Westinghouse Government Services Company LLC
a member of Washington Group International, Inc.

Electro-Mechanical Division
1000 Cheswick Avenue
Cheswick Pennsylvania 15024-1300
(724) 275 5000

February 1, 2001

P&C-2001-04

Mr. Mark Roberts
Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Dear Mr. Roberts:

As promised at an earlier meeting at the Electro-Mechanical Division, Cheswick, Pennsylvania, enclosed are the picture book and video of the EMD Cheswick Site D&D. Hopefully, this will help with the final review and issuance of the final NRC approval document.

If you have any questions, please contact me at 724-275-5030.

Sincerely,

WESTINGHOUSE GOVERNMENT SERVICES COMPANY LLC
Electro-Mechanical Division

Charles Lim, Manager
Environmental and Radiological Engineering Compliance

Enclosures – 1 Book and 1 Video

2001 FEB -6 PM 1:54
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REGION I

NMSS OGN004
Template.

NMSS RGN004
Template

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/7/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Large Butler Building, Floor- Survey Unit F1
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
195	3569	3374	^{99}Tc	23,400	14.4	469	916

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	361	166	1151	
2	332	137	950	
3	299	104	721	
4	342	147	1020	
5	950	755	**5236**	Hotspot averages away, but they'll re-scabble
6	583	388	2691	
7	442	247	1713	
8	434	239	1658	
9	397	202	1401	
10	446	251	1741	
11	382	187	1297	
12	338	143	992	
13	365	170	1179	
14	849	654	4536	
15	379	184	1276	
16	487	292	2025	
17	396	201	1394	
18	1014	819	**5680**	Hotspot averages away, but they'll re-scabble
19	319	124	860	
20	318	123	853	
21	387	192	1332	
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34				
35				

Signature: Steven A. Bostjanic Date: 12/29/00

7-7-99 Cheswick (W)

Meter 137745 / Det 147859
Bkgnd - 302 cpm
Gross - 3559 cpm
Net - 3257 cpm
Source Activ. - 23,400 dpm
Eff. ≅ 14%
5000 dpm > bkgnd = 700 cpm > bkgnd

Meter 132181 / Det. 146747
Bkgnd - 390 cpm
Gross - 3220 cpm
Net - 2830 cpm
Source Activ. - 23,400 dpm
Eff ≅ 12%
5000 dpm > bkgnd = 600 cpm > bkgnd

Site Check ↓

(Trailer) Bkgnd ~~542~~
187
189
210
195
Net - 3374 cpm
Eff = 14.4%

Gross
3598
3558
3551
3569

$$\sigma R_n = \sqrt{\frac{R_g}{t_g} + \frac{R_b}{t_b}}$$

$$\frac{5\,\mu Ci}{1} \times \frac{1\,Ci}{1E6\,\mu Ci} \times \frac{3.7\times10^{10}\,dps}{1\,Ci} \times \frac{60\,dps}{}$$

$$\frac{1.85\,E5\,Ion}{} \times \frac{60\,s}{1\,min} =$$

1.11 E7 DPM

~~47488~~ 131735
1.11 E7

SURVEY UNIT F1

~~Data~~ Measurement Point
~~Additional~~ Measurement Point

Location: Large Butler Building, Floor
Post decontaminating
~~Classification: Unaffected~~
~~Technician's Name: Shank~~
~~Date: 06/16/99~~
~~Model 43-68 #: 159019~~
~~Model 2221 #: 154207~~
~~Efficiency: 25%~~
~~Background CPM: 267~~

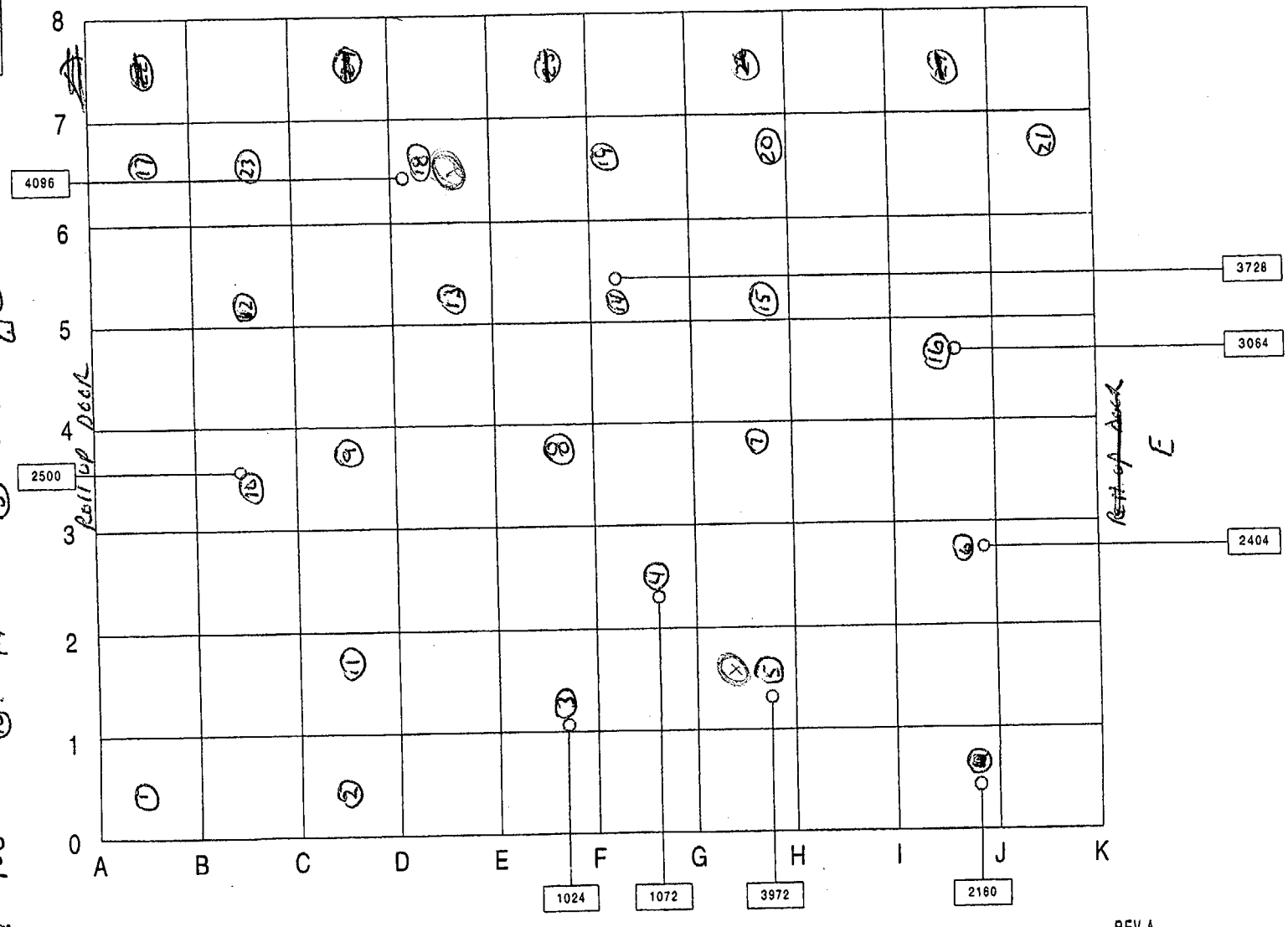
~~Comments: All readings in DPM; grids~~ are ~~1M X 1M~~.

BKgr 195cpm

(*) = DIRECT READINGS

Δ = SMEAR LOCATIONS

N



487	396	1014	315	318
382	338	365	849	379
583	442	434	397	4416
361	332	299	342	950

CPM/100 cm²

Chesnick 7-7-99

REV A
LbbF1pd.vsd

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN- 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Re-survey of Large Butler Bldg. Floor Hotspots
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	302	30	205	<MDA
2	300	28	191	<MDA
3	330	58	396	<MDA
4	342	70	479	<MDA
5	315	43	294	<MDA
6	330	58	396	<MDA
7	470	198	1354	
8	335	63	431	<MDA
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35				

Steven A. Bostjancic 12/29/00

Cheswick 7/14/99 Resurvey of 'Hotspot' in Large Butler Bldg.

Reading cpm

1. 302
2. 300
3. 330
4. 342
5. 315
6. 330
7. 470 ≅ 1400 dpm > bkgnd
8. 335

(W) Cheswick - 7/14/99 Inst. Eff. Chk.

Ludlum Model 2241-2 SN 137745 Det Ludlum 44-116 S SN 147859

Bkgnd (cpm)	Gross (cpm)	Net (cpm)
262	3675	3423
280	3684	
273	3725	
272	3695	

$\sigma_{R_N} = \sqrt{}$

$= \pm 63$ cpm

$$Eff = \frac{3423 \text{ cpm}}{23{,}400 \text{ dpm}} = 14.6\%$$

$$Threshld = 0.146(5000) + 272 \cong 1002 \text{ cpm}$$

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/7/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Large Butler Building, Floor- Survey Unit F2
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
195	3569	3374	^{99}Tc	23,400	14.4	469	916

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	301	106	735	
2	272	77	534	
3	287	92	638	
4	318	123	853	
5	538	343	2379	
6	331	136	943	
7	288	93	645	
8	315	120	832	
9	396	201	1394	
10	377	182	1262	
11	435	240	1664	
12	304	109	756	
13	290	95	659	
14	291	96	666	
15	333	138	957	
16	304	109	756	
17	333	138	957	
18	377	182	1262	
19	289	94	652	
20	319	124	860	
21	290	95	659	
22	319	124	860	
23	322	127	881	
24	372	177	1228	
25	302	107	742	
26	350	155	1075	
27	321	126	874	
28	367	172	1193	
29	302	107	742	
30	304	109	756	
31	336	141	978	
32	336	141	978	
33				
34				
35				

Signature: Steve A. Bostjancic Date: 12/29/00

SURVEY UNIT F2

● ~~Data~~ Measurement Point
○ ~~Additional~~ Measurement Point

Location: Large Butler Building, Floor
~~Post-Decontaminating~~

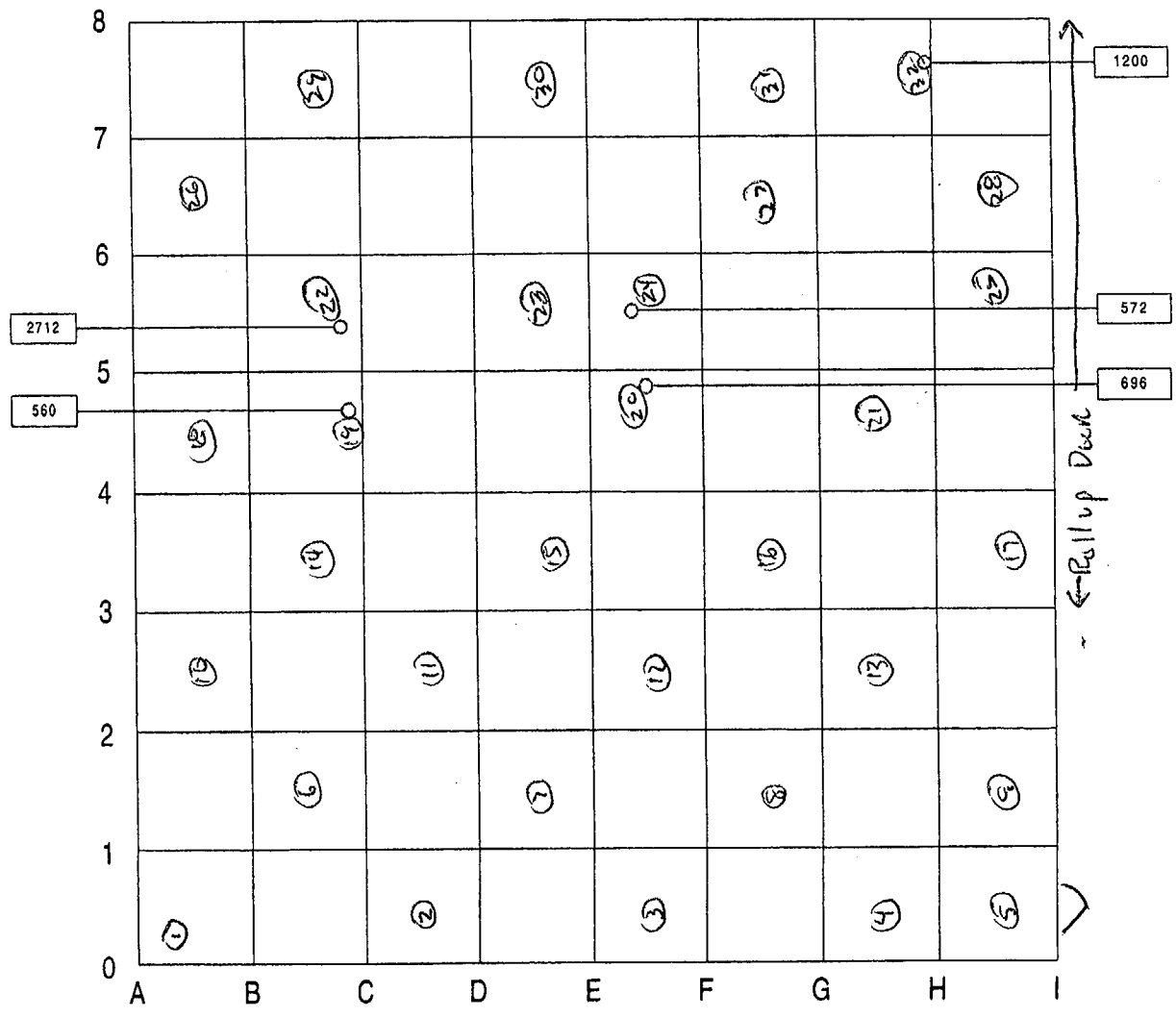
~~Classification:~~ Unaffected

Technician's Name: Shank

Date: ~~06/16/99~~
Model ~~43-68 #:~~ ~~159019~~
Model ~~2221 #:~~ 154207
Efficiency: ~~25%~~
Background CPM: 267

Comments: ~~All readings in DPM;~~ grids are 1M ~~X~~ 1M.

N



290	315	322	322	302	352	321	267	302	304	336	336
21	22	23	24	25	26	27	28	29	30	31	32

304	333	377	289	319	435	304	296	291	333
16	17	18	19	20	11	12	13	14	15

331	288	315	296	377	361	272	287	318	538
6	7	8	9	10	1	2	3	4	5

CPM
~~DPM~~/100 cm2 FIXED

REV A
LbbF2pd.vsd

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/7/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Large Butler Building, Floor- Survey Unit F3
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
195	3569	3374	^{99}Tc	23,400	14.4	469	916

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	497	302	2094	
2	459	264	1831	
3	307	112	777	
4	300	105	728	
5	285	90	624	
6	484	289	2004	
7	435	240	1664	
8	400	205	1422	
9	377	182	1262	
10	264	69	479	
11	300	105	728	
12	263	68	472	
13	306	111	770	
14	366	171	1186	
15	339	144	999	
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35				

Signature: Steven A. Bastyanin Date: 12/29/00

SURVEY UNIT F3

● Data Measurement Point
⊖ Additional Measurement Point

Location: Large Butler Building, Floor
Post Decontaminating
Classification: Unaffected

Technician's Name: Shank

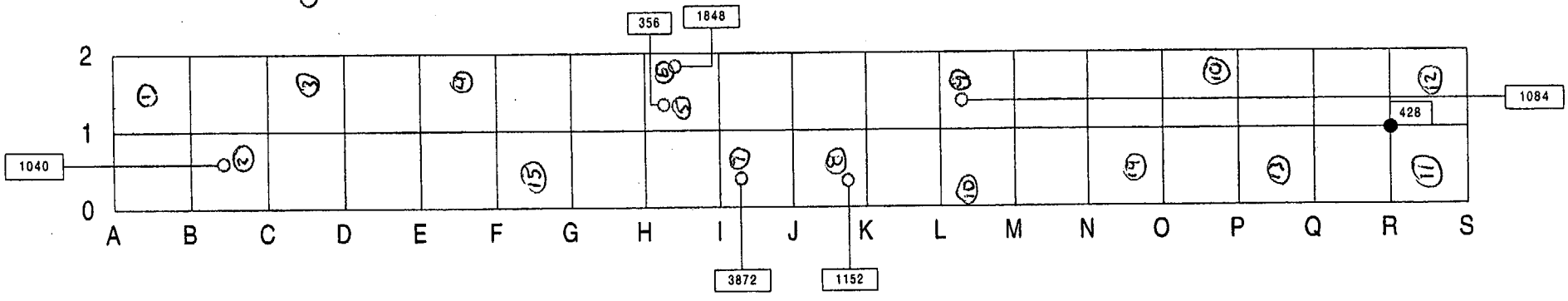
Date: 06/16/99
Model 43-68 #: 159019
Model 2221 #: 154207
Efficiency: 25%
Background CPM: 267

Comments: All readings in DPM; grids are 1M X 1M.

