^2	MAX DPM/100cm^2			9
MDA = 15.68 dpm/100 cm^2 Fixed				

N / W / E / S

1.5cm = 1 Meter

AREA Pu-PLANT LUNCHROOM

FINAL GRID

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50019

COMPLETION DATE 3-7-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: SN 83600115

SURVEY UNITS DPM/100cm² WGR

1 2 3 4 5 6

D - DIRECT
S - SMEAR
MDA 1568 DPM/100cm² FIXED

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

SOURCE #: 7272 VALUE: 950 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGDS/M
3-6-89	177-204	2
3-6-89	204+191	2
	ASC #1	
3-7-89	29	.3

WALL #1

D-12 S-0	D-16 S-0	D-0 S-0	D-0 S-3
D-0 S-3		D-4 S-0	
D-16 S-6	D-4 S-0	D-8 S-6	D-20 S-3

WALL #2

D-0 S-3
D-12 S-0
D-4 S-0

WALL #3

D-16 S-6
D-4 S-0
D-0 S-0

WALL #4

D-4 S-3		D-0 S-0	D-12 S-0	
	D-16 S-3			D-12 S-0
D-SINK S-		D-4 S-3	D-24 S-3	

D-8 S-0	D-16 S-0	D-12 S-3
	D-0 S-3	
D-4 S-0	D-12 S-3	D-0 S-3

WALL #5

D-0 S-3	D-16 S-0	D-12 S-0	D-16 S-6
D-16 S-0		D-0 S-0	
D-16 S-3	D-8 S-3	D-4 S-0	D-4 S-0

WALL #6

D-0 S-0		D-8 S-0	D-12 S-0	
	D-16 S-0			D-0 S-3
D-12 S-3		D-8 S-0	D-0 S-0	

D-0 S-3	D-0 S-6	D-0 S-6
D-0 S-0		
D-12 S-9		D-0 S-0

DIRECT

420 TOTAL DPM

55 READINGS

7.64 DPM/100cm² AVERAGE

24 MAX DPM/100cm²

SMEAR

99 TOTAL DPM

55 SMEARS

1.80 DPM/100cm² AVERAGE

9 MAX DPM/100cm²

AREA Pu-PLANT LUNCHROOM

FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 3-7-89

H.P. SIGNATURE Claudia Thompson

AUTO. SAMPLE COUNTER #: SN 83600115

SURVEY UNITS DPM/100cm² WAP

N / W / E / S

1.5cm = 1 Meter

D – DIRECT
S – SMEAR

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-7-89 AM	203/197	2
3-7-89	200	2
	ASC #1	
3-7-89	29	.3

			D-16 S-8	D-24 S-6	D-0 S-0		D-16 S-0					D- S-	D- S-		D- S-		D- S-				
				D-24 S-3		D-8 S-3							D- S-			D- S-					
			D-16 S-0	D-20 S-0	D-0 S-0		D-24 S-0					D- S-	D- S-		D- S-		D- S-				
			D-28 S-0	D-20 S-0	D-20 S-0		D-8 S-0					D- S-	D- S-		D- S-		D- S-				
				D-28 S-0		D-12 S-3							D- S-			D- S-					
			D-4 S-3	D-16 S-0	D-24 S-3		D-4 S-6					D- S-	D- S-		D- S-		D- S-				
			D-20 S-0	D-4 S-3	D-0 S-0		D-12 S-3					D- S-	D- S-		D- S-		D- S-				
				D-16 S-3		D-24 S-3							D- S-			D- S-					
			D-0 S-3	D-8 S-0	D-12 S-6		D-16 S-3					D- S-	D- S-		D- S-		D- S-				
					FLOOR									CEILING REMOVED								

DIRECT

420 TOTAL DPM

30 READINGS

14.0 DPM/100cm² AVG.

28 MAX DPM/100cm²

SMEAR

51 TOTAL DPM

30 SMEARS

1.70 DPM/100cm² AVG.

6 MAX DPM/100cm²

AREA Pu-PLANT OFFICE #101

FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

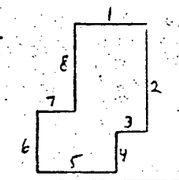
SERIAL NUMBER 50069

COMPLETION DATE 3-8-89

H.P. SIGNATURE Claudia Thompson

AUTO. SAMPLE COUNTER #: 83600115

SURVEY UNITS DPM/100cm² -WAK



N / W / E / S

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-7-89 pm	192 + 213	2
3-8-89 AM	189 + 175	20
3-8-89 pm	180 + 182	1
	ASC #1	
3-8-89	35	13

WALL #1: D-8 S-0; D-16 S-3; D-8 S-3; D-32 S-3; D-16 S-0; D-12 S-9 / D-16 S-3; D-4 S-6; D-24 S-0 / D-24 S-0; D-8 S-3; D-28 S-0; D-4 S-6; D-0 S-3; D-4 S-3

WALL #2: D-0 S-3; D-8 S-3; D-24 S-6; D-8 S-3; D-0 S-6; D-16 S-6 / D-4 S-0; D-0 S-3; D-4 S-0 / D-24 S-0; D-16 S-0; D-4 S-0; D-24 S-0; D-20 S-0; D-12 S-0

WALL #3: D-28 S-0; D-4 S-0 / D-8 S-0 / D-12 S-0; D-4 S-0

WALL #4: D-24 S-3; D-24 S-0 / D-0 S-0 / D-12 S-0; D-36 S-0

WALL #5: D-16 S-0; D-8 S-6; D-16 S-6; D-12 S-0; D-16 S-6; D-16 S-0 / D-4 S-3 / D-12 S-6; D-16 S-0 / D-0 S-0; D-4 S-3; D-12 S-6; D-20 S-3; D-24 S-6; D-8 S-6

WALL #6: D-8 S-3; D-16 S-3; D-4 S-3; D-16 S-0 / D-12 S-6; D-24 S-0 / D-32 S-0; D-4 S-6; D-32 S-0; D-4 S-3

WALL #7: D-16 S-3; D-8 S-0; D-24 S-6; D-0 S-3 / D-12 S-3; D-0 S-9 / D-8 S-0; D-12 S-0; D-8 S-3; D-28 S-0

WALL #8: D-16 S-0; D-20 S-0; D-0 S-0; D-12 S-3 / D-0 S-0; D-16 S-3 / D-36 S-6; D-24 S-0; D-8 S-3; D-16 S-0

DIRECT

1120 TOTAL DPM

85 TOTAL READINGS

13.18 DPM/100 cm² AVERAGE

32 MAX DPM/100 cm²

SMEAR

189 TOTAL DPM

85 SMEARS

2.22 DPM/100 cm² AVG.

9 MAX DPM/100 cm²

AREA Pu-PLANT ROOM 101 — FINAL GRID

TYPE OF SURVEY d DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 56069

COMPLETION DATE 3-9-89

H.P. SIGNATURE Claudia Thigpen

SURVEY UNITS DPM/100cm² WAR

AUTO. SAMPLE COUNTER #: #1 83600115

N / W / E / S

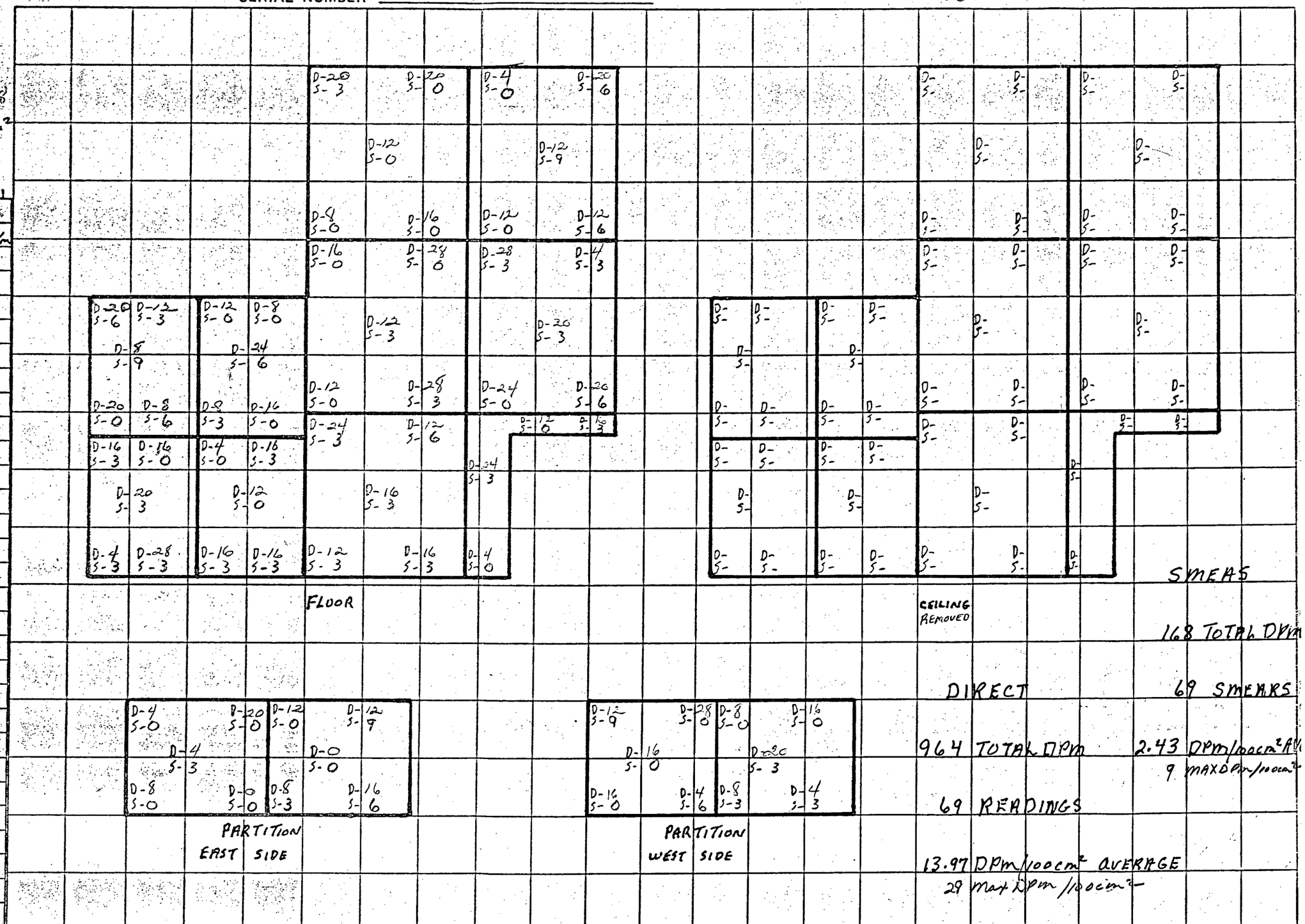
1.5cm = 1 Meter

D - DIRECT
S - SMEAR

F - FLOOR
C - CEILING
N - NORTH WALL MDA-15.68
S - SOUTH WALL DPM/100cm²
E - EAST WALL FIXED
W - WEST WALL

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-8-89 am	179 + 179	2
3-8-89 pm	180 & 182	1
	ASC #1	
3-9-89	36	13



SMEARS

168 TOTAL DPM

69 SMEARS

DIRECT

964 TOTAL DPM 2.43 DPM/100cm² AV

9 MAX DPM/100cm²

69 READINGS

13.97 DPM/100cm² AVERAGE

29 MAX DPM/100cm²

AREA Pu-PLANT ROOM # 102

FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 4-6-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS DPM/100cm² WGR

AUTO. SAMPLE COUNTER #: #2 SN 2220108

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

MDA 11.04 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 550 DPM

INSTRUMENT		
DATE	SOURCE C/m RESPONSE	BKGD C/m
4-5-89	205-217	0
	214-188	1
	ASC #2	
4-6-89	26	.1

NORTH WALL

D-12 S-0 | D-8 S-0 | D-8 S-0 | D-8 S-0
D-16 S-3 | D-12 S-0
D-20 S-0 | D-4 S-3 | D-32 S-3 | D-4 S-3

EAST WALL

D-16 S-0 | D-4 S-3 | D-20 S-0 | D-4 S-0
D-16 S-3 | D-20 S-0
D-0 S-0 | D-8 S-3 | D-12 S-0 | D-0 S-3

FLOOR

D-8 S-0 | D-8 S-6 | D-4 S-0 | D-4 S-3
D-4 S-0 | D-20 S-3
D-0 S-3 | D-12 S-0 | D-12 S-3 | D-4 S-0
D-0 S-3 | D-8 S-6 | D-4 S-6 | D-0 S-0
D-12 S-0 | D-16 S-6
D-0 S-0 | D-8 S-3 | D-0 S-6 | D-16 S-0

SOUTH WALL

D-20 S-0 | D-8 S-3 | D-0 S-3 | D-16 S-0
D-8 S-3 | D-0 S-0
D-4 S-0 | D-8 S-0 | D-0 S-0 | D-4 S-0

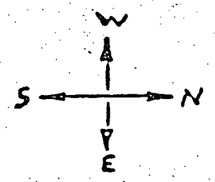
WEST WALL

D-8 S-0 | D-20 S-3 | D-0 S-0 | D-4 S-3
D-12 S-0 | D-0 S-0
D-24 S-0 | D-8 S-0 | D-20 S-0 | D-8 S-3

CEILING REMOVED

DIRECT
536 TOTAL DPM
60 READINGS
8.93 DPM/100cm² AVG.
32 MAX DPM/100cm²

SMEAR
TOTAL DPM 87
SMEARS 60
DPM/100cm² AVG 1.45
MAX DPM/100cm² 6



1cm = 1 METER

AREA Pu-PLANT OFFICE AREA
CEILING BEAMS
FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50669

COMPLETION DATE 4-5-89

H.P. SIGNATURE Charles M Thompson

SURVEY UNITS DPM/100cm² WAR

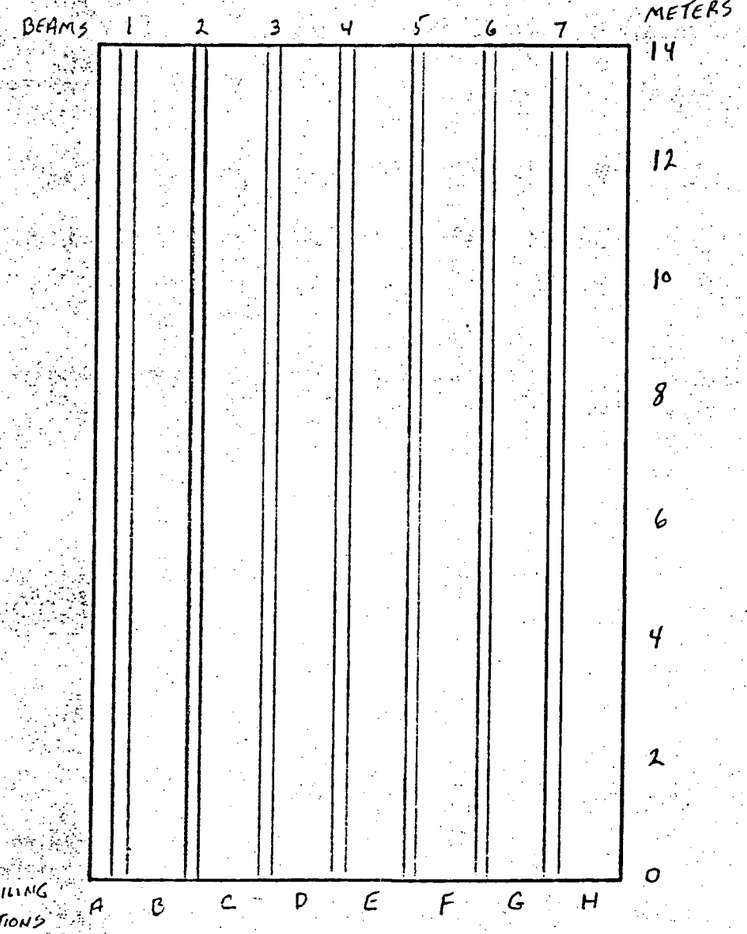
AUTO. SAMPLE COUNTER #: 2 SN 2360108

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-27-89	192-184	1
3-28-89	177-202	2
3-28-89	172-217	0
3-29-89	193-189	1
4-3-89	192-208	1
4-3-89	199-192	0
4-4-89	215-205	1
4-4-89	214-188	1
4-5-89	205-217	0
	ASC #2	
4-5-89	93	.3

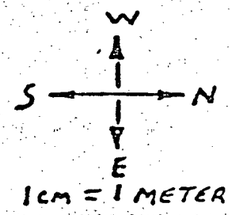


METERS	DIRECT	SMEAR
1 - 0	24	9
2	36	6
4	24	0
6	8	0
8	20	0
10	20	3
12	24	0
14	20	0
2 - 1	22	3
3	40	0
5	28	3
7	12	0
9	16	3
11	32	0
13	8	3
3 - 0	12	3
2	0	3
4	4	0
6	32	0
8	20	0
10	4	3
12	20	0
14	24	3

METERS	DIRECT	SMEAR
4 - 1	12	0
3	8	0
5	24	0
7	20	0
9	16	0
11	20	0
13	20	3
5 - 0	8	0
2	8	0
4	24	0
6	8	0
8	4	0
10	8	1.
12	12	0
14	20	3
6 - 1	8	0
3	12	0
5	4	0
7	24	0
9	12	0
11	8	0
13	8	0
7 - 0	28	0
2	20	0
4	28	0
6	12	3
8	12	0
10	12	3
12	16	0
14	12	0

DIRECT
884 TOTAL DPM
53 READINGS
16.68 DPM/100cm² AVG
40 MAX DPM/100cm²

SMEAR
60 TOTAL DPM
53 SMEARS
1.13 DPM/100cm² AVG
9 MAX DPM/100cm²



1cm = 1 METER

AREA Pu-PLANT OFFICE AREA
CEILING
FINAL GRID

TYPE OF SURVEY ✓ DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 4-5-89

H.P. SIGNATURE Charles M Thompson

SURVEY UNITS DPM/100cm² max

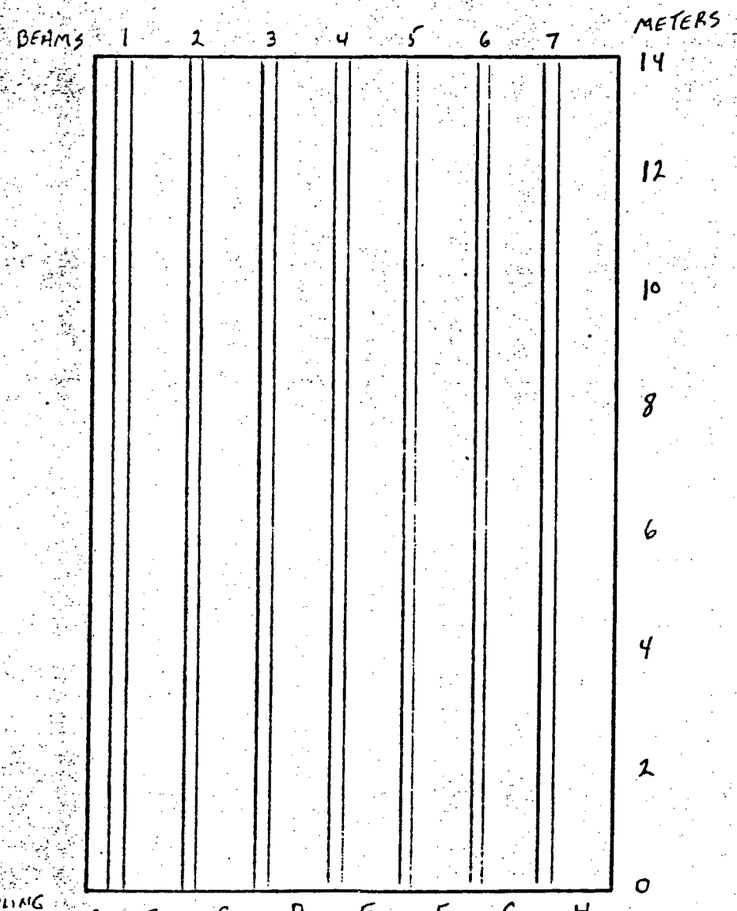
AUTO. SAMPLE COUNTER #: 2 SN 23609108

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

IMDA 15.68 DPM/100cm² FIXED

SOURCE #: 727 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	EXCEL C/M
3-27-89	192-184	1
3-28-89	177-202	2
3-28-89	172-217	0
3-29-89	193-189	1
4-4-89	215-205	1
4-4-89	214-188	1
4-5-89	205-217	0
	ASC #2	
4-5-89	23	.3



DIRECT
800 TOTAL DPM
60 READINGS
13.33 DPM/100cm² AVG
36 Mat DPM/100cm²

SMEAR
TOTAL DPM 99
SMEARS 60
DPM/100cm² AVG 1.65
Mat DPM/100cm² 6

METERS	DIRECT	SMEAR
A- 1	12	7
3	12	6
5	16	3
7	20	0
9	8	3
11	32	0
13	12	0
B- 0	8	0
2	8	0
4	0	0
6	12	0
8	0	0
10	4	6
12	28	3
14	16	3
C- 1	16	3
3	12	0
5	4	0
7	28	3
9	12	6
11	12	3
13	24	3
D- 0	0	0
2	0	0
4	12	3
6	8	0
8	8	0
10	20	0
12	16	0
14	12	0

METERS	DIRECT	SMEAR
E- 1	4	6
3	8	6
5	16	3
7	8	0
9	12	3
11	8	0
13	8	0
F- 0	16	0
2	12	6
4	4	3
6	12	3
8	24	3
10	16	0
12	12	0
14	12	0
G- 1	0	0
3	24	0
5	16	0
7	16	0
9	12	0
11	20	0
13	8	0
H- 0	16	3
2	12	3
4	28	0
6	16	0
8	12	3
10	20	6
12	36	3
14	20	0

AREA Pu-PLANT OFFICE AREA
ATTIC
FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 4-7-89

H.P. SIGNATURE Claude Thompson

SURVEY UNITS DPM/100cm² -WGK

AUTO. SAMPLE COUNTER #: 2 SN 9360108

N
W E
S
1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

MDA 1568 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 8.50 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE C/M	BKGDS C/M
3-30-89	188-193	0-AM
3-30-89	192-205	2-PM
3-31-89	183-207	0-AM
3-31-89	217-186	0-PM
4-6-89	190-176	1-AM
4-6-89	185-184	2-PM
	ASC #2	
4-7-89	26	.1

	DIRECT	SMEAR
1324	TOTAL DPM	177 TOTAL DPM
85	READINGS	85 SMEARS
15.50	DPM/100cm² AVG	2.08 DPM/100cm² AVG
36	MAX DPM/100cm²	9 MAX DPM/100cm²

NORTH WALL

D-24 S-3 | D-20 S-0 | D-12 S-3 | D-16 S-3 | D-13 S-0 | D-24 S-0 | D-12 S-0 | D-32 S-0 | D-20 S-0 | D-8 S-0 | D-8 S-3 | D-0 S-6 | D-16 S-9 | D-16 S-3 | D-12 S-0
D-12 S-3 | | D-20 S-0 | D-24 S-0 | | D-16 S-3 | D-8 S-0 | | D-16 S-0 | D-4 S-3 | | D-4 S-0 | D-0 S-0 | D-12 S-0 |

SOUTH WALL

D-20 S-0 | D-12 S-0 | D-32 S-3 | D-28 S-0 | D-12 S-0 | D-16 S-3 | D-12 S-0 | D-16 S-9 | D-16 S-0 | D-16 S-0 | D-28 S-0 | D-8 S-6 | D-8 S-6
A D-8 S-6 | | B | | | | | | | | | | D-20 S-6
D-28 S-6 | D-16 S-0 | D-12 S-0 | | D-12 S-6 | D-20 S-3 | | D-32 S-0 | D-16 S-0 | | D-24 S-0 | D-28 S-6 | D-28 S-3

EAST WALL

D-12 S-10 | D-16 S-3 | D-16 S-3 | D-4 S-6 | D-4 S-0 | D-8 S-9
A D-8 S-3 | | B D-8 S-9 | | C D-4 S-0 | |
D-20 S-0 | D-16 S-3 | D-8 S-6 | D-8 S-0 | D-8 S-0 | D-12 S-0

BEAM

WEST WALL

D-16 S-3 | D-36 S-3 | D-24 S-3 | D-24 S-0 | D-12 S-3 | D-8 S-0
A D-8 S-3 | | B D-24 S-0 | | C D-32 S-3 |
D-12 S-0 | D-12 S-0 | D-12 S-3 | D-16 S-0 | D-12 S-0 | D-20 S-3

TOP OF EAST WALL BEAM

METERS	DIRECT	SMEAR
0	D-20 S-0	
2	D-36 S-0	
4	D-12 S-3	
6	D-8 S-6	
8	D-8 S-0	

PLANT PU AREA AHU ABOVE LUNCH ROOM
SURVEYED BY R. Hoskins
INST. LUDLUM 2220 # 50057 DET. 43-68
SOURCE CK Pm 196-194 Am 204-214 BKG. 2
DATE: 4-10-89 SOURCE #6498 VALUE: 990 DPM

ASC # 2 SH 9360108
CTD. BY Dennis Ford
SOURCE CK. AVG. 30
BKG. 1
DATE: 4-11-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
AHU ABOVE LUNCH ROOM				
BLOWER	1	5	20	3
	2	1	4	0
	3	1	4	0
	4	9	36	6
	5	8	32	3
FLOOR				
	1	3	12	3
	2	0	0	0
	3	3	12	3
	4	1	4	3
	5	4	16	3
CEILING				
	1	6	24	6
	2	4	16	6
	3	6	24	0
	4	8	32	3
	5	6	24	6
NORTH WALL				
	1	3	12	3
	2	6	24	6
	3	12	48	3
SOUTH WALL				
	1	10	40	6
	2	6	24	3
	3	3	12	0
				0
				0
CONDENSIR				
	1	0	0	3
	2	9	36	0
	3	6	24	0
	4	7	28	0
	5	3	12	0

PLANT PU AREA AHU ABOVE LUNCH ROOM
SURVEYED BY P Hoskins
INST. LUDLUM 2220 # 50057 DET. 43-68
SOURCE CK Pm 196-194 Am 204-214 BKG. 2
DATE: 4-10-89 SOURCE #6498 VALUE: 990 DPM

ASC # 2 SH 9360108
CTD. BY Dennis Ford
SOURCE CK. AVG. 30
BKG. 1
DATE: 4-11-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
EAST WALL				
	1	11	44	3
	2	8	32	3
	3	—	High for Direct RR	0
	4	7	28	3
	5	8	32	0
FILTER COMPARTMENT				
	1	10	40	6
	2	5	20	0
	3	8	32	3
	4	2	8	6
	5	3	12	0
	6	3	12	3
	7	0	0	3
	8	7	28	3
	9	7	28	9

DIRECT 44 Max DPM/100 cm^2
836 TOTAL DPM
39 READINGS
21.44 DPM/100 cm^2 AVG

SMEAR 9 Max DPM/100 cm^2
111 TOTAL DPM
40 SMEAR
2.78 DPM/100 cm^2 AVG

MDA = 15.68 dpm/100 cm^2

AREA Pu-PLANT OFFICE PAER
AIR DUCT

TYPE OF SURVEY & DIRECT + SMEAR
TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4 43-68
SERIAL NUMBER 48395-50069-58313

COMPLETION DATE 3-22-89
H.P. SIGNATURE Claude M Thompson
AUTO. SAMPLE COUNTER #: 1 SN # 2600115

SURVEY UNITS DPM/100cm² WGR

N
W E
S

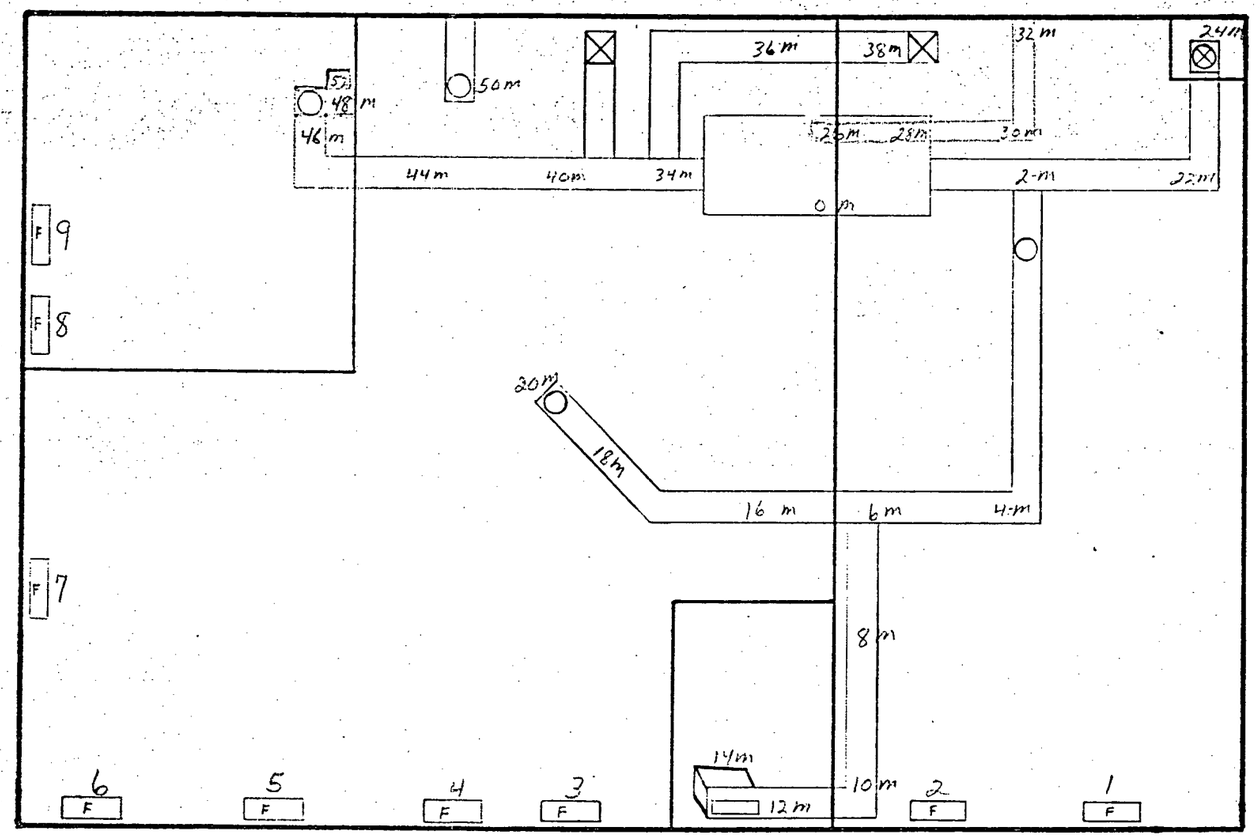
1.5cm = 1METER

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

MDA 27.44 DPM/100cm² FIXED

SOURCE #: 7777 VALUE: 850 DPM

	INSTRUMENT		
	DATE	SOURCE CPM RESPONSE	BKGD CPM
48395	3-1-89	195-197	2
	3-1-89	168-172	1
	3-9-89	178-186	2
	3-8-89	171-187	2
50069	3-13-89	210-211	2
	3-13-89	201-190	0
58313	3-13-89	206-216	2
	3-13-89	179-237	2
52834	3-15-89	230-243	2
	3-15-89	214-232	2
		ASC#1	
	3-14-89	34	.3
	3-22-89	36	.3