N

CPM/100 cm²

1 497
2 459
3 307
4 300
5 265
6 484
7 435
8 400
9 377
10 264
11 306
12 263
13 266
14 366
15 339



(3) "Unusual 7-7-99
BKGD 195 cpm
Eff 14.4%

(#) - Direct Readings
#1 - Smear Locations

REV A
LbbF3pd.vsd

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/7/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Large Butler Building, Interior Walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
195	3569	3374	^{99}Tc	23,400	14.4	469	916

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	224	29	201	<MDA
2	216	21	146	<MDA
3	224	29	201	<MDA
4	256	61	423	<MDA
5	222	27	187	<MDA
6	264	69	479	
7	226	31	215	<MDA
8	282	87	603	
9	248	53	368	<MDA
10	222	27	187	<MDA
11	271	76	527	
12	274	79	548	
13	242	47	326	<MDA
14	264	69	479	
15	331	136	943	
16	377	182	1262	
17	428	233	1616	
18	301	106	735	
19				Blocked by crates
20				Blocked by crates
21				Blocked by crates
22	188	-7	-49	<MDA Gross count less than background
23	214	19	132	<MDA
24	264	69	479	
25	247	52	361	<MDA
26	209	14	97	<MDA
27	213	18	125	<MDA
28	186	-9	-62	<MDA Gross count less than background
29	147	-48	-333	<MDA Gross count less than background
30	201	6	42	<MDA
31	231	36	250	<MDA
32	224	29	201	<MDA
33				
34				
35				See micro R survey data on attached raw data sheet

Signature: Steven A. Bostwick Date: 12/29/00

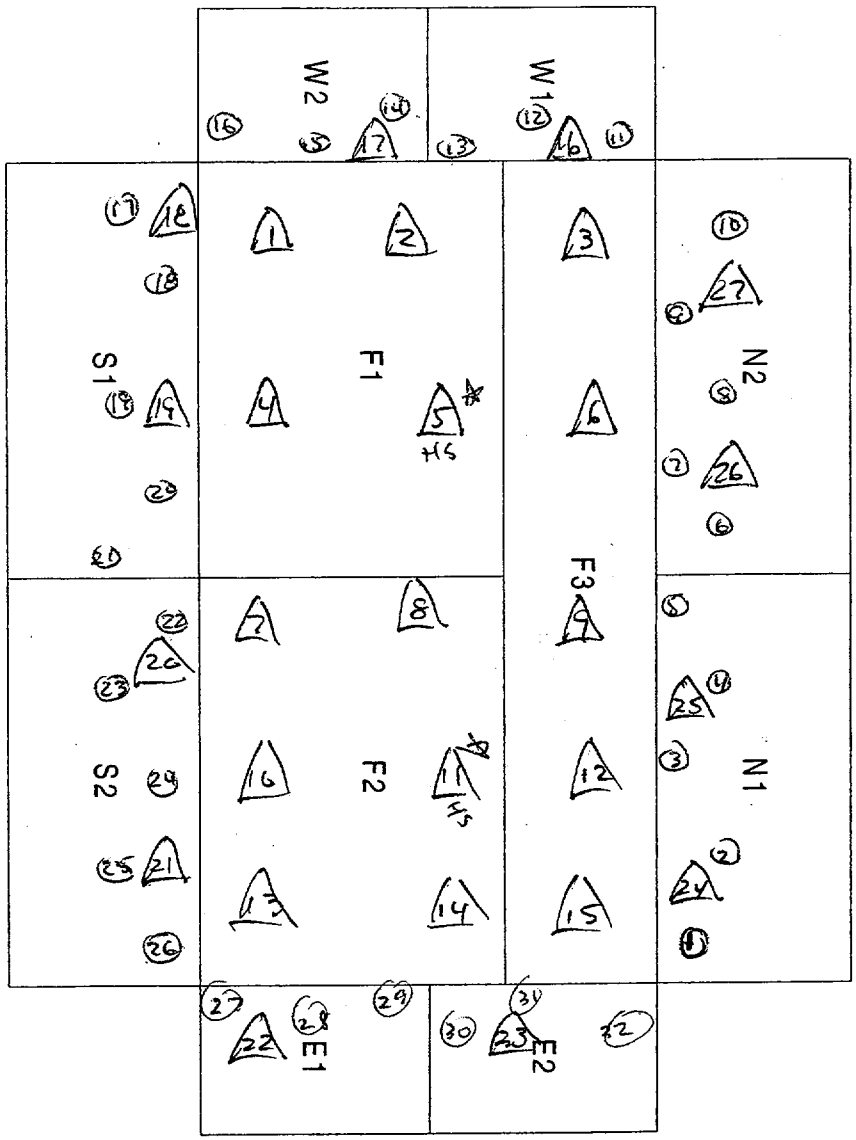
Location: Large Butler Building Floor
Classification:
Comments:

Interior Walls

CHESWICK (50) 2-2-88

CPM/100 cm²

(1) 224
(2) 216
(3) 224
(4) 256
(5) 222
(6) 264
(7) 226
(8) 282
(9) 248
(10) 222
(11) 221
(12) 274
(13) 242
(14) 264
(15) 331
(16) 377
(17) 428
(18) 301
(19) (20) (21) Blocked by Crates
(22) 188
(23) 214
(24) 264
(25) 247
(26) 209
(27) 213
(28) 186
(29) 147?
(30) 201
(31) 231
(32) 224



N

Micro R survey
Meter Bicro Micro Analyst B601k
Min - 5 mR/hr
Max ≈ 23 mR/hr (due to bags of waste from excavation in Bldg # 9 pump repair facility, 1.9E6 lbs 90% soil / 10% concrete)
Avg. ~ 10 mR/hr

REV A
LBBFGRID

9268

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/7/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Large Butler Building, Exterior Walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
195	3569	3374	^{99}Tc	23,400	14.4	469	916

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	288	93	645	
2	253	58	402	<MDA
3	889	694	4813	Interference from soil in 'super-sacks'
4	1135	940	**6519**	Interference from soil in 'super-sacks'
5	411	216	1498	
6	380	185	1283	
7	246	51	354	<MDA
8	261	66	458	<MDA
9				
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Signature: Steven A. Bostjanic Date: 12/29/00

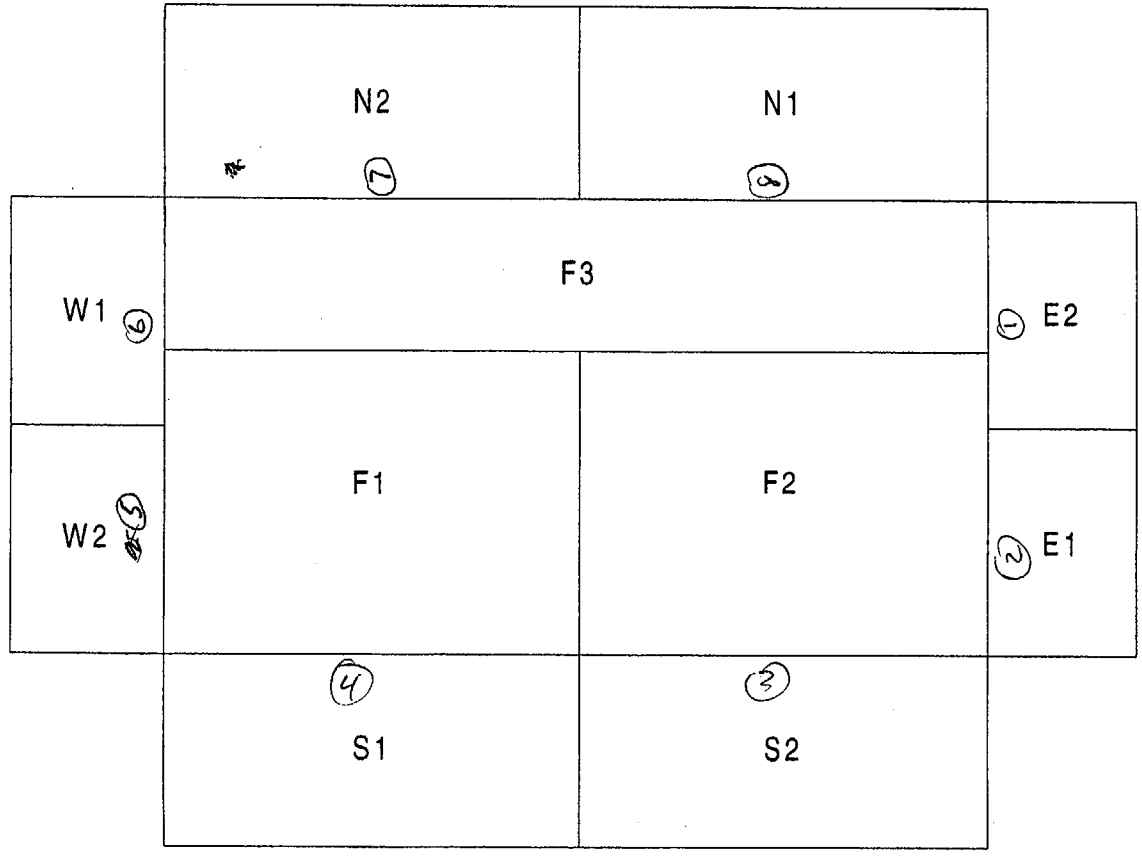
Sack of soil causing in-
creased surface counts on
building wall.
7. 7. 1999

C01

Location: Large Butler Building Floor
Classification:

Comments:

N



Exterior Wall Survey 7/7/99

① 282
② 253
③ 889 (444, rib) interference from waste
④ 1135
⑤ 411
⑥ 280
⑦ 242
⑧ 221

REV A
LBBFGRID

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/22/99
Meter Model and Serial Number: Eberline Beta Counter BC-4 Serial # 870
Removable Contamination Counts
Area/Building Surveyed: Large Butler Building, Floor and Interior Walls
Count times: Background – 10 min., Sample – 1 min.

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Bkgnd. Count Rate (cpm)	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm per wipe)
229	23	2324	2301	^{99}Tc	23,400	9.8	196

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)		Comments
1	27	4	41	<MDA	
2	32	9	92	<MDA	
3	32	9	92	<MDA	
4	26	3	31	<MDA	
5	28	5	51	<MDA	
6	22	-1	-10	<MDA	Gross count less than background
7	23	0	0	<MDA	
8	17	-6	-61	<MDA	Gross count less than background
9	26	3	31	<MDA	
10	31	8	81	<MDA	
11	26	3	31	<MDA	
12	22	-1	-10	<MDA	Gross count less than background
13	38	15	153	<MDA	
14	28	5	51	<MDA	
15	31	8	81	<MDA	
16	19	-4	-41	<MDA	Gross count less than background
17	25	2	20	<MDA	
18	26	3	31	<MDA	
19	29	6	61	<MDA	
20	20	-3	-31	<MDA	Gross count less than background
21	22	-1	-10	<MDA	Gross count less than background
22	26	3	31	<MDA	
23	21	-2	-20	<MDA	Gross count less than background
24	27	4	41	<MDA	
25	31	8	81	<MDA	
26	23	0	0	<MDA	
27	33	10	102	<MDA	
28	42	19	193	<MDA	
29	28	5	51	<MDA	
30	27	4	41	<MDA	
31	19	-4	-41	<MDA	Gross count less than background
32					
33					
34					
35					

Signature: Steven A. Bostjancic Date: 12/29/00

Cheswick Swipe Counts cont

#	Location	Gross count (~~[illegible]~~)
(14) #34	NW corner of Insp. Rm	24
(15) #33	Top of elec. box in lunch Rm	25
(16) #32	SE corner of lunch Rm	22

Large Butler Bldg

#	Swipe Locations (See survey map)	Gross count 1 min cnt. (~~[illegible]~~)
(1) #1		27
(2) #2		32
(3) #3		32
(4) #4		26
(5) #5		28
(6) #6		22
(7) #7		23
(8) #8		17
(9) #9		26
(10) #10		31
(11) #11		26
(12) #12		22
(13) #13		38
(14) #14		28
(15) #15		31
(16) #16		19
(17) #17		25
(18) #18		26
(19) #19		29
(20) #20		20

#	Location	Gross Count ~~rate~~ 1 min cnt.
(21) #21	See survey map	22
(22) #22		26
(23) #23		21
(24) #24		27
(25) #25		31
(26) #26		23
(27) #27		33
(28) #28	N. Floor/Wall Juncture	42
(29) #29	W " "	28
(30) #30	S " "	27
(31) #31	E " "	19

Conclusion - no swipe samples in PRF, Admin or large Butler bldg > 1000 dpm above background

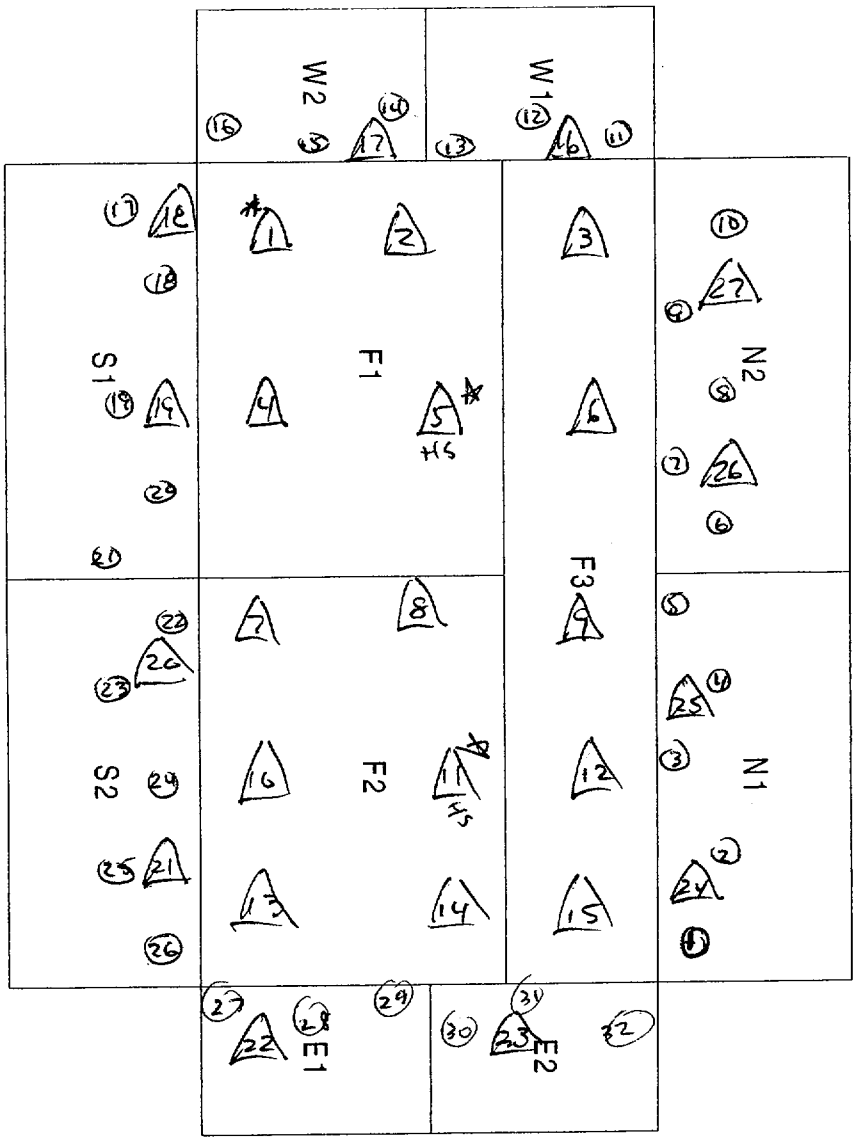
Max was PRF (1) #48 (79 cpm - 23 cpm) / 0.098 = 571 dpm

CHESWICK (W) 2-2-99

Location: Large Butler Building Floor
Classification:
Comments:

CPM/100 cm²

1. 224
2. 216
3. 224
4. 256
5. 222
6. 264
7. 226
8. 282
9. 248
10. 222
11. 271
12. 274
13. 242
14. 264
15. 331
16. 377
17. 428
18. 301
19. Blocked by Crates
20. Blocked by Crates
21. Blocked by Crates
22. 188
23. 214
24. 264
25. 247
26. 209
27. 213
28. 186
29. 147?
30. 201
31. 231
32. 224



N

Micro R survey
Meter Bicro Micro Analyst B601k
Min - 5 uR/hr
Max ≈ 23 uR/hr (due to bags of waste from excavation in Bldg # 9 pump repair facility 1.9E6 lbs 90% soil / 10% concrete)
Avg. ~ 10 uR/hr

* △ = smear location

REV A
L88FGRID

9268

Cheswick swipe counts 7/22/99
Instrument - Eberline Beta Counter BC-4 SN - 870

Bkgnd - 229 counts T_B = 10 min
R_B = 22.9 cpm
Gross - ① 2348 ② 2311 ③ 2314 Avg - 2324 cpm
Net - 2301
Eff = $\frac{2301 \text{ cpm}}{23{,}400 \text{ dpm}}$ = 9.8% σR_N = ± 48 cpm

Pump Repair Facility

① - #48 - Survey Unit W-10 Grid F-0 ~~#4 Hb~~ Gross - 79 cpm
② - #49 - W-10 Grid A-0 Gross - 23 cpm
③ - #50 - Alcove E. Wall Hotspot Gross - 24 cpm
④ - #51 - Alcove Floor Hotspot Gross - 31 cpm

#	Administration Bldg Location	Result Gross Counts (cpm)
① #47	Wallplate Grid 1	Gross - 27 cpm
② #44	Breezeway Area 2 NW Corner	Gross - 20 cpm
③ #46	Breezeway 2nd Step hotspot	Gross - 30 cpm
④ #43	Brzwy Area 1 NW corner	Gross - 21 cpm
⑤ #45	Brzwy threshold (scabbled)	Gross - 20 cpm
~~#6~~ #42	Threshhold between HP Area & Brzwy	- 33
~~#7~~ #41	HP Area Drain Rim	- 20
⑧ #39	Mid Shower doorway top	- 20
⑨ #38	Mid Shower NW corner	29
⑩ #40	Top of restroom door	29
⑪ #37	Shower Room shelf	28
⑫ #36	Locker Rm excluded floor area	34
⑬ #35	Ladies Rm floor	28

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Lunchroom Floor
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	304	32	219	<MDA
2	308	36	246	<MDA
3	295	23	157	<MDA
4	283	11	75	<MDA
5	285	13	89	<MDA
6	338	66	451	<MDA
7	292	20	137	<MDA
8	326	54	369	<MDA
9	284	12	82	<MDA
10	320	48	328	<MDA
11	289	17	116	<MDA
12	278	6	41	<MDA
13	300	28	191	<MDA
14	315	43	294	<MDA
15	368	96	656	
16	350	78	533	<MDA
17	311	39	267	<MDA
18	299	27	185	<MDA
19	280	8	55	<MDA
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Signature: Steve Bootzmin Date: 7/14/99

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Lunchroom, South Wall
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	343	71	485	<MDA
2	343	71	485	<MDA
3	354	82	561	
4	280	8	55	<MDA
5	316	44	301	<MDA
6	314	42	287	<MDA
7				
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Signature: Steve Bostanic Date: 7/14/99

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Lunchroom, North Wall
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments		
1	252	-20	-137	<MDA	gross count less than background	
2	237	-35	-239	<MDA	gross count less than background	
3	234	-38	-260	<MDA	gross count less than background	
4	262	-10	-68	<MDA	gross count less than background	
5	273	1	7	<MDA		
6	239	-33	-226	<MDA	gross count less than background	
7	246	-26	-178	<MDA	gross count less than background	window ledge
8	323	51	349	<MDA		
9	261	-11	-75	<MDA	gross count less than background	
10	291	19	130	<MDA		
11	255	-17	-116	<MDA	gross count less than background	
12	271	-1	-7	<MDA	gross count less than background	
13	288	16	109	<MDA		
14	247	-25	-171	<MDA	gross count less than background	
15	288	16	109	<MDA		
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Signature: Steve Bootzmann Date: 7/14/99

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Lunchroom, East Wall
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	228	-44	-301	<MDA gross count less than background
2	281	9	62	<MDA
3	246	-26	-178	<MDA gross count less than background
4	312	40	273	<MDA
5	300	28	191	<MDA
6	306	34	232	<MDA
7	285	13	89	<MDA
8	274	2	14	<MDA
9				
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Signature: Steve Bostyanin Date: 7/14/99

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Lunchroom, West Wall
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments	
1	269	-3	-21	<MDA	gross count less than background
2	290	18	123	<MDA	
3	259	-13	-89	<MDA	gross count less than background
4	248	-24	-164	<MDA	gross count less than background
5	242	-30	-205	<MDA	gross count less than background
6	284	12	82	<MDA	
7	281	9	62	<MDA	
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Signature: Steve Bostjanin Date: 7/14/99

(W) Cheswick - 7/14/99 Inst. Eff. Chk.

Ludlum Model 2241-2 SN 137745 Det Ludlum 44-116 S SN 147859

Bkgnd (cpm)	Gross (cpm)	Net (cpm)
262	3675	3423
280	3684	
273	3725	
272	3695	

$\sigma_{R_N} = \sqrt{}$

$= \pm 63$ cpm

$$Eff = \frac{3423 \text{ cpm}}{23{,}400 \text{ dpm}} = 14.6\%$$

$$Threshld = 0.146(5000) + 272 \cong 1002 \text{ cpm}$$

N ↑

PRF ADMIN. LUNCH ROOM FLOOR

DATE

	TAYLOR	SILVIO
	DATA PT	SCA
2221#	84458	13834
43-68#	124497	12452
BKG CPM	321	287
EFF.	25%	25%

	A	B	C	D	E
6	439 (4) ND	419 ND	424 (11) ND	455 (12)	474 (19)
	400-600	400-600	400-600	400-600	
5	420	481	465	453	418
	400-600 (3)	400-600 (5)	400-600 (10)	400-600	(18)
4	441	467	473	470	489
	400-600	400-600	400-600	400-600 (13)	
3	436	441	464	484	465
	(2) 400-600	400-600	400-600 (9)	400-600	(17)
2	476	481 (6)	435	470	485
	400-600	400-600	400-600	400-600 (14)	
1	468	486	480	429	496
	400-600 (1)	400-600	400-600 (8)	400-600 (15)	
0	443	435 (7)	460	461	518 (16)

(1) 304
(2) 308
(3) 295
(4) 283
(5) 285
(6) 338
(7) 292
(8) 326
(9) 284
(10) 320
(11) 289
(12) 278
(13) 300
(14) 315
(15) 368
(16) 350
(17) 311
(18) 299
(19) 280

for high mR/hr readings
~5 to 13 mR/hr.
Highest reading along east wall
(due to contamination on other side of wall in pump repair facility ?)

PRF ADMIN LUNCHROOM

WEST WALL

	A	B	C	D	E	F	G
3	341	442	442	409	427	441	424
	Z=400-600	Z=400-600	Z=400-600 (3)	Z=400-600	Z=400-600	Z=400-600	
2	443	366	429	439	372	380	~~387~~ 387
	Z=400-600	Z=400-600 (2)	Z=400-600	Z=400-600 (5)	Z=400-600	Z=400-600	
1	382	390	457	448	377	340	361
	Z=400-600 (1)	Z=400-600	Z=400-600	Z=400-600	Z=400-600 (6)	Z=400-600 (7)	
0	340	340	364 (4)	356	358	349	345

(1) 269
(2) 290
(3) 259
(4) 248
(5) 242
(6) 284
(7) 281

EAST WALL

	A	B	C	D	E	F	G
3	441	424	419	474	422	479	523
	Z=400-600	Z=400-600 (2)	Z=400-600	Z=400-600	Z=400-600	Z=400-600 (8)	
2	385	388	455	405	467	454	440
	Z=400-600 (3)	Z=400-600	Z=400-600 (5)	Z=400-600	Z=400-600 (7)	Z=400-600	
1	412	379	386	566	427	400	412
	Z=400-600	Z=400-600	Z=400-600	Z=400-600 (6)	Z=400-600	Z=400-600	
0	356 (6)	345 (4)	419	482	567	429	394

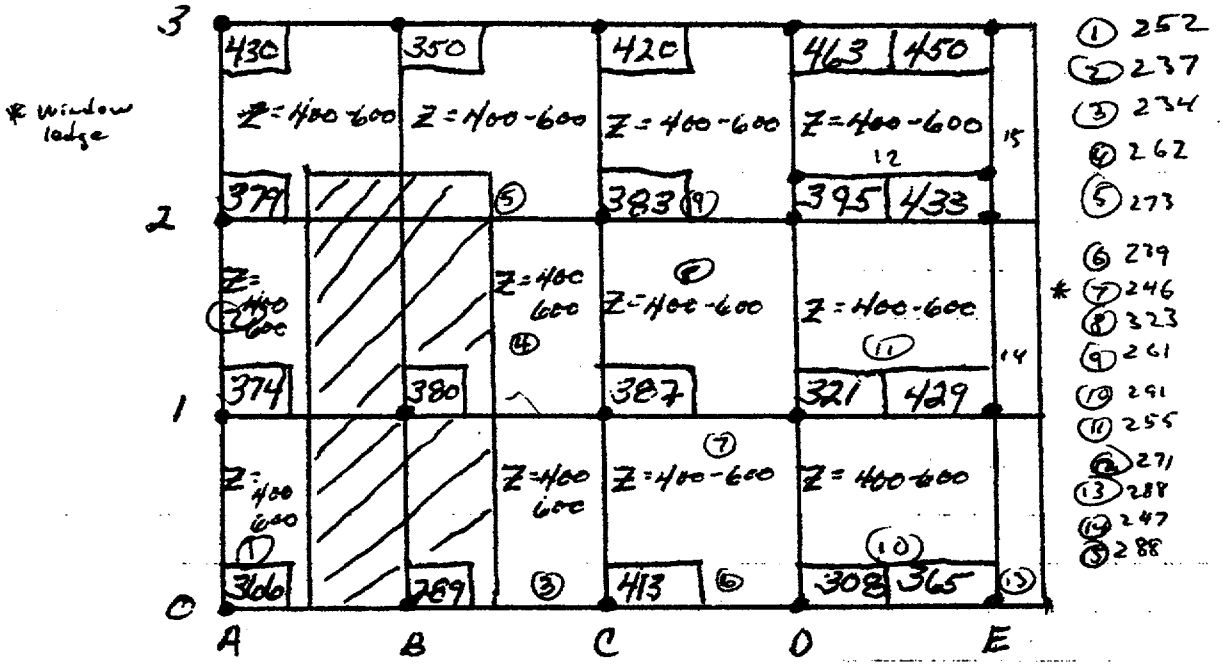
(1) 228
(2) 281
(3) 246
(4) 212
(5) 300
(6) 306
(7) 285
(8) 274

DATE 6-15-99

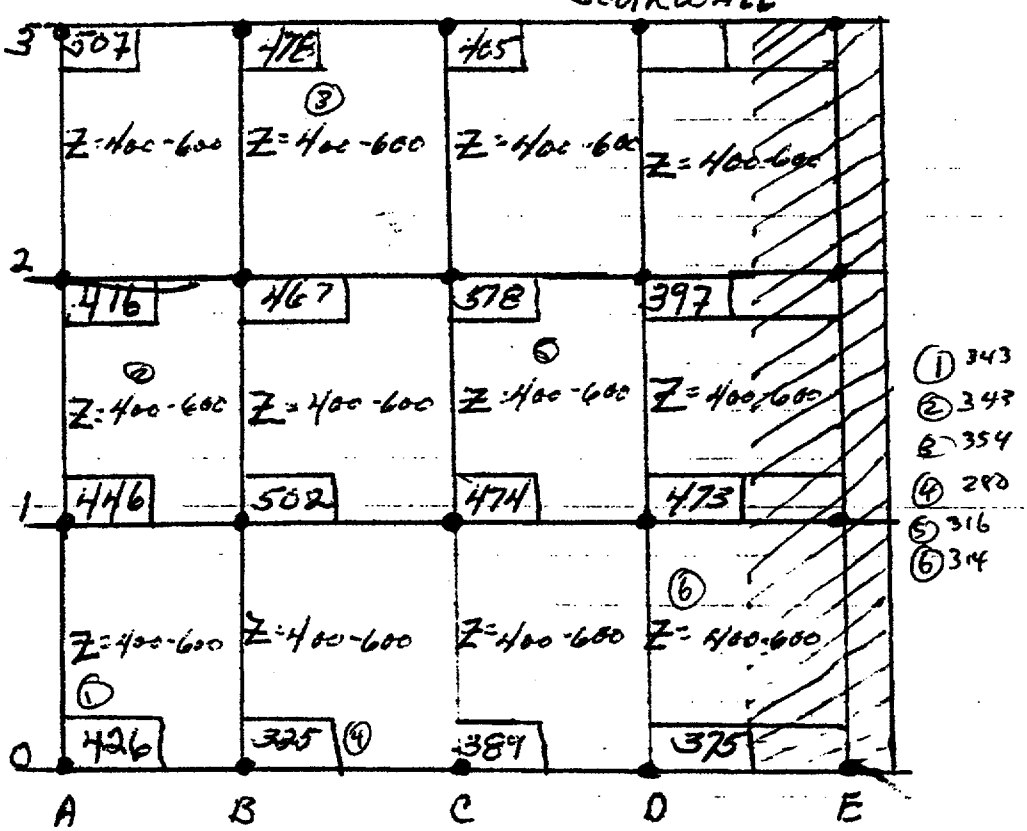
TECH	TAYLOR	SILVIO
FUNCT.	DATA PT	SCAN
2221#	84458	138347
43-68#	124497	124522
BKGCAM	321	287

PRF ADMIN LAUNCH ROOM

NORTH WALL

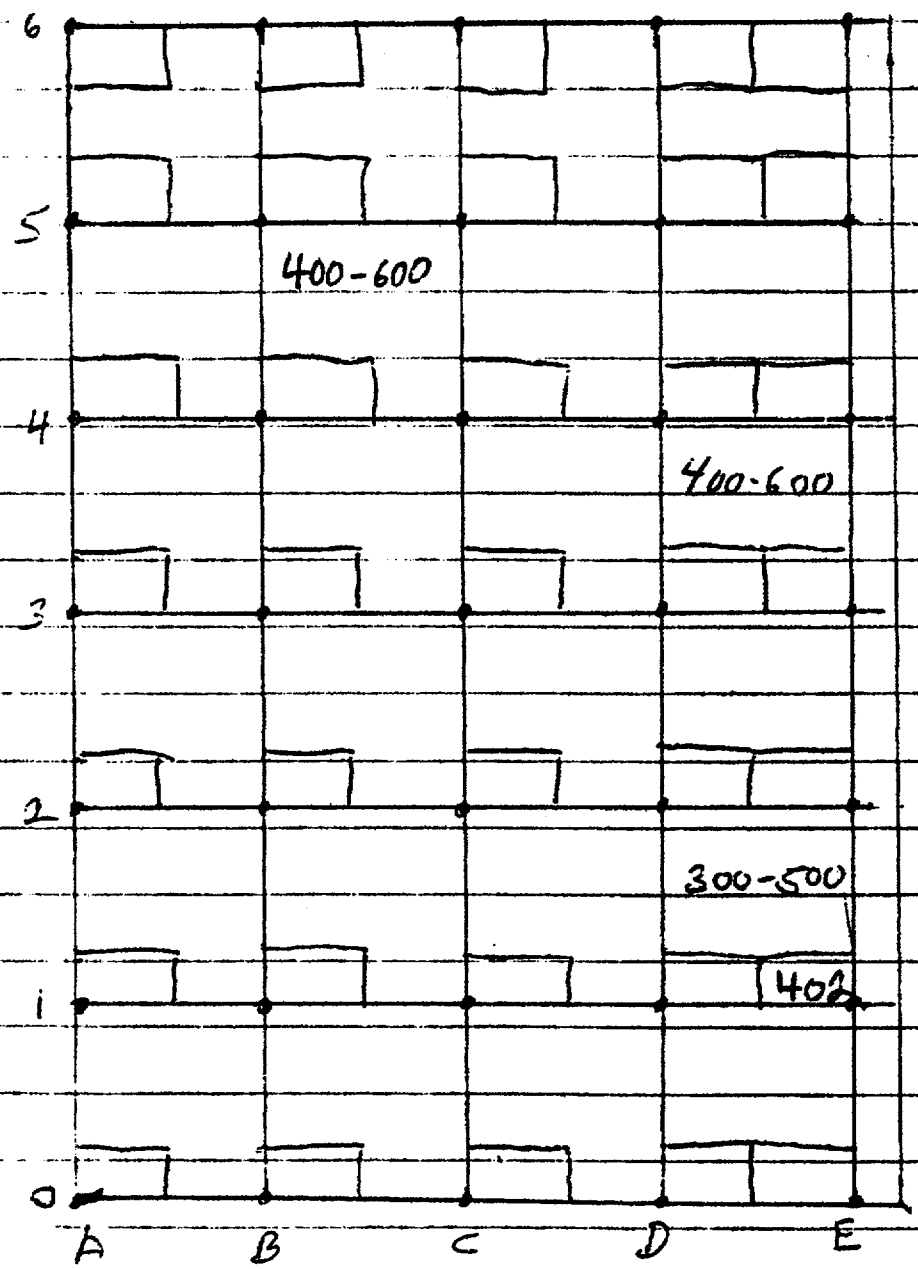


SOUTHWALL



DATE - 6-15-99
TEC. - TAYLOR - SILVIO
2221-84438-138347
43-68-124497-124522
BKg - 321 - 287
EFF - 25%

PRF ADMIN LUNCH ROOM CEILING



DATE: 6-15-99

	TAYLOR DATAPT	SILVIO SCAN
2221#	84438	138347
43-68#	124497	124522
[illegible]	321	187

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Inspection Area, Floor
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	323	51	349	<MDA
2	308	36	246	<MDA
3	353	81	554	
4	357	85	581	
5	318	46	314	<MDA
6	306	34	232	<MDA
7	339	67	458	<MDA
8	371	99	677	
9				
10				
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Signature: Steven A. Bartlewicz Date: 12/29/00

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Inspection Area, Walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments			
1	355	83	567				north wall
2	363	91	622				north wall
3	364	92	629				north wall
4	279	7	48	<MDA			north wall
5	314	42	287	<MDA			north wall
6	271	-1	-7	<MDA	gross count less than background		south wall
7	329	57	390	<MDA			south wall
8	343	71	485	<MDA			south wall
9	372	100	684				south wall
10	245	-27	-185	<MDA	gross count less than background		south wall
11	377	105	718				west wall
12	351	79	540	<MDA			west wall
13	293	21	144	<MDA			west wall
14	368	96	656				west wall
15	274	2	14	<MDA			east wall
16	265	-7	-48	<MDA	gross count less than background		east wall
17	310	38	260	<MDA		window sill	east wall
18	285	13	89	<MDA			east wall
19	282	10	68	<MDA			east wall
20							
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Signature: Steven A. Bostjanic Date: 12/29/00

(W) Cheswick - 7/14/99 Inst. Eff. Chk.