SUPPLY OUTLETS
F = FLOOR
RETURN
SUPPLY INLET

DIRECT
2310 TOTAL DPM
163 READINGS
14.26 DPM/100cm² AVG
88 MAX DPM/100cm²

SMEAR
282 TOTAL DPM
162 SMEARS
1.74 DPM/100cm² AVG
6 MAX DPM/100cm²

PLANT PU AREA Floor Supply Outlets Office AREA
SURVEYED BY I Ducan
INST. LUDLUM 2220 #52934 DET. 43-68 43-4
SOURCE CK 241 AVG BKG. 1
DATE: 3-15-89 Source #: 7272 value: 250 DPm

ASC # 15N836CO115
CTD. BY D.
SOURCE CK. AVG. 36
BKG. .3
DATE: 3-22-89

READINGS IN DPM/100 cm²

CTS X 6
CTS X 7

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
OFFICE SUPPLY OUTLETS				
#1 Lunch Room	NORTH	7	42	0
	EAST	8	48	0
	SOUTH	0	0	3
	WEST	6	36	3
#2 LUNCH ROOM				
	NORTH	3	18	6
	EAST	4	24	3
	SOUTH	2	12	0
	WEST	10	60	3
#3 MAIN OFFICE				
	NORTH	5	30	0
	EAST	3	18	0
	SOUTH	5	30	0
	WEST	2	12	0
#4 MAIN OFFICE				
	NORTH	5	30	0
	EAST	2	12	0
	SOUTH	5	30	3
	WEST	2	12	0
#5 mickey OFFICE				
	NORTH	5	30	0
	EAST	7	42	6
	SOUTH	4	24	3
	WEST	2	6	6
#6 mickey OFFICE				
	NORTH	0	0	3
	EAST	3	18	3
	SOUTH	5	30	3
	WEST	1	6	0

PLANT PU AREA Floor Supply Outlet Office AREA
SURVEYED BY I Ducan
INST. LUDLUM 2220 #52934 DET. 43-68
SOURCE CK 241 AVG BKG. 1
DATE: 3-15-89 Source #: 7272 value: 250 DPm

ASC # 15N836CO115
CTD. BY D.
SOURCE CK. AVG. 36
BKG. .3
DATE: 3-22-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
#7 MICKEY OFFICE				
	NORTH	0	0	3
CTS X6	EAST	3	18	3
	SOUTH	5	30	3
	WEST	1	6	0
#8 WAYNES OFFICE	NORTH	3	21	6
CTS X7	EAST	1	7	3
	SOUTH	4	28	0
	WEST	0	0	3
#9 WAYNES OFFICE				
	NORTH	1	7	3
CTS X7	EAST	1	7	6
	SOUTH	0	0	3
	WEST	2	14	0

PLANT PU AREA OFFICE AREA AIR DUCT

SURVEYED BY Jim Hartley [illegible]

INST. LUDLUM 2220 # 58313 [illegible] 52669 DET. 43-4 43-68

SOURCE CK 210 AVG BKG. 2

DATE: 3-14-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1SA9360115

CTD. BY Dennis Ford

SOURCE CK. AVG. 34

BKG. .3

DATE: 7-22-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
0 METERS AIR DUCT	BOTTOM	3	12	0
	TOP	22	88	6
	NORTH	7	28	6
	SOUTH	4	16	3
2 METERS				
	TOP	5	20	0
	BOTTOM	2	8	3
	NORTH	0	0	0
	SOUTH	2	8	0
4 METERS				
	TOP	1	4	3
	BOTTOM	1	4	0
	NORTH	3	12	0
	SOUTH	3	12	3
6 METERS	TOP	5	20	0
	BOTTOM	4	16	6
	NORTH	1	4	3
	SOUTH	5	20	6
8 METERS	TOP	6	24	3
	BOTTOM	3	12	0
	NORTH	1	4	3
	SOUTH	3	12	3
10 METERS	TOP	4	16	6
	BOTTOM	3	12	0
	NORTH	1	4	3
	SOUTH	6	24	0
12 METERS	TOP	4	16	0
	BOTTOM	1	4	0
	NORTH	1	4	3
	SOUTH	0	0	3

PLANT PU AREA AIR DUCT OFFICE AREA

SURVEYED BY [illegible]

INST. LUDLUM 2220 # 50669 DET. [illegible]

SOURCE CK [illegible] BKG.

DATE: 4-6-89 SOURCE #: [illegible] VALUE: [illegible] DPM

ASC # [illegible]

CTD. BY [illegible]

SOURCE CK. AVG. 36

BKG. [illegible]

DATE: [illegible]

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION			DIRECT CPM	DPM	SMEAR
Rm 102 WAYNES OFFICE Exhaust Duct					
	SOUTH	OUTSIDE	8	32	0
		INSIDE	3	12	3
	EAST	INSIDE	16	64	3
	NORTH	INSIDE	19	72	0
		OUTSIDE	7	28	3
	WEST	INSIDE	12	48	3
		OUTSIDE	4	16	0

PLANT PU AREA OFFICE AREA
SURVEYED BY J Handly AIR DUCT
INST. LUDLUM 2220 # 58313 / 48395 50069 DET. 43-4 / 43-68
SOURCE CK 210 BKG. 2
DATE: 3-14-99 SOURCE #: 7272 VALUE: 650 DPM

ASC # 1SP 82100115
CTD. BY Dennis Ford
SOURCE CK. AVG. 34
BKG. .3
DATE: 2-22-99

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
14 METERS				
	EAST	5	20	0
	WEST	0	0	0
	NORTH	1	4	0
	SOUTH	3	12	6
16 METERS	TOP	5	20	3
	BOTTOM	0	0	0
	NORTH	0	0	0
	SOUTH	5	20	0
18 METERS				
	TOP	4	16	0
	BOTTOM	0	0	0
	NORTH	2	8	3
	SOUTH	2	8	0
20 METERS ROUND DUCT				
INSIDE	EAST	7	49	0
INST # 58313 CTS X7	SOUTH	4	28	0
	WEST	4	28	0
	NORTH	5	35	0
20 METERS ROUND DUCT				
OUTSIDE	EAST	1	7	3
INST # 58313 CTS X7	SOUTH	1	7	0
	WEST	2	14	0
	NORTH	0	0	0
22 METERS				
	NORTH	0	0	0
	SOUTH	0	0	3
	EAST	0	0	0
	TOP	0	0	6
	BOTTOM	0	0	0

PLANT PU AREA OFFICE AREA
SURVEYED BY J Handly AIR DUCT
INST. LUDLUM 2220 # 48395 / 58313 50069 DET. 43-4 / 43-68
SOURCE CK 210 BKG. 2
DATE: 3-14-99 SOURCE #: 7272 VALUE: 650 DPM

ASC # 1SH 836001115
CTD. BY Dennis Ford
SOURCE CK. AVG. 34
BKG. 3
DATE: 2-22-99

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
24 METERS	TOP	1	4	0
	BOTTOM	0	0	6
	EAST	0	0	6
	WEST	0	0	0
	SOUTH	0	0	0
26 METERS-ROUND DUCT				
INST # 58313 CTS X7	BOTTOM	0	0	0
	NORTH	1	7	3
	WEST	0	0	0
	SOUTH	6	42	0
28 METERS ROUND DUCT				
INST # 58313 CTS X7	BOTTOM	1	7	0
	NORTH	0	0	3
	SOUTH	0	0	0
	TOP	8	56	0
30 METERS				
ROUND DUCT	TOP	5	35	0
Inst # 58313 CTS X7	BOTTOM	0	0	3
	NORTH	0	0	0
	SOUTH	4	28	0
32 METERS	TOP	0	0	0
ROUND DUCT	BOTTOM	0	0	0
Inst # 58313 CTS X7	EAST	0	0	0
	WEST	0	0	3
34 METERS				
	BOTTOM	10	40	0
	EAST	0	0	3
	WEST	0	0	0
	TOP	0	0	3

PLANT PU AREA OFFICE AREA AIR DUCT
SURVEYED BY J. Handley
INST. LUDLUM 2220 # 48395 / 58313 / 50069 DET. 43-4 / 43-69
SOURCE CK 210 BKG. 2
DATE: 3-14-89 Source #: 7272 VALUE: 850 DPM

ASC # 1st 83600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 34
BKG. .3
DATE: 3-22-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SHEAR
36 METERS				
	TOP	0	0	0
	BOTTOM	5	20	0
	SOUTH	2	8	0
38 METERS				
	TOP	5	20	3
	EAST	0	0	0
	SOUTH	0	0	6
	WEST	4	16	6
40 METERS				
	TOP	3	12	3
	BOTTOM	2	8	0
	NORTH	1	4	0
	SOUTH	0	0	3
42 METERS				
	TOP	1	4	0
	BOTTOM	0	0	0
	EAST	1	4	3
	WEST	0	0	3
44 METERS				
	TOP	5	20	0
	BOTTOM	0	0	0
	NORTH	0	0	6
	SOUTH	0	0	0
46 METERS				
	TOP	5	20	0
	BOTTOM	0	0	0
	EAST	0	0	3
	WEST	2	8	0

PLANT PU AREA OFFICE AREA AIR DUCT
SURVEYED BY J. Handley
INST. LUDLUM 2220 # 48395 / 50069 / 58313 DET. 43-4 / 43-69
SOURCE CK 210 BKG. 2
DATE: 3-14-89 Source #: 7272 VALUE: 850 DPM

ASC # 1st 83600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 34
BKG. .3
DATE: 3-22-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SHEAR
48 METERS	TOP	0	0	3
	NORTH	0	0	3
	EAST	0	0	6
	SOUTH	0	0	3
	WEST	0	0	0
50 METERS ROUND DUCT				
Inst # 58313 INSIDE	SOUTH	1	7	3
CTS X7	EAST	—	—	—
	WEST	—	—	—
	NORTH	3	21	0
50 METERS ROUND DUCT	SOUTH	0	0	3
Inst # 58313 OUTSIDE	EAST	0	0	3
CTS X7	WEST	0	0	0
	NORTH	0	0	3
52 METERS OUTSIDE				
	NORTH	7	28	3
	SOUTH	8	32	0
	WEST	4	16	0
52 METERS				
INSIDE	NORTH	18	72	0
	SOUTH	3	12	3
	EAST	16	64	3
	WEST	12	48	3

PLANT PU AREA OFFICE AREA WATER LINES FOR AHU

SURVEYED BY Lin H

INST. LUDLUM 2220 # 58313 DET. 43-4

SOURCE CK 187-199 BKG. 3

DATE: 3-6-89 - 3-14-89 SOURCE #: 7772 VALUE: 850 DPM

ASC # 1 SN 93600115

CTD. BY RHM

SOURCE CK. AVG. 36

BKG. .3

DATE: 3-13-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
METERS LINE #1 CTSX7				
0-m	TOP	3	21	9
0-m	EAST	0	0	
2-m	TOP	6	42	6
	BOTTOM	0	0	
4-m	TOP	2	14	3
	BOTTOM	2	14	
6-m	TOP	0	0	0
	BOTTOM	0	0	0
8-m	TOP	2	14	6
	BOTTOM	0	0	6
10-m	TOP	2	14	0
	BOTTOM	2	14	3
12 m	TOP	1	7	3
	BOTTOM	0	0	9
LINE #2				
0-m	TOP	5	35	6
	BOTTOM	0	0	0
2-m	TOP	6	42	0
	BOTTOM	0	0	3
4-m	TOP	6	42	3
	BOTTOM	0	0	3
6-m	TOP	2	14	0
	BOTTOM	1	7	0
7-m	TOP	2	14	6
	BOTTOM	2	14	0
8-m	TOP	1	7	0
	BOTTOM	3	21	3
10-m	TOP	1	7	0
	BOTTOM	1	7	0
12-m	TOP	4	28	0
	BOTTOM	0	0	0
14-m	TOP	4	28	3
	BOTTOM	7	49	6

PLANT PU AREA OFFICE AREA WATER LINES FOR AHU

SURVEYED BY Lin H

INST. LUDLUM 2220 # 58313 DET. 43-4

SOURCE CK 187-199 BKG. 3

DATE: 3-6-89 SOURCE #: 7772 VALUE: 850 DPM

ASC # 1 SN 93600115

CTD. BY RHM

SOURCE CK. AVG. 36

BKG. .3

DATE: 3-15-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
ALSO LINE #2				
16-m	TOP	8	56	3
	BOTTOM	6	42	0
18-m	TOP	1	7	3
	BOTTOM	0	0	0
20-m	TOP	2	14	3
	BOTTOM	2	14	3
0-m LINE #3	TOP	2	14	3
	BOTTOM	2	14	0
2-m	TOP	5	35	6
	BOTTOM	0	0	0
4-m	TOP	3	21	3
	BOTTOM	3	21	3
6-m	TOP	4	28	0
	BOTTOM	0	0	9
5-m	TOP	1	7	0
	BOTTOM	0	0	0
8-m	TOP	1	7	0
	BOTTOM	2	14	0
10-m	TOP	1	7	0
	BOTTOM	1	7	0
12-m	TOP	2	14	0
	BOTTOM	2	14	0
14-m	TOP	6	42	3
	BOTTOM	3	21	0
16-m	TOP	5	35	0
	BOTTOM	1	7	3
18-m	TOP	2	14	0
	BOTTOM	0	0	0
20-m	TOP	1	7	3
	BOTTOM	1	7	6

PLANT RU AREA OFFICE AREA WATER
SURVEYED BY J Hamlin LINES FOR RHM
INST. LUDLUM 2220 # 59313 DET. 43-4
SOURCE CK 187-199 BKG. 3
DATE: 3-6-89 - 3-14-89 SOURCE #: 7272 VALUE: 854 DPM

ASC 0 1SM93600115
CTD. BY RHM
SOURCE CK. AVG. 36
BKG. 3
DATE: 3-15-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
LINE #4				
0-M	TOP	5	35	3
	BOTTOM	0	0	
2-M	TOP	6	42	6
	BOTTOM	0	0	
4-M	TOP	7	49	3
	BOTTOM	0	0	
6-M	TOP	1	7	6
	BOTTOM	1	7	6
8-M	TOP	1	7	0
	BOTTOM	0	0	0
10-M	TOP	2	14	3
	BOTTOM	0	0	3
12-M	TOP	1	7	0
	BOTTOM	0	0	3
0-M LINE #5	TOP	0	0	6
	BOTTOM	4	28	
2-M	TOP	0	0	3
	BOTTOM	4	28	
4-M	TOP	2	14	0
	BOTTOM	1	7	3
6-M	TOP	4	28	0
	BOTTOM	0	0	0
8-M	TOP	1	7	3
	BOTTOM	0	0	10
10-M	TOP	1	7	6
	BOTTOM	1	7	3
12-M	TOP	3	21	3
	BOTTOM	0	0	0
LINE #6				
0-M	TOP	8	56	0
	BOTTOM	0	0	3
2-M	TOP	3	21	0
	BOTTOM	1	7	0

PLANT RU AREA OFFICE AREA WATER
SURVEYED BY J Hamlin LINES FOR RHM
INST. LUDLUM 2220 # 59313 DET. 43-4
SOURCE CK 187-199 BKG. 3
DATE: 3-6-89 3-14-89 SOURCE #: VALUE: DPM

ASC 0 1SM93600115
CTD. BY RHM
SOURCE CK. AVG. 36
BKG. 3
DATE: 3-15-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
METERS LINE #6				
4-M	TOP	1	7	0
	BOTTOM	1	7	3
LINE #7				
0-M	TOP	5	35	0
	BOTTOM	6	42	9
1-M	TOP	9	63	6
	BOTTOM	4	28	3
LINE #8				
0-M	TOP	4	28	0
	BOTTOM	4	28	3
2-M	TOP	5	35	3
	BOTTOM	1	7	0
4-M	TOP	7	49	3
	BOTTOM	2	14	3

AREA Pu-PLANT OFFICE AREA
WATER LINES FOR A.H.U.

TYPE OF SURVEY ✓ DIRECT ✓ SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4

SERIAL NUMBER 58313

COMPLETION DATE 3-15-89

H.P. SIGNATURE Claudia Thompson

AUTO. SAMPLE COUNTER#: SN: 193603115

SURVEY UNITS DPM/100cm² WGA

N
W E
S

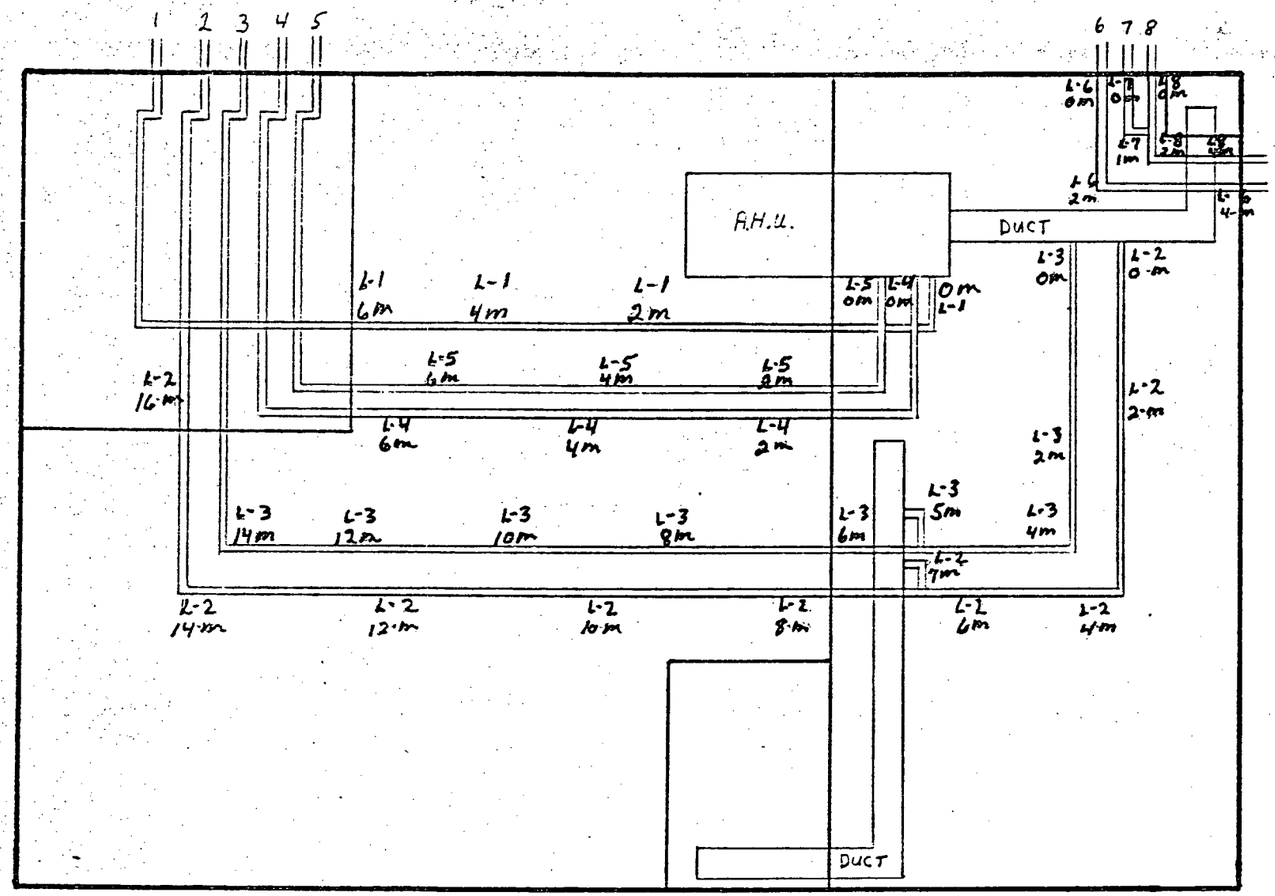
1.5cm = 1METER

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

MDA 33.61 DPM/100cm² FIXED

SOURCE#: 7272 VALUE: 850DPM

INSTRUMENT		
DATE	SOURCE CPM RESPONSE	EXCOR CPM
3-6-89	183-200	2
3-6-89	207-192	2
3-8-89	187-195	3
3-8-89	201-229	2
3-9-89	179-208	2
3-9-89	180-201	2
3-13-89	206-216	2
3-13-89	192-237	2
3-14-89	207-213	2
3-14-89	188-193	1
	ASC#1	
3-10-89	36	3
3-15-89	34	3



DIRECT
1666 TOTAL DPM
106 TOTAL READINGS
15.72 DPM/100cm² AVG
63 MAX DPM/100cm²

SMEAR
219 TOTAL DPM
98 SMEARS
2.23 DPM/100cm² AVG
9 MAX DPM/100cm²

AREA Pu-PLANT MENS CHANGE Room TYPE OF SURVEY d DIRECT & SMEAR COMPLETION DATE 5-15-89 SURVEY UNITS DPM/100cm² WAR

FINAL GRID TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68 H.P. SIGNATURE Claude M Thompson

SERIAL NUMBER 50629 AUTO. SAMPLE COUNTER #: 2 SN 83600108

N / W / E / S

1.5cm = 1 Meter

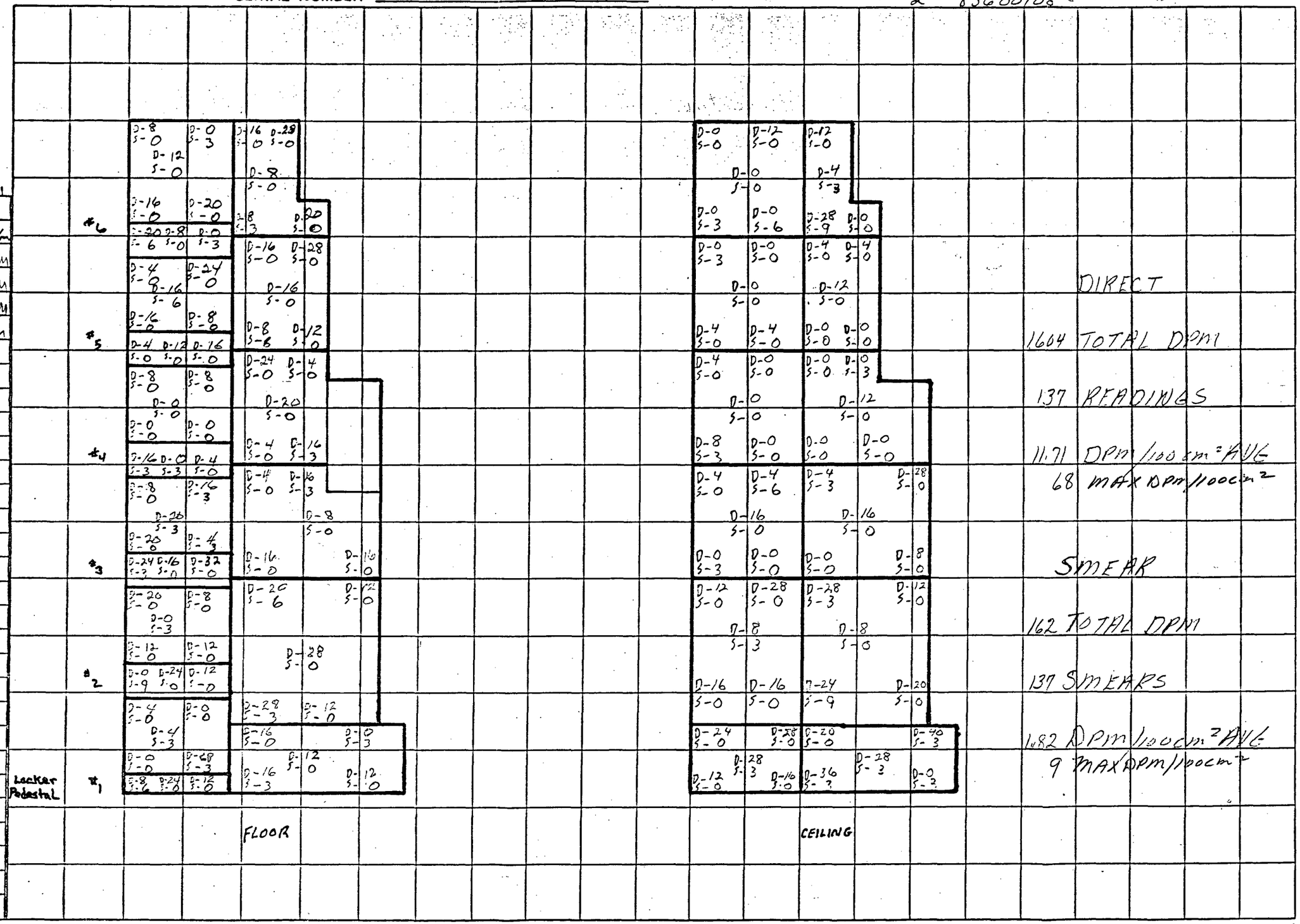
D – DIRECT
S – SMEAR

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

MDA = 22.17 DPM/100cm²

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
5/11/89	211/207	4 PM
5/5/89	203/225	1 AM
5/12/89	198/213	2 AM
	212/202	1 PM
	ASC#2	
5-15-89	30	3



DIRECT
1604 TOTAL DPM
137 READINGS
11.71 DPM/100cm² AVG
68 MAX DPM/100cm²

SMEAR
162 TOTAL DPM
137 SMEARS
1.82 DPM/100cm² AVG
9 MAX DPM/100cm²

N / W / E / S

1.5cm = 1 Meter

AREA Pu-PLANT
MENS CHANGE ROOM
FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

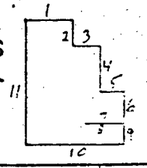
TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50057

COMPLETION DATE 3-21-89

H.P. SIGNATURE Charles M Thompson

SURVEY UNITS DPM/100cm² WAN



D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm²
FIXED

SOURCE #: 649 VALUE: 890 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-17-89	185-199	1
3-17-89	219-199	2
3-20-89	231-203	1
	ASC #1	
3-21-89	28	.3

D-0 S-3 | D-20 S-3 | D-16 S-3 | D-12 S-3 | D-16 S-0 | D-0 S-0 | D-16 S-6 | D-7 S-0 | D-16 S-0 D-8 S-0 | D-20 S-0 | D-8 S-0 D-8 S-0 | D-16 S-0 | D-20 S-0 | D-20 S-0 | D-4 S-0

D-24 S-0 | D-16 S-6 | D-12 S-3 | D-12 S-0 | SHOWERS | D-8 S-0 | D-8 S-0

D-16 S-0 | D-8 S-0 | D-8 S-0 D-36 S-0 | D-16 S-0 | D-32 S-0 | D-8 S-0 D-20 S-0 | D-24 S-0 | D-14 S-0 | D-8 S-0 | D-16 S-6

WALL #1 | WALL #2 | WALL #3+4 | WALL #5+6

D-12 S-0 D-8 S-3 | D-24 S-0 | D-12 S-6 | D-200 S-0 D-8 S-3 | D-24 S-3 | D-16 S-3 | D-12 S-3 | D-24 S-0

D-40 S-3 | D-12 S-3 | D-4 S-0 | D-36 S-3 | D-96 S-0

D-8 S-6 D-28 S-3 | D-16 S-0 | D-20 S-0 | D-24 S-0 D-20 S-0 | D-72 S-0 | D-36 S-3 | D-16 S-6 | D-56 S-9

WALL #7 | WALL #8 | WALL #9 | WALL #10

DIRECT

1844 TOTAL DPM

90 READINGS

20.49 DPM/100cm² AVG.

96 MAX DPM/100cm²

SMEAR

D-20 S-3 | D-24 S-3 | D-24 S-6 | D-16 S-0 | D-24 S-0 | D-28 S-0 | D-28 S-3 | D-12 S-0 | D-24 S-0 | D-12 S-0 | D-20 S-0 | D-8 S-3

D-24 S-6 | D-48 S-12 | D-32 S-3 | D-12 S-0 | D-12 S-3 | D-24 S-0

D-24 S-0 | D-12 S-3 | D-12 S-3 | D-32 S-0 | D-24 S-3 | D-20 S-0 | D-16 S-0 | D-24 S-0 | D-36 S-0 | D-36 S-0 | D-0 S-6 | D-72 S-0

WALL #11

168 TOTAL DPM

90 SMEARS

1.87 DPM/100cm² AVG.

12 MAX DPM/100cm²

AREA Pu-PLANT MENS CHANGE ROOM
SOUTH SHOWER

TYPE OF SURVEY ∝ DIRECT + SMEAR

COMPLETION DATE 5-15-89

SURVEY UNITS DPM/100cm² WGK

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4 43-68

H.P. SIGNATURE Claude M. Thompson #1

SERIAL NUMBER 37807 (43-68) – 58313 (43-4)