Ludlum Model 2241-2 SN 137745 Det Ludlum 44-116 S SN 147859

Bkgnd (cpm)	Gross (cpm)	Net (cpm)
262	3675	3423
280	3684	
273	3725	
272	3695	

$\sigma_{R_n} = \sqrt{}$

$= \pm 63$ cpm

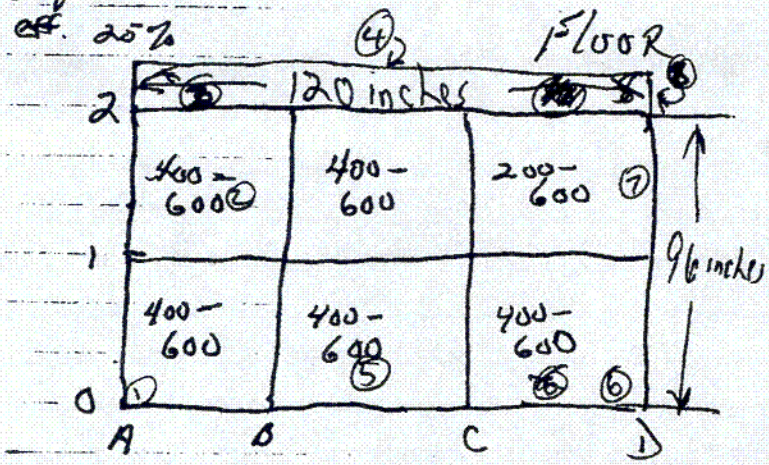
$$Eff = \frac{3423 \text{ cpm}}{23{,}400 \text{ dpm}} = 14.6\%$$

$$Threshld = 0.146(5000) + 272 \cong 1002 \text{ cpm}$$

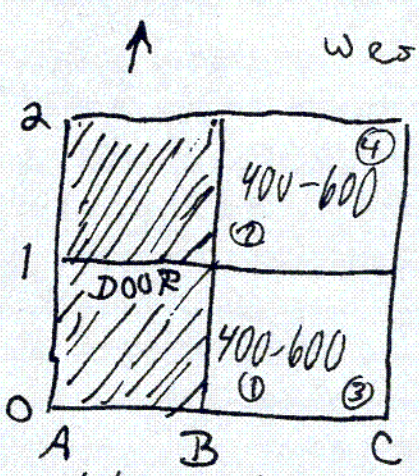
6-14-99 Shank
MODEL 2221
S.N. 254207
PROBE. 43-68
S.D. PR159019
bkgd
eff. 25%

INSPECTION AREA

Floor



West Wall



Floor
1 323 6 306
2 308 7 339
3 353 8 371
4 357
5 318

North Wall
1 355 2 363 3 364
4 279 5 314

South Wall
1 271 2 328 3 343
4 372 5 245

West Wall
1 377 2 351
3 293 4 368

East Wall
1 274 2 265
3 *310 4 285
5 282

* window sill

data points

	A	B	C	D
2	394	414	392	269
1	397	401	416	412
0	408	409	422	425

data points

	A	B	C
3			
2		440	440
1		440	375
0		389	361

98 inches

NORTH WALL Data Points

	A	B	C	D
3	N/A	431	424	403
2	437	398	433	410
1	389	415	449	376
0	382	348	422	373

98"

A,3 = N/A due to wall height <100 inches @ this point

North Wall SCAN

	A	B	C	D
3	400-600	400-600	400-600	
2	400-600	400-600	400-600	
1	400-600	400-600	400-600	
0	400-600	400-600	400-800	

103"

μR readings
8-14 μR/hr

South Wall

	A	B	C	D
3	474	485	502	N/A
2	447	471	435	425
1	417	417	427	359
0	317	404	326	365

103"

98"

120"

D,3 = N/A due to wall height <100 inches

East Wall

	A	B	C
3	404	472	421
2	336	392	396
1	347	374	443
0	368	339	506

120 inches

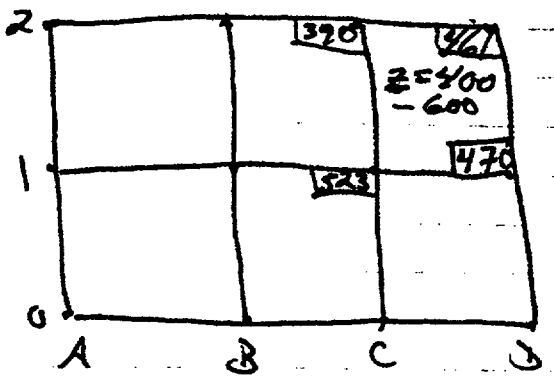
91"

C02

INSPECTION AREA - CEILING

6-15-99

N ↑



6-15-99 Shank
Model 2221
S.N. 154207
probe: 43-68
S.N. PR159019
bkgd: 245 cpm
eff 25%

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Ladies Change Room, Floor
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	388	116	793	
2	344	72	492	<MDA
3	311	39	267	<MDA
4	355	83	567	
5	516	244	1668	5a - 1771 dpm, 5b - 2420 dpm (ok)
6	452	180	1230	
7	345	73	499	<MDA
8	333	61	417	<MDA
9	639	367	2509	
10				
11				
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Signature: Steven A. Bostjancic Date: 12/29/00

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Ladies Change Room, Walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments	
1	342	70	479	<MDA	north wall
2	372	100	684		north wall
3	342	70	479	<MDA	north wall
4	280	8	55	<MDA	north wall
5	347	75	513	<MDA	north wall
6	267	-5	-34	<MDA	east wall
7	338	66	451	<MDA	east wall
8	390	118	807		east wall
9	294	22	150	<MDA	east wall
10	336	64	438	<MDA	east wall
11	331	59	403	<MDA	south wall
12	373	101	690		south wall
13	357	85	581		south wall
14	372	100	684		south wall
15	359	87	595		south wall
16	382	110	752		west wall
17	371	99	677		west wall
18	440	168	1148		west wall
19					
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34					
35					

Signature: Steven A. Bordyanin Date: 12/29/00

(W) Cheswick - 7/14/99 Inst. Eff. Chk.

Ludlum Model 2241-2 SN 137745 Det Ludlum 44-116 S SN 147859

Bkgnd (cpm)	Gross (cpm)	Net (cpm)
262	3675	3423
280	3684	
273	3725	
272	3695	

$\sigma_{R_n} = \sqrt{}$

$= \pm 63$ cpm

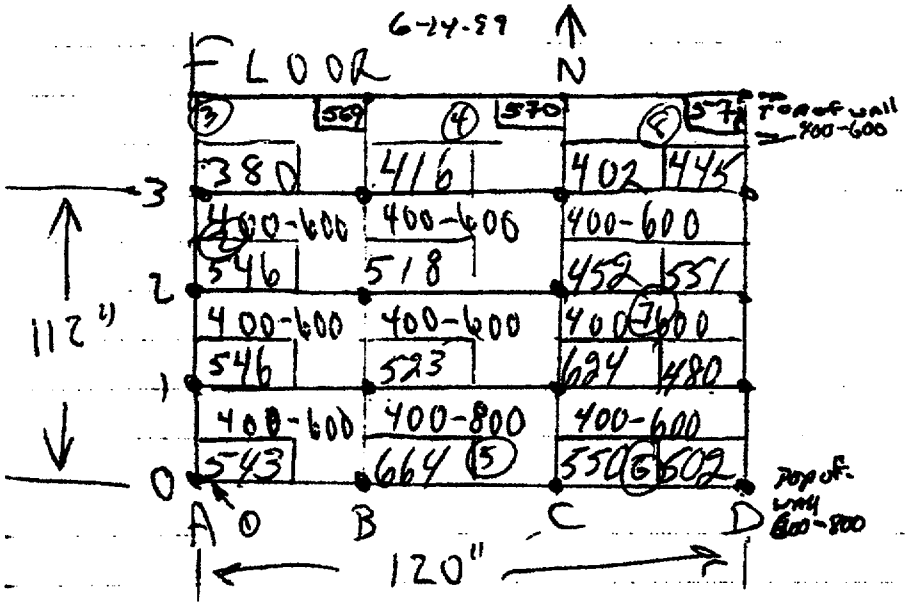
$$Eff = \frac{3423 \text{ cpm}}{23{,}400 \text{ dpm}} = 14.6\%$$

$$Threshld = 0.146(5000) + 272 \cong 1002 \text{ cpm}$$

LADIES CHANGE ROOM

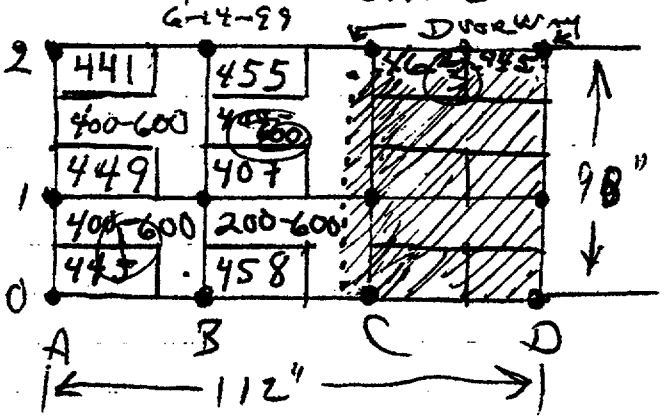
6-24-99

FLOOR



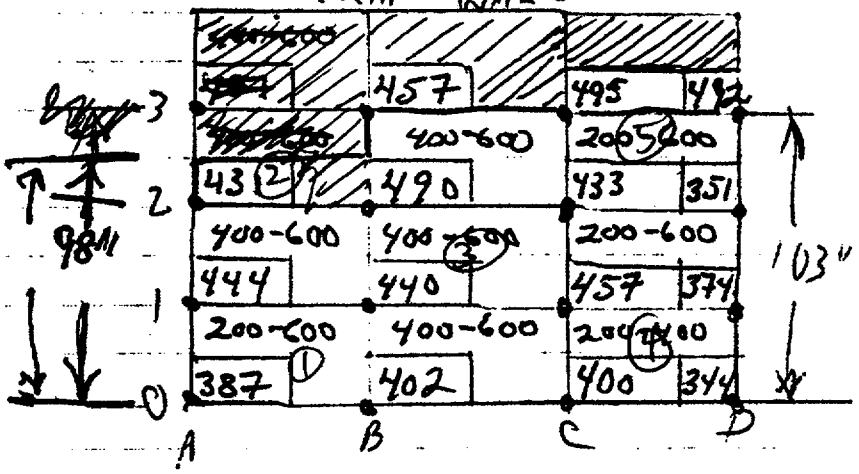
WEST WALL

6-14-99



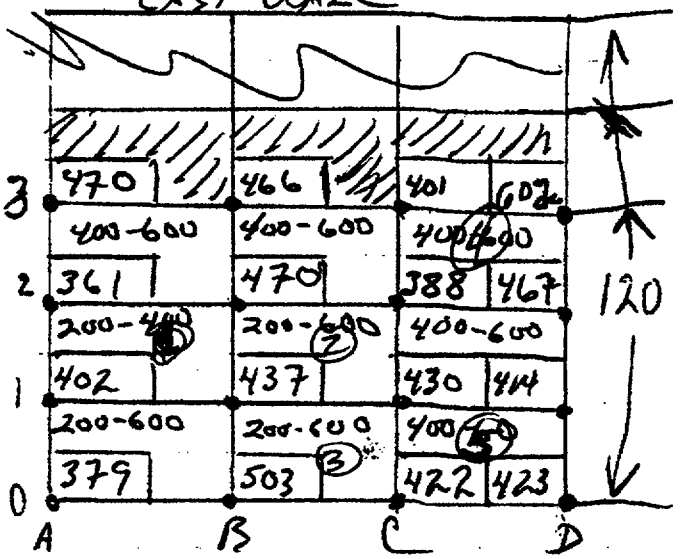
6-14-99

NORTH WALL



6-15-99

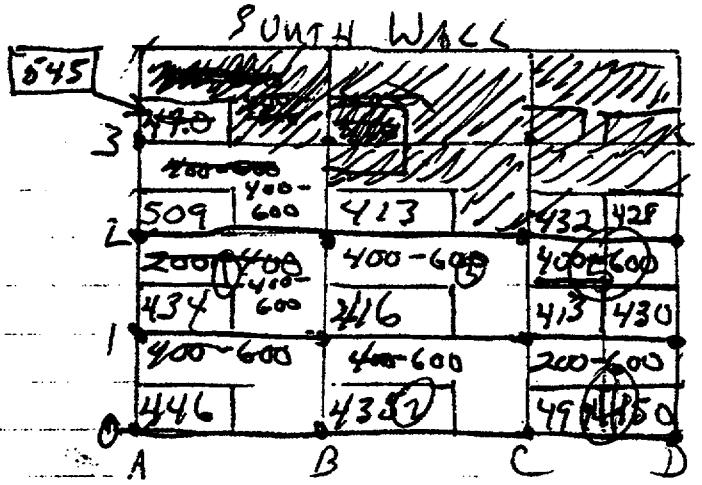
EAST WALL



*1200 cpm on center beam
·1250 cpm on pipe stub then wc

6-15-99

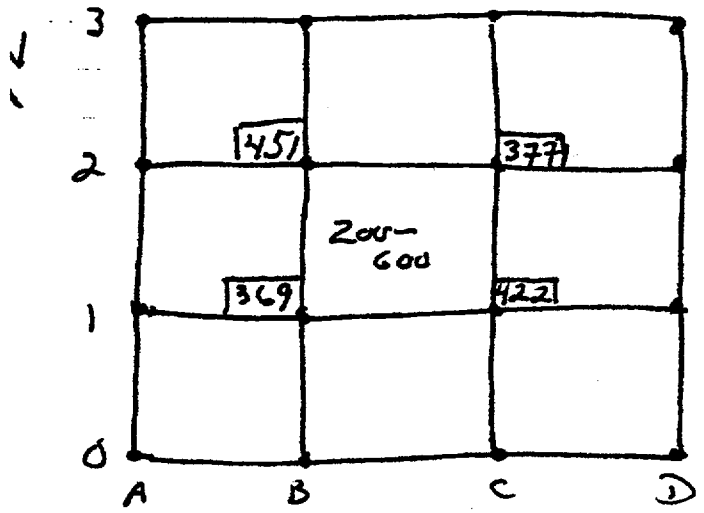
SOUTH WALL



*A,3 WALL Height is 103", balance of wall = 98"

6-14-99 Shank
Model 2221
S.N. 154207
Probe 43-68
S.N. PR159019
bkgd 6/14/99 6-15/99
245 cpm
off 0.5%

CEILING - Ladies Change Room
6-15-99 Shank



Model 2221
S.N. 154207
PROBE: 43-68
S.N. - PR159019
b/gd: 245 cpm
eff: 25%

Floor	N. Wall	E. Wall	S. Wall	W. Wall
(1) 388	(1) 342	(1) 267	(1) 331	(1) 382
(2) 344	(2) 372	(2) 338	(2) 373	(2) 371
(3) 311	(3) 342	(3) 390	(3) 357	(3) 440
(4) 355	(4) 280	(4) 294	(4) 372	
(5) 516, 531, 626	(5) 347	(5) 336	(5) 359	
(6) 452				
(7) 345				
(8) 333				
(9) 639 (by shower floor drain)				

in front of toilet stall

1m mR/hr readings
10 - 15 uR/hr
(20 uR/hr on floor)

(1)

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Locker Room, Floor
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	349	77	526	<MDA
2	396	124	848	
3	304	32	219	<MDA
4	344	72	492	<MDA
5	424	152	1039	
6	292	20	137	<MDA
7	307	35	239	<MDA
8	1435	1163	**7950**	excluded area to be remediated during demo
9	342	70	479	<MDA
10	528	256	1750	excluded area to be remediated during demo
11	598	326	2229	excluded area to be remediated during demo
12	399	127	868	
13	316	44	301	<MDA
14	329	57	390	<MDA
15	373	101	690	
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Signature: Steven A. Bostjancic Date: 12/29/00

C03

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/14/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Locker Room, Walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	^{99}Tc	23,400	14.6	543	1003

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments		
1	371	99	677			north wall
2	369	97	663			north wall
3	329	57	390	<MDA		north wall
4	338	66	451	<MDA		north wall
5	382	110	752			north wall
6	357	85	581			east wall
7	302	30	205	<MDA		east wall
8	290	18	123	<MDA		east wall
9	313	41	280	<MDA		east wall
10	308	36	246	<MDA		east wall
11	320	48	328	<MDA		east wall
12	598	326	2229			east wall
13	266	-6	-41	<MDA	gross count less than background	east wall
14	368	96	656			east wall
15	526	254	1736			east wall
16	312	40	273	<MDA		east wall
17	588	316	2160			south wall
18	266	-6	-41	<MDA	gross count less than background	south wall
19	291	19	130	<MDA		south wall
20	403	131	896			south wall
21	285	13	89	<MDA		south wall
22	300	28	191	<MDA		west wall
23	330	58	396	<MDA		west wall
24	336	64	438	<MDA		west wall
25	327	55	376	<MDA		west wall
26	347	75	513	<MDA		west wall
27	382	110	752			west wall
28	347	75	513	<MDA		west wall
29	323	51	349	<MDA		west wall
30	392	120	820			west wall
31	338	66	451	<MDA		west wall
32						
33						
34						
35						

Signature: Steven A. Bostjanic Date: 12/29/00

(W) Cheswick - 7/14/99 Inst. Eff. Chk.