AUTO. SAMPLE COUNTER #: 83600115

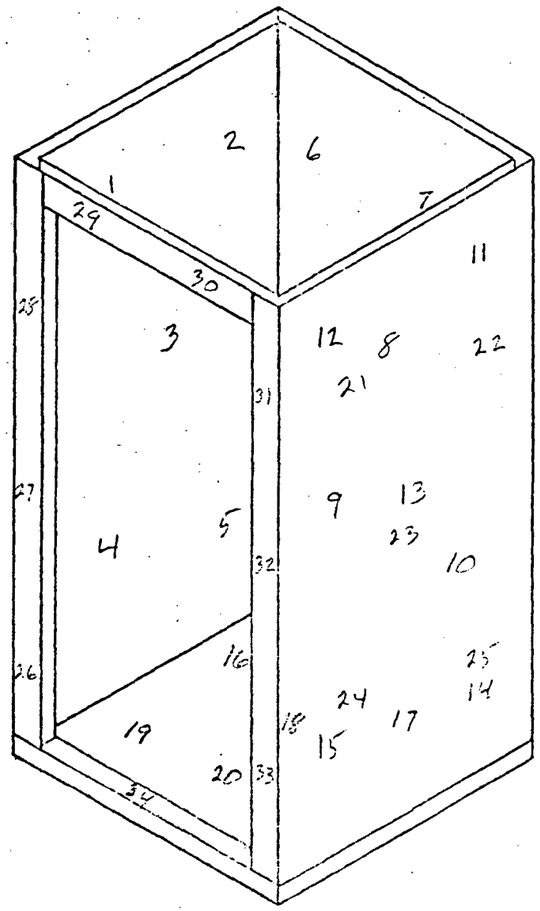
N E W S

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

MDA = 23.52 DPM/100cm²
FIXED

SOURCE #: 6 8 (7272) IC VALUE: 1078 (850) DPM

INSTRUMENT			
DATE	SOURCE C/M RESPONSE	BKGD C/M	
5-12-89	262-248	0	37807
5-12-89	219-211	2	58313
	ASC #1		
5-15-89	34	.2	



DIRECT
736 TOTAL DPM
34 READINGS
21.65 DPM/100cm² AVG
68 MDA DPM/100cm²

SMEAR
39 TOTAL DPM
34 SMEARS
1.15 DPM/100cm² AVG
6 MDA DPM/100cm²

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
INSIDE NORTH WALL		1	1	8	6
		2	0	0	0
		3	8	32	3
		4	3	12	0
		5	3	12	3
EAST WALL		6	4	16	0
		7	4	16	6
		8	6	24	0
		9	3	12	0
		10	3	12	0
SOUTH WALL		11	7	28	0
		12	2	8	0
		13	4	16	0
		14	5	20	3
		15	3	12	3
FLOOR		16	13	52	0
		17	11	44	0
		18	7	28	0
		19	17	68	0
		20	9	36	0
OUTSIDE SOUTH WALL		21	3	12	3
		22	4	16	0
		23	4	16	0
		24	7	28	6
		25	4	16	0
FRONT FRAME		26	4	16	0
		27	5	20	0
		28	2	8	3
	X6	29	2	8	0
	X6	30	14	56	3
		31	2	8	0
		32	5	20	0
		33	5	20	0
	X6	34	9	36	0

N E W S

AREA Pu-PLANT MENS CHANGE ROOM NORTH SHOWER

TYPE OF SURVEY α DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4 43-68 43-68

SERIAL NUMBER 37807 - 58313 - 50069

COMPLETION DATE 5-15-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS DPM/100cm² WAR

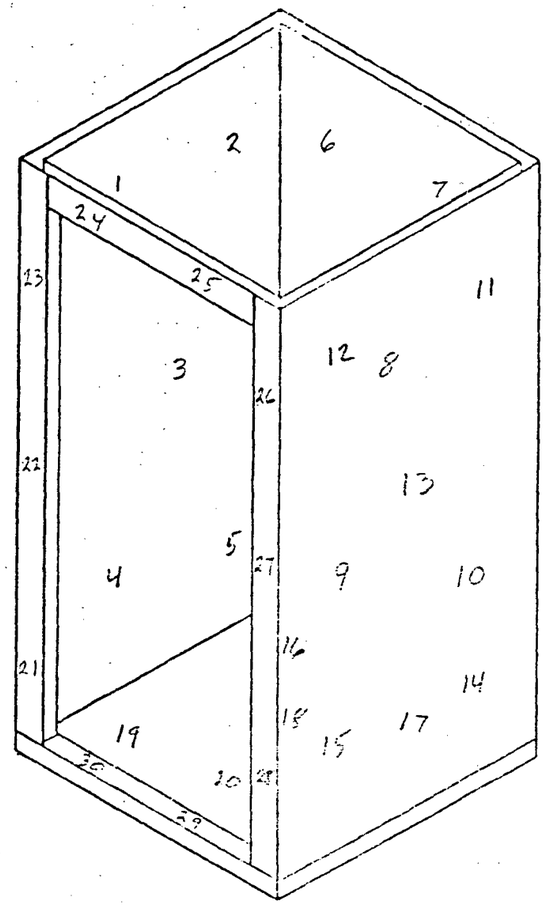
AUTO. SAMPLE COUNTER #2: 83600105

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

MDA 2352 DPM/100cm² FIXED

SOURCE #: 6816 7272 VALUE: 1078 850 DPM

INSTRUMENT			
DATE	SOURCE C/M RESPONSE	BKGD C/M	
5-12-89	219-211	2	58313
5-12-89	[illegible]	0	37807
5-15-89	203-182	2	50069
5-15-89	219 211	2	58313
	ASC #2		
5-15-89	30	.3	



DIRECT
670 TOTAL DPM
30 READINGS
22.33 DPM/100cm² AVG
90 Max DPM/100cm²

SMEAR
57 TOTAL DPM
30 SMEARS
1.9 DPM/100cm² AVG
9 Max DPM/100cm²

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
INSIDE	NORTH WALL	1	3	12	3
		2	6	24	0
		3	2	8	0
		4	8	32	0
		5	3	12	0
	EAST WALL	6	4	16	0
		7	8	32	3
		8	4	16	0
		9	2	8	0
		10	6	24	0
	SOUTH WALL	11	3	12	3
		12	9	36	9
		13	5	20	0
		14	2	8	0
		15	6	24	0
	FLOOR	16	4	16	0
		17	11	44	0
		18	8	32	0
		19	1	4	6
		20	11	44	6
OUTSIDE	FRONT FRAME	21	1	4	0
		22	1	4	3
		23	6	24	6
	x6	24	1	6	0
	x6	25	4	24	0
		26	0	0	6
		27	3	12	3
		28	7	28	6
	x6	29	9	54	3
	x6	30	15	90	0

PLANT Pu AREA MENS CHANGE ROOM TOILET STALLS

SURVEYED BY D.D.

INST. LUDLUM 2220 # 37807 DET. 43-68

SOURCE CK 237-249 BKG. 2

DATE: 5-17-89 SOURCE # 0816 VALUE: 107 dpm

ASC # 2 83600108

CTD. BY D Ford

SOURCE CK. AVG. 32

BKG. .2

DATE: 5-18-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
SOUTH STALL INSIDE NORTH WALL	1	3	12	3
	2	3	12	6
	3	0	0	0
	4	0	0	6
	5	2	8	0
WEST WALL	6	6	24	0
	7	2	8	0
	8	4	16	6
	9	3	12	3
	10	3	12	3
OUTSIDE WEST WALL	11	5	20	0
	12	0	0	3
	13	5	20	6
	14	1	4	0
	15	1	4	3
NORTH STALL INSIDE SOUTH WALL	16	0	0	3
	17	2	8	0
	18	1	4	6
	19	0	0	3
	20	3	12	3
WEST WALL	21	2	8	3
	22	4	16	3
	23	0	0	0
	24	2	8	3
	25	1	4	3
NORTH WALL	26	0	0	3
	27	1	4	0
	28	0	0	0
	29	1	4	0
	30	1	4	0

PLANT Pu AREA MENS CHANGE ROOM TOILET STALLS

SURVEYED BY E.W.

INST. LUDLUM 2220 # 37807 DET. 43-68

SOURCE CK 284-253 BKG. 2

DATE: 5-17-89 SOURCE # 6816 VALUE: 10780 dpm

ASC # 2 83600108

CTD. BY D. Ford

SOURCE CK. AVG. 32

BKG. .2

DATE: 5-18-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
NORTH STALL OUTSIDE WEST WALL	31	0	0	9
	32	1	4	6
	33	3	12	6
	34	3	12	3
	35	1	4	3
NORTH WALL	36	1	4	3
	37	1	4	0
	38	2	8	0
	39	1	4	6
	40	1	4	0
FRONT FRAME	41	1	4	3
	42	1	4	6
	43	0	0	0
	44	0	0	6
	45	4	16	0
	46	0	0	0
	47	0	0	0
	48	1	4	0
	49	0	0	0

E S N W

AREA Pu-PLANT MENS CHANGE ROOM
TOILET STALLS

TYPE OF SURVEY ∝ DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 37807

COMPLETION DATE 5-18-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: #2 83600108

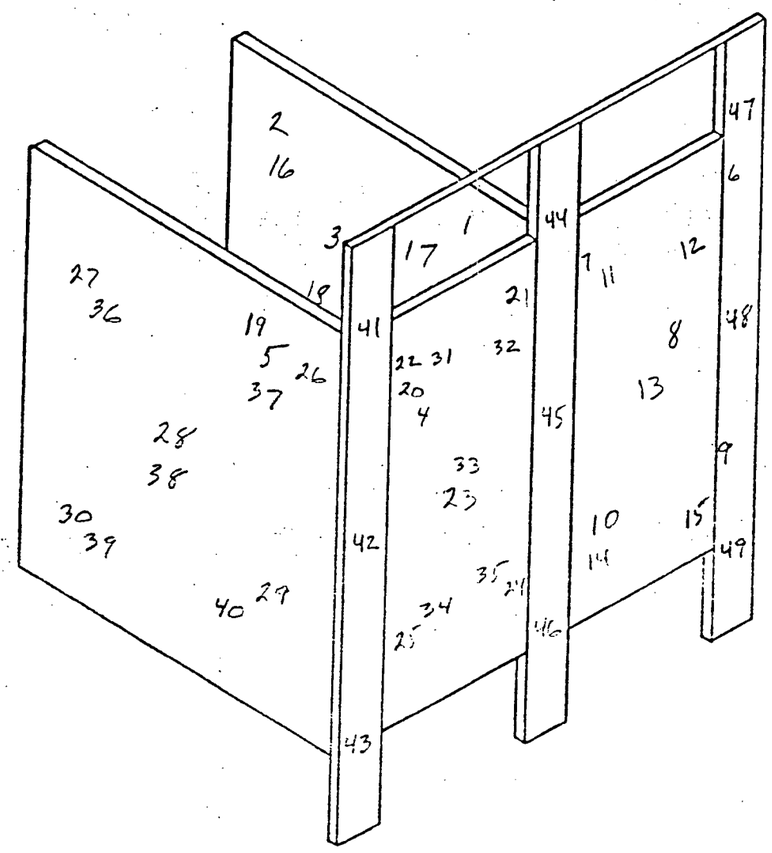
SURVEY UNITS DPM/100cm²

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 1816 VALUE: 1078 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
5-16-89	234-246	2
5-16-89	243-252	1
5-17-89	237-249	2
5-17-89	284-253	2
	ASC #2	
5-18-89	32	2



DIRECT
308 TOTAL DPM
49 READINGS
629 DPM/100cm² AVG
24 DPM/100cm² MAX

SMEAR
120 TOTAL DPM
49 SMEARS
2.45 DPM/100cm² AVG
9 DPM/100cm² MAX

N / W / E / S

1.5cm = 1 Meter

AREA Pu-PLANT
MCR AIRLOCK
FINAL GRID

TYPE OF SURVEY d DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50057/50069

COMPLETION DATE 5-15-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS DPM/100cm² WAR

AUTO. SAMPLE COUNTER #: #2 83600108 #1 831.00115

D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 6498 7272 VALUE: 890 950 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-15-89 AM	217 & 226	1
3-15-89 PM	186 & 199	2
5-12-89	192-202	1
	ASC #2	
5-15-89	30	.3
3-15-89	ASC #1	
	314	3

NORTH WALL: D-32 S-3; D-16 S-3; D-20 S-0; D-36 S-0; D-16 S-0

EAST WALL: D-28 S-3; D-12 S-0; D-26 S-3; D-12 S-6; D-40 S-0

FLOOR: D-0 S-0; D-16 S-0; D-8 S-6; D-60 S-0; D-20 S-0

SOUTH WALL: D-12 S-0; D-28 S-6; D-40 S-3; D-36 S-0; D-4 S-0

WEST WALL: D-36 S-3; D-28 S-3; D-20 S-3; D-24 S-3; D-28 S-3

CEILING: D-16 S-3; D-16 S-3; D-8 S-9; D-0 S-3; D-8 S-0

DIRECT

632 TOTAL DPM

30 READINGS

21.07 DPM/100cm² AVG.

60 MAX DPM/100cm²

SMEAR

66 TOTAL DPM

30 SMEARS

2.2 DPM/100cm² AVG

6 MAX DPM/100cm²

AREA Pu-PLANT
WOMENS CHANGE ROOM
FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 5-15-89

H.P. SIGNATURE Hamilton Thompson

AUTO. SAMPLE COUNTER #: 1 SN 83600115

SURVEY UNITS DPM/100cm² WAR

N
W E
S

1.5cm = 1 Meter

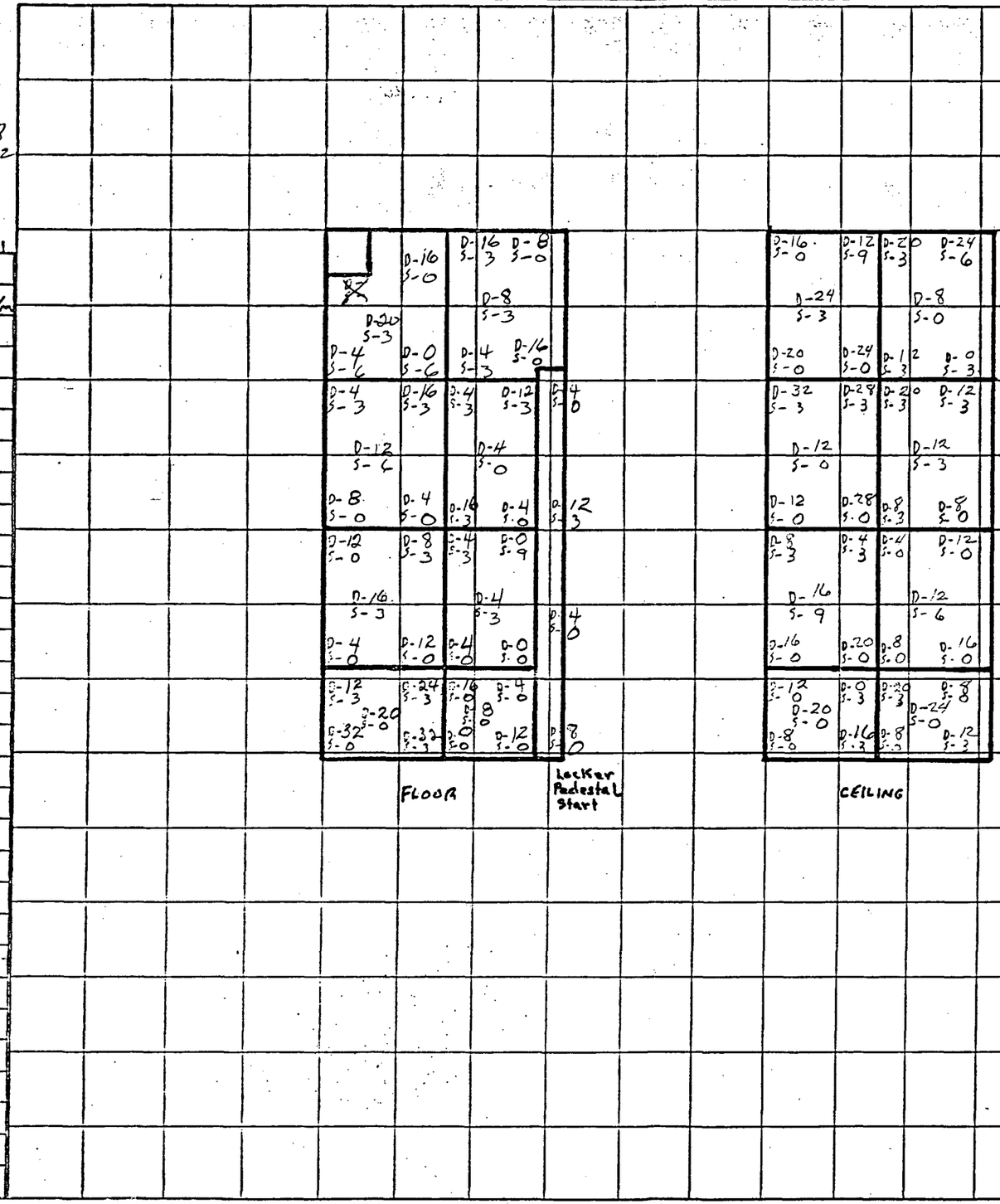
D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm²
FIXED

SOURCE #: 7277 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
5/4/89	198/207	1
5-12-89	PM192/202	1
5-15-89	AM 205/182	2
	ASC #1	
5-15-89	34	2



DIRECT
1004 TOTAL DPM
83 READINGS
12.10 DPM/100 cm² AVG
32 max DPM/100 cm²

SMEAR
156 TOTAL DPM
83 SMEARS
1.88 DPM/100cm² AVG
9 max DPM/100cm²

AREA: Pu-PLANT — WOMENS CHANGE ROOM — FINAL GRID

TYPE OF SURVEY: α DIRECT & SMEAR

TYPE OF INSTRUMENT: LUDLUM 2220/DET. 43-68

SERIAL NUMBER: 50057

COMPLETION DATE: 3-20-89

H.P. SIGNATURE: Claude M. Thompson

SURVEY UNITS: DPM/100cm²

WAR

AUTO. SAMPLE COUNTER #: 2 SN 83600108

N / W — E / S

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 6498 VALUE: 870 DPM

INSTRUMENT		
DATE	SOURCE c/m RESPONSE	BKGD c/m
3-16-89 pm	2302223	2
3-17-89 am	1852197	1
	ASC#2	
3-20-89	27	.3

WALL #1 (SHOWER): D-12 S-6; D-0 S-6; D-0 S-6; D-0 S-6; D-9 S-6; D-4 S-3; D-0 S-3; D-8 S-6; D-0 S-9

WALL #2: D-0 S-3; D-4 S-0; D-8 S-6; D-4 S-6; D-20 S-3; D-0 S-3; D-16 S-6; D-20 S-3; D-0 S-3; D-0 S-6; D-16 S-3; D-32 S-3; D-4 S-3; D-8 S-0; D-4 S-9; D-12 S-0; D-8 S-6; D-20 S-6; D-0 S-9; D-8 S-3

WALL #3: D-12 S-6; D-12 S-0; D-20 S-0; D-12 S-3; D-4 S-3; D-16 S-0; D-8 S-0; D-8 S-3; D-24 S-3; D-8 S-6

WALL #4: D-0 S-3; D-0 S-3; D-8 S-6; D-0 S-6; D-4 S-0

WALL #5: D-8 S-0; D-0 S-0; D-8 S-3; D-8 S-0; D-12 S-0

WALL #6: D-12 S-0; D-16 S-0; D-16 S-0; D-12 S-3; D-16 S-0

WALL #7 (SHOWER): D-4 S-3; D-4 S-3; D-16 S-6; D-4 S-0; D-12 S-0; D-8 S-6; D-12 S-0; D-8 S-3; D-8 S-0; D-8 S-0; D-16 S-0; D-0 S-0; D-16 S-3; D-16 S-6

DIRECT		SMEAR	
592	TOTAL DPM	210	TOTAL DPM
68	READINGS	68	SMEARS
8.71	DPM/100cm² AVERAGE	3.09	DPM/100cm² AVERAGE
32	Max DPM/100cm²	9	Max DPM/100cm²

PLANT PU AREA WOMEN'S CHANGE ROOM TOILET STALLS

SURVEYED BY S.D.

INST. LUDLUM 2220 # 137807 DET. _____

SOURCE CK 234-246 (PM 243-252) BKG. 2

DATE: 5-16-89 SOURCE # 6811 VALUE: 1678 DPM

ASC # L 83600115

CTD. BY J. Black

SOURCE CK. AVG. 32

BKG. .2

DATE: 5-17-89

AM

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
SOUTH STALL INSIDE NORTH WALL	1	2	8	0
	2	3	12	6
	3	0	0	3
	4	1	4	3
	5	3	12	6
EAST WALL	6	4	16	3
	7	7	28	0
	8	3	12	0
	9	0	0	0
	10	2	8	0
OUTSIDE EAST WALL	11	1	4	6
	12	2	8	6
	13	4	16	0
	14	0	0	0
	15	0	0	3
NORTH STALL INSIDE SOUTH WALL	16	0	0	0
	17	3	12	0
	18	0	0	3
	19	0	0	3
	20	1	4	3
EAST WALL	21	1	4	6
	22	0	0	3
	23	1	4	0
	24	0	0	0
	25	4	16	3
NORTH WALL	26	1	4	9
	27	2	8	0
	28	2	8	3
	29	2	8	3
	30	1	4	0

PLANT Pu AREA WOMENS CHANGE ROOM TOILET STALLS

SURVEYED BY LD

INST. LUDLUM 2220 # 137807 DET. ____

SOURCE CK 243 - 152 BKG. 1

DATE: 5-16-89 SOURCE # 6814 VALUE: 107800

ASC # 1 83600115

CTD. BY J Black

SOURCE CK. AVG. 32

BKG. .2

DATE: 5-17-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
NORTH STALL OUTSIDE EAST WALL	31	3	12	0
	32	2	8	0
	33	3	12	0
	34	4	16	0
	35	0	0	6
NORTH WALL	36	6	24	3
	37	4	16	9
	38	3	12	6
	39	3	12	0
	40	5	20	0
FRONT FRAME	41	2	8	3
	42	1	4	0
	43	3	12	3
	44	3	12	3
	45	2	8	0
	46	5	20	0
	47	1	4	9
	48	2	8	3
	49	2	8	0

S W E N

AREA Pu-PLANT WOMENS CHANGE ROOM
TOILET STALLS

TYPE OF SURVEY ∝ DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 37807 –

COMPLETION DATE 5 – 17 – 89

H.P. SIGNATURE Claudia M Thompson

AUTO. SAMPLE COUNTER#: 83600/15

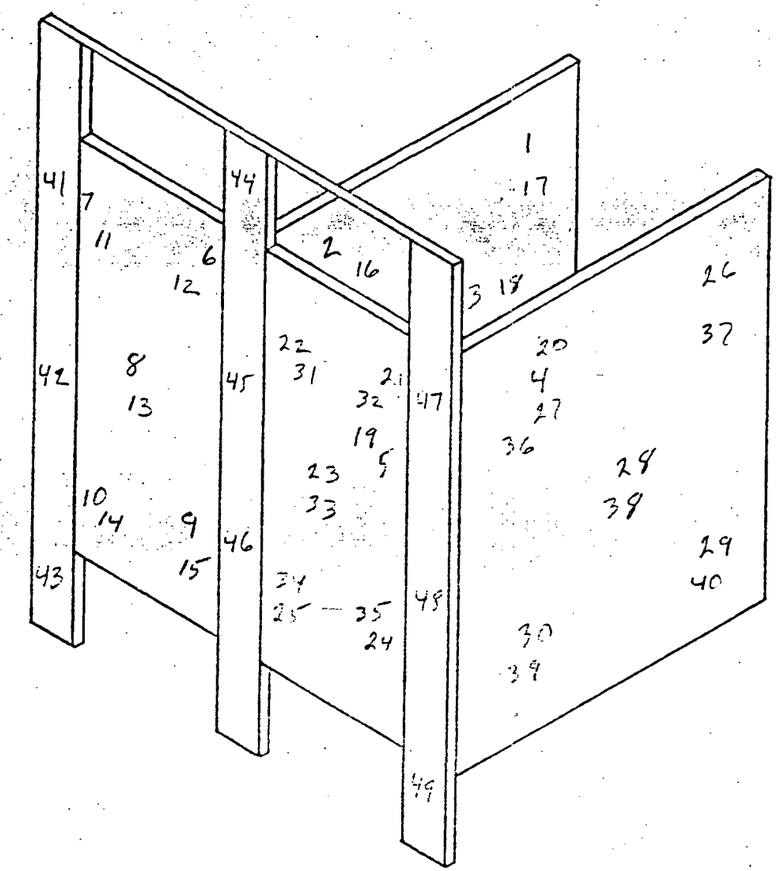
SURVEY UNITS DPM/100cm²

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

mDA 15.68 DPM/100cm² FIXED

SOURCE#: 6816 VALUE: 1078 DPM

INSTRUMENT			
DATE	SOURCE C/M RESPONSE	BKGD C/M	
5-15-89	264-252	0	37807
5-15-89	229-192	2	58313
5-15-89	243-259	2	37807
5-16-89	234-246	2	37807
5-16-89	243-252	1	37807
	IASC#1		
5-17-89	32	.2	



DIRECT
416 TOTAL DPM
49 READINGS
8.49 DPM/100cm² AVG
28 MAX DPM/100cm²

SMEAR
117 TOTAL DPM
49 SMEARS
2.39 DPM/100cm² AVG.
9 MAX DPM/100cm²

AREA PU-PLANT - WOMENS CHANGE Room SHOWER TYPE OF SURVEY α DIRECT + SMEAR COMPLETION DATE 5-15-89 SURVEY UNITS DPM/100cm²

TYPE OF INSTRUMENT LUDLUM 2221/DET. 43-4/43-68 H.P. SIGNATURE Claudia M Thompson WAR

SERIAL NUMBER 37807 (43-68) - 58313 (43-4) AUTO. SAMPLE COUNTER #2: 83600108

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

MDA = 23.52 DPM/100cm² FIXED

SOURCE #: ~~6816~~ 7272 VALUE: ~~1028~~ 850 DPM

	INSTRUMENT		
	DATE	SOURCE RESPONSE C/M	BKGD C/M
37807	5-15-89	264-252	0
58313	5-15-89	229-192	2
		ASC #2	
	5-15-89	30	.3

DIRECT
514 TOTAL DPM
34 READINGS
15.12 DPM/100cm² AVG
36 Max DPM/100cm²

SMEAR
60 TOTAL DPM
34 SMEARS
1.76 DPM/100cm² AVG
9 max DPM/100cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
INSIDE NORTH WALL	1	4	16	3
	2	2	8	3
	3	2	8	0
	4	2	8	0
	5	6	24	3
SOUTH WALL	6	4	16	3
	7	5	20	3
	8	5	20	6
	9	6	24	6
	10	2	8	0
WEST WALL	11	6	24	3
	12	5	20	3
	13	2	8	3
	14	1	4	3
	15	1	4	0
FLOOR	16	8	32	9
	17	5	20	6
	18	7	28	3
	19	5	20	0
	20	7	28	0
OUTSIDE SOUTH WALL	21	2	8	0
	22	2	8	0
	23	3	12	0
	24	2	8	0
	25	2	8	0
FRONT FRAME X6	26	0	0	0
X6	27	1	6	0
	28	5	20	0
	29	6	24	0
	30	3	12	3
	31	4	16	0
	32	1	4	0
	33	3	12	0
X6	34	6	36	0

AREA Pu-PLANT
WCR AIRLOCK
FINAL GRID

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50057/50069

COMPLETION DATE 5-15-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: #1 83600115

SURVEY UNITS DPM/100cm² WOR

N
W E
S

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm²
FIXED

SOURCE #: 6498 7272 VALUE: 890 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-15-89 pm	186 & 199	2
5-12-89	192-202	1
	ASC #1	
5-15-89	34	.2
3-15-89	34	.3

NORTH WALL

D-8 D-40
S-9 S-0
D-32
S-3
D-0 D-8
S-9 S-3

EAST WALL

D-0 D-16 D-14 D-8
S-9 S-0 S-3 S-3
D-16 D-16
S-0 S-0
D-0 D-4 D-8 D-8
S-3 S-6 S-10 S-0

FLOOR

D-8 D-8
S-9 S-3
D-12
S-3
D-12 D-24
S-3 S-0
D-12 D-20
S-0 S-3
D-16
S-0
D-8 D-8
S-0 S-0

CEILING

D-32 D-16
S-0 S-3
D-0
S-0
D-0 D-0
S-3 S-0
D-24 D-8
S-3 S-9
D-24
S-3
D-16 D-4
S-0 S-0

SOUTH WALL

D-20 D-8
S-9 S-3
D-8
S-0
D-0 D-0
S-0 S-3

WEST WALL

D-12 D-4 D-8 D-4
S-3 S-3 S-3 S-0
D-12 D-20
S-0 S-6
D-0 D-16 D-12 D-8
S-6 S-6 S-3 S-0

DIRECT

560 TOTAL DPM

50 READINGS

11.2 DPM/100cm² AVG

48 MAX DPM/100cm²

9 MAX DPM/100cm² SMEAR

135 TOTAL DPM

50 SMEARS

2.7 DPM/100cm² AVG

N / W — E / S
1.5cm = 1 Meter

AREA Pu-PLANT LAUNDRY ROOM
FINAL GRID

TYPE OF SURVEY α DIRECT & SMEAR
TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68
SERIAL NUMBER 50057, 50068

COMPLETION DATE 6-9-89
H.P. SIGNATURE [signature]
AUTO. SAMPLE COUNTER #: 1 SN 8360115

SURVEY UNITS DPM/100cm²

D - DIRECT
S - SMEAR

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

MDA 19.20 DPM/100cm² FIXED

SOURCE #: 1832 VALUE: 342 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE c/m	BKGD c/m
3-22-89 am	217 & 204	2
3-22-89 pm	191 & 219	2
6-5-89	113 - 106	2 (PM) 50068
6-9-89	112 - 129	3 Am
	HSC # 1	
3-22-89	31	.2
6-9-89	29	.3

NORTH WALL (2)
D-12 S-6; D-[illegible] S-3; D-16 S-0; D-16 S-3
D-4 S-3; D-4 S-0
D-4 S-0; D-16 S-0; D-0 S-0; D-12 S-0

EAST WALL
D-28 S-3; D-12 S-0; D-16 S-3; D-4 S-3
D-4 S-3; D-24 S-0
D-8 S-6; D-16 S-0; D-16 S-3; D-8 S-3

CEILING
D-0 S-0; D-8 S-0; D-24 S-0; D-0 S-3
D-4 S-6; D-8 S-0
D-16 S-0; D-120 S-3; D-8 S-3; D-0 S-3
D-8 S-0; D-40 S-0; D-16 S-0; D-24 S-3
D-24 S-0; D-16 S-0
D-24 S-0; D-5 S-6; D-16 S-0; D-0 S-0

CEMENT BEAM IN CENTER of EAST WALL

North Side	Front	South Side
D-0 S-0	D-16 S-3	D-0 S-3
D-28 S-3	D-16 S-3	D-20 S-3
D-12 S-3	D-8 S-0	D-32 S-9

SOUTH WALL
D-24 S-6; D-0 S-3; D-24 S-3; D-16 S-3
D-28 S-0; D-4 S-9
D-12 S-0; D-24 S-0; D-16 S-0; D-16 S-0

WEST WALL (1)
D-12 S-0; D-10 S-3; D-[illegible] S-3; D-12 S-0
D-0 S-3; D-16 S-3
D-24 S-6; D-12 S-0; D-16 S-0; D-20 S-3