Ludlum Model 2241-2 SN 137745 Det Ludlum 44-116 S SN 147859

Bkgnd (cpm)	Gross (cpm)	Net (cpm)
262	3675	3423
280	3684	
273	3725	
272	3695	

$\sigma_{R_n} = \sqrt{}$

$= \pm 63$ cpm

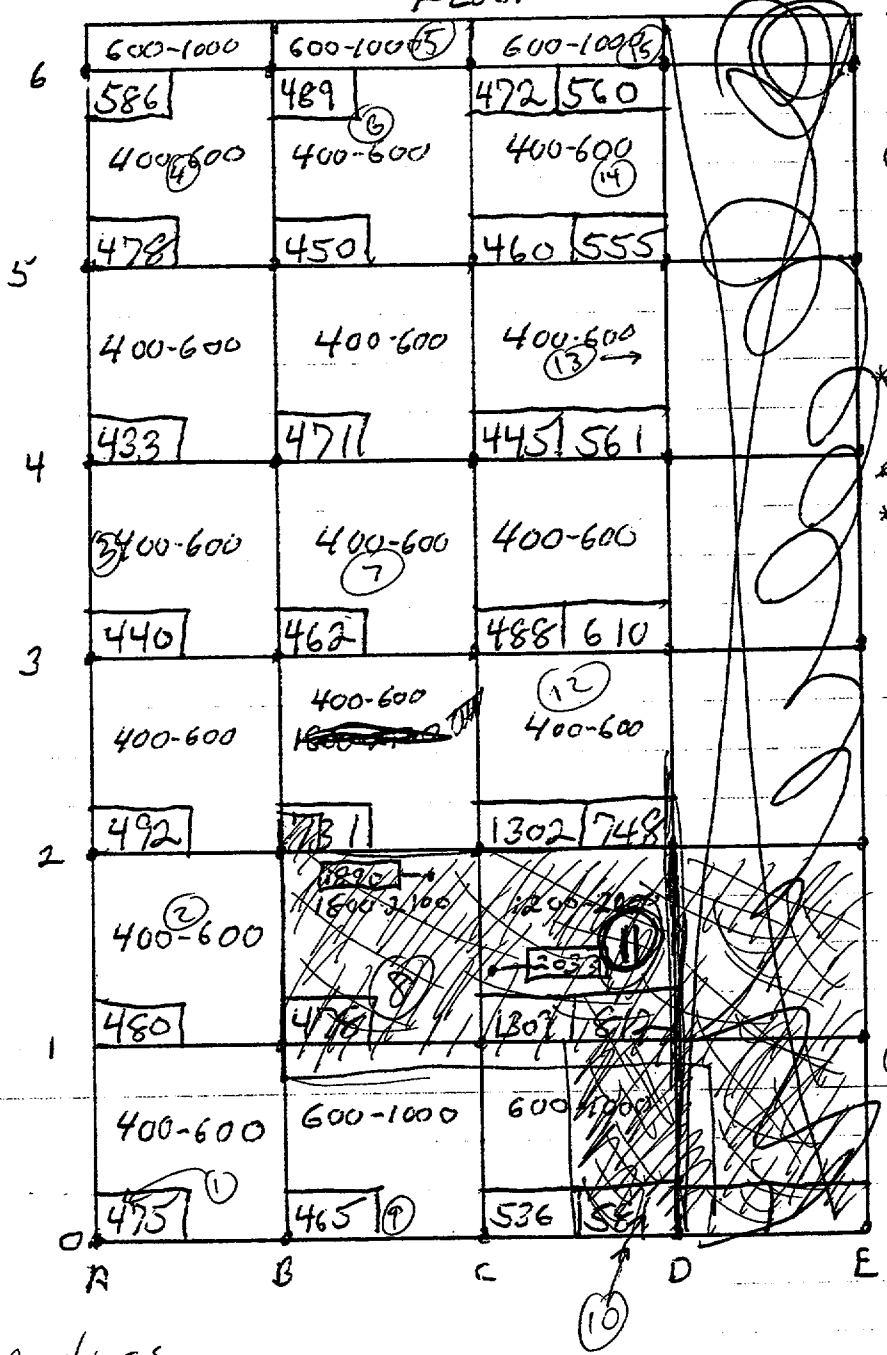
$Eff = \frac{3423 \text{ cpm}}{23{,}400 \text{ dpm}} = 14.6\%$

Threshld = 0.146 (5000) + 272 ≈ 1002 cpm

6-11-99

~~PRF~~ CED.
PRF ADMIN
LOCK RR ROOM
FLOOR

	TAYLOR DATAPT.	SILVIO SCAN
43.68#	124497	142522
2221#	84458	138347
BILGCPM	329	334



(1) 349
(2) 396
(3) 304
(4) 344
(5) 424
(6) 292
(7) 307
*(8) (1435)
(9) 342
*(10) (528)
*(11) (598)
(12) 399
(13) 316
(14) 329
(15) 373

= excluded area (contamination under scabbled concrete)

1m μR/hr readings
12-20 μR/hr
(20 μR/hr over excluded area)

N. Wall	E. Wall		S. Wall	W Wall	
(1) 371	(1) 357	(8) 266	(1) 588	(1) 300	(9) 392
(2) 369	(2) 302	(9) 368	(2) 266	(2) 330	(10) 338
(3) 329	(3) 290	(10) 526	(3) 291	(3) 336	
(4) 338	(4) 313	(11) 312	(4) 403	(4) 327	
(5) 382	(5) 308		(5) 285	(5) 347	
	(6) 320			(6) 382	
	(7) 598			(7) 347	
				(8) 323	

PRF ADMIN LOCKE ROOM

COUNTER: LUDLUM 2929 SERIAL# 102015

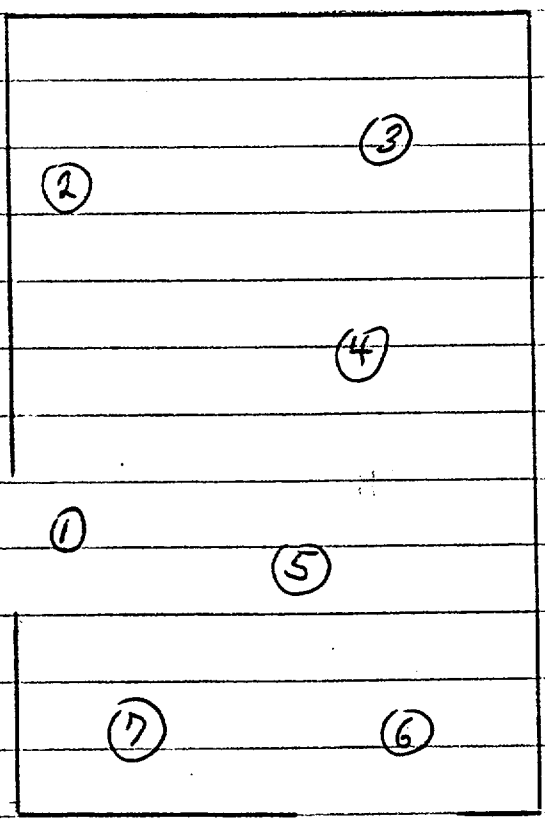
BKG 54

EFF. .14

CAL DUE: 4-22-00

POST NEEDLE GUN OF FLOOR

SMEAR#	DPM VALUE
1	30
2	≤BKG
3	30
4	≤BKG
5	28
6	43
7	≤BKG



PRF ADMIN, LOCKER ROOM

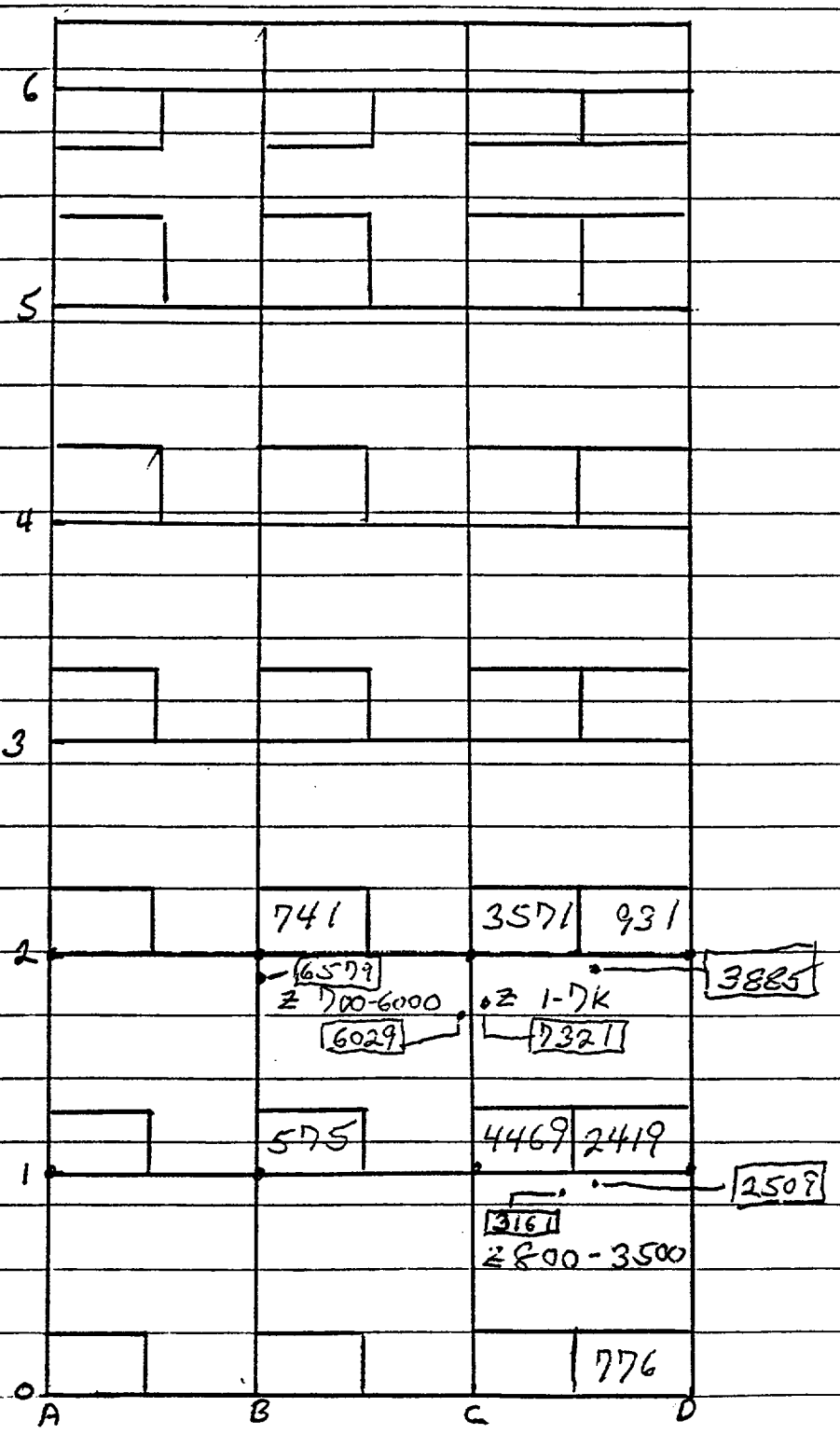
DATE: 7-9-99 TECH. TAYLOR

2221 # 84458

43-68 # 124497 POST NEEDLE GWO

BKG. CPM 308

EFF. 25%



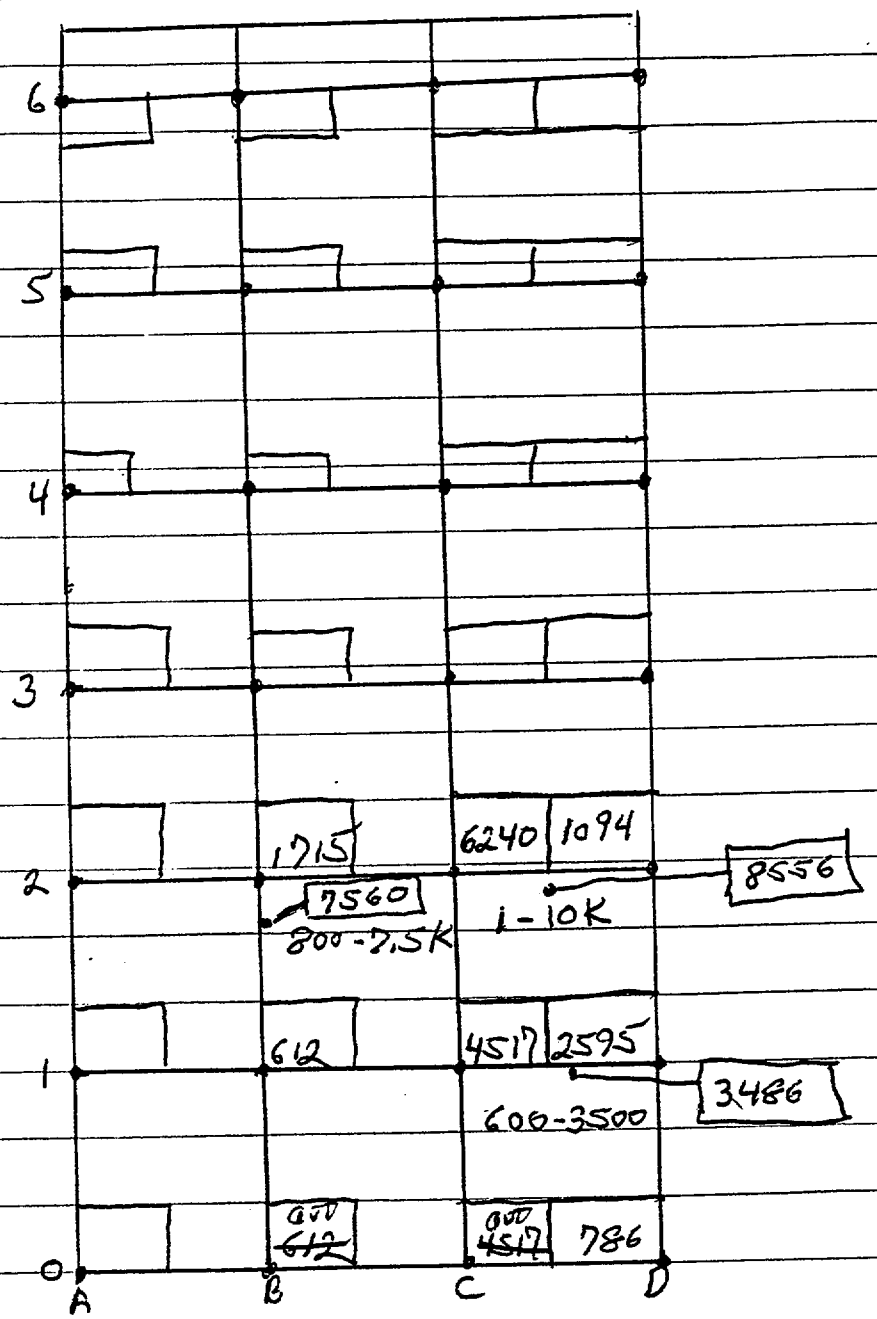
PRF ADMIN LOCKER ROOM

7-8-99 TECH. TAYLOR

POST FLOOR TILE REMOVAL

2221 # 84458
43-68 # 124497
BKG CPM 291
EFF. 25%

SURVEYED ONLY WHERE FLOOR TILE WAS REMOVED



A-5

EAST WALL

	A–B	B–C	C–D	D–E	E–F	F–G	
3	855 / ~~600-800~~ 600-800	544 / 400-600	542 / 400-600	524 / 400-600	492 / 400-600	483 / 463 / 400-600	400-600
2	497 (2)	590 (3)	474 (5)	557 (6)	502 (8)	528 / 459 (9)	400-600
1	530 / 400-600	553 / 400-600	534 / 400-600	541 / 400-600	606 / 400-600	563 / 528 / 400-600 (11)	400-600
0	615 (1) / 400-600	573 / 400-600	514 (4) / 400-600	514 / 400-600	668 (7) / 600-800	721 / 726 / 600-800 (10)	400-600