FLOOR
D-16 S-3; D-4 S-3; D-16 S-6; D-28 S-3
D-0 S-6; D-8 S-3
D-4 S-3; D-0 S-0; D-4 S-0; D-24 S-0
D-16 S-3; D-8 S-3; D-28 S-0; D-8 S-3
D-4 S-0; D-12 S-0
D-8 S-0; D-8 S-6; D-28 S-0; D-16 S-3

D-8

D-24 | CEILING 4-E / D-120

	DIRECT	SMEAR
TOTAL DPM	1252	101
# READINGS	89	89
AVG DPM/100cm²	14.07	1.13
MAX DPM/100cm²	120	9

N / W / E / S

1.5cm = 1 Meter

AREA Pu-PLANT ROOM #112
JANITORS CLOSET
FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50057 - 50068

COMPLETION DATE 6-9-89

H.P. SIGNATURE Claudia Thompson

SURVEY UNITS DPM/100cm²

AUTO. SAMPLE COUNTER #: ISN 83600115

D - DIRECT
S - SMEAR

MDA 15.68 DPM/100cm² FIXED

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

SOURCE #: VALUE: DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGDS/m
3-20-89 AM	231 ± 203	1
3-20-89 pm	199 ± 213	1
6-5-89	113 - 106	2 (AM)
	HSC #1	
3-22-89	36	.3
6-9-89	29	.3

#50068

NORTH WALL

D-4 S-0 | D-8 S-0
D-0 S-0
D-0 S-0 | D-12 S-0

EAST WALL

D-8 S-6 | D-21 S-0
D-32 S-0
D-8 S-3 | D-8 S-0

FLOOR

D-32 S-0 | D-12 S-3
D-20 S-0
D-16 S-0 | D-16 S-0

SOUTH WALL

D-4 S-0 | D-16 S-0
D-20 S-0
D-24 S-6 | D-16 S-0

WEST WALL

D-4 S-0 | D-4 S-3
D-28 S-3
D-16 S-3 | D-16 S-0

CEILING

D- S-
D- S-
D- S-
D- S-

#1

D-49 S-6 | D-20 S-3 | D-24 S-6

Shelves East Wall

#2

D-4 S-3 | D-20 S-6 | D-16 S-0

Ceiling Anchor Removed

#3

D-28 S-0 | D-32 S-3 | D-44 S-3

Shelf South Wall

#4

D-20 S-6 | D-4 S-9
D-28 S-0
D-0 S-0 | D-20 S-3

	DIRECT	SMEAR
TOTAL DPM	656	75
# READINGS	39	39
AVG DPM/100cm²	16.82	1.92
MAX DPM/100cm²	48	9

AREA Pu-PLANT OVER MCB + WCB CEILING BEAMS

TYPE OF SURVEY ✓ DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 48395

COMPLETION DATE 3-17-89

H.P. SIGNATURE Claudia Thompson

SURVEY UNITS DPM/100cm² NOR

AUTO. SAMPLE COUNTER #: 2 SN 83600108 + #1 SN 83600115

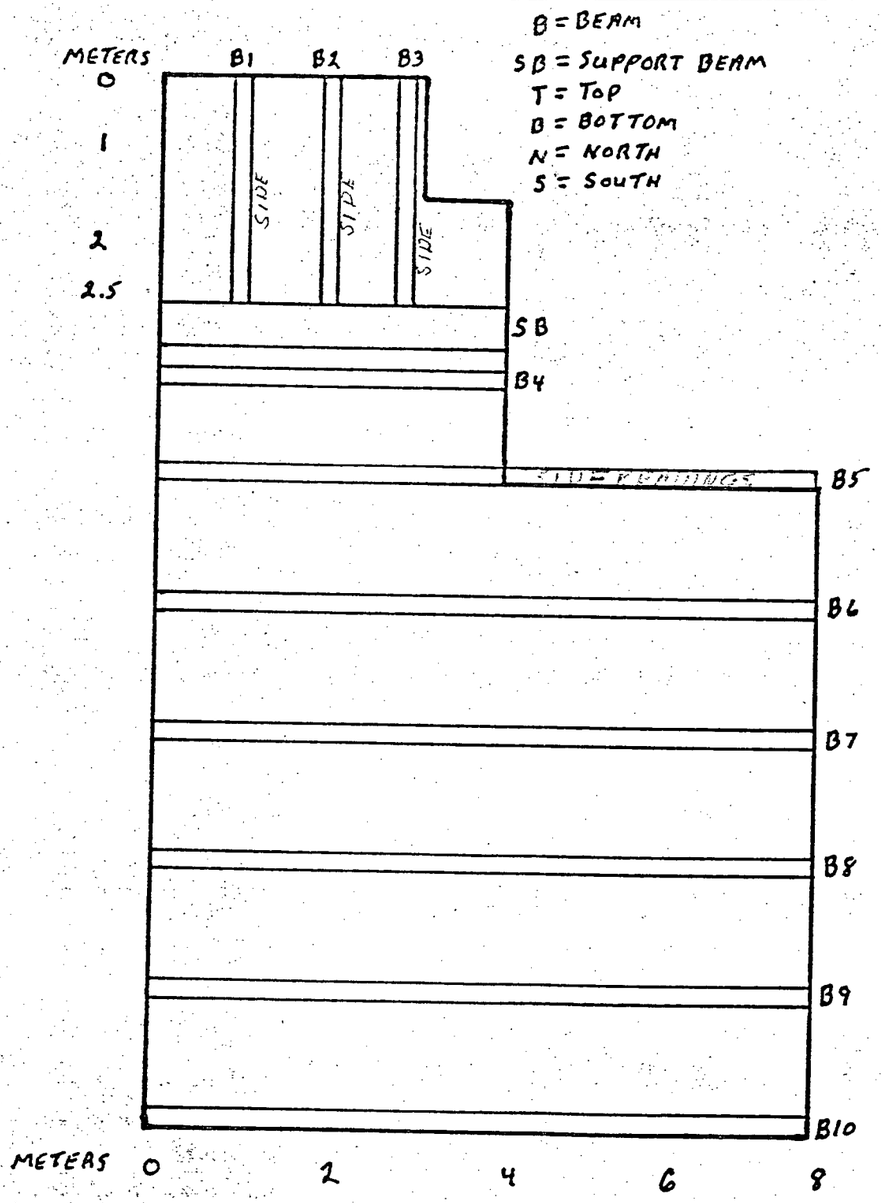
1.5cm = 1METER

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

MDA 22.17 DPM/100cm² FIXED

SOURCE #: 727 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-13-89	181-199	4
	199-206	4
3-14-89	206-211	2
	164-206	0
3-15-89	205-194	2
	174-194	3
3-16-89	175-207	1
	ASC #2	
3-14-89	30	.3
	ASC #1	
3-14-89	34	.3
3-17-89	31	.2



METERS		DIRECT	SMEAR
B1	0	0	3
	2	0	0
B2	1	8	0
	2.5	12	0
B3	0	12	0
	2	0	0
B4	0	16	0
	2	11	0
	4	12	0
B5	1	8	0
	3	24	0
	5	36	0
	7	24	3
B6	0	0	0
	2	24	0
	4	24	3
	6	0	0
	8	20	6
B7	1	16	3
	3	24	0
	5	0	3
	7	16	3
B8	0	24	0
	2	20	12
	4	24	0
	6	16	0
	8	0	3

METERS		DIRECT	SMEAR
B9	1	32	0
	3	24	3
	5	20	0
	7	24	0
B10	0	44	3
	2	16	3
	4	12	0
	6	12	3
	8	4	3
S.B. 0	T	28	6
	B	20	0
	N	20	0
	S	24	0
2	T	8	0
	B	0	3
	N	12	0
	S	8	6
4	T	16	3
	B	28	0
	N	12	0
	S	4	0

DIRECT
744 TOTAL DPM
48 READINGS
15.50 DPM/100cm² AVG.
44 max DPM/100cm²

SMEAR
TOTAL DPM 66
48 SMEARS
DPM/100cm² AVG. 1.38
max DPM/100cm² 12

AREA Pu-PLANT OVER MCR + WCR
CEILING

TYPE OF SURVEY ∝ DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 48395

COMPLETION DATE 3-20-89

H.P. SIGNATURE Claudia M Thompson

SURVEY UNITS DPM/100cm² WGR

AUTO. SAMPLE COUNTER #: 2SN 836010810 #1 SN 836001115

N
W E
S

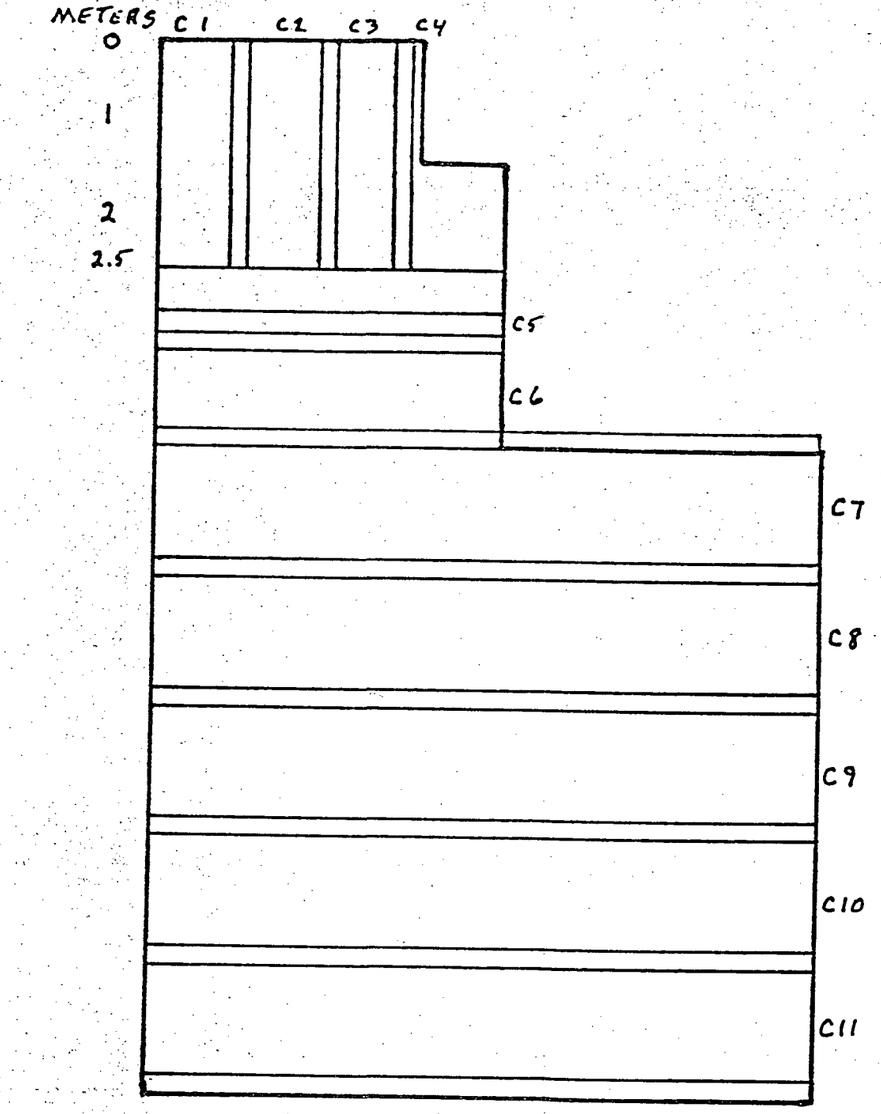
1.5cm = 1 METER

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

MDA = 22.17 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-13-89	199-181	4
	199-206	4
3-14-89	206-211	2
	164-206	0
3-15-89	205-194	2
	174-194	3
3-16-89	175-207	1
	ASC #1	.3
3-14-89	34	.3
	31	.3
	35	.3
	ASC #2	
3-14-89	30	.3
3-20-89	27	.3



METERS		DIRECT	SMEAR
C1	1	16	0
	2.5	0	0
C2	0	8	0
	2	0	0
C3	1	8	0
	2.5	4	0
C4	2	0	2
	2.5	8	0
C5	1	8	3
	3	12	0
C6	0	24	9
	2	16	0
	4	40	0
C7	1	0	9
	3	8	0
	5	8	0
	7	8	0
C8	0	28	6
	2	4	0
	4	16	0
	6	16	0
	8	20	0

METERS		DIRECT	SMEAR
C9	1	4	3
	3	4	0
	5	4	3
	7	16	6
C10	0	32	0
	2	20	3
	4	4	0
	6	24	0
	8	8	3
C11	1	32	0
	3	28	3
	5	8	6
	7	16	3
C12	0	36	3
	2	24	9
	4	36	6
	6	16	0
	8	16	0

	DIRECT	SMEAR
TOTAL DPM	590	78
# READINGS	40	40
AVG. DPM/100cm²	14.75	1.95
MAX DPM/100cm²	40	9

N / W / E / S

1.5cm = 1 Meter

AREA Pu-PLANT OVER MCR & WCR FLOOR FINAL GRID

TYPE OF SURVEY d DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 48395

COMPLETION DATE 3-20-89

H.P. SIGNATURE Claude M Thayer

SURVEY UNITS DPM/100cm² wipe

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

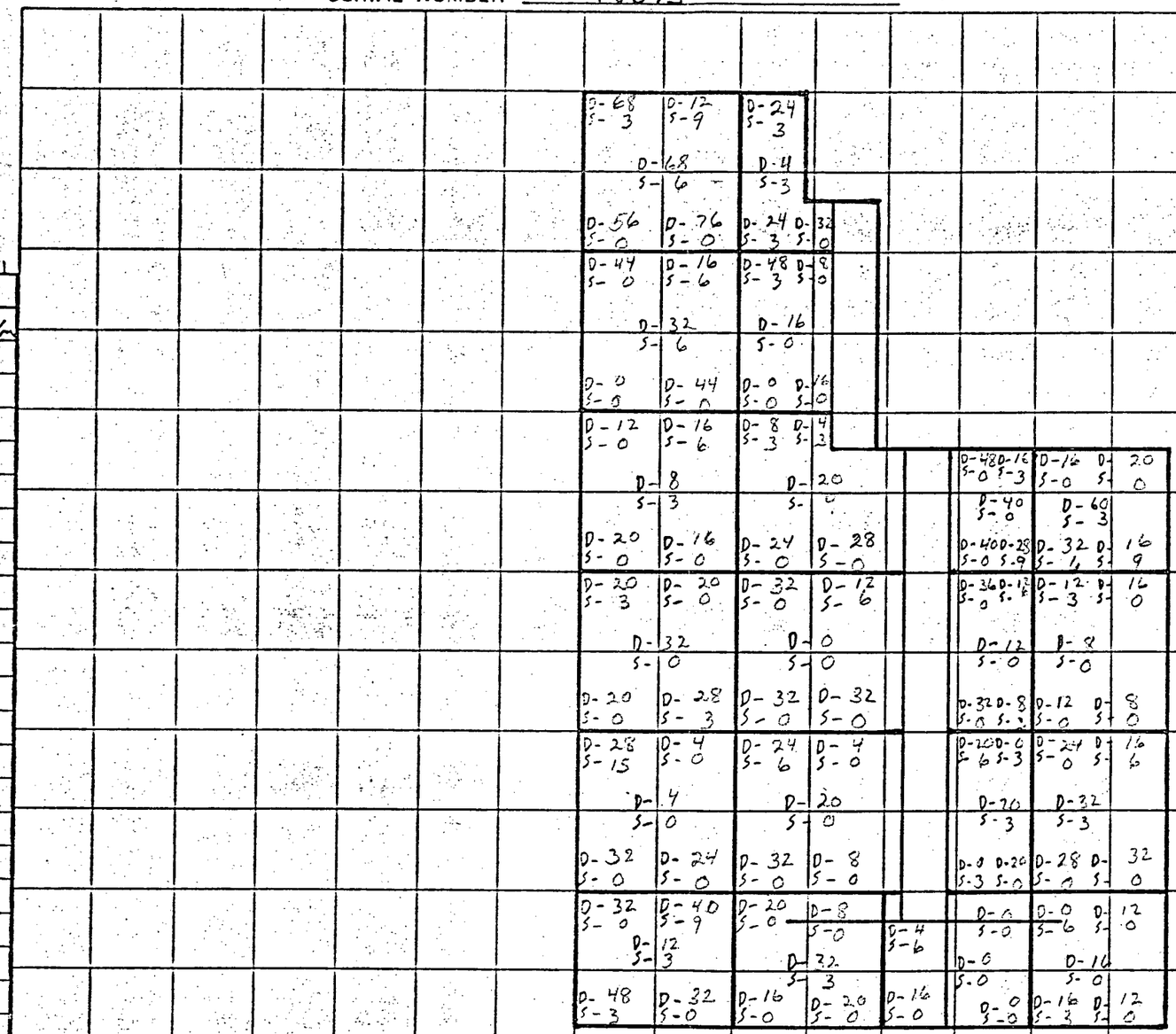
D - DIRECT
S - SMEAR

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

MDA = 22.17 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE C/M	BKGD C/M
3-13-89	191-199	4
	199-206	4
3-14-89	206-211	2
	164-206	0
3-15-89	205-194	2
	174-194	3
3-16-89	176-209	1
	ASC #1	
3-14-89	34	13
	ASC #2	
3-20-89	27	13



DIRECT

2,152 TOTAL DPM

199 READINGS

24.74 DPM/100cm² AVERAGE

76 Max DPM/100cm²

SMEAR

189 TOTAL DPM

99 SMEARS

1.91 DPM/100cm² AVERAGE

15 Max DPM/100cm²

AREA Pu-PLANT MCR & WCR ATTIC
FINAL GRID

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

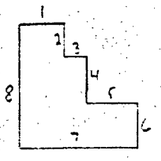
SERIAL NUMBER 48395

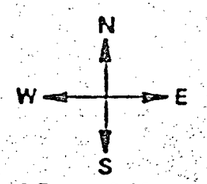
COMPLETION DATE 3-17-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: SN #1 83600115

SURVEY UNITS DPM/100cm² WCR





1.5cm = 1 Meter

D - DIRECT
S - SMEAR
MDA = 22.20 DPM/100cm²
FIXED

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

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-13-89	181-199	4
	199-306	4
3-14-89	206-211	2
	164-206	0
3-15-89	205-194	2
	174-194	3
3-16-89	175-207	1
	ASC #1	
3-14-89	34	13
3-17-89	35	13

WALL #1

D-0 S-0	D-8 S-3	D-12 S-3	D-4 S-0
D-28 S-0		D-0 S-0	
D-0 S-0	D-0 S-0	D-16 S-0	D-12 S-0

WALL #2

D-0 S-0	D-0 S-0
D-4 S-3	
D-0 S-0	D-8 S-3

WALL #3

D-0 S-0	D-8 S-0
D-4 S-0	
D-4 S-0	D-20 S-3

WALL #4

D-0 S-0	D-0 S-0	D-4 S-0	D-4 S-0
D-12 S-3		D-0 S-0	
D-32 S-0	D-0 S-0	D-0 S-3	D-12 S-0

WALL #5

D-16 S-3	D-20 S-3	D-16 S-0	D-24 S-0
D-24 S-3		D-4 S-0	
D-20 S-0	D-28 S-0	D-32 S-0	D-4 S-0

WALL #6

D-0 S-3	D-12 S-0	D-12 S-3	D-20 S-0	D-0 S-0	D-4 S-0	D-4 S-0	D-16 S-0
D-0 S-3		D-12 S-0		D-4 S-3		D-16 S-0	
D-20 S-0	D-20 S-0	D-40 S-0	D-32 S-0	D-20 S-0	D-0 S-0	D-0 S-0	D-28 S-2

WALL #7

D-8 S-0	D-16 S-0	D-8 S-0	D-28 S-6	D-8 S-3	D-28 S-0	D-16 S-0	D-24 S-0
D-16 S-0		D-40 S-3		D-20 S-0		D-32 S-0	
D-4 S-0	D-0 S-0	D-32 S-6	D-20 S-0	D-32 S-3	D-16 S-0	D-16 S-3	D-32 S-0

WALL #8

D-20 S-0	D-8 S-0	D-36 S-0	D-16 S-0	D-20 S-3	D-4 S-0	D-0 S-0	D-16 S-3	D-0 S-0	D-16 S-0	D-0 S-3	D-32 S-0
D-12 S-0		D-24 S-0		D-16 S-0		D-20 S-0		D-24 S-0		D-16 S-0	
D-36 S-0	D-48 S-3	D-0 S-0	D-32 S-0	D-4 S-0	D-4 S-0	D-16 S-6	D-8 S-0	D-12 S-3	D-16 S-3	D-28 S-3	D-8 S-3

SMEAR

99 TOTAL DPM

110 SMEARS

0.90-DPm/100cm² AVERAGE

& Mdf DPM/100cm²

DIRECT

1528 TOTAL DPM

110 READINGS

13.89 DPm/100cm² AVERAGE

48 Mdf DPM/100

PLANT PH AREA AIR DUCT ATTIC AREA ASC # 1 SN 836001154
SURVEYED BY [illegible] OVER MCR/WCR CTD. BY Dennis Ford
INST. LUDLUM 2220 # 48395 DET. 43-68 SOURCE CK. AVG. 36
SOURCE CK 190-203 BKG. 4 BKG. .3
DATE: 3-16-89 Source #: 7272 VALUE: 850 DPM DATE: 3-16-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
METERS DUCT #1				
0-m	TOP	6	24	0
	BOTTOM	0	0	3
	NORTH	1	4	3
	SOUTH	0	0	0
2-METERS	TOP	0	0	6
	BOTTOM	3	12	0
	NORTH	0	0	3
	SOUTH	0	0	6
3 METERS	NORTH	0	0	3
	SOUTH	4	16	3
	EAST	0	0	0
DUCT #2				
0 METERS	TOP	0	0	0
	BOTTOM	0	0	3
	NORTH	3	12	0
	SOUTH	0	0	3
2-METERS	TOP	2	8	0
	BOTTOM	0	0	6
	WEST	0	0	0
	NORTH	7	28	0
	EAST	1	4	3
4 METERS	TOP	2	8	3
	BOTTOM	0	0	0
	WEST	0	0	0
	EAST	2	8	0
4-METERS VENT	NORTH	0	0	6
	EAST	0	0	0
	SOUTH	0	0	6
	WEST	2	8	0

PLANT PH AREA AIR DUCT-ATTIC AREA ASC # 1 SN 836001155
SURVEYED BY [illegible] OVER MCR/WCR CTD. BY Dennis Ford
INST. LUDLUM 2220 # 48395 DET. 43-68 SOURCE CK. AVG. 36
SOURCE CK 109-203 BKG. 4 BKG. .3
DATE: 3-16-89 Source #: 7272 VALUE: 850 DPM DATE: 3-16-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
DUCT #2				
6 METERS	TOP	0	0	3
	BOTTOM	1	4	3
	WEST	0	0	0
	EAST	0	0	0
8-METERS	EAST	1	4	3
	WEST	7	28	3
	NORTH	4	16	6
	SOUTH	1	4	3
10-METERS	TOP	4	16	0
	BOTTOM	5	20	15
	WEST	2	8	3
	EAST	0	0	0
12-METERS VENT	NORTH	2	8	9
	SOUTH	11	44	0
	WEST	8	32	3
	EAST	7	28	3
DUCT #3				
0 METERS	TOP	5	20	0
	BOTTOM	5	20	0
	EAST	6	24	0
	SOUTH	5	20	0
	WEST	6	24	6
2 METERS	TOP	8	32	9
	BOTTOM	4	16	6
	NORTH	4	16	0
	SOUTH	5	20	0

PLANT PU AREA AIP DUCT-ATTIC AREA
SURVEYED BY A.H. V.Dle. OVER mCR/WCR
INST. LUDLUM 2220 S/N 48345 DET. 434.8
SOURCE CK 190-203 BKG. _____
DATE: 3-16-89 SOURCE #: 7272 VALUE: 950 DPM

ASC # ISM 93600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 36
BKG. 13
DATE: 3-16-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
DUCT #3				
4-METERS	TOP	3	12	3
	BOTTOM	2	8	3
	EAST	2	8	0
	WEST	5	20	0
6 METERS	NORTH	1	4	3
	EAST	4	16	9
	SOUTH	4	16	0
	WEST	3	12	0
8-METERS	NORTH	2	8	3
	EAST	0	0	3
	SOUTH	1	4	8
	WEST	0	0	3
10 METERS	TOP	7	28	3
	BOTTOM	6	24	0
	EAST	8	32	6
	WEST	4	16	6
DUCT #4				
0-METERS	TOP	6	24	0
	BOTTOM	6	24	0
	EAST	0	0	6
	WEST	3	12	0
2 METERS	TOP	3	12	6
	BOTTOM	3	12	0
	EAST	6	24	9
	WEST	3	12	0

PLANT _____ AREA _____
SURVEYED BY _____
INST. LUDLUM 2220 S/N _____ DET. _____
SOURCE CK _____ BKG. _____
DATE: SOURCE #: VALUE: DPM

ASC # _____
CTD. BY _____
SOURCE CK. AVG. _____
BKG. _____
DATE: _____

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
DUCT #4				
2-METERS VENT	EAST	7	28	3
	WEST	3	12	3
	NORTH	5	20	6
	SOUTH	7	28	0
4-METERS	TOP	1	4	3
	BOTTOM	1	4	0
	EAST	3	12	0
	WEST	4	16	0
6-METERS	TOP	3	12	3
	BOTTOM	0	0	3
	EAST	0	0	0
	WEST	0	0	0
7.53 METERS	EAST	0	0	0
	WEST	1	4	0
	NORTH	1	4	0
	SOUTH	4	16	0
DUCT #5				
0-METERS	TOP	3	12	3
	BOTTOM	0	0	0
	EAST	7	28	3
	WEST	2	8	0
2-METERS	TOP	6	24	6
	BOTTOM	1	4	0
	EAST	4	16	0
	WEST	5	20	0

PLANT PU — AREA AIR DUCT-ATTIC AREA OVER MCR/WCK — ASC # 1 SW 83600115

SURVEYED BY Vance R.H. — CTD. BY RHM

INST. LUDLUM 2220 # 49395 DET. 43-68 — SOURCE CK. AVG. 36

SOURCE CK 190-203 BKG. ______ — BKG. .3

DATE: 7-16-89 Source #7272 value: 850 DPM — DATE: 7-16-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
DUCT #5				
4-METERS	TOP	4	16	6
	BOTTOM	3	12	0
	EAST	7	28	6
	WEST	2	8	3
5 METERS	TOP	5	20	3
	BOTTOM	0	0	0
	EAST	2	8	0
	WEST	2	8	0

Page 5 of 5

N / W — E / S

AREA Pu-PLANT OVER MCR + WCR AIR DUCT

TYPE OF SURVEY α DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 49395

COMPLETION DATE 3-16-89

SURVEY UNITS DPM/100cm² WAR

H.P. SIGNATURE [signature]

AUTO. SAMPLE COUNTER#: / SN 8360011S + SN 83600108

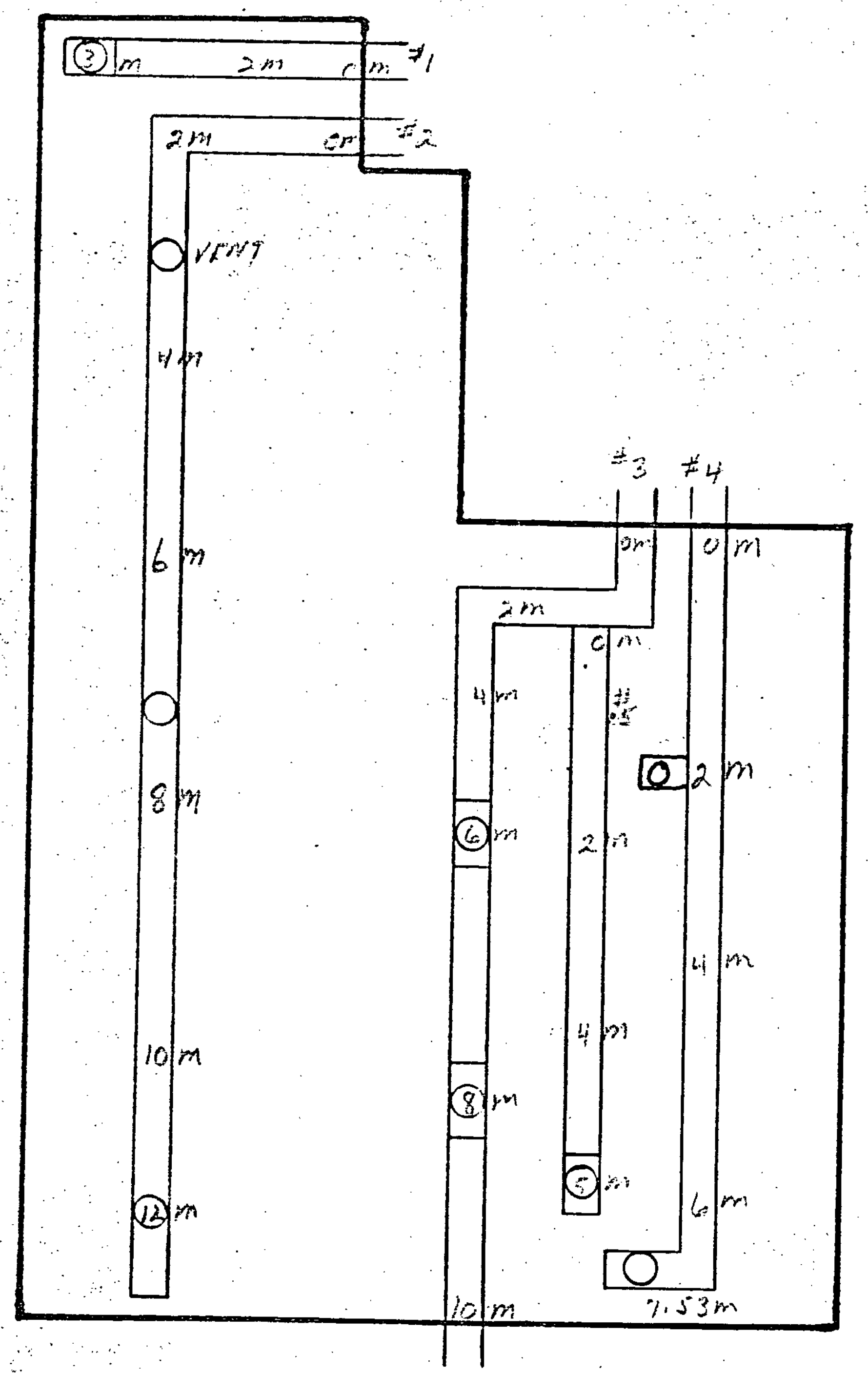
1.5cm = 1METER

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

MDA 22.20 DPM/100cm² FIXED

SOURCE#: 7072 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE C/M	BKGD C/M
3-13-89	181-199	4
	199-206	4
3-14-89	206-211	2
	164-206	0
3-15-89	205-194	2
	174-194	3
3-16-89	175-207	1
	ASC#2	
3-14-89	30	.3
	ASC#1	
3-15-89	34	.3
3-16-89	36	.3



DIRECT
1236 TOTAL DPM
109 READINGS
11.34 DPM/100cm² AVG
44 Max DPM/100cm²

SMEARS
254 TOTAL DPM
109 SMEARS
2.33 DPM/100cm² AVG.
9 Max DPM/100cm²

AREA Pu-PLANT OVER MCR & WCR
PLUMBING ACCESS WELLS
FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 48395

COMPLETION DATE 3-20-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: 1 SN 83600115

SURVEY UNITS DPM/100cm² AVG

N
W E
S

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 7212 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-16-89	178+216	2
	ASC #1	
3-20-89	35	.3

SMALL WELL

D-16 S-0 | D-16 S-0 | D-12 S-0 | D-12 S-9 | D-4 S-0
D-0 | D-4
D-16 | D-8 | D-20 | D-8 | D-8

EAST WALL | NORTH WALL

D-8 S-3 | D-16 S-0 | D-12 S-9 | D-28 S-3 | D-20 S-3
D-16 | D-0
D-32 | D-12 | D-8 | D-16 | D-32

WEST WALL | SOUTH WALL

LARGE WELL

D-0 S-0 | D-16 S-3 | D-26 S-0 | D-16 S-3 | D-0 S-0
D-8 | D-16
D-24 | D-20 | D-16 | D-12 | D-16

EAST WALL | NORTH WALL

D-24 S-3 | D-32 S-6 | D-24 S-0 | D-0 S-0 | D-16 S-3
D-0 | D-20
D-32 | D-20 | D-20 | D-28 | D-20

WEST WALL | SOUTH WALL

DIRECT

730 TOTAL DPM

48 READINGS

15.21 DPM/100cm² AVERAGE

32 Max DPM/100cm²

SMEAR

45 TOTAL DPM

20 SMEARS

2.25 DPM/100cm² AVERAGE

9 Max DPM/100cm²

N
W — E
S

AREA Pu-PLANT OVER MCR & WCR PLUMBING ACCESS WELLS

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 48395

COMPLETION DATE 7-20-89

M.P. SIGNATURE Claudia Thompson

AUTO. SAMPLE COUNTER #: 1 SN 87606115

SURVEY UNITS DPM/100cm² NOR

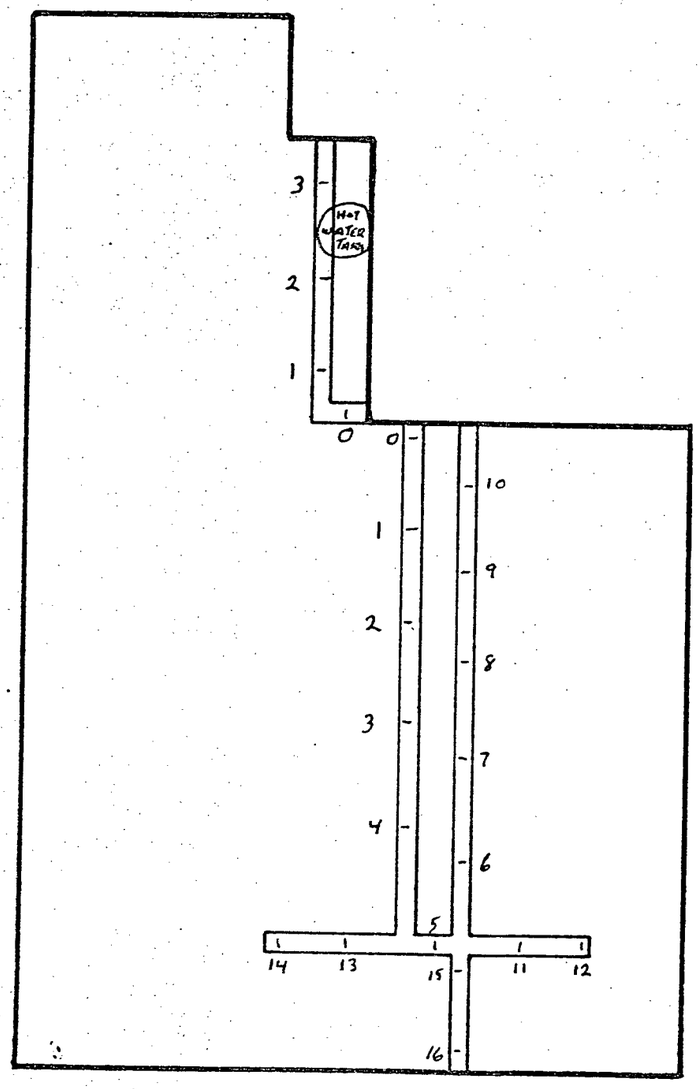
1.5cm = 1METER

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

MDA = 11.04 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE c/m RESPONSE	BKGD c/m
7-17-89	180-196	1
	ASC #1	
7-20-89	35	3



METERS	DIRECT	SMEAR
0	20	3
1	32	3
2	24	0
3	8	0

HOT WATER TANK

TOP	8	3
NORTH WEST	0	0
SOUTH WEST	8	0
NORTH EAST	8	0
SOUTH EAST	4	6

PLYWOOD BASE FOR HOT WATER TANK

S W CORNER	36	6
N W CORNER	24	3
N E CORNER	32	3

METERS	DIRECT	SMEAR
0	20	0
1	20	3
2	24	0
3	32	3
4	24	3
5	8	0
6	8	3
7	5	0
8	24	12
9	24	3
10	28	0
11	32	6
12	12	0
13	28	0
14	36	0
15	32	0
16	30	9

DIRECT
584 TOTAL DPM
29 READINGS
20.14 DPM/100cm² AVG.
36 Max DPM/100cm²

SMEAR
69 TOTAL DPM
29 SMEARS
2.38 DPM/100cm² AVG
12 Max DPM/100cm²

PLANT PU AREA ATTIC OVER MCR+WCR WATER LINES
SURVEYED BY VMC+A.H.
INST. LUDLUM 2220 # 52937 DET. 43-4
SOURCE CK 249 AVG BKG. 2
DATE: 3-20-89 SOURCE #6498 VALUE: 890 DPM

ASC # 2 SN 83600108
CTD. BY Will Rogers
SOURCE CK. AVG. 29
BKG. 3
DATE: 3-22-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION CTS. X6	DIRECT CPM	DIRECT DPM	SMEAR
#1 WATER LINES			
0 METERS	2	12	3
2 METERS	16	96	0
4 METERS	12	72	3
6 METERS	12	72	6
8 METERS	14	84	3
10 METERS	6	36	9
12 METERS	10	60	0
#2 LINE			
1 METERS	0	0	0
3 METERS	12	72	3
5 METERS	10	60	0
7 METERS	8	48	3
9 METERS	6	36	9
11 METERS	14	84	0
#3 LINE			
0 METERS	10	60	3
2 METERS	6	36	3
4 METERS	4	24	9
6 METERS	14	84	3
8 METERS	0	0	3
10 METERS	6	36	6
12 METERS	14	84	0
#4 LINE			
1 METERS	8	48	0
3 METERS	16	96	6
5 METERS	10	60	6
7 METERS	2	12	0
9 METERS	8	48	0
11 METERS	2	12	0

PLANT PU AREA ATTIC OVER MCR+WCR WATER LINES
SURVEYED BY VMC+A.H.
INST. LUDLUM 2220 # 52934 DET. 43-4
SOURCE CK 249 AVG BKG.
DATE: 3-20-89 SOURCE #: 6498 VALUE: 890 DPM

ASC # 2 SN 83600108
CTD. BY Will Rogers
SOURCE CK. AVG. 29
BKG. 3
DATE: 3-22-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION CTS X6	DIRECT CPM	DIRECT DPM	SMEAR
#5 LINE	8	48	0
0 METERS	10	60	0
2 METERS	10	60	0
4 METERS	6	36	0
6 METERS	8	48	0
8 METERS	2	12	0
10 METERS	2	12	6
12 METERS			
#6 LINE			
1 METERS	6	36	3
3 METERS	8	48	6
5 METERS	8	48	3
7 METERS	10	60	0
9 METERS	8	48	3
11 METERS	8	48	6
13 METERS	2	12	0
15 METERS	4	24	3
#7 LINE			
0 METERS	12	72	0
2 METERS	16	96	0
4 METERS	0	0	0
6 METERS	6	36	3
8 METERS	6	36	0
10 METERS	0	0	3
#8 LINE			
1 METERS	2	12	0
3 METERS	12	72	0
5 METERS	4	24	3
7 METERS	6	36	0
9 METERS	8	48	0
11 METERS	2	12	9
#9 LINE			
0 METERS	6	36	6
2 METERS	10	60	3

PLANT PU AREA ATTIC OVER MCR + WCR

SURVEYED BY VM + AH. WATER LINES & VENT-PIPE

INST. LUDLUM 2220 # E2934 DET. 43-4

SOURCE CK 249 AVG. BKG. 2

DATE: 3-20-89 SOURCE #: 6497 VALUE: 898 DPM

ASC # 2 SN 83600108

CTD. BY Will Roane

SOURCE CK. AVG. 29"

BKG. .3

DATE: 3-22-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION CTS x 2	DIRECT CPM	DPM	SMEAR
#10 LINE			
1-METER	6	36	0
3-METERS	4	24	3
5-METERS	12	72	0
#11 LINE			
0-METERS	0	0	0
2-METERS	14	84	0
#12 LINE			
1-METER	8	48	6
#13 LINE			
0-METERS	8	48	9
1-METERS	4	24	9
VENT PIPE HORIZONTAL			
1 METERS	12	72	0
3 METERS	16	96	6
NORTH VENT PIPE VERTICAL			
0 METERS	12	72	0
2 METERS	8	48	6
SOUTH VENT PIPE VERTICAL			
0 METERS	8	48	0
2 METERS	2	12	3

N
W E
S

AREA Pu-PLANT OVER MCR & WCR WATER LINES

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4

SERIAL NUMBER 52834

COMPLETION DATE 3-22-89

H.P. SIGNATURE W.A. Rogers

AUTO. SAMPLE COUNTER #: 2 SN 93600108

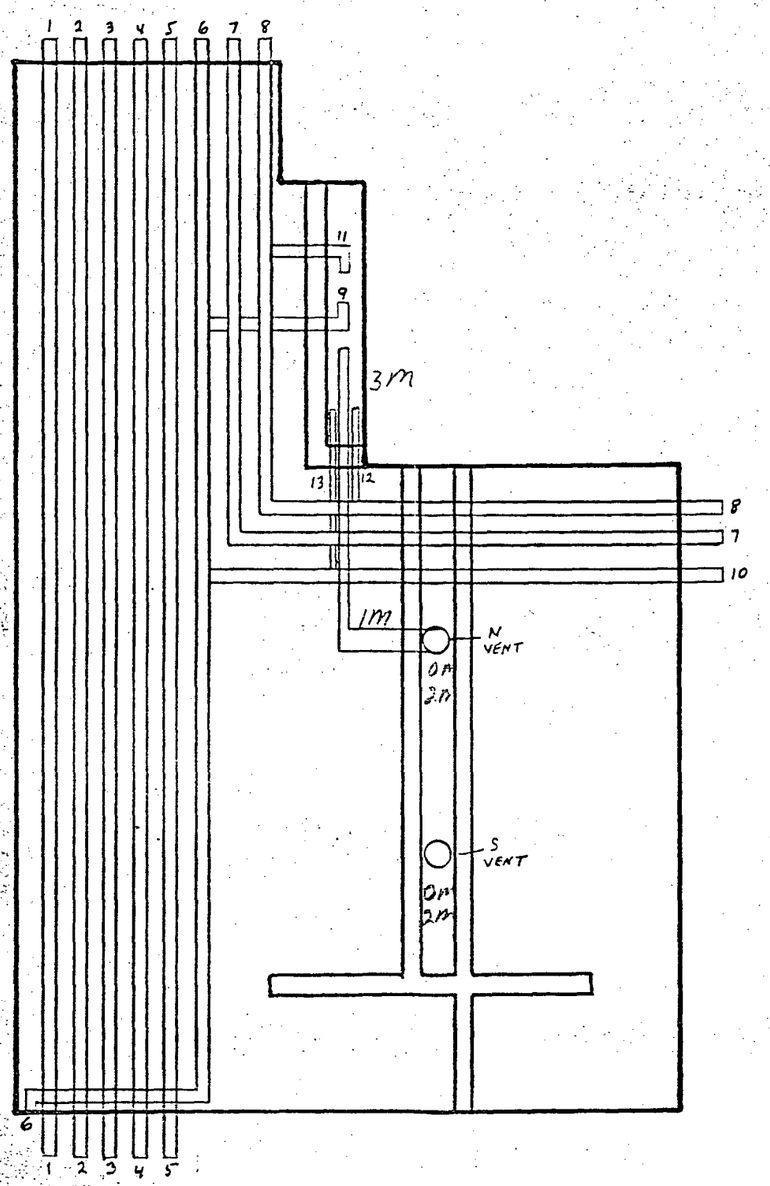
SURVEY UNITS DPM/100cm²

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

MDA = 23.52 DPM/100cm² FIXED

SOURCE #: 6498 VALUE: 890 DPM

INSTRUMENT		
DATE	SOURCE c/m RESPONSE	BKGD c/m
3-17-89	252-246	2
3-20-89	208 · 220	1
3-20-89	230 - 212	1
	ASC #2	
3-22-89	29	.3



DIRECT
3156 TOTAL DPM
69 READINGS
45.74 DPM/100cm² AVG
96 Max DPM/100cm²

SMEAR
177 TOTAL DPM
69 SMEARS
2.57 DPM/100cm² AVG
9 Max DPM/100cm²

AREA Pu-PLANT H.P. HALLWAYS
FLOOR
FINAL GRID

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

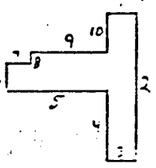
SERIAL NUMBER 50069

COMPLETION DATE 5-16-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: 1-83600115

SURVEY UNITS DPM/100cm²



E
N
S
W

1.5cm = 1 Meter

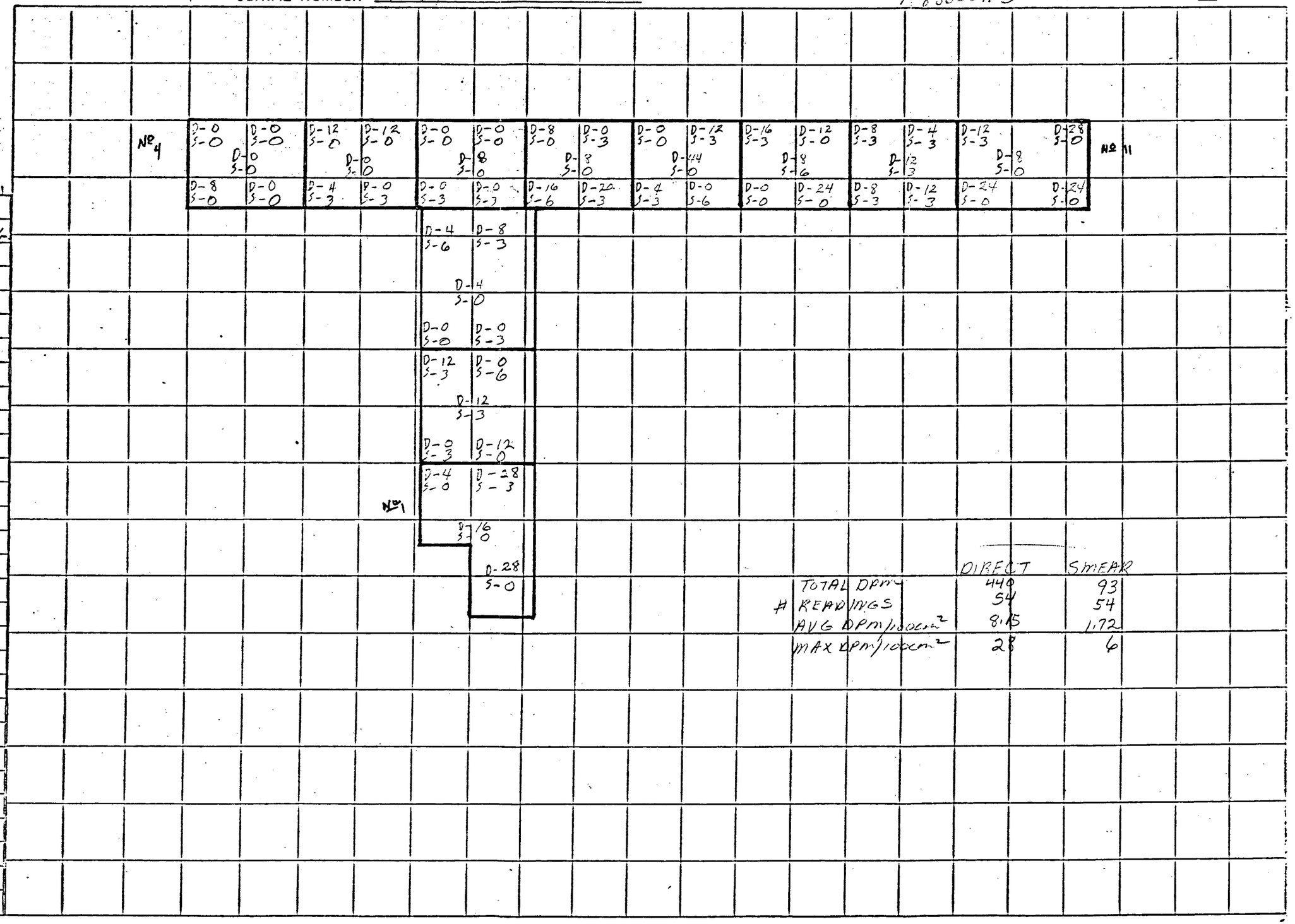
D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 950 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE C/M	BKGD C/M
5-12-88	197 - 213	2
	192 - 202	1
5-15-88	203 - 182	2
	211 - 188	2
	ASC #1	
5-15-88	34	.2



		DIRECT	SMEAR
	TOTAL DPM	440	93
#	READINGS	54	54
	AVG DPM/100cm²	8.15	1.72
	MAX DPM/100cm²	28	6

E / N / S / W

1.5cm = 1 Meter

AREA Pu-PLANT H.P. HALLWAYS CEILING FINAL GRID

TYPE OF SURVEY d DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

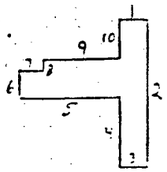
SERIAL NUMBER 50057

COMPLETION DATE 3-16-89

H.P. SIGNATURE Claudia Thompson

AUTO. SAMPLE COUNTER #: SN 8360011S

SURVEY UNITS DPM/100cm² WAR

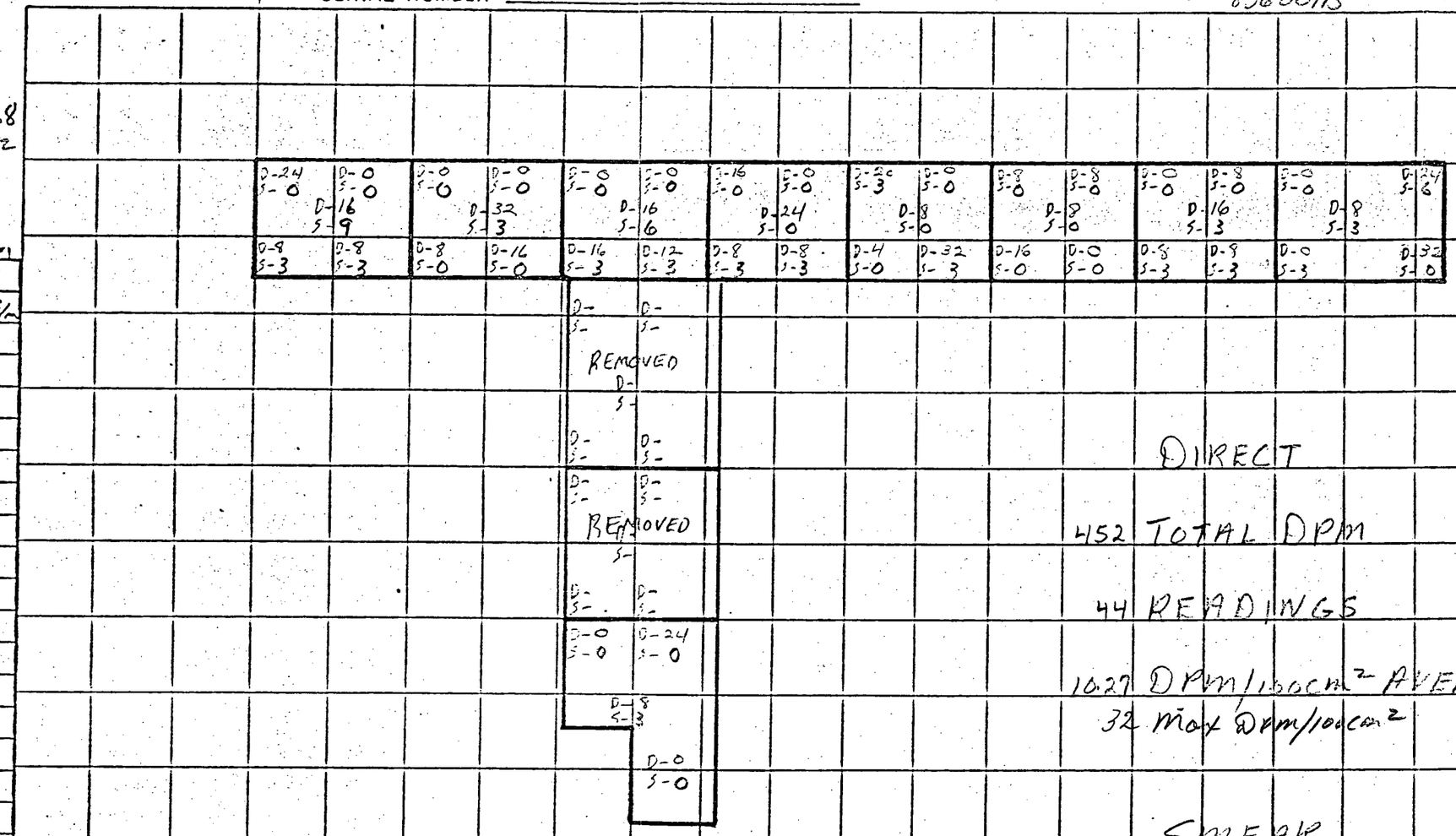


D - DIRECT
S - SMEAR
MDA 15.68 DPM/100cm² FIXED

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

SOURCE #: 6498 VALUE: 890 DPM

INSTRUMENT		
DATE	SOURCE C/m RESPONSE	BKGD C/m
3-16-89 AM	240 & 221	20
	ASC #1	
3-16-89	36	.3



DIRECT

452 TOTAL DPM

44 READINGS

10.27 DPM/100cm² AVERAGE

32 Max DPM/100cm²

SMEAR

66 TOTAL DPM

44 SMEARS

1.50 DPM/100cm² AVERAGE

9 MAX DPM/100cm²

AREA Pu-PLANT H.P. HALLWAYS — FINAL GRID

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

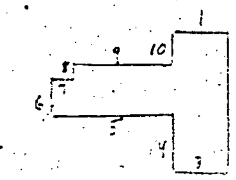
SERIAL NUMBER 50057

COMPLETION DATE 3-15-89

H.P. SIGNATURE [signature]

AUTO. SAMPLE COUNTER #: SN #1 83600108 & #2 83600115

SURVEY UNITS DPM/100cm² W&R



N / S / E / W

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 6498 VALUE: 890 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE c/m	BKGD. c/m
3-13-89 AM	214 & 182	1
3-13-89 PM	201 & 220	2
3-15-89 AM	217 & 226	1
	ASC#2	
3-13-89	30	.3
	ASC#1	
3-15-89	34	.3

84	Max DPM/100cm²
	DIRECT
1500	TOTAL DPM
135	READINGS
11.11	DPM/100cm² AVG.
	SMEAR
228	TOTAL DPM
135	SMEARS
1.69	DPM/100cm² AVG
9	Max DPM/100cm²

WALL #1

Top left	Top right	Center	Bottom left	Bottom right
D-12 S-3	D-36 S-3	D-4 S-0	D-4 S-0	D-8 S-3

WALL #2

Top left	Top right	Center	Bottom left	Bottom right
D-16 S-0	D-12 S-0	D-12 S-0	D-4 S-0	D-4 S-3
D-8 S-0	D-8 S-0	D-32 S-0	D-32 S-0	D-16 S-0
D-20 S-3	D-4 S-0	D-24 S-3	D-12 S-3	D-12 S-0
D-4 S-0	D-4 S-3	D-16 S-3	D-8 S-9	D-12 S-6
D-0 S-3	D-8 S-0	D-8 S-3	D-24 S-0	D-36 S-3
D-4 S-3	D-16 S-0	D-4 S-0	D-12 S-6	D-20 S-6
D-4 S-3	D-0 S-3	D-0 S-0	D-4 S-0	D-8 S-0
D-4 S-0	D-8 S-0	D-16 S-0	D-8 S-6	D-8 S-0

WALL #3

Top left	Top right	Center	Bottom left	Bottom right
D-8 S-0	D-16 S-0	D-0 S-3	D-12 S-0	D-12 S-0

WALL #4

Top left	Top right	Center	Bottom left	Bottom right
D-4 S-0	D-0 S-6	D-16 S-0	D-8 S-0	D-8 S-3
D-4 S-6	D-8 S-0	D-12 S-3	D-4 S-0	D-4 S-0
D-0 S-0	D-8 S-3	D-22 S-0	D-0 S-0	D-4 S-3
D-12 S-3	D-0 S-0	D-40 S-3	D-16 S-0	D-12 S-9
D-12 S-3	D-4 S-0	D-16 S-6	D-8 S-3	D-12 S-6

WALL #6

Top left	Top right	Center	Bottom left	Bottom right
D-24 S-3	D-16 S-3	D-84 S-0	D-40 S-0	D-12 S-0

WALL #7

Top left	Top right	Center	Bottom left	Bottom right
D-8 S-0	D-8 S-3	D-16 S-0	D-24 S-0	D-20 S-0

WALL #5

Top left	Top right	Center	Bottom left	Bottom right
D-4 S-3	D-8 S-3	D-20 S-9	D-20 S-3	D-0 S-3
D-4 S-6	D-16 S-3	D-20 S-0	D-0 S-0	D-6 S-3
D-4 S-6	D-12 S-0	D-8 S-0	D-6 S-0	D-8 S-6
D-4 S-0	D-4 S-0	D-16 S-0	D-12 S-0	D-24 S-3

WALL #8&9

Top left	Top right	Center	Bottom left	Bottom right
D-0 S-3	D-16 S-0	D-16 S-3	D-12 S-0	D-20 S-3
D-8 S-0	D-0 S-0	D-16 S-3	D-12 S-9	D-16 S-0
D-8 S-0	D-16 S-0	D-4 S-0	D-6 S-0	D-8 S-0
D-8 S-3	D-0 S-0	D-12 S-0	D-16 S-0	D-0 S-3

WALL #10

Top left	Top right	Center	Bottom left	Bottom right
D-12 S-0	D-0 S-3	D-8 S-0	D-12 S-3	D-20 S-0
D-0 S-0	D-8 S-3	D-12 S-0	D-12 S-0	D-0 S-0

N / W / E / S

1.5cm = 1 Meter

AREA Pu-PLANT ROOM# 108

FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50057

COMPLETION DATE 3-9-89

H.P. SIGNATURE Claude M. Thompson

AUTO. SAMPLE COUNTER #: SN 8360015

SURVEY UNITS DPM/100cm² WAR

D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 6498 VALUE: 870 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-9-89 AM	205 ± 220	1
3-9-89 pm	192 ± 228	2
	ASC#1	
3-9-89	36	.3

NORTH WALL

D-24 S-9	D-8 S-3	D-0 S-3	D-8 S-3
D-8 S-0		D-0 S-0	
D-12 S-3	D-16 S-0	D-0 S-0	D-8 S-0

EAST WALL

D-8 S-3	D-0 S-0
D-20 S-0	
D-20 S-3	D-0 S-3

FLOOR

D-4 S-0	D-4 S-0	D-4 S-0	D-8 S-6
	D-16 S-6		D-24 S-3
D-8 S-3	D-0 S-0	D-0 S-0	D-16 S-6

SOUTH WALL

D-8 S-0	D-16 S-3	D-8 S-3	D-16 S-3
D-8 S-3		D-0 S-0	
D-8 S-0	D-16 S-0	D-0 S-6	D-8 S-6

WEST WALL

D-4 S-0	D-8 S-6
D-12 S-3	
D-12 S-0	D-12 S-0

CEILING

D-4 S-0	D-4 S-0	D-0 S-0	D-0 S-6
	D-24 S-0		D-4 S-0
D-4 S-3	D-16 S-3	D-8 S-0	D-0 S-0

DIRECT 24 Max DPM/100cm²

416 TOTAL DPM

50 READINGS

8.32 DPM/100cm² AVERAGE

SMEAR 9 Max DPM/100cm²

99 TOTAL DPM

50 SMEARS

1.98 DPM/100cm² AVERAGE

AREA Pu-PLANT ROOM# 109 — TYPE OF SURVEY α DIRECT & SMEAR — COMPLETION DATE 3-10-89 — SURVEY UNITS DPM/100cm² WAR

FINAL GRID — TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68 (43-68) — H.P. SIGNATURE Claude M Thompson

SERIAL NUMBER 50057 + 48395 — AUTO. SAMPLE COUNTER#: SN 8360011S

N / W / E / S

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm²
FIXED

SOURCE#: 7272 6498 VALUE: 850 890 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
50057 3-9-89 PM	182+228	2
48395 3-10-89 AM	191+214	2
	ASC#1	
3-10-89	36	.3