WEST WALL

	A–B	B–C	C–D	D–E	E–F	F–G	
2	400-600 (2) / 475	400-600 / 522	400-600 (5) / 518	400-600 (6) / 625	400-600 / 526	400-600 (9) / 575 / 558	
1	400-600 / 489	400-600 (3) / 469	400-600 / 520	400-600 / 541	400-600 (7) / 477	400-600 / 514 / 517	400-600 (10)
0	400-600 / 488 (1)	400-600 / 436	400-800 / 469 (4)	428	400-600 / 453	400-600 (8) / 445 / 559	400-600

SOUTH WALL

	A–B	B–C	C–D
3	425 / 400-600 (2)	417 / 400-600	425 / 453 / 400-600 (5)
2	395 / 400-600	(3)	447 / 426 / 400-600
1	457 / 400-600		522 / 427 / 400-600 (4)
0	475 (1)		488 / 403

Doorway

Doorway

NORTH WALL

	A–B	B–C	C–D
2	400-600 (2) / 512	400-600 / 484	400-600 / 512 / 554
1	400-600 / 501	400-600 (3) / 479	400-600 (4) / 533 / 541
0	400-600 (1) / 666	400-600 / 520	400-600 (5) / 500 / 598

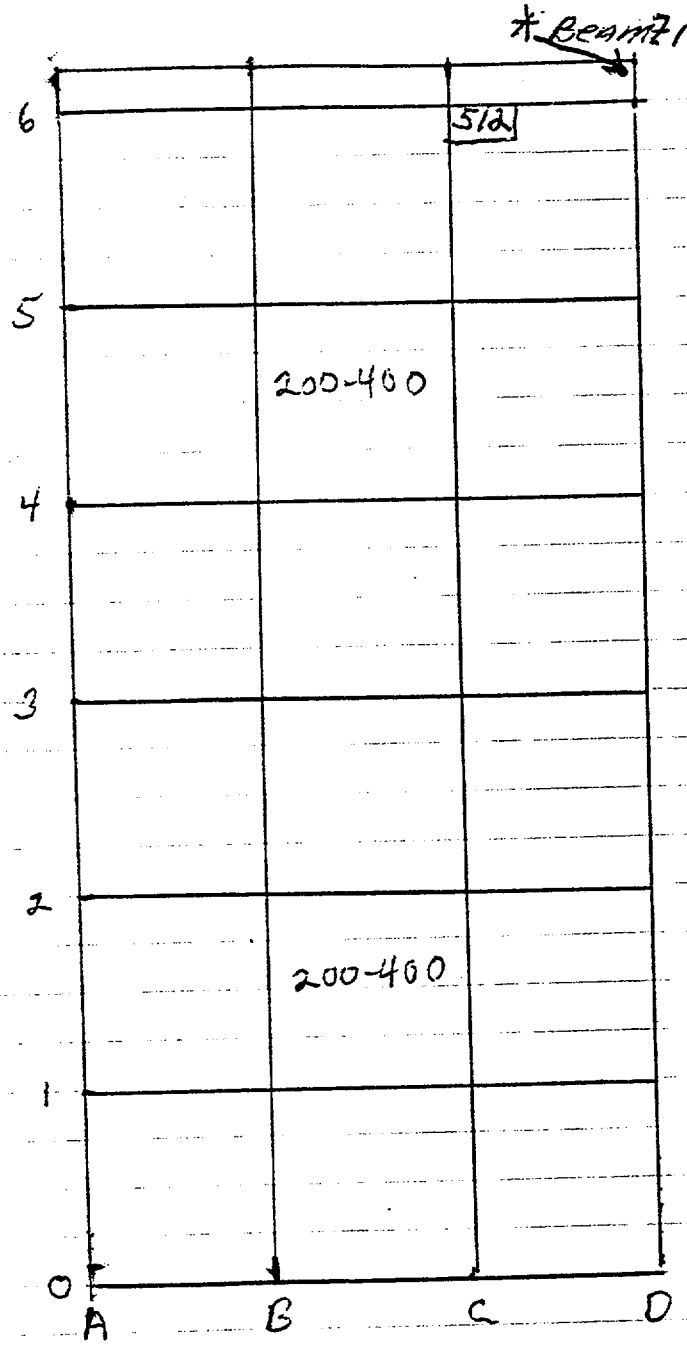
43.684
2221H
BLGCAM 329
EFF.
25%

TAYLOR
DATA PT.
124497
84458

142522
138347
334
25%

SILVIO
SCAN

FIRE AUDITIN
LOCKER ROOM CEILING



	6-14-99 TAYLOR DATA PT.	SILVIO SCAN
2221#	84458	138347
#3-68#	124497	124522
BKG CPM	329	334
EFF.	25%	25%

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/15/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Shower/Wash/Rest Rooms, Floor
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	^{99}Tc	23,400	14.2	535	961

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	551	302	2122	ledge between locker room and shower
2	591	342	2403	ledge between locker room and shower
3	502	253	1778	east wall of locker/shower doorway
4	512	263	1848	shower floor
5	515	266	1869	shower floor
6	525	276	1939	shower floor
7	510	261	1834	shower floor
8	530	281	1975	shower floor
9	275	26	183	<MDA stoop between shower & washroom
10	527	278	1954	washroom floor
11	535	286	2010	washroom floor
12	516	267	1876	washroom floor
13	534	285	2003	washroom floor
14	509	260	1827	restroom floor
15	530	281	1975	restroom floor
16	505	256	1799	restroom floor
17				
18				
19				
20				Note: elevated background due to ceramic tile
21				
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33				
34				
35				

Signature: Steven C. Bostjanic Date: 12/29/00

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/15/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Shower/Wash/Rest Rooms, Walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	^{99}Tc	23,400	14.2	535	961

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	511	262	1841	shower room west wall
2	497	248	1743	shower room west wall
3	469	220	1546	shower room west wall
4	456	207	1455	shower room west wall
5	492	243	1708	shower room north wall
6	452	203	1426	shower room north wall
7	457	208	1462	shower room north wall
8	456	207	1455	shower room north wall
9	611	362	2544	shower room north wall
10	471	222	1560	shower room east wall
11	456	207	1455	shower room east wall
12	466	217	1525	shower room east wall
13	419	170	1195	shower room east wall
14	453	204	1434	shower room south wall
15	278	29	204	<MDA shower room south wall
16	462	213	1497	shower room south wall
17	504	255	1792	shower room south wall
18	443	194	1363	shower room south wall
19	455	206	1448	wash room south wall
20	480	231	1623	wash room south wall
21	450	201	1412	wash room south wall
22	433	184	1293	wash room south wall
23	447	198	1391	wash room north wall
24	468	219	1539	wash room north wall
25	468	219	1539	wash room north wall
26	289	40	281	<MDA wash room north wall
27	497	248	1743	wash room west wall
28	441	192	1349	wash room west wall
29	487	238	1672	wash room west wall
30	518	269	1890	wash room east wall
31	456	207	1455	wash room east wall
32	498	249	1750	wash room east wall
33	501	252	1771	wash room east wall
34	415	166	1166	restroom south wall
35	416	167	1174	restroom south wall continued on page 2

Signature: Steven A. Bostgumia Date: 12/29/00

Survey Data Continued

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
36	488	239	1679	restroom south wall
37	456	207	1455	restroom west wall
38	439	190	1335	restroom west wall
39	480	231	1623	restroom west wall
40	503	254	1785	restroom north wall
41	478	229	1609	restroom north wall
42	420	171	1202	restroom north wall
43	431	182	1279	restroom north wall
44	472	223	1567	restroom east wall
45	440	191	1342	restroom east wall
46	471	222	1560	restroom east wall
47	231	-18	-126	<MDA <BKGND restroom stall, partition 1 south
48	257	8	56	<MDA restroom stall, partition 1 north
49	252	3	21	<MDA restroom stall, partition 2 south
50	253	4	28	<MDA restroom stall, partition 2 north
51	250	1	7	<MDA restroom stall, door 1
52	249	0	0	<MDA restroom stall face at floor
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7/15/99 Cheswick (W) Inst. Efficiency Chk.

Ludlum 2241-2 SN 137245
Ludlum 44-116 SN 147859

Bkgnd	Gross	Net
223	3567	3330
251	3533	
272	3677	
249	3579	

$$Eff = \frac{3330 \text{ cpm}}{23{,}400 \text{ dpm}} = 14.2\%$$

PRF ADMIN BATH & SHOWER ROOM

B-3 NORTH FLOOR

6-17-99

	TAYLOR	SILVIO
	DATA PT	SCAN
2221#	84458	138347
43-68#	124497	142522
BKGCPM	303	301
EFF.	25%	25%

Ledge/Step between locker & shower
① 551 ② 591
E. Wall 502

B-3 N. Floor
① 512
② 515
③ 525
④ 510
⑤ 530

B3 10-13 uR/hr @ 1m

	A	B	C	D
3	704	698	750	732
	Z=600-800 ②	Z=600-800	Z=600-800	
2	670	715	704	722
	Z=600-800	Z 600-800 ③	Z 600-800	
1	697	726	789	686
	Z 600-800	Z 600-800	Z=600-800 ④	
0	728 ①	763	713	731

B-2

	A	B	C	D
		②	Stoop ① ③	
1	745	747	688	717
	Z=600-800	Z 600-800	Z 600-800	
0	744 ①	701	840 ④	765

→ Stoop ① 275

① 527
② 535
③ 516
④ 534

B2 1m high uR/hr → 10-15uR/hr

B-1

	A	B	C	D
3	734	728	777	745
	Z=600-800	Z=600-800	Z=600-800 ①	
2	718	744	739	711
	Z 600-800	Z 600-800 ②	Z 600-800	
1	713	742	703	722
	Z 600-800	Z 600-800	Z=600-800	
0	712 ③	722	743	748

① 509
② 530
③ 505

B1 1m uR readings 10-12uR/hr.