NORTH WALL

D-0 S-3	D-12 S-0	D-8 S-3	D-12 S-0
	D-0 S-3		D-16 S-0
D-12 S-0	D-16 S-0	D-16 S-0	D-8 S-0

EAST WALL

D-16 S-9	D-0 S-6
D-36 S-3	
D-4 S-3	D-4 S-0

FLOOR

D-7 S-6	D-8 S-0	D-12 S-3	D-8 S-6
	D-4 S-0		D-20 S-0
D-0 S-0	D-20 S-0	D-4 S-3	D-12 S-3

SOUTH WALL

D-20 S-6	D-8 S-3	D-0 S-0	D-0 S-0
	D-8 S-3		D-0 S-6
D-8 S-9	D-20 S-0	D-28 S-3	D-16 S-9

WEST WALL

D-8 S-0	D-4 S-6
D-16 S-6	
D-0 S-3	D-4 S-3

CEILING

D-8 S-0	D-0 S-0	D-8 S-3	D-0 S-6
	D-8 S-3		D-16 S-6
D-8 S-0	D-0 S-3	D-0 S-3	D-24 S-3

DIRECT 36 Max DPM/100cm² — SMEAR 9 Max DPM/100cm²

464 TOTAL DPM — 135 TOTAL DPM

50 READINGS — 50 SMEARS

9.28 DPM/100cm² AVERAGE — 2.70 DPM/100cm² AVERAGE

AREA Pu-PLANT ROOM # 110 — FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 50057 & 49395

COMPLETION DATE 3-10-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: #1 83600115

SURVEY UNITS DPM/100cm² WAM

N / W / E / S

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 7272 6498 VALUE: 850 890 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
93395 3-10-89 pm	191 & 214	2
50057 3-10-89 pm	199 & 225	1
	ASC #1	
3-10-89	36	.3

NORTH WALL

D-0 S-0	D-0 S-6	D-16 S-0	D-16 S-6
D-20 S-0		D-0 S-0	
D-0 S-3	D-28 S-0	D-24 S-0	D-12 S-0

EAST WALL

D-0 S-0	D-0 S-3
D-8 S-3	
D-8 S-3	D-0 S-0

FLOOR

D-0 S-6	D-24 S-3	D-4 S-3	D-24 S-3
D-0 S-3		D-16 S-0	
D-4 S-6	D-0 S-0	D-12 S-0	D-8 S-0

SOUTH WALL

D-8 S-0	D-12 S-3	D-16 S-6	D-8 S-3
D-4 S-6		D-8 S-0	
D-0 S-0	D-4 S-6	D-12 S-9	D-0 S-0

WEST WALL

D-0 S-0	D-8 S-3
D-4 S-6	
D-8 S-3	D-0 S-3

CEILING

D-16 S-3	D-16 S-0	D-8 S-0	D-4 S-6
D-0 S-0		D-8 S-0	
D-8 S-3	D-4 S-0	D-8 <-0	D-4 S-0

DIRECT 24 Max DPM/100cm²

384 TOTAL DPM

50 READINGS

7.68 DPM/100cm² AVERAGE

SMEARS 9 Max DPM/100cm²

108 TOTAL DPM

50 SMEARS

2.16 DPM/100cm² AVERAGE

AREA Pu-PLANT ROOM # 114

TYPE OF SURVEY α DIRECT & SMEAR

COMPLETION DATE 3-16-89

SURVEY UNITS DPM/100cm² fixed

FINAL GRID

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

H.P. SIGNATURE W.A. Rogers

SERIAL NUMBER 50057

AUTO. SAMPLE COUNTER #: SN 83600115 + 83600108

N / W / E / S

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

MDA 11.09 DPM/100cm² FIXED

SOURCE #: 6498 VALUE: 890 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-10-89	199+225	1
3-10-89	212	1
	ASC #2	
3-10-89	33	.3
	ASC #1	
3-16-89	36	.3

NORTH WALL

D-0 S-0 | D-16 S-0 | D-20 S-0
D-4 S-0 | | D-0 S-3

EAST WALL

D-16 S-3 | D-4 S-0
D-16 S-0
D-24 S-0 | D-12 S-6

FLOOR

D-12 S-6 | D-4 S-0 | D-20 S-3
D-12 S-0 | | D-24 S-0

SOUTH WALL

D-16 S-3 | D-16 S-0
D-36 S-0
D-0 S-0 | D-24 S-3

WEST WALL

D-12 S-0 | D-8 S-0
D-72 S-6
D-12 S-9 | D-20 S-0

CEILING REMOVED

D- S- | D- S-
D- S-
D- S- | D- S-

Blocks BELOW WEST WALL WHERE TUB WAS

D-16 S-3 | D-16 S-0 | D-24 S-6 | D-20 S-0 | D-20 S-0
D-60 S-3 | D-4 S-0
D-4 S-0 | D- S-
D-20 S-6

S N

DIRECT

592 TOTAL DPM

35 READINGS

16.91 DPM/100cm² AVERAGE

72 Max DPM/100cm²

SMEAR

63 TOTAL DPM

35 SMEARS

1.80 DPM/100cm² AVERAGE

9 Max DPM/100cm²

PLANT PU AREA ATTIC CEILING
SURVEYED BY Vicki Arroyo OVER HP OFFICE
INST. LUDLUM 2220 # 48395 DET. 42-68
SOURCE CK 184-204 BKG. 3
DATE: 3-31-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 SN 8236000115 + 2 SN 8360000108
CTD. BY Dennis Ford
SOURCE CK. AVG. 32
BKG. 3
DATE: 4-3-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
0 METERS C-1	3	12	0
2 METERS	5	20	3
4 METERS	3	12	0
6 METERS	0	0	0
0 METERS C-2	3	12	0
2 METERS	3	12	3
4 METERS	3	12	0
6 METERS	2	8	0
C-3			
0 METERS	0	0	3
2 METERS	0	0	3
4 METERS	4	16	0
6 METERS	0	0	3
C-4			
0 METERS	3	12	3
2 METERS	5	20	0
4 METERS	4	16	0
6 METERS	1	4	3
C-5			
0 METERS	0	0	0
2 METERS	1	4	3
4 METERS	3	12	3
6 METERS	0	0	0
C-6	0	0	0
0 METERS	3	12	9
2 METERS	6	24	0
4 METERS	0	0	0
6 METERS			

PLANT ____ AREA ATTIC CEILING
SURVEYED BY Vicki Arroyo OVER HP OFFICE
INST. LUDLUM 2220 # 48395 DET. 43-18
SOURCE CK 184-204 BKG. 3
DATE: 3-31-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 SN 8236000115 & SN 8360000108
CTD. BY Dennis Ford
SOURCE CK. AVG. 32
BKG. 3
DATE: 4-3-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
0 METERS C-7	1	4	6
2 METERS	3	12	0
4 METERS	6	24	9
6 METERS	5	20	0
8 METERS	9	36	0
10 METERS	12	48	3
C-8			
0 METERS	1	4	0
2 METERS	0	0	3
4 METERS	0	0	0
6 METERS	9	36	0
8 METERS	6	24	0
10 METERS	1	4	3
C-9			
1 METER	1	4	0
C-10			
0 METERS	5	20	3
2 METERS	7	28	0
C-11			
0 METERS	10	40	0
2 METERS	7	28	0
C-12			
0 METERS	6	24	0
2 METERS	2	8	0
4 METERS	5	20	6

PLANT PU AREA ATTIC CEILING OVER HP OFFICE
SURVEYED BY DMC, ANDY H
INST. LUDLUM 2220 # 49395 DET. 43-68
SOURCE CK 184-204 BKG. 3
DATE: 3-31-89 Source #: 7272 VALUE: 850 DPM

ASC # 1st 83600115 + 83600108
CTD. BY Dennis Ford
SOURCE CK. AVG. 32
BKG. 3
DATE: 4-3-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
0 METERS	C-13	4	16	0
2 METERS		0	0	0
4 METERS		4	16	6
	C-14			
0 METERS		6	24	0
2 METERS		3	12	0
	C-15			
0 METERS		2	8	6
2 METERS		7	28	0
4 METERS		0	0	0
	C-16			
0 METERS		2	8	0
2 METERS		7	28	0
4 METERS		0	0	3

PLANT PU AREA ATTIC CEILING OVER HP OFFICE
SURVEYED BY ANDY H V MC.
INST. LUDLUM 2220 # 49395 DET. 43-68
SOURCE CK 184-204 BKG. 3
DATE: 3-31-89 Source #: 7272 VALUE: 850 DPM

ASC # 1st 83600115 + 83600108
CTD. BY Dennis Ford
SOURCE CK. AVG. 32
BKG. 3
DATE: 4-3-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
0 METERS	C-17	0	0	3
2 METERS		0	0	0
4 METERS		1	4	0
6 METERS		4	16	0
0 METERS	C-18	0	0	0
2 METERS		1	4	0
4 METERS		4	16	3
6 METERS		2	8	0
	C-19			
INACCESSABLE				
1 METERS	C-20	0	0	0
3 METERS		1	4	0

AREA Pu-PLANT ATTIC CEILING OVER H.P. OFFICES

TYPE OF SURVEY α DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

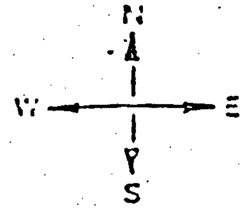
SERIAL NUMBER 48395

COMPLETION DATE 4-7-89

H.P. SIGNATURE [illegible]

AUTO. SAMPLE COUNTER#: 1 S/N 83600115 & S/N 8?600109

SURVEY UNITS DPM/100cm² WGH

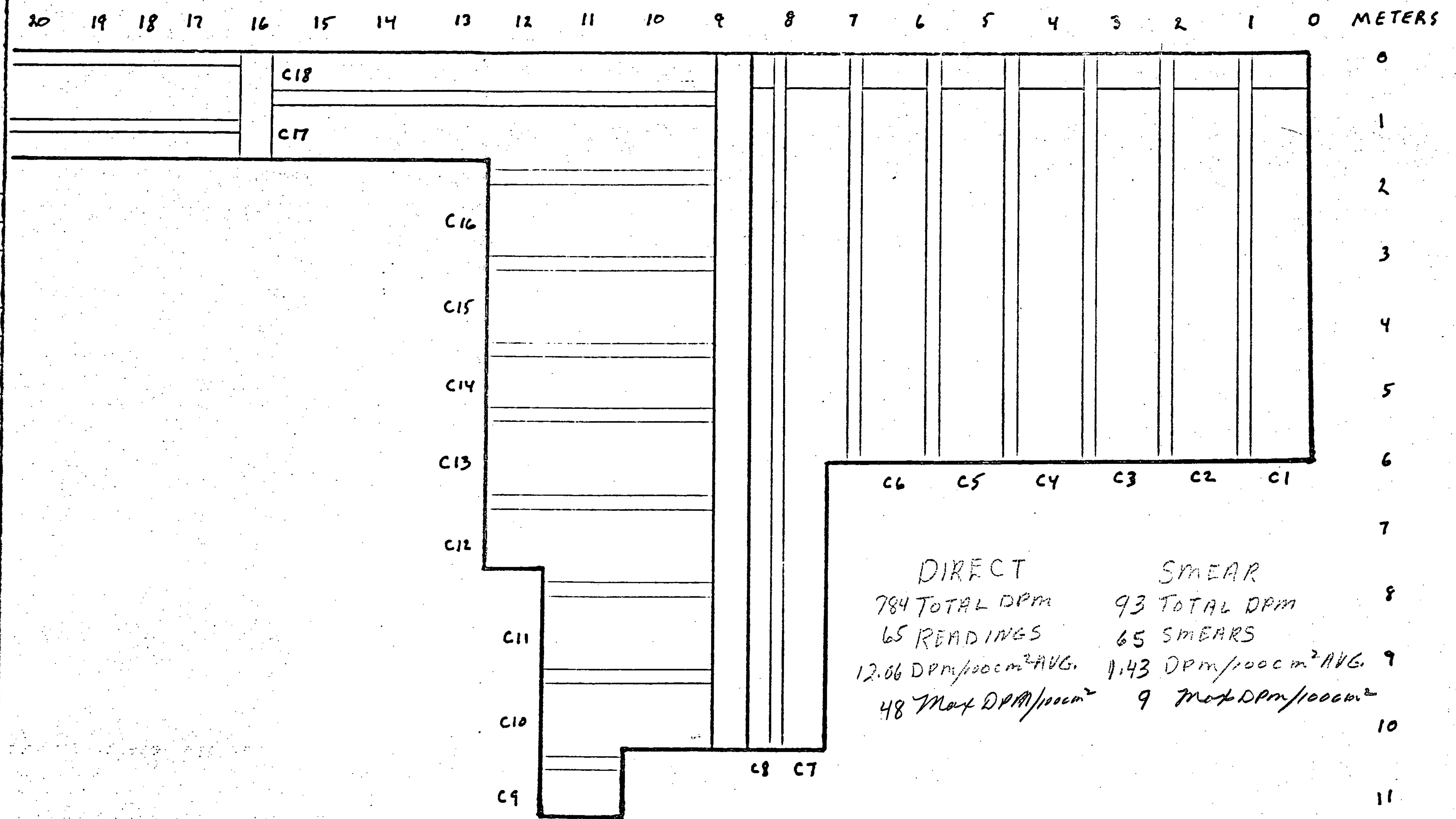


1.5 cm = 1 METER MDA 19.20 Dpm/100cm² FIXED

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

SOURCE #: 7272 VALUE: 8.50 PPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-22-89	199- 196	3
	215- 186	4
3-23-89	199- 219	1
	189- 198	1
3-27-89	180- 204	2
	189- 200	3
3-28-89	167- 184	1
	182- 192	0
3-30-89	191- 195	3
	189- 209	2
3-31-89	179- 205	4
	184- 204	3
	ASC#1	
4-3-89	32	.3
	ASC#2	
4-3-89	29	.3



DIRECT	SMEAR
784 TOTAL DPM	93 TOTAL DPM
65 READINGS	65 SMEARS
12.06 DPM/100cm² AVG.	1.43 DPM/100cm² AVG.
48 Max DPM/100cm²	9 Max DPM/100cm²

PLANT PU AREA HP CEILING BEAMS OVE HP OFFICE
SURVEYED BY AH & VM
INST. LUDLUM 2220 S/N 49395 DET. 43-63
SOURCE CK 191-195 BKG. 3
DATE: 3-30-89 SOURCE #: 7277 VALUE: 9500PM

ASC # 2 SN 821.00109
CTD. BY Dennis Ford
SOURCE CK. AVG. 29
BKG. 3
DATE: 4-3-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
BEAM #1			
1 METER	1	4	0
3 METERS	2	8	3
5 METERS	4	16	0
BEAM #2			
1 METER	4	16	3
3 METERS	1	4	0
5 METERS	0	0	0
BEAM #3			
1 METER	0	0	0
3 METERS	1	4	0
5 METERS	2	8	3
BEAM #4			
1 METER	0	0	0
3 METERS	7	28	6
5 METERS	0	0	0
BEAM #5			
1 METER	1	4	0
3 METERS	4	16	6
5 METERS	3	12	0
BEAM #6			
1 METER	0	0	0
3 METERS	3	12	0
5 METERS	3	12	3
BEAM #7			
1 METER	2	8	0
3 METERS	0	0	3
5 METERS	0	0	3
7 METERS	3	12	3
9 METERS	10	40	0
BEAM #8			
1.5 METERS	2	8	0

PLANT PU AREA HP ATTIC
SURVEYED BY AH & VM SUPPORT BEAM #3
INST. LUDLUM 2220 S/N 49395 DET. 43-68
SOURCE CK 180+204 BKG. 2
DATE: 3-22-89 SOURCE #: 7273 VALUE: 9500PM

ASC # 2 SN 821.00109
CTD. BY Dennis Ford
SOURCE CK. AVG. 36
BKG. 3
DATE: 3-22-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
SUPPORT BEAM #3				
0 METERS	TOP	N/A	N/A	0
	WEST	7	28	0
	BOTTOM	0	0	3
2 METERS	TOP	2	8	3
	WEST	3	12	0
	BOTTOM	1	4	3
4 METERS	TOP	9	36	0
	WEST	3	12	0
	BOTTOM	3	12	3
6 METERS	TOP	4	16	3
	WEST	4	16	0
	BOTTOM	6	24	0
8 METERS	TOP	5	20	3
	WEST	1	4	0
	BOTTOM	0	0	0
SUPPORT PILLAR				
0 METERS	NORTH	4	16	3
	SOUTH	2	8	3
	EAST	4	16	3
	WEST	0	0	0
9 METERS	NORTH	3	12	0
	SOUTH	0	0	3
	EAST	5	20	3
	WEST	0	0	0

PLANT PU AREA HP CEILING BEAMS OVER HP OFFICE
SURVEYED BY AH & VM
INST. LUDLUM 2220 S/N 49395 DET. 43-68
SOURCE CK 191-195 BKG. 3
DATE: 3-30-89 SOURCE #: 7272 VALUE: 950 DPM

ASC # 2 SN 93-00108
CTD. BY Dennis Ford
SOURCE CK. AVG. 29
BKG. 3
DATE: 4-3-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
BEAM #9			
1 METER	2	8	0
3 METERS	4	16	6
BEAM #10			
1 METER	8	32	0
3 METERS	7	28	0
BEAM #11			
1 METER	1	4	0
3 METERS	4	16	0
BEAM #12			
1 METER	6	24	0
3 METERS	7	28	0
BEAM #13			
1 METER	10	40	9
3 METERS	4	16	0
BEAM #14			
1 METER	0	0	3
3 METERS	5	20	3
BEAM #15			
1 METER	5	20	0
3 METERS	9	36	0
BEAM #16			
1 METER	0	0	0
3 METERS	3	12	0
5 METERS	2	8	3
BEAM #17			
0 METER	14	56	0
2 METERS	0	0	3
4 METERS	1	4	0
BEAM #18			
1 METER	3	12	0
3 METERS	7	28	0

PLANT PU AREA HP ATTIC SUPPORT BEAM #1
SURVEYED BY VM & AH
INST. LUDLUM 2220 S/N 49395 DET. 43-68
SOURCE CK 179-205 BKG. 4
DATE: 3-23-89 SOURCE #: 7272 VALUE: 950 DPM

ASC # 2 SN 93-00108
CTD. BY Dennis Ford
SOURCE CK. AVG. 36
BKG. 3
DATE: 3-27-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
SUPPORT BEAM #1				
0 METERS	NORTH SIDE	0	0	0
2 METERS	NORTH SIDE	0	0	3
	NORTH TOP CENTER	3	12	3
0 METERS	SOUTH SIDE	2	8	0
2 METERS	SOUTH SIDE	0	0	0
	SOUTH TOP CENTER	6	24	0
	BOTTOM CENTER	0	0	3

PLANT PU AREA HP ATTIC Support BEAMS #2
SURVEYED BY VM, AH & SV
INST. LUDLUM 2220 * # 48395 DET. 43-68
SOURCE CK 179-205 BKG. 4
DATE: 3-23-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 9360108
CTD. BY Dennis Ford
SOURCE CK. AVG. 36
BKG. .3
DATE: 3-27-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Support BEAM #2				
0 METERS	Top	7	28	0
	Bottom	4	16	3
	NORTH	2	8	0
	South	3	12	0
2 METERS	Top	15	60	3
	Bottom	5	20	0
	NORTH	4	16	0
	South	4	16	0
4 METERS	Top	24	96	3
	Bottom	6	24	3
	NORTH	6	24	0
	South	3	12	0
5 METERS	Top	67	268	3
	Top	60	240	6
	Top	60	240	6
5 METERS - RECOUNTS				
	Top	6	24	0
	Top	15	60	6
	Top	17	68	0
6 METERS	Top	2	8	0
	Bottom	0	0	3
	NORTH	2	8	3
	South	5	20	0
8 METERS	Top	6	24	6
	Bottom	2	8	0
	NORTH	2	8	3
	South	3	12	3

PLANT PU AREA HP ATTIC Support BEAM #2
SURVEYED BY VM - AH - SV
INST. LUDLUM 2220 * # 48395 DET. 43-68
SOURCE CK 179-205 BKG. 4
DATE: 3-23-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 9360108
CTD. BY Dennis Ford
SOURCE CK. AVG. 36
BKG. .3
DATE: 3-27-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Continued Support BEAM #2				
10 METERS	Top	6	20	6
	Bottom	2	8	3
	North	0	0	0
	South	1	4	3

AREA Pu-PLANT CEILING BEAMS OVER H.P. OFFICES

TYPE OF SURVEY α DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 48395

COMPLETION DATE 4-19-89

H.P. SIGNATURE [signature]

SURVEY UNITS DPM/100cm² WGA

AUTO. SAMPLE COUNTER#: 2 SN 83600108 + SN/# 83600115

E / N — S / W

1.5cm = 1 METER

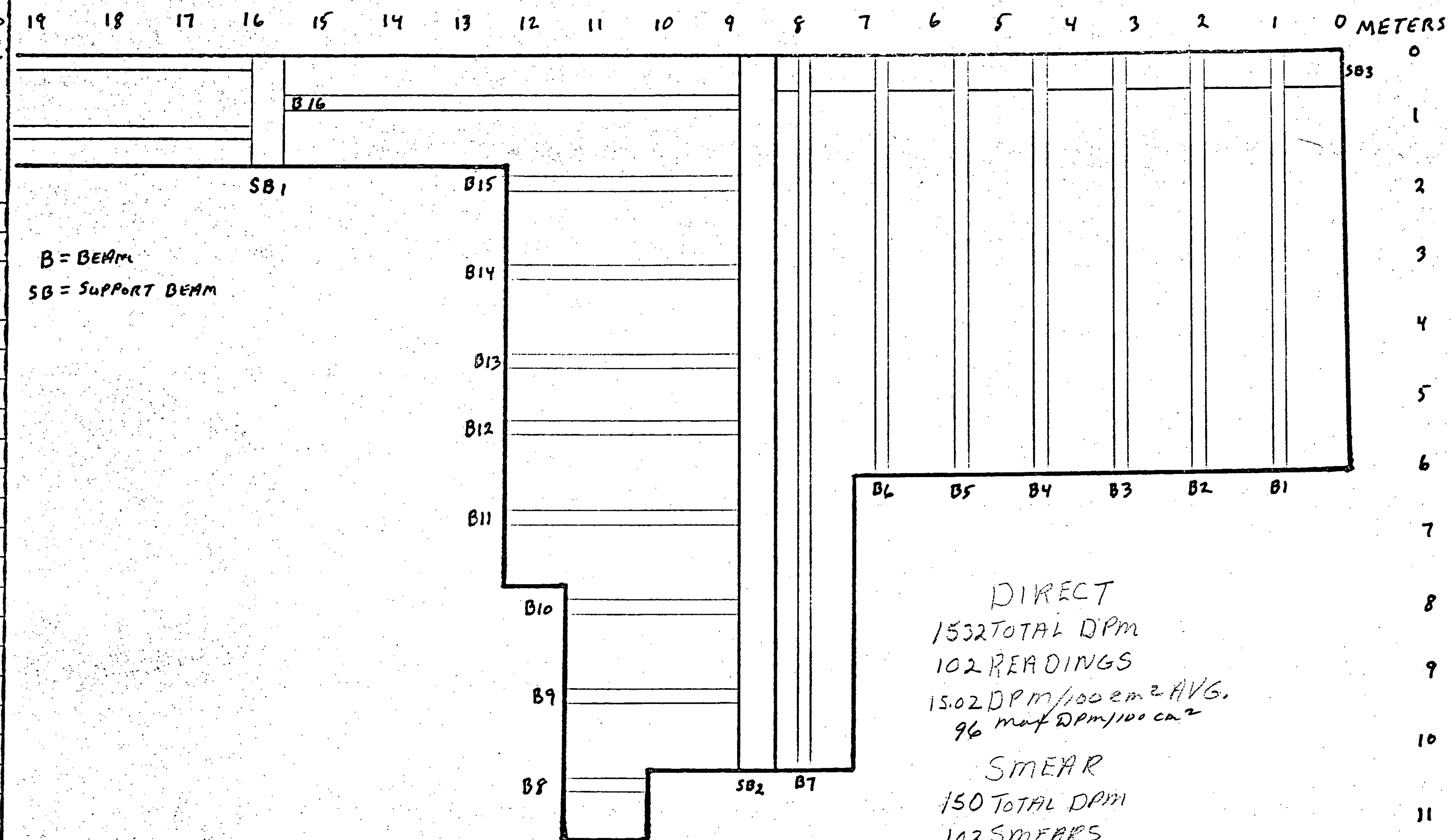
MDA 22.17 DPM/100cm² FIXED

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

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-22-89	198-196	3
	215-196	4
3-2?-89	199-218	1
	189-198	1
3-27-89	180-204	2
	189-200	3
3-28-89	167-184	1
	182-192	0
3-30-89	191-195	3
	189-204	2
3-31-89	179-205	4
	184-204	3
	ASC#1	
3-28-89	31	.2
4-3-89	32	.3
4-19-89	24	.1
	ASC#2	
3-27-89	36	.3
4-3-89	29	.3

B = BEAM
SB = SUPPORT BEAM



DIRECT
1532 TOTAL DPM
102 READINGS
15.02 DPM/100cm² AVG.
96 max DPM/100 cm²

SMEAR
150 TOTAL DPM
103 SMEARS
1.46 DPM/100cm² AVG
9 max DPM/100 cm²

AREA Pu-PLANT ATTIC WALLS OVER H.P. OFFICES FINAL GRID

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 48295

COMPLETION DATE 4-4-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: 1 SN 8360015

SURVEY UNITS DPM/100cm² Wall

PAGE 1 OF 2

N / W / E / S

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

MDA 22.17 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGDS/M
3-22-89	198-196	3
	215-186	4
3-23-89	199-218	1
	189-198	1
3-27-89	180-204	2
	189-200	3
3-28-89	167-184	1
	182-192	0
3-30-89	191-195	3
	182-209	2
3-31-89	179-204	4
	184-205	3
	ASC #1	
4-4-89	37	.3

WALL #1

WALL #2

WALL #3

WALL #4

WALL #5

WALL #6

WALL #7

DIRECT

1740 TOTAL DPM

171 READINGS

10.16 DPM/100cm² AVG

5% MAX DPM/100cm²

SMEAR

273 TOTAL DPM

171 SMEARS

1.60 DPM/100cm² AVG

9 MAX DPM/100cm²

AREA Pu-PLANT ATTIC WALLS OVER H.P. OFFICES FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

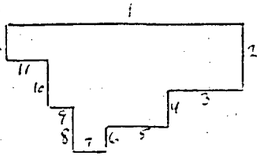
SERIAL NUMBER 48295

COMPLETION DATE 4-4-89

H.P. SIGNATURE

AUTO. SAMPLE COUNTER #: SN 1-8360015

SURVEY UNITS DPM/100cm²



N
W E
S

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

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

SOURCE #: 7222 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
3-22-89	198-196	3
	215-186	4
3-23-89	199-218	1
	189-198	1
3-27-89	185-204	2
	189-200	3
3-28-89	167-184	1
	182-192	0
3-30-89	191-195	3
	182-209	2
3-31-89	179-204	4
	184-205	3
	ASC #1	
4-4-89	37	.3

D-12 S-9 | D-0 S-0 | D-0 S-0 | D-0 S-3 | D-4 D-28 S-0 S-3 | D-16 S-0 | D-16 S-3 | D-16 S-6 | D-16 S-0 | D-8 S-0 | D-4 S-3

D-12 S-6 | D-8 S-0 | D-28 S-0 | D-12 S-6 | HOLE | D-4 S-0

D-8 S-3 | D-32 S-0 | D-28 S-0 | D-16 S-9 | D-24 D-16 S-0 S-3 | D-56 S-0 | HOLE | D-20 S-3 | D-32 S-3 | D-4 S-0 | D-0 S-3

WALL #8 | WALL #9 | WALL #10

ABOVE AIR DUCT: D-0 S-0 | D-0 S-3

D-16 S-0 | D-12 S-6 | D-8 S-0 | D-0 S-3 | D-16 S-3 | D-8 S-3 | D-4 S-0 | D-12 S-0 | D-32 S-0 | D-16 S-3

D-20 S-0 | D-8 S-9 | D-8 S-0 | D-0 S-6 | D-24 S-0 | D-28 S-0

D-20 S-3 | D-0 S-6 | D-32 S-0 | D-8 S-0 | D-0 S-3 | D-0 S-0 | D-4 S-0 | D-0 S-0 | D-4 S-0 | D-0 S-0

WALL #11 | WALL #12

AREA Pu-PLANT H.P. OFFICES
FLOOR IN ATTIC
FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER H8395

COMPLETION DATE 3-30-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS DPM/100cm² NaR

AUTO. SAMPLE COUNTER #: 1 S/N 93600115 4 #2 S/N 93600108

E
N S
W

1.5 cm = 1 Meter

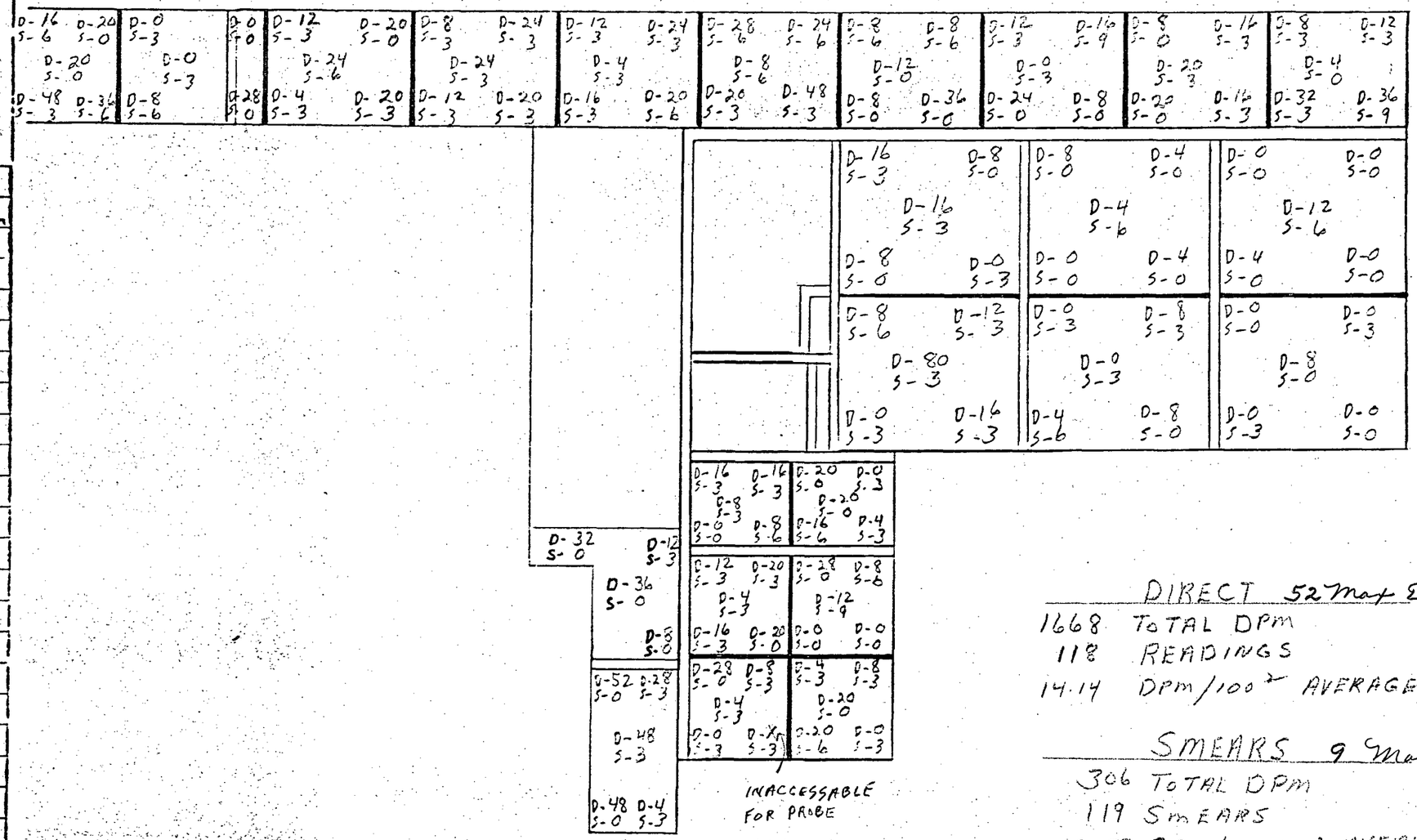
D- DIRECT
S- SMEAR

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

MDA 22.17 DPm/100cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/m RESPONSE	BKGDS C/m
3-22-89	198-196	3
	215-186	4
3-23-89	199-216	1
	189-198	1
3-27-89	180-204	2
	189-200	3
3-28-89	167-184	1
	182-192	0
3-30-89	191-195	3
	189-209	2
	ASC#2	
3-22-89	29	1.3
	ASC#1	
3-30-89	35	1.3



DIRECT 52 Max DPm/100cm²

1668 TOTAL DPM
118 READINGS
14.14 DPm/100cm² AVERAGE

SMEARS 9 Max DPm/100cm²

306 TOTAL DPM
119 SMEARS
2.57 DPm/100cm² AVERAGE

PLANT PU AREA HP OFFICE Supply AIR DucT
SURVEYED BY Vm+Andy H
INST. LUDLUM 2220 # 46395 DET. 43-68
SOURCE CK 198-196 / 215-186 BKG. 4
DATE: 3-30-89 Source #: 7272 VALUE: 2500 DPM

ASC # 1 SN 8360015
CTD. BY Dennis F RHM
SOURCE CK. AVG. 36
BKG. .3
DATE: 3-22-89 / 4-10-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SHEAR
DucT #1 BoTTom READINGS By WALL #12			
A	2	8	0
B	3	12	6
C	3	12	0
WEST			
A	1	4	3
B	3	12	0
EAST			
A	2	8	0
B	3	12	3
DucT #2 By WALL #11 WEST SIDE INACCESSABLE			
TOP			
0 METERS	2	8	0
2 METERS	0	0	0
4 METERS	0	0	9
EAST SIDE			
0 METERS	2	8	0
2 METERS	2	8	3
4 METERS	0	0	0
BoTTom			
0	0	0	0
2	0	0	3
4	0	0	3
NoRTH			
0 METERS	7	28	0
RISE AIR DUCT			
NORTH	0	0	0
SOUTH	1	4	0
EAST	0	0	0

PLANT PU AREA Supply AIR DucT
SURVEYED BY VM+ Andy H
INST. LUDLUM 2220 # 46395 DET.
SOURCE CK 178-196 / 215-186 BKG. 4
DATE: 3-30-89 SOURCE #: VALUE: DPM

ASC # 1 SN 8360015
CTD. BY Dennis Ford RHM
SOURCE CK. AVG. 36
BKG. .3
DATE: 3-22-89 / 4-10-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SHEAR
METERS DUCT #3			
0-m TOP	2	8	0
0-m BoTTom	1	4	0
0-m SOUTH	0	0	0
0-m NORTH	0	0	0
2-m TOP	1	4	3
2-m BoTTom	0	0	0
2-m NORTH	0	0	0
2-m SOUTH	2	8	0
DUCT #4			
0-m TOP	2	8	3
0-m BoTTom	INACCESSABLE		
0-m NORTH	2	8	3
0-m SOUTH	3	12	6
2-m TOP	4	16	0
2-m BoTTom	4	16	0
2-m EAST	2	8	0
2-m WEST	3	12	3
4-m TOP	3	12	3
4-m BoTTom	3	12	0
4-m EAST	1	4	6
4-m WEST	3	12	0
6-m TOP	12	48	6
6-m BoTTom	3	12	6
6-m EAST	4	16	9
6-m WEST	2	8	0

PLANT PU AREA Supply Air Duct
SURVEYED BY Vick m+Andy H
INST. LUDLUM 2220 # 48395 DET. 43-68
SOURCE CK 198-196 215-186 BKG. _____
DATE: 3-30-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 SN 93600115
CTD. BY Dennis Tarda RHM
SOURCE CK. AVG. 36
BKG. .3
DATE: 3-22-89 / 4-10-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
8m TOP DUCT #4	3	12	3
8m Bottom	2	8	9
8m EAST	2	8	0
8m WEST	3	12	3
10m TOP	4	16	1.
10m Bottom	2	8	9
10m EAST	6	24	9
10m WEST	3	12	6
DUCT #5			
0 m TOP	4	16	0
0 m Bottom	0	0	0
0 m NORTH	3	12	0
0 m SOUTH	4	16	0
2m TOP	6	24	0
2m Bottom	0	0	0
2m NORTH	4	16	3
2m SOUTH	2	8	3
4m TOP	3	12	0
4m Bottom	7	28	0
4m EAST	3	12	0
4m WEST	6	24	0
EXHAUST VENT			
4m NORTH	6	24	6
4m EAST	3	12	0
4m SOUTH	2	8	0
4m WEST	4	16	0

PLANT PU AREA Supply Air Duct
SURVEYED BY Vick m+Andy H
INST. LUDLUM 2220 # 48395 DET. 43-68
SOURCE CK 198-196 215-186 BKG. 4
DATE: SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 SN 93600115
CTD. BY Dennis Tarda RHM
SOURCE CK. AVG. 36
BKG. .3
DATE: 3-22-89 / 4-10-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
DUCT #5			
6m NORTH	1	40	3
6m VENT	4	16	3
6m EAST	0	0	0
6m WEST	2	8	0
7m EAST	0	0	0
7m SOUTH	4	16	3
7m WEST	2	8	0
7m NORTH	10	40	3
8m TOP	0	0	0
8 m BOTTOM	1	4	0
8 m EAST	2	8	3
8 m WEST	0	0	3
10 m NORTH	2	8	3
10 m EAST	0	0	0
10 m SOUTH	1	4	0
10 m WEST	0	0	0
12 m TOP	0	0	0
12 m BOTTOM	0	0	0
12 m EAST	2	8	0
12 m WEST	1	4	0
14 m NORTH	0	0	0
14 m EAST	1	4	0
14 m SOUTH	2	8	3
14 m WEST	1	4	0

PLANT P11 AREA Supply Air Duct

SURVEYED BY Vickmc Andy H

INST. LUDLUM 2220 # 148395 DET. 43-68

SOURCE CK 198-176 315-186 BKG. 4

DATE: 3-30-89 SOURCE #: 7272 VALUE: 856 DPM

ASC # ISN9360115

CTD. BY Dennis Jr RHH

SOURCE CK. AVG. 36

BKG. 3

DATE: 3-22-89 / 4/6/89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION CTSV4	DIRECT CPM	DIRECT DPM	SMEAR
DUCT #6			
0 M TOP	12	48	0
0 M BOTTOM	2	8	0
0 M NORTH	2	8	0
0 M SOUTH	0	0	0
2 M TOP	7	28	0
2 M BOTTOM	1	4	0
2 M NORTH	0	0	0
2 M SOUTH	3	12	0
2 M TOP DUCT #6A	4	16	0
2 M BOTTOM	7	28	0
2 M EAST	4	16	0
2 M WEST	1	4	6
4 M TOP	2	8	0
4 M BOTTOM	1	4	3
4 M NORTH	0	0	0
4 M SOUTH	0	0	0
DUCT #6			
4 M TOP	11	44	0
4 M BOTTOM	9	36	3
4 M EAST	8	32	0
4 M WEST	14	56	0
DUCT #7 REMOVED			
1 M TOP DUCT #8	8	32	0
1 M BOTTOM	1	8	3
1 M EAST	3	12	0
1 M WEST	3	12	3

PLANT P11 AREA Supply Air Duct

SURVEYED BY Vickmc Andy H

INST. LUDLUM 2220 # 148395 DET. 43-68

SOURCE CK 198-176 315-186 BKG. 4

DATE: 3-30-89 SOURCE #: 7272 VALUE: 856 DPM

ASC # ISN9360115

CTD. BY Dennis Jr RHH

SOURCE CK. AVG. 36

BKG. 3

DATE: 3-22-89 4/6/89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
DUCT #8A			
1 M TOP	7	28	0
1 M BOTTOM	4	16	3
1 M NORTH	3	12	3
1 M SOUTH	3	12	0
3 M TOP	4	16	6
3 M BOTTOM	6	24	3
3 M EAST	5	20	3
3 M WEST	5	20	0
DUCT #8A			
3 M TOP	11	44	0
3 M BOTTOM	5	20	3
3 M NORTH	3	12	0
3 M SOUTH	3	12	0
5 M TOP	7	28	0
5 M BOTTOM	7	28	0
5 M EAST	12	48	3
5 M WEST	4	16	0
DUCT #4			
0 M TOP	2	8	0
0 M BOTTOM	0	0	0
0 M NORTH	0	0	0
0 M SOUTH	0	0	0
2 M NORTH	0	0	0
2 M SOUTH	0	0	0
2 M EAST	2	8	0
2 M WEST	0	0	0

PLANT PU AREA Supply Air Duct
SURVEYED BY V.Mc ANDREW
INST. LUDLUM 2220 # 49395 DET. 43-68
SOURCE CK 198-196 BKG. 4
DATE: 3-30-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 SM 8360115
CTD. BY Dennis Ford
SOURCE CK. AVG. 36
BKG. 3
DATE: 3-22-89 4/10/89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
DUCT #9			
4 m TOP	2	8	0
4 m BOTTOM	0	0	0
4 m NORTH	1	4	3
4 m SOUTH	0	0	6
6 m NORTH	2	8	3
6 m SOUTH	0	0	3
6 m EAST	2	8	3
6 m WEST	1	4	0
DUCT #10			
1 m TOP	0	0	9
1 m BOTTOM	4	16	3
1 m EAST	0	0	0
1 m WEST	1	4	3
3 m TOP	12	48	3
3 m BOTTOM	6	24	3
3 m EAST	4	16	0
3 m WEST	1	4	3
5 m TOP	6	24	0
5 m BOTTOM	4	16	3
5 m EAST	5	20	0
5 m WEST	1	4	0
7 m TOP	7	28	0
7 m BOTTOM	3	12	3
7 m EAST	0	0	6
7 m WEST	5	20	0

PLANT PU AREA Supply Air Duct
SURVEYED BY V.Mc ANDREW
INST. LUDLUM 2220 # 49395 DET. 43-68
SOURCE CK 198-196 BKG. 4
DATE: 3-30-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 SM 8360115
CTD. BY Dennis Ford
SOURCE CK. AVG. 36
BKG. 3
DATE: 3-22-89 4-10-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
DUCT #10			
9 m TOP	14	56	0
9 m BOTTOM	3	12	6
9 m EAST	2	8	0
9 m WEST	3	12	6
11 TOP	12	48	0
11 BOTTOM	0	0	3
11 EAST	4	16	0
11 WEST	3	12	3
13 TOP	25	100	6
13 BOTTOM	1	4	0
13 EAST	1	4	0
13 WEST	4	16	0
13-m AFTE DECON TOP	1	4	

AREA Pu-PLANT H.P. OFFICES
SUPPLY AIR DUCT

TYPE OF SURVEY ✓ DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET 43-68

SERIAL NUMBER 48395

COMPLETION DATE 4-20-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: 1 SN 826 00115

SURVEY UNITS DPM/100cm² WAR

E
N S
W

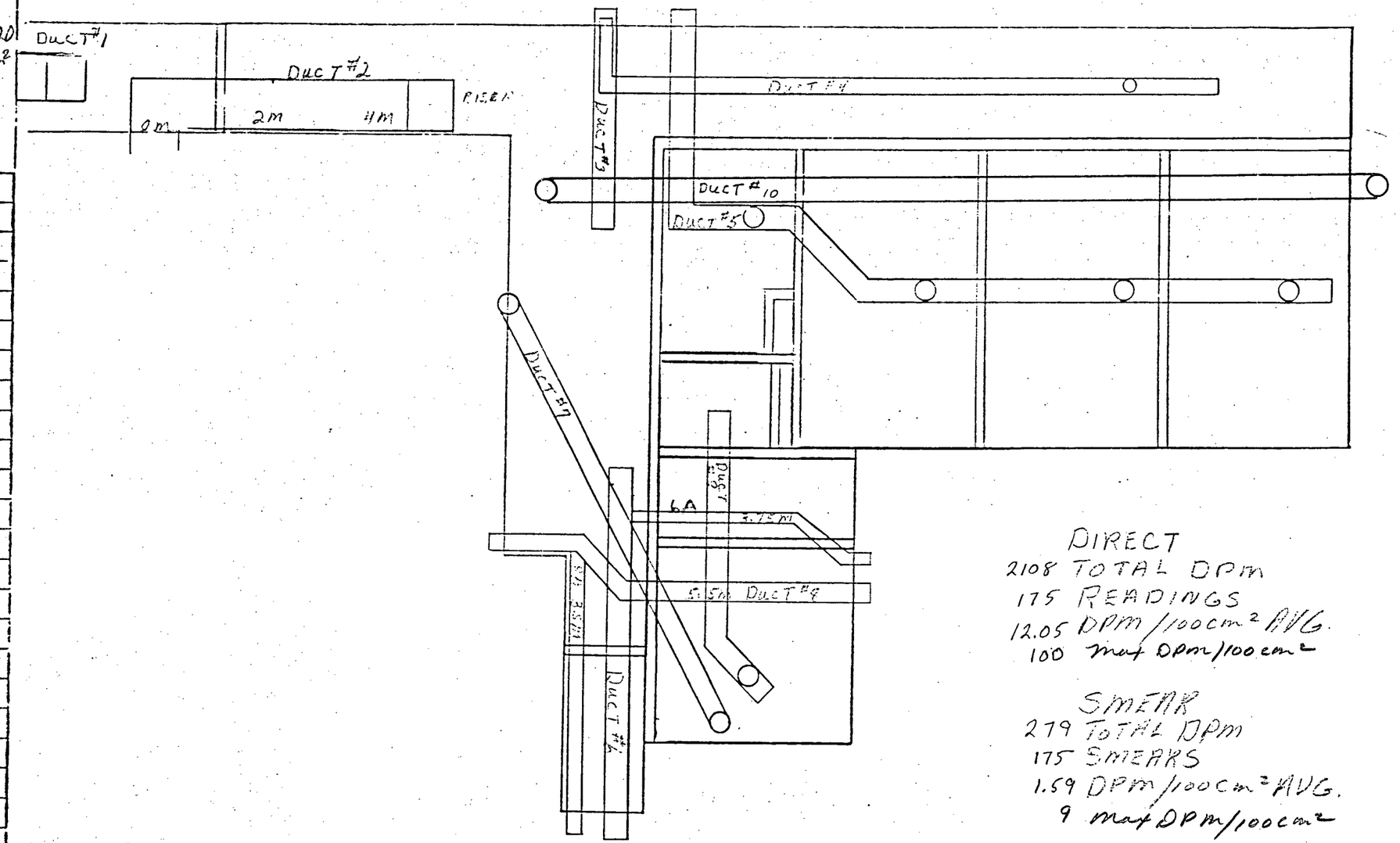
1.5 cm = 1 Meter

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

MDA 22.20 DPM/100cm² FIXED

SOURCE #: 7272 VALUE 850

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
3-22-89	198-196	3
PM	215-186	4
3-23-89	199-218	1
PM	189-199	1
3-29-89	190-204	2
PM	189-200	3
3-29-89	167-184	1
PM	182-192	0
3-30-89	191-195	3
PM	189-209	2
3-31-89	179-205	4
PM	184-204	3
	ASC #1	
3-22-89	36	.3
3-23-89	31	.3
3-31-89	33	.3
4-10-89	29	.2
	ASC #2	
4-20-89	29	.3



DIRECT
2108 TOTAL DPM
175 READINGS
12.05 DPM/100cm² AVG.
100 max DPM/100cm²

SMEAR
279 TOTAL DPM
175 SMEARS
1.59 DPM/100cm² AVG.
9 max DPM/100cm²

PLANT PU AREA OFFICE AREA

SURVEYED BY Jim H ELECTRIC LIGHT CONDUIT

INST. LUDLUM 2220 # 59313 DET. 43-4

SOURCE CK 206-211 BKG. 2

DATE: 3-8-99 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 SM 8 2660115

CTD. BY RHM

SOURCE CK. AVG. 36

BKG. 3

DATE: 3-22-99

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION Ct. X 13	DIRECT CPM	DPM	SMEAR
ELECTRIC LIGHTS AND CONDUIT			
1	3	39	3
2	0	0	3
3 LIGHT	2	26	0
4	1	13	0
5 LIGHT	2	26	3
6	4	52	3
7	3	39	3
8 LIGHT	0	0	0
9	2	26	3
10	4	52	3
11	4	52	0
12	4	52	6
13	3	39	0
14 LIGHT	5	65	6
15	4	52	3
16	6	78	9
17	4	52	9
18	4	52	6
19	5	65	6
20	6	78	0
21 LIGHT	5	65	0
22	4	52	3
23 LIGHT	7	91	3
24	5	65	0
25 LIGHT	3	39	0
26	3	39	0
27 LIGHT	3	39	0
28 LIGHT	3	39	3
29 LIGHT	2	26	6
30	3	39	6
31 LIGHT	2	26	0
32	4	52	3
33 LIGHT	0	0	0

PLANT PU AREA OFFICE AREA ELECTRIC CONDUIT LIGHT

SURVEYED BY Jim H

INST. LUDLUM 2220 # 59313 DET. 43-4

SOURCE CK 206-211 BKG. 2

DATE: 3-13-99 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 SM 8 2660115

CTD. BY RHM

SOURCE CK. AVG. 36

BKG. 3

DATE: 3-22-99

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
34	4	52	0
35	4	52	0
36 LIGHT	6	78	3
37	4	52	0
38 LIGHT	7	91	6
39 LIGHT	7	91	3
40	2	26	3
41	2	26	3
42	4	52	3
43	6	78	0
44	5	65	6
45 LIGHT	1	13	0
46 LIGHT	2	26	0
47	4	52	0

AREA Pu-PLANT NON PRO AREA
ELEC. CONDUIT

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4

SERIAL NUMBER 58313

COMPLETION DATE 4-5-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS DPM/100cm² WAW

AUTO. SAMPLE COUNTER #: 1 SN 8360115 #2 SN 8360108

W
S N
E

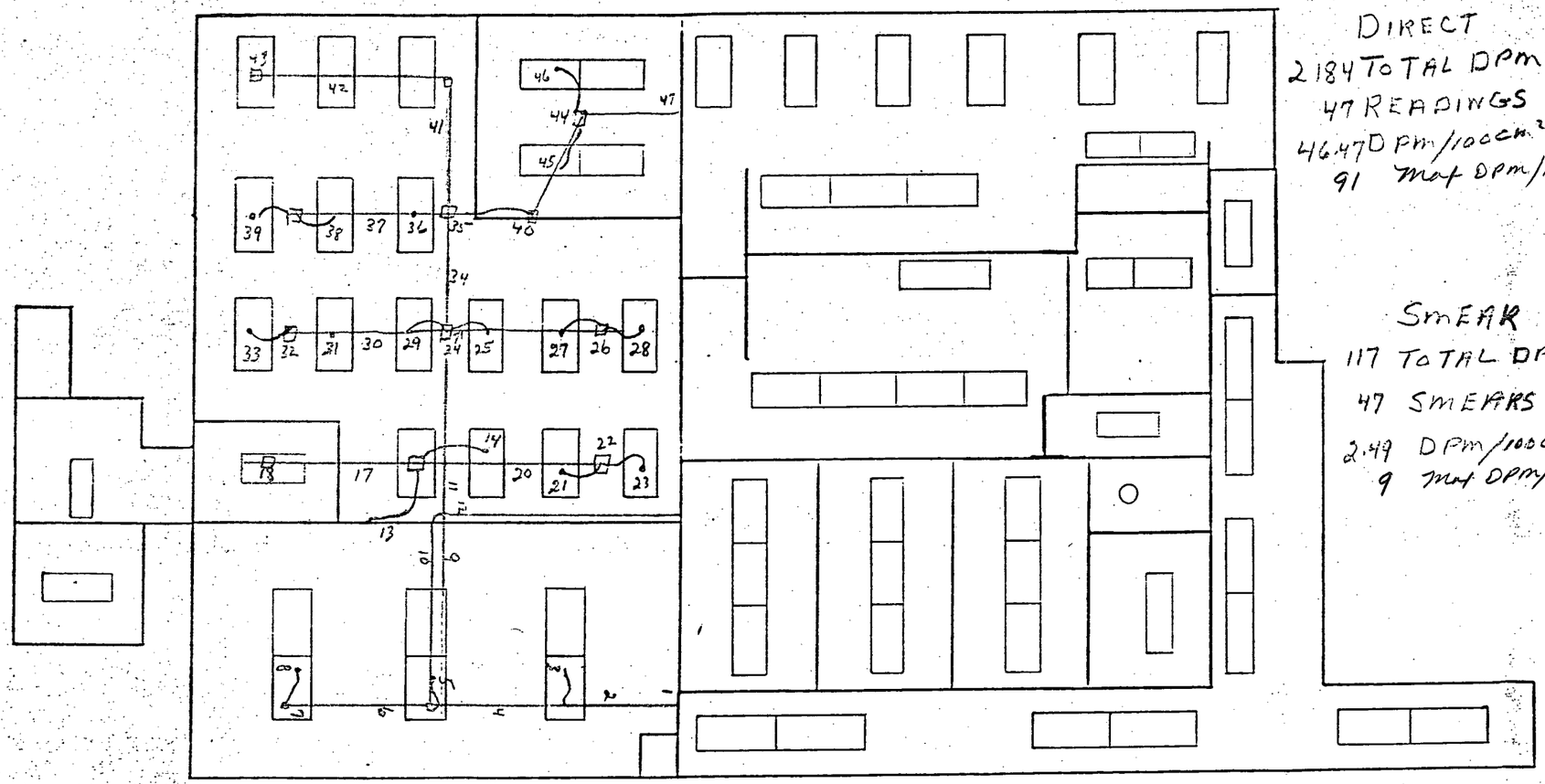
1 cm = 1 Meter

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

MDA 62.41 dpm/100cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
3-8-89	187-199	AM 3
3-8-89	202-190	PM 2
3-9-89	208-179	AM 2
3-9-89	190-204	PM 2
3-13-89	216-206	AM 2
3-13-89	237-190	PM 2
3-14-89	213-207	AM 2
3-14-89	191-188	PM 1
3-15-89	214-196	AM 0
3-15-89	183-208	PM 0
	ASC #1	
3-22-89	36	3
	ASC #2	
4-5-89	23	3



DIRECT
2184 TOTAL DPM
47 READINGS
46.47 DPM/100cm² AVG.
91 MAX DPM/100cm²

SMEAR
117 TOTAL DPM
47 SMEARS
2.49 DPM/100cm² AVG.
9 MAX DPM/100cm²

PLANT PU AREA NON PRO AREA

SURVEYED BY Andy H Vickers ELEC. CONDUIT

INST. LUDLUM 2220 # 50064 DET. 43-4

SOURCE CK 230-220 BKG. 0

DATE: 3-21-89 SOURCE # 1.49 VALUE: 990 DPM

ASC # 2 SN 8360108

CTD. BY RHM

SOURCE CK. AVG. 29

BKG. 3

DATE: 3-22-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
Loop LINES			
0 METERS LINE #1	6	84	0
2 METERS	4	56	6
LINE #2			
0 METERS	2	28	3
2 METERS	0	0	0
LINE #3			
0 METERS	0	0	3
2 METERS	1	14	0
LINE #4			
0 METERS	0	0	0
2 METERS	3	42	3
LINE #5			
0 METERS	3	42	0
2 METERS	2	28	6
LINE #6			
0 METERS	0	0	0
LINE #7			
0 METERS	4	56	0
2 METERS	0	0	0
4 METERS	3	42	0
LINE #8			
0 METERS	0	0	0
2 METERS	2	28	0
4 METERS	0	0	0
LINE #9			
0 METERS	3	42	0
2 METERS	4	56	0
4 METERS	6	84	0
LINE #10			
0 METERS	4	56	3
2 METERS	6	84	0
4 METERS	4	56	3

NON PRO AREA

PLANT PU AREA ELECT. CONDUIT

SURVEYED BY Andy H Vickers

INST. LUDLUM 2220 # 50664 DET. 43-4

SOURCE CK 230-220 BKG. 0

DATE: 3-21-89 SOURCE # 1.49 VALUE: 990 DPM

ASC # 2 SN 8360108

CTD. BY RHM

SOURCE CK. AVG. 29

BKG. 3

DATE: 3-22-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
Loop LINES			
LINE #11			
0 METERS	3	42	3
2 METERS	2	28	0
LINE #12			
0 METERS	5	70	0
2 METERS	5	70	6

W
S — N
E
1 cm = 1 Meter

AREA Pu-PLANT NON PRO AREA
ELEC. CONDUIT

TYPE OF SURVEY α DIRECT + SMEAR
TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4
SERIAL NUMBER 52974

COMPLETION DATE 3-22-99
H.P. SIGNATURE [signature]
AUTO. SAMPLE COUNTER #: 2 SN 971/0109

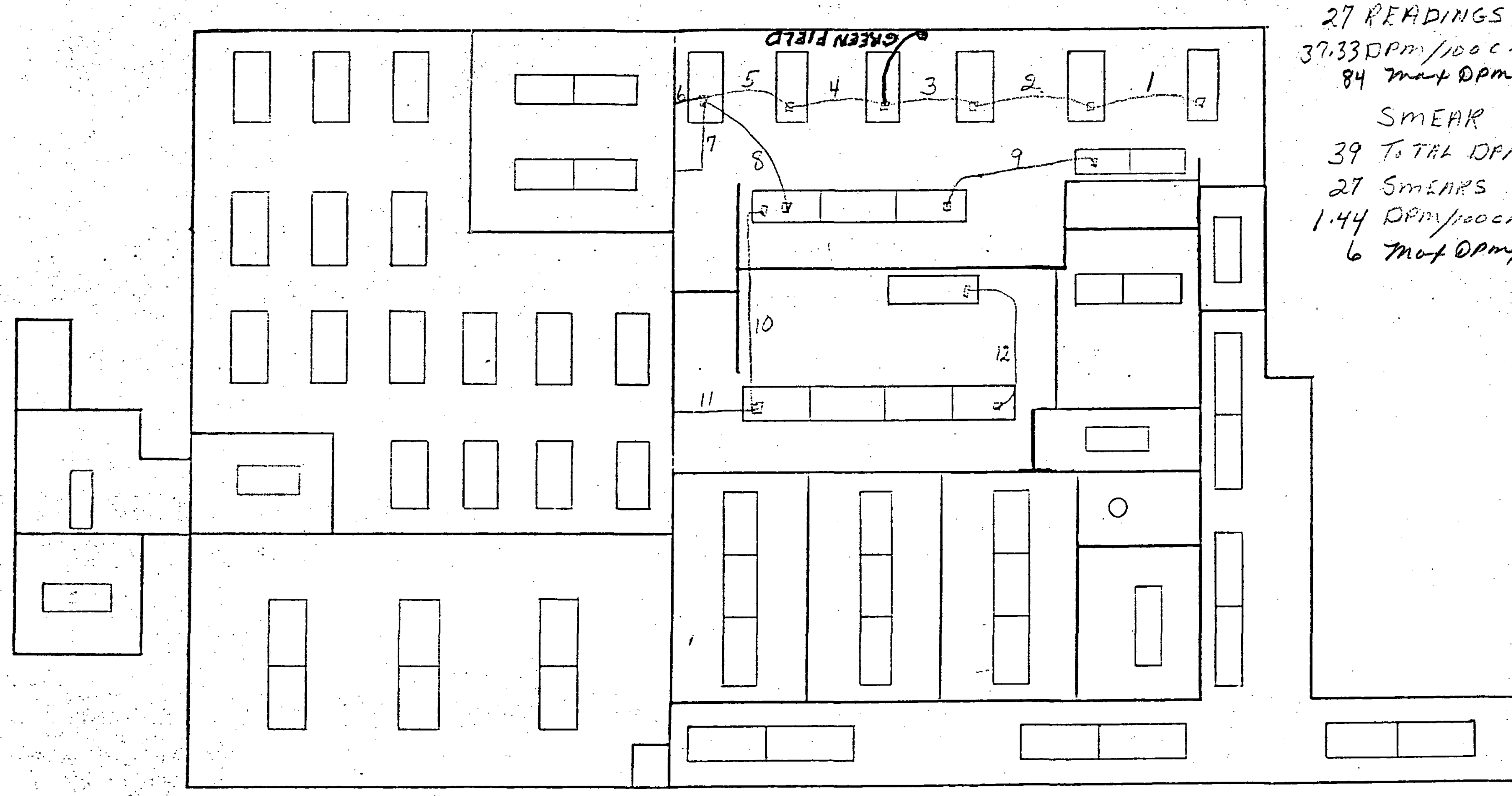
SURVEY UNITS DPM/100cm²

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

MDA = 38.81 DPM/100cm² FIXED

SOURCE #: 6498 VALUE: 890 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
3-21-99	230/220	0
	ASC#2	
3-22-99	29	.3



DIRECT
1008 TOTAL DPM
27 READINGS
37.33 DPM/100cm² AVG
84 max DPM/100cm²

SMEAR
39 TOTAL DPM
27 SMEARS
1.44 DPM/100cm² AVG
6 max DPM/100cm²

PLANT PU AREA HP ATTIC
SURVEYED BY AH & VM & SV ELEC. CONDUIT
INST. LUDLUM 2220 * # 52834 DET. 43-4
SOURCE CK 195-202 BKG. 2
DATE: 4-3-89 SOURCE #: 1498 VALUE: 890 DPM