South

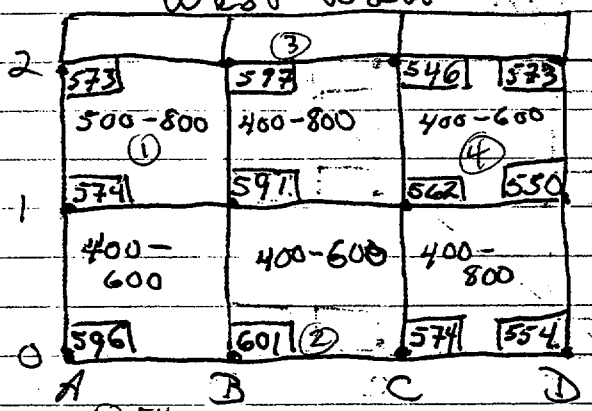
C04

*Note- higher bkgnd due to ceramic tile

μR readings - 10 to 15 mR/hr

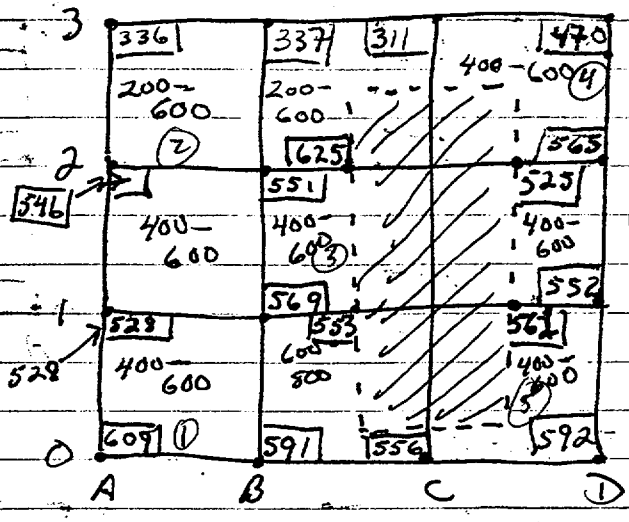
SHOWER Room

West Wall



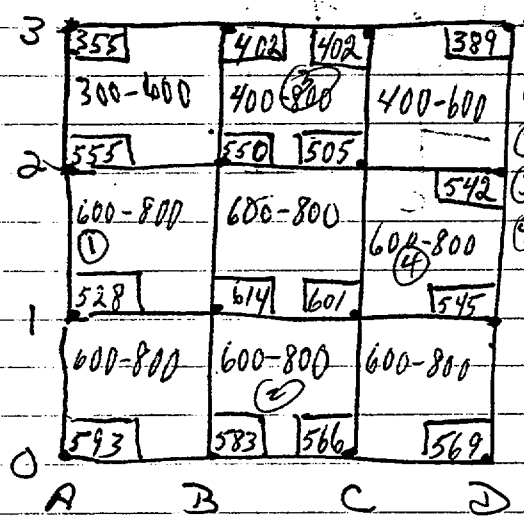
① 511
② 497
③ 469
④ 456

NORTH WALL



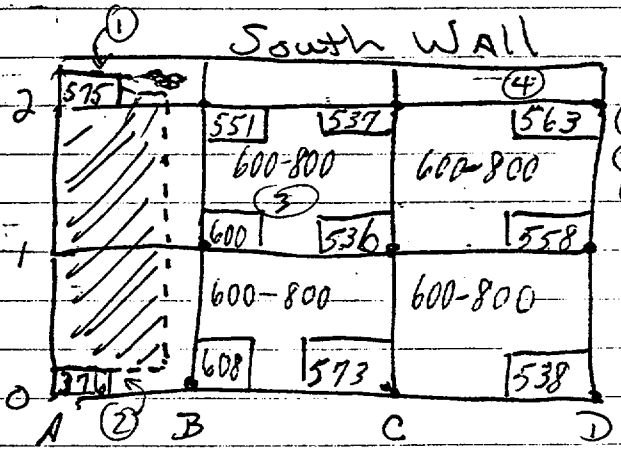
① 492
② 452
③ 457
④ 456
⑤ 611

EAST WALL



① 471
② 456
③ 466
④ 419

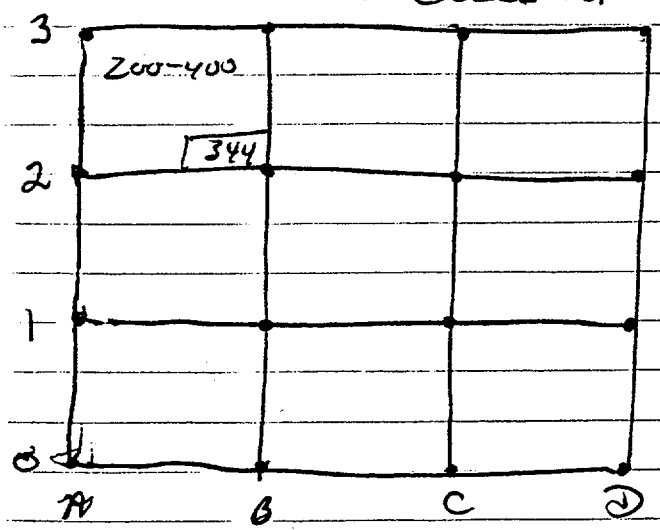
South WALL



① 453
② 278
③ 462
④ 504
⑤ 443

DENOTES PASSWAY

~~Floor~~ CEILING

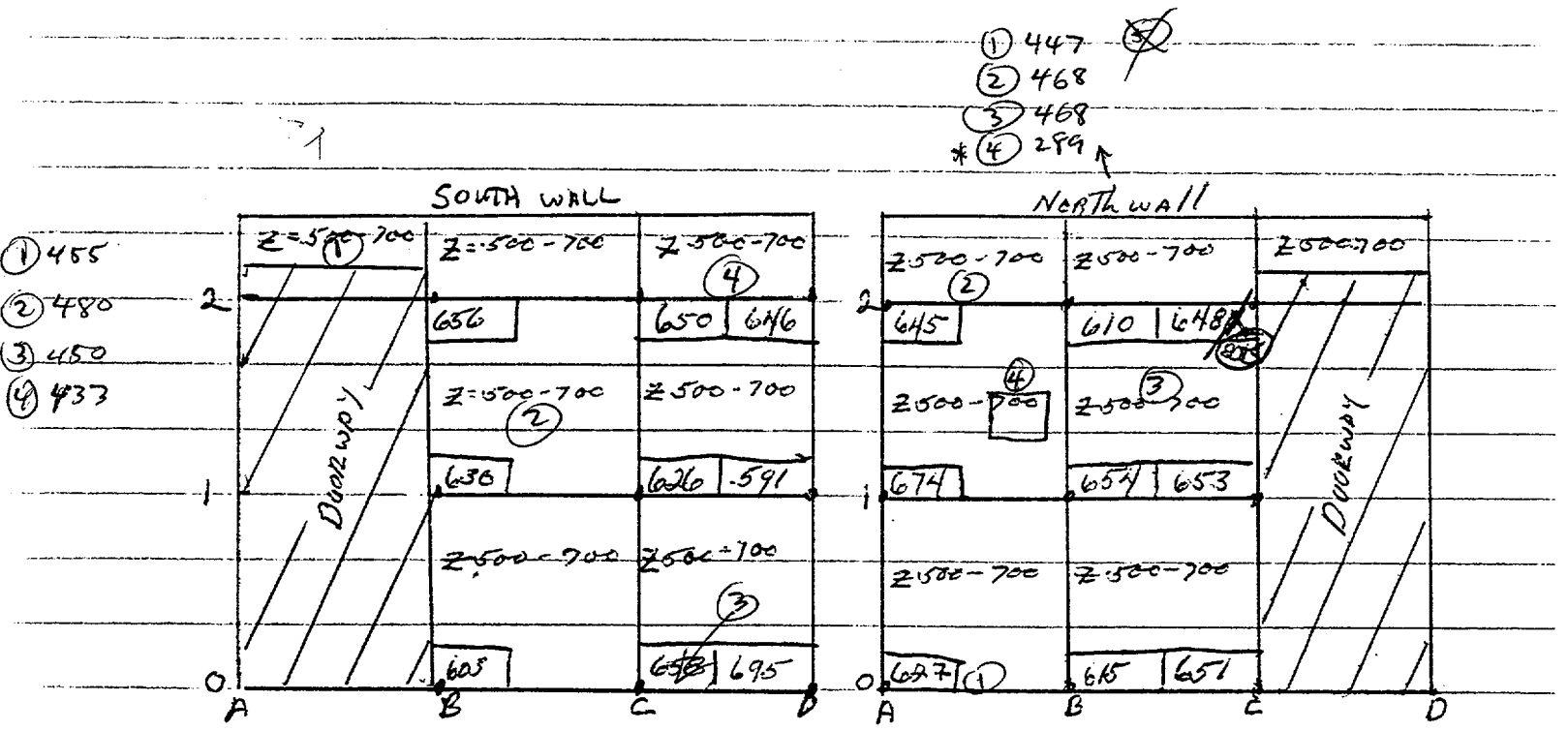


6-17-99 Shank
Model 2221
S.N. 154207
Probe H3-68
S.N. PR 159019
bkgd 265
eff 23%

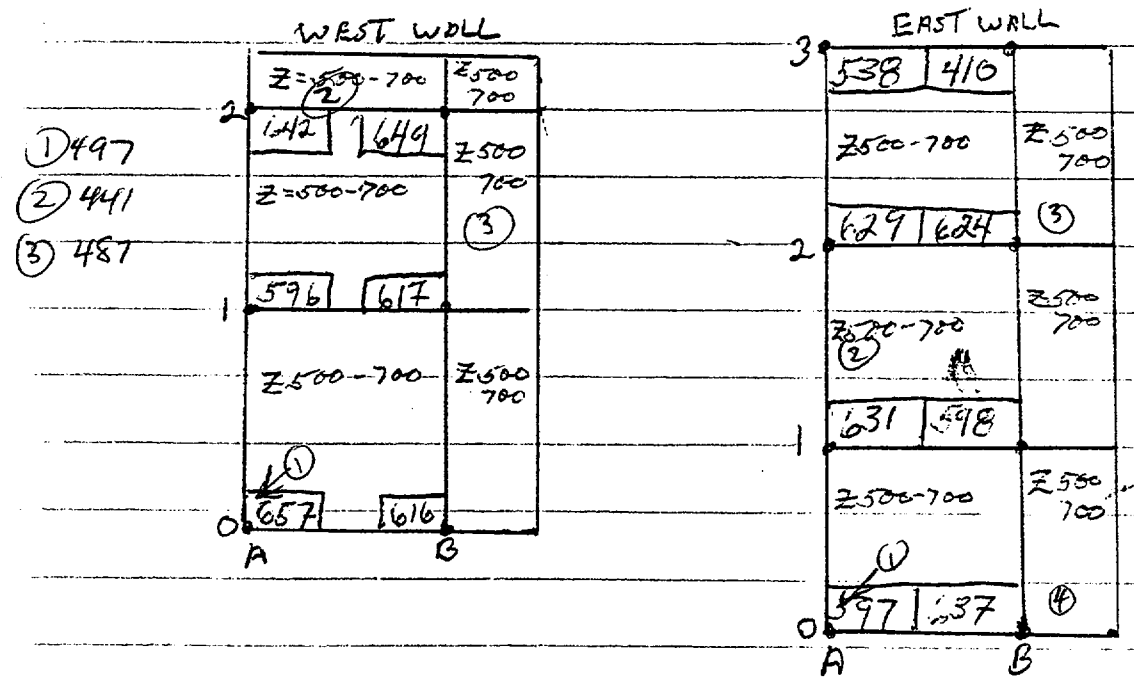
PRF ADmin BATH & SHOWER

B-2

*4 - top of towel dispenser



6-17-99



	TOYLOR DATAFT	SILVIO SCAN
2221#	84458	138347
4368#	124497	142522
BKCFM	303	301
EFF	25%	25%

B-1 SOUTH WALL

(1) 415
(2) 416
(3) 488

	A–B	B–C	C–D
2	Z=400-600 (1) 347	Z=400-600 645	Z=400-600 646 627
	Z=400-600 353	Z=400-600 (2) 601	Z=400-600 640 626
1	Z=400-600 407	Z=500-700 653	Z=500-700 650 (3) 619

B-1 WEST WALL

(1) 456
(2) 439
(3) 480

	A–B	B–C	C–D
2	Z=500-700 660	Z=400-600 613	Z=400-600 (3) 600 659
	Z=500-700 634	Z=400-600 (2) 595	Z=400-600 648 602
1	(1) Z=500-700 652	Z=400-600 626	Z=400-600 654 599

6-17-99

Taylor — Silvio

DATA - SCAN

#
2221-84458-138347

#
43-68-124497-142522

B-1 NORTH WALL

	A–B	B–C	C–D
2	Z=400-600 (2) 609	Z=400-600 608 594	Z=400-600 DOOR
	Z=400-600 655	Z=400-600 (3) 636 689	
1	Z=500-700 (1) 652	Z=400-600 660 662	OPENING

(1) 503
(2) 478
(3) 420
(4) 431

B-1 EAST WALL

BKg. -303 -301

Eff. 25% -25%

	A–B	B–C	C–D
3	Z=200-400 398	Z=200-400 382	Z=400-600 357 406
	Z=400-600 593	Z=400-2000 642	Z=400-600 (3) 623 605
2	Z=500-700 653	Z=500-700 (2) 625	Z=500-700 633 633
1	Z=500-700 (1) 684	Z=500-700 678	Z=500-700 633 598

(1) 472
(2) 440
(3) 471

PRF. Admin BATH + Shower Room WALLS

PRF ADMIN BATHROOM STALLS

6-17-99

PARTITION #1

TECH: TAYLOR

DATA POINT & SCAN

SAME INSTRUMENT

2221# 84458

43-68# 124497

BKGCPM 303

EFF. 25%

SOUTH	NORTH
231	257
347	342
Z - 200-400	Z = 300-400

PARTITION #2

SOUTH	NORTH
252	253
326	398
Z 200-400	Z 300-400

DOOR #1	DOOR #2
250	
370	351
Z 300-400	Z = 300-400

Stall face at floor

249

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/15/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – H.P. control area, floor and walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	^{99}Tc	23,400	14.2	535	961

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments	
1	288	39	274	<MDA	HP control area floor
2	321	72	506	<MDA	HP control area floor
3	296	47	330	<MDA	HP control area floor
4	328	79	555		HP control area floor
5	365	116	815		HP control area floor
6	268	19	134	<MDA	HP control area west wall
7	208	-41	-288	<MDA <BKGND	HP control area west wall
8	236	-13	-91	<MDA <BKGND	HP control area west wall
9	227	-22	-155	<MDA <BKGND	HP control area west wall
10	306	57	401	<MDA	HP control area north wall
11	278	29	204	<MDA	HP control area north wall
12	278	29	204	<MDA	HP control area north wall
13	277	28	197	<MDA	HP control area east wall
14	264	15	105	<MDA	HP control area east wall
15	262	13	91	<MDA	HP control area east wall
16	308	59	415	<MDA	HP control area east wall
17	277	28	197	<MDA	HP control area south wall
18	207	-42	-295	<MDA <BKGND	HP control area south wall
19	289	40	281	<MDA	HP control area south wall
20	260	11	77	<MDA	HP control area south wall
21	289	40	281	<MDA	HP control area south wall
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					

Signature: Steven A. Bostjanic Date: 12/29/00

7/15/99 Cheswick (W) Inst. Efficiency Chk.

Ludlum 2241-2 SN 137245
Ludlum 44-116 SN 147559

Bkgnd	Gross	Net
223	3567	3330
251	3533	
272	3637	
249	3579	

$$Eff = \frac{3330 \text{ cpm}}{23{,}400 \text{ dpm}} = 14.2\%$$

6-16-99
Shank MODEL 2221
S.N. 154207
Probe 43-68
S/N. PR15 9019
bkgd. 267
eff 25%

6-17-99
Shank
MODEL 2221
S/N 154207
Probe 43.68
S/N PR 159019
bkgd 265
eff. 25%

~~WORK~~
H.P. ~~Control~~ CONTROL AREA
Admin. Bldg.

N ↑

West Wall

	A	B	C	D	E
3	301 * window; N/A; 318; 220-300	302; 280-340	235; 220-300	247; 260-320	
2	345; N/A; 200-400	280; * 200-400 (2); 284	(3) 254; 200-400	251; 200-400	
1	267; 200-400 (1)	200-400	200-400	200-400 (4)	
0	311; 290	292	269	293	

South Wall

	A	B	C	D	E
3	316; 200-300	341; 200-340 (3)	292; 280-340	278; 303; 240-400	
2	271; 303; 328	327	303	312	
1	200-340; 280-340	260-320	260-300 (4)	240-360	
0	244; (1) 200-340; 280-340 (2); 279	250; 259	280-320; 270	260-340; 297	240-320; (5); 328

North Wall

	A	B	C	D	E
2	328 DOORWAY; 325 (1); 200-340	328; 300-440	352; (2) 352	365; 260-440	
1	327; 327; 200-340; 341	300-400	327 (3)	335; 260-440	
0	1312; 324			328	

DOOR

East Wall

	A	B	C	D
3	305; 300-340; 318	293; 240-320; 331	304; 300-360 (3)	316; 260-380; 288
2	260-340; 301	280-360 (2); 298	307; 320-340	259; 240-300; 316
1	280-380	280-380	284; 260-340	255; 260-320
0	315 (1)	349	296	299 (4); 311

Floor

6/17/99

	A	B	C	D	E
4	372; 388	361	354	(1) 402	
3	300-500; 407	340-440; 362	320-420; 371	360-800; 712	
2	578; 360-440	300-480; 366	300-440; (2) 362	340-480; 446	
1	426; 372; 300-460	340-440 (3); 379	300-480; 370	300-600; 472	
0	475; 350; 300-460 (4); 449	371	300-480; 408	360-460; 449	300-600; 426

(5) (edge)

6/17/99

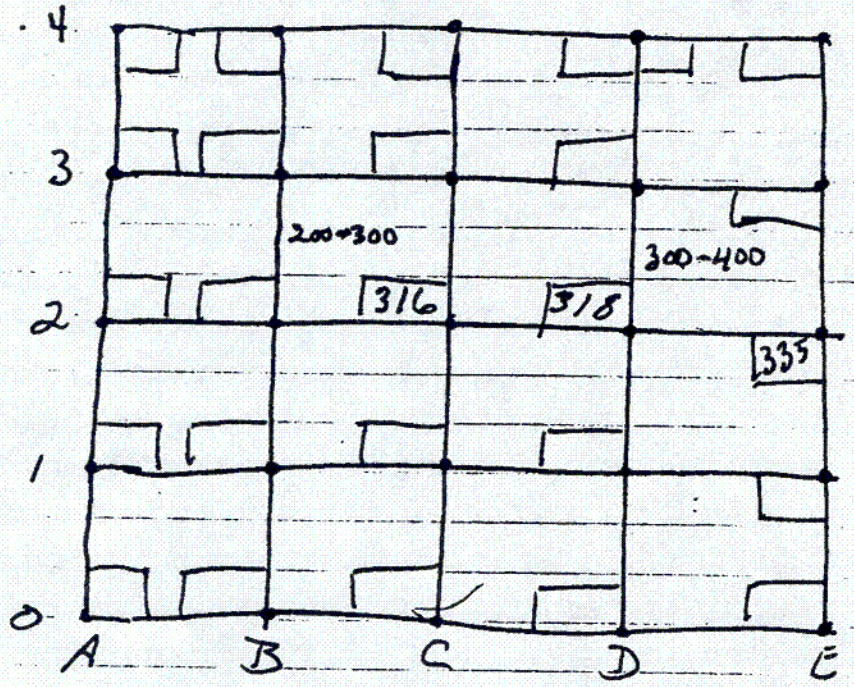
Top of shaver Room south wall
scan Z=450 - 500
Data points top of wall
Column B - 433 cpm
" C - 438 cpm
" D - 446 cpm
" E - 566 cpm

Floor + Ceiling 6-17-99

H.P. Control Area
Admin. Bldg.

↑ N

CEILING 6-17-99



1m mR readings
9-14 mR/hr.

~~6-16-99~~
~~Model 2221~~
~~S.N. 154207~~
~~Probe 43-68~~
~~S.N. PR159019~~
~~bkgd. 267~~
~~eff. 25%~~

6-17-99
Model 2221
S.N. 154207
Probe: 43-68
S.N. PR 159019
bkgd. ~~267~~ 265
eff. 25%

Floor	W. Wall	N. Wall	E. Wall	S. Wall
(1) 288	(1) 268	(1) 306	(1) 277	(1) 277
(2) 321	(2) 208	(2) 278	(2) 264	(2) 207
(3) 296	(3) 236	(3) 278	(3) 262	(3) 289
(4) 328	(4) 227		(4) 308	(4) 260
(5) 365				(5) 289

C05

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/15/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Breezeway Area 1, Walls and Floor
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	^{99}Tc	23,400	14.2	535	961

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)		Comments
1	288	39	274	<MDA	Breezeway Area 1 north wall
2	327	78	548		Breezeway Area 1 north wall
3	344	95	668		Breezeway Area 1 south wall
4	331	82	576		Breezeway Area 1 south wall
5	376	127	892		Breezeway Area 1 west wall
6	350	101	710		Breezeway Area 1 west wall
7	309	60	422	<MDA	Breezeway Area 1 west wall
8	311	62	436	<MDA	Breezeway Area 1 west wall
9	384	135	949		Breezeway Area 1 west wall
10	317	68	478	<MDA	Breezeway Area 1 east wall
11	380	131	921		Breezeway Area 1 east wall
12	304	55	386	<MDA	Breezeway Area 1 east wall
13	329	80	562		Breezeway Area 1 east wall
14	322	73	513	<MDA	Breezeway Area 1 floor
15	614	365	2565		Breezeway Area 1 floor
16	521	272	1911		Breezeway Area 1 floor
17					
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33					
34					
35					

Signature: Steven A. Bostgraver Date: 12/29/00

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/15/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Breezeway Area 2, Walls and Floor
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	^{99}Tc	23,400	14.2	535	961

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	570	321	2256	Admin Breezeway Area 2 floor
2	572	323	2270	Admin Breezeway Area 2 floor
3	504	255	1792	Admin Breezeway Area 2 floor
4	361	112	787	Admin breezeway Area 2 south wall
5	447	198	1391	Admin breezeway Area 2 south wall
6	380	131	921	Admin breezeway Area 2 south wall
7	447	198	1391	Admin Breezeway area 2 west wall
8	335	86	604	Admin Breezeway area 2 west wall
9	245	-4	-28	<MDA <BKGND Admin breezeway area 2 east wall
10	307	58	408	<MDA Admin breezeway area 2 east wall
11	389	140	984	Admin breezeway area 2 north wall
12	358	109	766	Admin breezeway area 2 north wall
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Signature: Steven A. Bastyanic Date: 12/29/00

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/15/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Breezeway Area 3, Walls and Floor
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	^{99}Tc	23,400	14.2	535	961

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	328	79	555	Admin breezeway area 3 floor
2	324	75	527	<MDA Admin breezeway area 3 floor
3	279	30	211	<MDA Admin breezeway area 3 floor
4	331	82	576	Threshold from hall
5	279	30	211	<MDA Admin breezeway area 3 north wall
6	317	68	478	<MDA Admin breezeway area 3 north wall
7	334	85	597	Admin breezeway area 3 north wall
8	324	75	527	<MDA Admin breezeway area 3 north wall
9	226	-23	-162	<MDA <BKGND Admin breezeway area 3 east wall
10	216	-33	-232	<MDA <BKGND Admin breezeway area 3 east wall
11	228	-21	-148	<MDA <BKGND Admin breezeway area 3 east wall
12	317	68	478	<MDA Admin breezeway area 3 south wall
13	299	50	351	<MDA Admin breezeway area 3 south wall
14	312	63	443	<MDA Admin breezeway area 3 south wall
15	314	65	457	<MDA Admin breezeway area 3 west wall
16	310	61	429	<MDA Admin breezeway area 3 west wall
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34				
35				