ASC # 1 SN 83600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 37
BKG. 3
DATE: 4-4-89 & 4-20-89

RECOUNTS BKG. 3-4
50064 DATE 4-18-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Light Loops & Switches				
AND RECOUNTS				
LOOP #1				
0 METERS	Top	6	72	0
0 METERS	Bottom	6	72	0
2 METERS	Top	13	156	0
2 METERS	Top	RECOUNT	0	3
2 METERS	Bottom	3	36	0
LOOP #2				
0 METERS	Top	5	60	9
0 METERS	Bottom	5	60	3
2 METERS	Top	6	72	0
2 METERS	Bottom	5	60	3
Light Switch #1				
0 METERS	Top	5	60	6
0 METERS	Bottom	6	72	0
2 METERS	Top	3	36	3
2 METERS	Bottom	5	60	3
LOOP #3				
0 METERS	Top	13	156	9
0 METERS	Top	RECOUNT	12	0
0 METERS	Bottom	8	96	9
0 METERS	Bottom	RECOUNT	72	0
2 METERS	Top	4	48	0
2 METERS	Bottom	7	84	0
END	Top	5	60	0
END	Bottom	3	36	0
Light Switch #2				
0 METERS	Top	4	48	3
0 METERS	Bottom	2	24	6

PLANT PU AREA HP ATTIC
SURVEYED BY AH & VM + SV ELEC. CONDUIT
INST. LUDLUM 2220 * # 52834 DET. 43-4
SOURCE CK 195-202 BKG. 2
DATE: 4-3-89 SOURCE #: 1498 VALUE: 890 DPM

ASC # 1 SN 83600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 37
BKG. 3
DATE: 4-4-89 & 4-20-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Loop #4				
0 METERS	Top	5	60	0
0 METERS	Bottom	6	72	3
2 METERS	Top	7	84	3
2 METERS	Bottom	6	72	6
END	Top	7	84	3
END	Bottom	6	72	0
LIGHT SWITCH #3				
0 METERS	Top	3	36	3
0 METERS	Bottom	18	216	0
0 METERS	Bottom	RECOUNT	24	0
2 METERS	Top	8	96	3
2 METERS	Top	RECOUNT	96	3
2 METERS	Bottom	18	216	3
		RECOUNT	96	6
Loop #5				
0 METERS	Top	1	12	0
0 METERS	Bottom	8	96	3
0 METERS	Bottom	RECOUNT	108	3
2 METERS	Top	6	72	0
2 METERS	Bottom	3	36	3
END	Top	2	24	0
END	Bottom	2	24	0
LIGHT SWITCH #4				
0 METERS	Top	2	24	0
0 METERS	Bottom	3	36	0
END	Top	11	132	0
END	Top	RECOUNT	48	6
END	Bottom	8	96	0
END	Bottom	RECOUNT	48	0

PLANT PU AREA HP ATTIC
SURVEYED BY AH + VM + SV ELEC. CONDUIT
INST. LUDLUM 2220 * # 52834 DET. 43-4
SOURCE CK 195-202 BKG. 2
DATE: 4-3-89 SOURCE #: 1498 VALUE: 890 DPM

ASC # 1 SN 83600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 37
BKG. 3
DATE: 4-4-89 + 4-20-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
LOOP #6				
0 METERS	TOP	11	132	3
0 METERS	TOP	RECOUNT	0	3
0 METERS	BOTTOM	4	48	3
2 METERS	TOP	9	108	0
2 METERS	TOP	RECOUNT	72	3
2 METERS	BOTTOM	3	36	3
4 METERS	TOP	11	120	0
4 METERS	TOP	RECOUNT	24	0
4 METERS	BOTTOM	3	36	0
6 METERS	TOP	2	24	0
6 METERS	BOTTOM	3	36	0
LIGHT SWITCH # 5				
0 METERS	TOP	10	120	0
0 METERS	TOP	RECOUNT	36	3
0 METERS	BOTTOM	2	24	0
2 METERS	TOP	1	12	3
2 METERS	BOTTOM	5	60	3
LOOP #7				
0 METERS	TOP	2	24	0
0 METERS	BOTTOM	3	36	0
2 METERS	TOP	0	0	3
2 METERS	BOTTOM	0	0	0
LOOP #8				
0 METERS	TOP	9	108	6
0 METERS	TOP	RECOUNT	0	0
0 METERS	BOTTOM	6	72	0
2 METERS	TOP	7	84	0
2 METERS	BOTTOM	2	24	0

PLANT PU AREA HP ATTIC
SURVEYED BY AH + VM + SV ELEC. CONDUIT
INST. LUDLUM 2220 * # 52834 DET. 43-4
SOURCE CK 195-202 BKG. 2
DATE: 4-3-89 SOURCE #: 1498 VALUE: 890 DPM

ASC # 1 SN 83600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 37
BKG. 3
DATE: 4-4-89 + 4-20-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
LOOP #9				
0 METERS	TOP	9	108	3
0 METERS	TOP	RECOUNT	0	3
0 METERS	BOTTOM	3	36	9
2 METERS	TOP	2	24	0
2 METERS	BOTTOM	0	0	3
LOOP #10				
0 METERS	TOP	19	228	0
0 METERS	TOP	RECOUNT	0	0
0 METERS	BOTTOM	2	24	0
2 METERS	TOP	8	96	6
2 METERS	TOP	RECOUNT	12	3
2 METERS	BOTTOM	7	84	3
LOOP #11				
0 METERS	TOP	3	36	0
0 METERS	BOTTOM	6	72	0
2 METERS	TOP	20	240	0
2 METERS	TOP	RECOUNT	0	9
2 METERS	BOTTOM	8	96	0
2 METERS	BOTTOM	RECOUNT	108	6
4 METERS	TOP	12	144	0
4 METERS	TOP	RECOUNT	24	6
4 METERS	BOTTOM	10	120	3
	BOTTOM	RECOUNT	0	3
0 METERS LOOP #12	TOP	4	48	3
0 METERS	BOTTOM	7	84	3
2 METERS	TOP	8	96	0
2 METERS	TOP	RECOUNT	0	0
2 METERS	BOTTOM	9	108	0
2 METERS	BOTTOM	RECOUNT	60	0
4 METERS	TOP	10	120	0
4 METERS	TOP	RECOUNT	0	0
4 METERS	BOTTOM	3	36	9

PLANT PH AREA HP ATTIC

SURVEYED BY AH VM + SV ELEC. CONDUIT

INST. LUDLUM 2220 # 52834 DET. 43-4

SOURCE CK 195-202 BKG. 2

DATE: 4-3-89 SOURCE #: 6498 VALUE: 896 DPM

ASC # 1 SN 83600115

CTD. BY Dennis Ford

SOURCE CK. AVG. 37

BKG. 3

DATE: 4-4-89 4-20-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
CONTINUATION				
OF LOOP #12				
6 METERS	TOP	6	72	3
6 METERS	BOTTOM	10	120	0
6 METERS	BOTTOM	RECOUNT	48	3
LIGHT SWITCH #6				
0 METERS		0	0	6
0 METERS		0	0	3
2 METERS		8	96	0
2 METERS		RECOUNT	36	3
2 METERS		1	12	0
LOOP #13				
0 METERS	TOP	3	36	6
0 METERS	BOTTOM	5	60	3
2 METERS	TOP	7	84	0
2 METERS	BOTTOM	10	120	3
2 METERS	BOTTOM	RECOUNT	72	3
END	TOP	9	108	0
END	TOP	RECOUNT	60	0
END	BOTTOM	13	156	0
END	BOTTOM	RECOUNT	72	0
LIGHT SWITCH #8				
0 METERS		2	24	3
0 METERS		2	24	0
2 METERS		3	36	3
2 METERS		4	48	3

AREA Pu-PLANT NON PRO AREA
LIGHT FIXTURES
ELEC. CONDUIT

TYPE OF SURVEY d DIRECT & SMEAR
TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-4
SERIAL NUMBER 52834

COMPLETION DATE 4-20-89
H.P. SIGNATURE Claude M Thompson
SURVEY UNITS DPM/100cm²
AUTO. SAMPLE COUNTER #: 2 SN 8360108 & SN 8360115

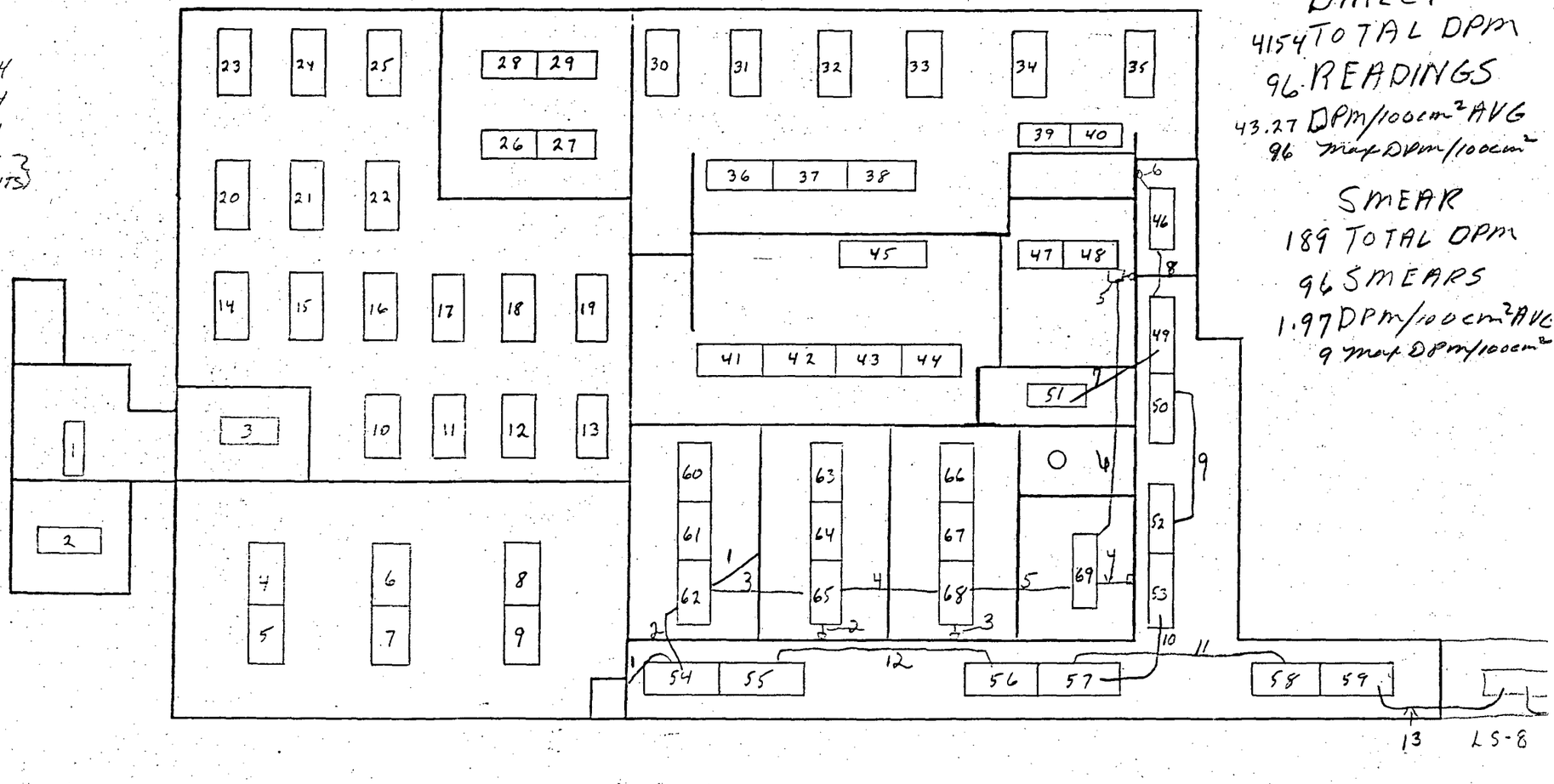
W
S — N
E
1 cm = 1 Meter

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

MDA 66.52 DPM/100cm²: FIXED

SOURCE #: 6498 VALUE: 890 DPM

INSTRUMENT			
DATE	SOURCE RESPONSE	BKGD.	
4-3-89	195-202	2	52834
	205-206	2	52834
4-4-89	232-242	3	52834
4-18-89	251-275	4	50064 ? RECOUNTS
	ASC#1		
4-4-89	37	3	
	ASC#2		
4-20-89	29	3	



DIRECT
4154 TOTAL DPM
96 READINGS
43.27 DPM/100cm² AVG
96 max DPM/100cm²

SMEAR
189 TOTAL DPM
96 SMEARS
1.97 DPM/100cm² AVG
9 max DPM/100cm²

OFFICE

PLANT PA AREA NON-PRO AREA
SURVEYED BY Jim H. LIGHT FIXTURES
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 198-211 BKG. 0
DATE: 3-23-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 836 00108
CTD. BY Dennis Ford
SOURCE CK. AVG. 28
BKG. .3
DATE: 4-10-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	LIGHT #	DIRECT CPM	DIRECT DPM	SMEAR
LIGHT FIXTURES OUTSIDE	#1 C	2	8	0
C - COVER	C	1	4	3
T - TOP	T	3	12	0
N - NORTH	T	6	24	0
E - EAST				
S - SOUTH	#2 C-N	4	16	0
W - WEST	C-S	0	0	3
	T-N	1	4	0
	T-S	0	0	0
#3 REMOVED				
	#4 C-E	3	12	0
	C-W	2	8	3
	T-E	2	8	6
	T-W	1	4	0
	#5 C-E	1	4	0
	C-W	0	0	3
	T-E	0	0	0
	T-W	2	8	0
	#6 C-E	0	0	3
	C-W	1	4	6
	T-E	2	8	0
	T-W	2	8	6
	#7 C-E	2	8	0
	C-W	1	4	3
	T-E	3	12	0
	T-W	0	0	3

OFFICE

PLANT PA AREA NON PRO AREA
SURVEYED BY Jim H. LIGHT FIXTURES
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 198-211 BKG. 0
DATE: 3-23-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 836 00108
CTD. BY Dennis Ford
SOURCE CK. AVG. 28
BKG. .3
DATE: 4-10-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	LIGHT #	DIRECT CPM	DIRECT DPM	SMEAR
OUTSIDE-LIGHT FIXTURES	#8 C-E	0	0	0
	C-W	2	8	0
C = COVER	T-E	0	0	0
T = TOP	T-W	2	8	0
N = NORTH				
E = EAST	#9 C-E	2	8	6
S = SOUTH	C-W	2	8	3
W = WEST	T-E	2	8	3
	T-W	1	4	0
#10 REMOVED				
	#11 C-E	3	12	6
	C-W	1	4	6
	T-E	5	20	3
	T-W	1	4	0
	#12 C E	1	4	6
	C W	2	8	6
	T E	5	20	3
	T W	4	16	3
	#13 C-E	2	8	3
	C-W	3	12	0
	T-E	2	8	0
	T-W	4	16	0
	#14 C-E	4	16	0
	C-W	4	16	3
	T-E	4	16	0
	T-W	3	12	0
	#15 C-E	3	12	0
	C-W	4	16	3
	T-E	3	12	0
	T-W	3	12	0

OFFICE

PLANT PU AREA NON PRO AREA
SURVEYED BY I.L.P. LIGHT FIXTURES
INST. LUDLUM 2220 # 48395 DET. 4368
SOURCE CK 191-174 BKG. 2
DATE: 4-6-89 SOURCE #: 7272 VALUE: 858 DPM

ASC # 2 SN 8360010C
CTD. BY Dennis Ford
SOURCE CK. AVG. 28
BKG. 13
DATE: 4-10-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	LIGHT #		DIRECT CPM	DIRECT DPM	SMEAR
LIGHT FIXTURES OUTSIDE	#16	C-E	4	16	0
		C-W	2	8	9
C= COVER		T-E	2	8	0
T= TOP		T-W	2	8	3
N= NORTH					
E= EAST	#17	C-E	1	4	0
S= SOUTH		C-W	3	12	0
W= WEST		T-E	2	8	0
		T-W	4	16	3
	#18	C-E	5	20	3
		C-W	1	4	3
		T-E	1	4	3
		T-W	1	4	0
	#19	C-E	0	0	3
		C-W	2	12	3
		T-E	4	16	6
		T-W	5	20	6
	#20	C-E	3	12	0
		C-W	1	4	0
		T-E	5	20	3
		T-W	2	8	0
	#21	C-E	0	0	6
		C-W	0	0	0
		T-E	3	12	3
		T-W	4	16	9
	#22	C-E	1	4	6
		C-W	2	8	0
		T-E	6	24	3
		T-W	2	8	0

OFFICE

PLANT PU AREA NON PRO AREA
SURVEYED BY Jim H LIGHT FIXTURES
INST. LUDLUM 2220 # 48395 DET. 43-68
SOURCE CK 191-174 BKG. 2
DATE: 4-6-89 SOURCE #: 7272 VALUE: 858 DPM

ASC # 2 SN 8360010B
CTD. BY Dennis Ford
SOURCE CK. AVG. 26
BKG. 1
DATE: 4-7-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
LIGHT FIXTURES OUTSIDE					
REMOVED #23			—	—	—
REMOVED #24			—	—	—
REMOVED #25			—	—	—
	#26	C-N	1	4	0
		C-S	1	4	0
C-COVER		T-N	2	8	3
T-TOP		T-S	3	12	0
N-NORTH					
E-EAST	#27	C-N	1	4	9
S-SOUTH		C-S	3	12	3
W-WEST		T-N	2	8	0
		T-S	1	4	6
REMOVED #28			—	—	—
REMOVED #29			—	—	—
	#30	C-E	1	4	0
		C-W	2	8	0
		T-E	1	4	3
		T-W	1	4	0
	#31	C-E	0	0	6
		C-W	2	8	0
		T-E	4	16	0
		T-W	2	8	0
	#32	C-E	3	12	0
		C-W	1	4	0
		T-E	3	12	0
		T-W	0	0	0

PLANT PH AREA OFFICE NON PRO AREA
SURVEYED BY J. M LIGHT FIXTURES
INST. LUDLUM 2220 # 48395 DET. 43-68
SOURCE CK 191-174 BKG. 2
DATE: 4-6-89 SOURCE #7272 VALUE: 850 DPM

ASC # 2 SN 836 00108
CTD. BY Dennis Ford
SOURCE CK. AVG. 26
BKG. 1
DATE: 4-7-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
LIGHT FIXTURES OUTSIDE #33	C-E	1	4	3
C-COVER	C-W	5	20	3
T-TOP	T-E	10	40	0
N-NORTH	T-W	7	24	2
E-EAST				
S-SOUTH #34	C-E	4	16	0
W-WEST	C-W	7	28	3
	T-E	5	28	3
	T-W	5	20	10
#35	C-E	2	8	0
	C-W	3	12	3
	T-E	5	20	3
	T-W	7	28	0
#36	C-N	0	0	0
	C-S	2	8	0
	T-N	2	8	0
	T-S	3	12	0
#37	C-N	1	4	3
	C-S	0	0	0
	T-N	2	8	0
	T-S	4	16	3
#38	C-N	1	4	3
	C-S	3	12	0
	T-N	2	8	0
	T-S	2	8	0
#39	C-N	0	0	3
	C-S	0	0	0
	T-N	1	4	3
	T-S	2	8	3

PLANT PH AREA OFFICE NON PRO AREA
SURVEYED BY J. M LIGHT FIXTURES
INST. LUDLUM 2220 # 48395 DET. 43-68
SOURCE CK 191-173 BKG. 2
DATE: 4-6-89 SOURCE #7272 VALUE: 850 DPM

ASC # 2 SN 836 00108
CTD. BY Dennis Ford
SOURCE CK. AVG. 26
BKG. 1
DATE: 4 7 89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
LIGHT FIXTURES OUTSIDE #40	C-N	1	4	0
	C-C	1	4	0
C-COVER	T-N	7	28	3
T-TOP	T-S	4	16	0
N-NORTH				
E-EAST #41	C-N	1	4	0
S-SOUTH	C-S	1	4	0
W-WEST	T-N	7	28	0
	T-S	0	0	0
#42	C-N	2	8	0
	C-S	1	4	0
	T-N	2	8	0
	T-S	3	12	6
#43	C-N	0	0	0
	C-S	2	8	0
	T-N	2	8	0
	T-S	1	4	0
#44	C-N	4	16	3
	C-S	1	4	3
	T-N	4	16	0
	T-S	0	0	0
#45	C-N	8	32	3
	C-S	1	4	3
	T-N	1	4	0
	T-S	4	16	3
#46	C-E	0	0	6
	C-W	2	8	0
	T-E	4	16	6
	T-W	1	4	3

OFFICE

PLANT PU AREA NON-PRO AREA LIGHT FIXTURES
SURVEYED BY Jim H
INST. LUDLUM 2220 # 48395 DET. 43-68
SOURCE CK 212-198 BKG. 2
DATE: 4-10-89 SOURCE #: VALUE: DPM

ASC # 2 SN 83600108
CTD. BY Dennis Ford
SOURCE CK. AVG. 26
BKG. 11
DATE: 4-7-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
LIGHT FIXTURES OUTSIDE #47	C-N	0	0	0
	C-S	0	0	3
C = COVER	T-N	0	0	3
T = TOP	T-S	2	8	3
N = NORTH				
E = EAST #48	C-N	0	0	3
S = SOUTH	C-S	1	4	0
W = WEST	T-N	1	4	0
	T-S	0	0	0
#49	C-E	0	0	6
	C-W	0	0	0
	T-E	0	0	3
	T-W	1	4	3
#50	C-E	0	0	6
	C-W	5	20	0
	T-E	2	8	3
	T-W	0	0	0
#51	C-N	5	20	0
	C-S	1	8	0
	T-N	6	24	3
	T-S	3	12	0
#52	C-E	4	16	0
	C-W	1	4	3
	T-E	3	12	3
	T-W	1	4	0
#53	C-N	1	4	0
	C-S	0	0	3
	T-N	1	4	3
	T-S	2	8	3

OFFICE

PLANT PU AREA NON PRO-AREA LIGHT FIXTURES
SURVEYED BY Jim H
INST. LUDLUM 2220 # 48395 DET. 43-68
SOURCE CK 198-200 BKG. 2
DATE: 4-10-89 SOURCE # 7272 VALUE: 850 DPM

ASC # 2 SN 83600108
CTD. BY Dennis Ford
SOURCE CK. AVG. 26
BKG. 11
DATE: 4-10-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
LIGHT FIXTURES OUTSIDE #54	C-N	1	4	0
	C-S	2	8	3
C-COVER	T-N	2	8	0
T- TOP	T-S	6	24	0
N- NORTH				
S- SOUTH #55	C-N	1	4	0
E- EAST	C-S	1	4	6
W WEST	T-N	5	20	3
	T-S	3	12	6
#56	C-N	0	0	3
	C-S	3	12	0
	T-N	0	0	3
	T-S	0	0	0
#57	C-N	1	4	0
	C-S	3	12	0
	T-N	0	0	0
	T-S	2	8	0
#58	C-N	5	20	3
	C-S	2	8	0
	T-N	2	8	0
	T-S	4	16	3
#59	C-N	3	12	0
	C-S	3	12	0
	T-N	1	4	3
	T-S	1	4	0
#60	C-E	7	28	6
	C-W	3	12	0
	T-E	5	20	0
	T-W	1	4	3

PLANT PH AREA OFFICE NON PRO AREA LIGHT FIXTURES

SURVEYED BY A.M.H

INST. LUDLUM 2220 * 48395 DET. 43-68

SOURCE CK 198-200 BKG. 2

DATE: 4-10-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SM 83600108

CTD. BY Dennisford

SOURCE CK. AVG. 26

BKG. .1

DATE: 4-10-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
LIGHT FIXTURES OUTSIDE #61	C-E	2	8	0
	C-W	1	4	6
C-COVER	T-E	5	20	3
T-TOP	T-W	0	0	0
N-NORTH				
E-EAST #62	C-E	3	12	0
S-SOUTH	C-W	1	4	0
W-WEST	T-E	4	16	0
	T-W	2	8	3
#63	C-E	2	8	3
	C-W	4	16	3
	T-E	1	4	0
	T-W	6	24	0
#64	C-N	0	0	0
	C-S	1	4	3
	T-N	4	16	0
	T-S	2	8	3
NO LIGHT COVER #65	C-N	4	16	0
	C-S	0	0	6
	T-N	2	8	0
	T-S	9	36	0
#66	C-E	0	0	0
	C-W	1	4	0
	T-E	4	16	0
	T-W	3	12	0
#67	C-E	2	8	0
	C-W	0	0	0
	T-E	2	8	3
	T-W	2	8	3

PLANT PH AREA OFFICE NON PRO AREA LIGHT FIXTURES

SURVEYED BY A.M.H

INST. LUDLUM 2220 * DET. 43-68

SOURCE CK 198-200 BKG. 2

DATE: 4-10-89 SOURCE #: VALUE: DPM

ASC # 2 SM 83600108

CTD. BY Dennisford

SOURCE CK. AVG. 26

BKG. .1

DATE: 4-10-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
LIGHT FIXTURES OUTSIDE #68	C-E	4	16	3
	C-W	0	0	6
C-COVER	T-E	0	0	3
T-TOP	T-W	0	0	3
N-NORTH				
E-EAST #69	C-E	1	4	0
S-SOUTH	C-W	1	4	3
W-WEST	T-E	19	76	0
	T-W	5	20	9

AREA Pu-PLANT NON PRO AREA
LIGHT FIXTURES

TYPE OF SURVEY α DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 50069 + 48395 + 50057

COMPLETION DATE 4-12-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS DPM/100cm² α,β

AUTO. SAMPLE COUNTER #: 2 SN 83600108 + #1 83600115

W
S N
E

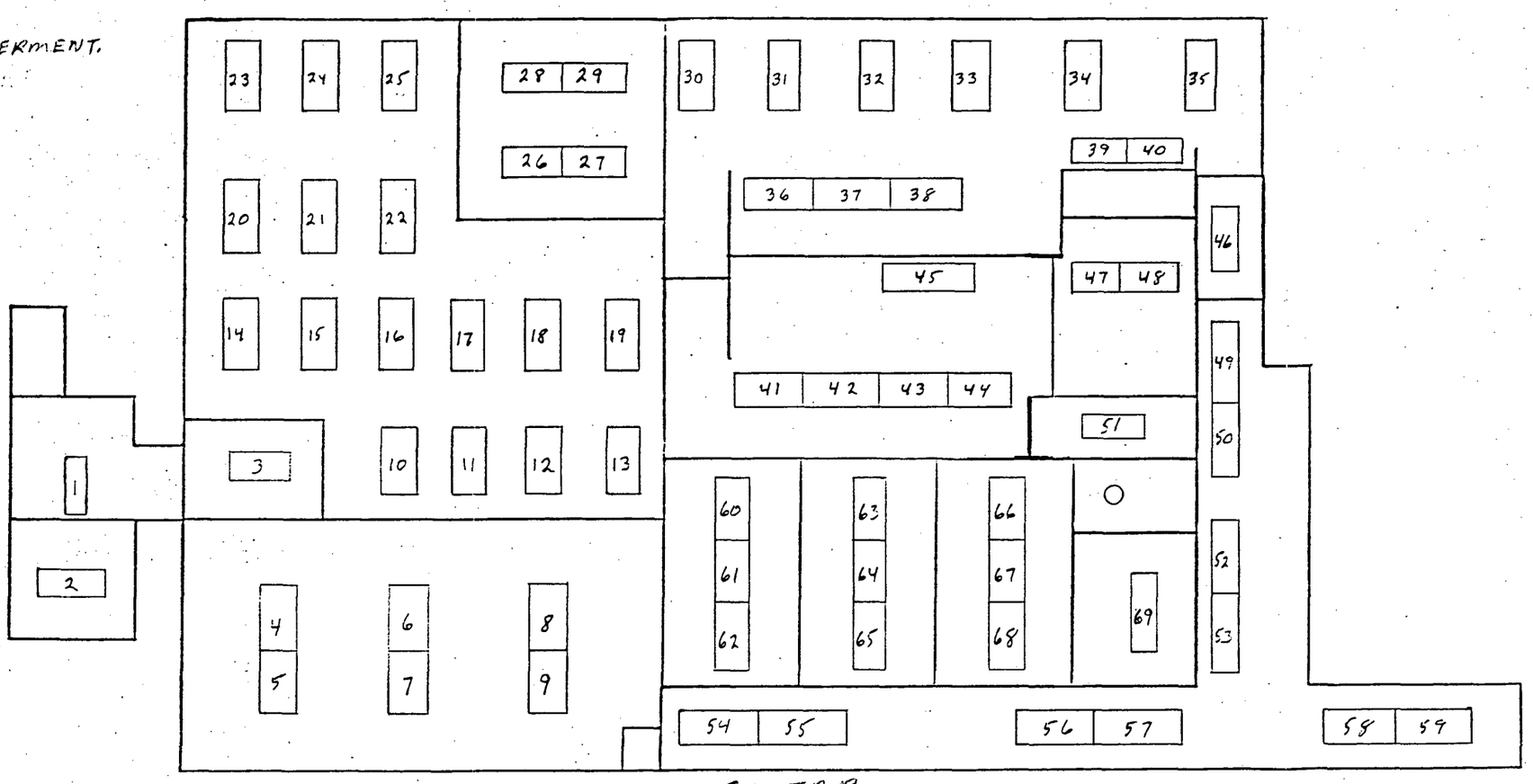
1 cm = 1 Meter

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

MDA 19.20 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT			
DATE	SOURCE RESPONSE	BKGD.	INSTERMENT.
3-23-89	185-208	0	50069
3-23-89	198-211	0	50069
3-27-89	191-181	0	50069
3-27-89	192-184	1	50069
3-29-89	193-189	1	50069
4-4-89	214-188	1	50069
4-5-89	205-217	0	50069
4-5-89	212-189	2	50057
4-5-89	201-180	3	48395
4-6-89	191-173	2	48395
4-6-89	192-174	2	48395
4-7-89	196-195	1	48395
4-7-89	216-192	3	48395
4-10-89	198-212	2	48395
4-10-89	193-186	1	48395
4-11-89	198-200	2	48395
4-11-89	197-193	2	48395
	ASC #2		
4-7-89	26	.1	
4-7-89	26	.3	
4-10-89	28	.3	
4-12-89	27	.2	
	ASC #1		
4-7-89	26	.3	
4-11-89	33	.2	



DIRECT
2284 TOTAL DPM
248 READINGS
9.21 DPM/100cm² AVG
76 Max DPM/100cm²

SMEAR
423 TOTAL DPM
248 SMEARS
1.71 DPM/100 cm² AVG
9 Max DPM/100cm²