Signature: Steven A. Bostjanic Date: 12/29/00

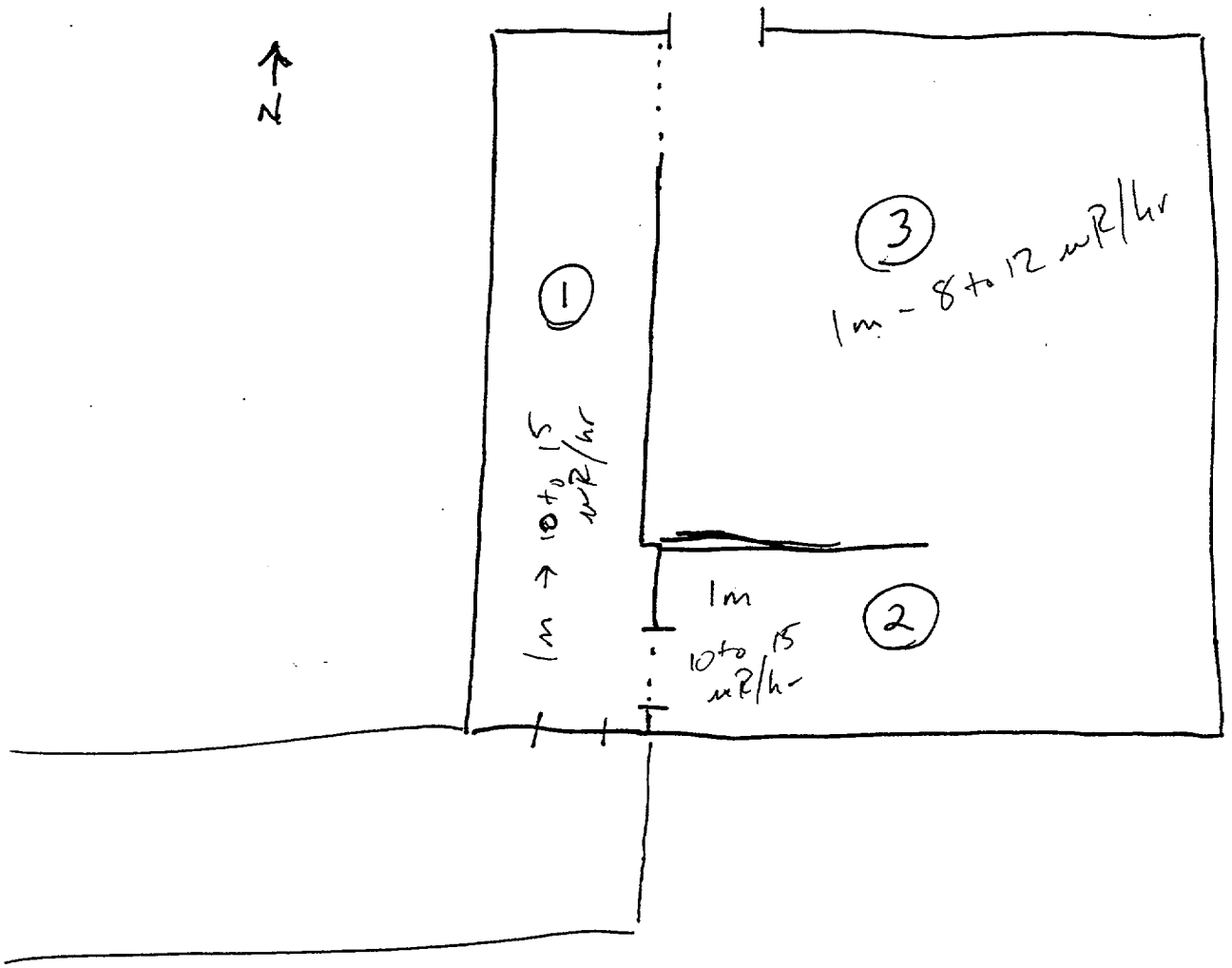
7/15/99 Chesnick (W) Inst. Efficiency Chk.

Ludlum 2241-2 SN 137745
Ludlum 44-116 SN 147559

Bkgnd	Gross	Net
223	3567	3330
251	3533	
272	3677	
249	3579	

$$Eff = \frac{3330 \text{ cpm}}{23{,}400 \text{ dpm}} = 14.2\%$$

PRF ADMIN BREEZWAY OVERVIEW
BREEZEWAY



Area 3

N. Wall	E. Wall	S. Wall	W. Wall
(1) 279	(1) 226	(1) 317	(1) 314
(2) 317	(2) 216	(2) 299	(2) 310
(3) 334	(3) 228	(3) 312	
(4) 324			

Floor
(1) 328
(2) 324
(3) 279
(4) 331 Threshold from wall

Area 1

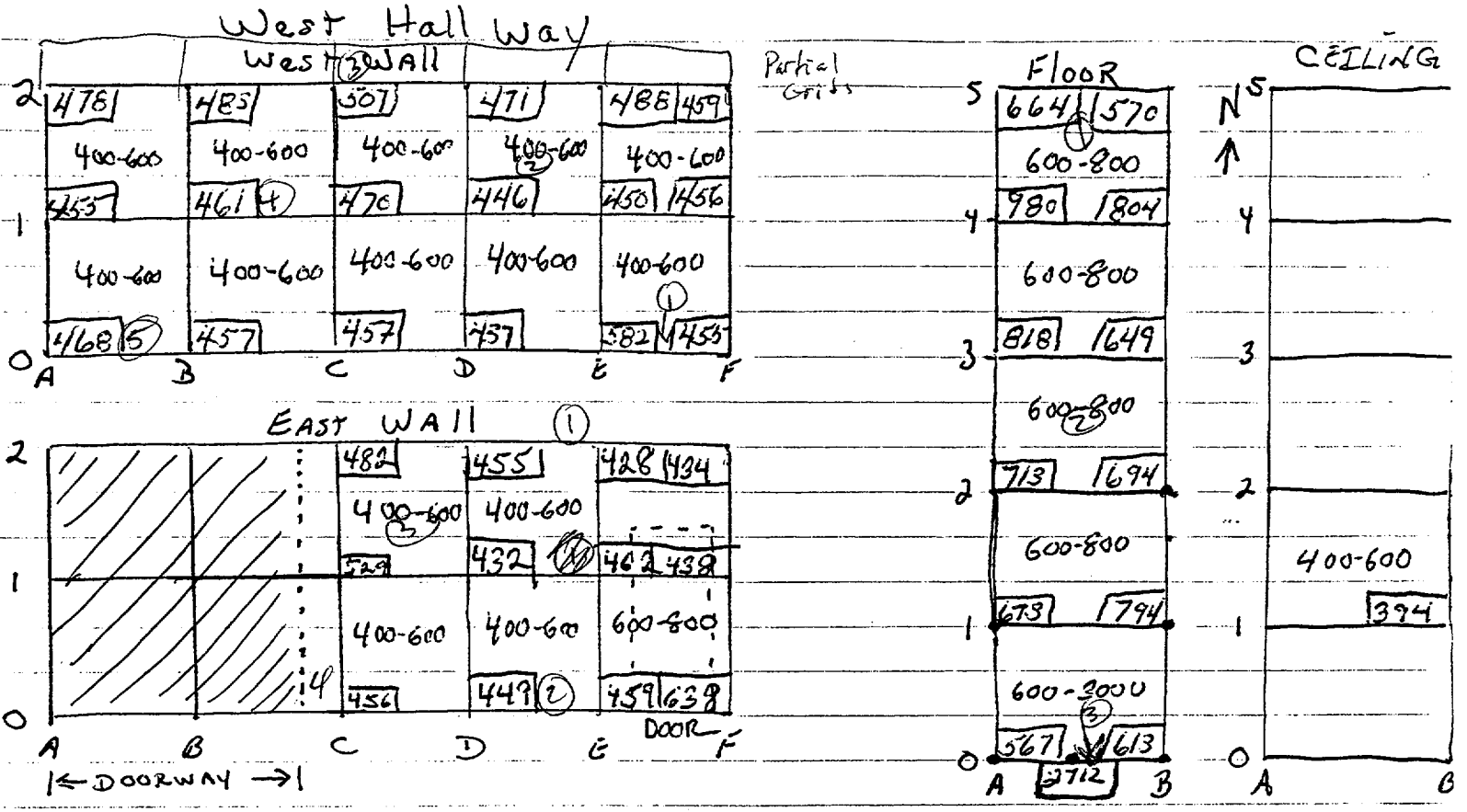
North Wall	S. Wall
(1) 281	(1) 344
(2) 327	(2) 331

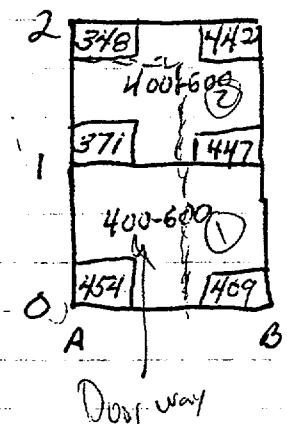
W. Wall	E. Wall
(1) 376	(1) 317
(2) 350	(2) 380
(3) 309	(3) 304
(4) 311	(4) 329
(5) 384	

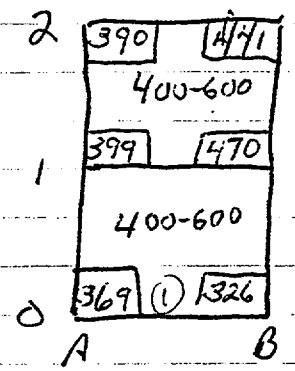
Floor
(1) 322
(2) 614
(3) 521

PRF ADMIN BREEZWAY

(1)



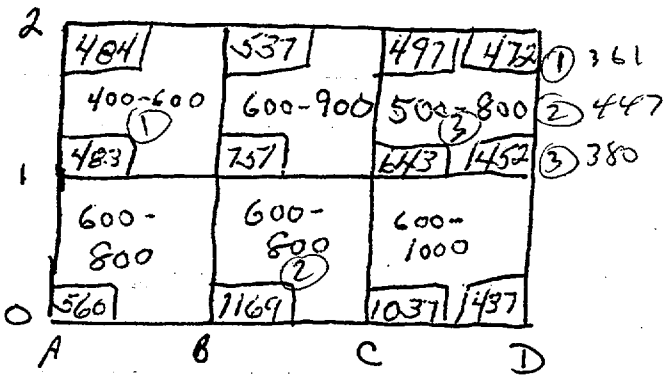




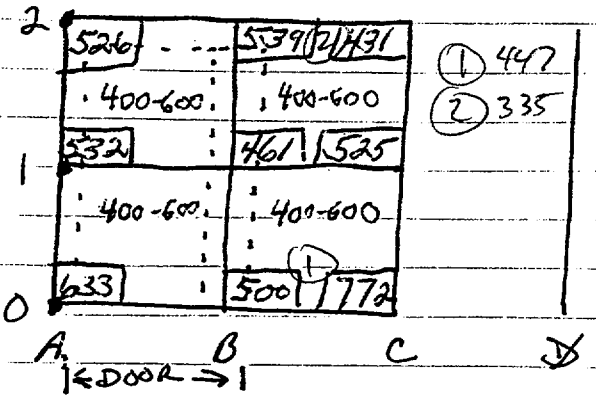
DATE 6-23-99
TAYLOR — SILVIO
DATA — SCAR
2221-84458 — 138347
4368-124497 — 142522
BKG 309 — 299
Eff. 25% — 25%

(2)

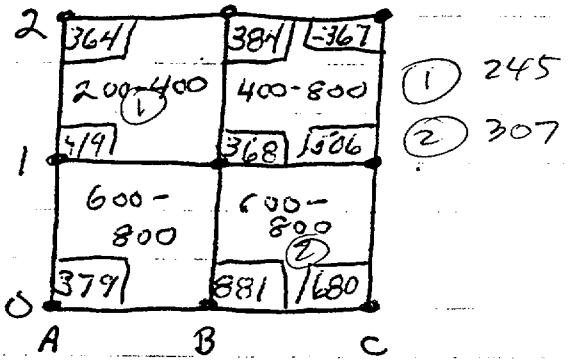
South Wall



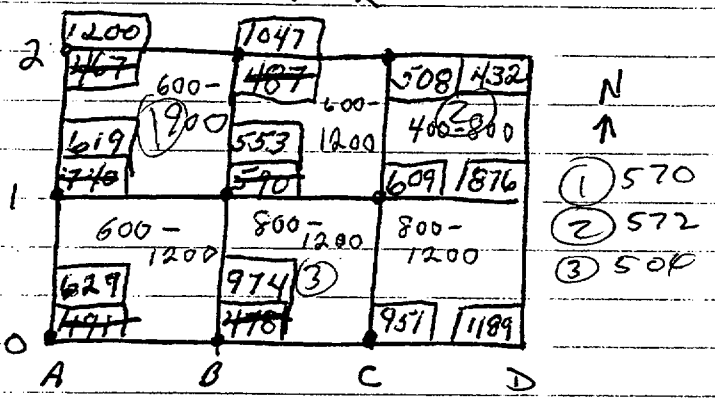
West Wall



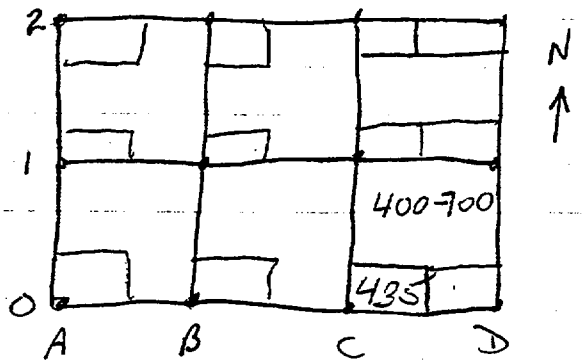
EAST Wall (to step off line)



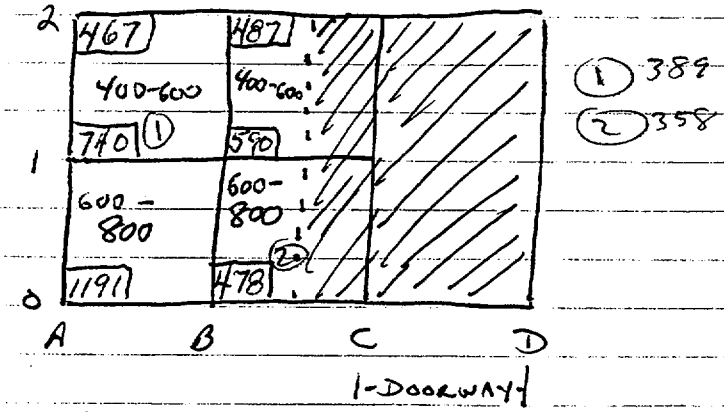
Floor



Ceiling



North Wall



6-23-99

	TAYLOR	SILVIO
	DATA PT.	SCAN
2221#	84458	138347
43-68#	124497	142522
BKG CPM	309	299
EFF.	25%	25%

R. SHANK 6-22-99

6-21-99
MODEL 2221
S.N. 154207
PROBE 43-68
S.N. PR159019
bkgd 252 cpm
eff. 25%

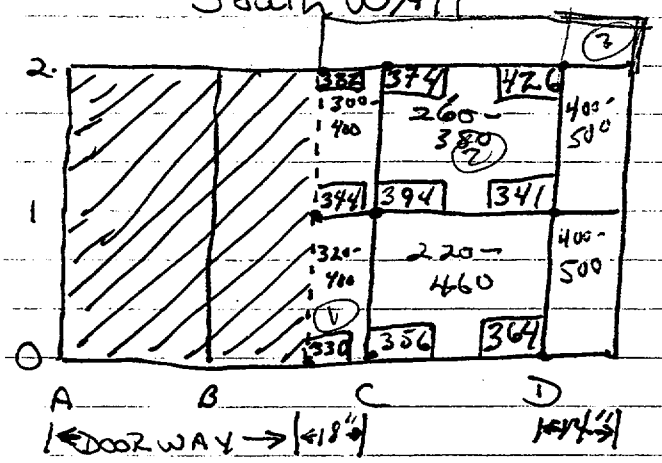
MODEL 2221
S.N. 154207
PROBE 43-68
S.N. PR159019
bkgd 246 cpm
eff 25%

PRE ADMIN
SOUTH, WEST, NORTH WALL ONLY
BREEZWAY

(3)

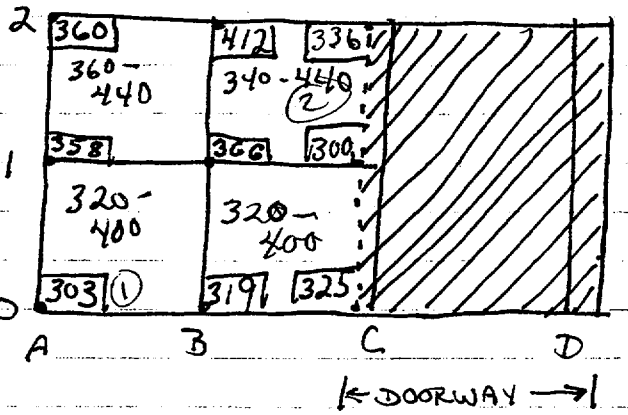
6-21-99

South WALL

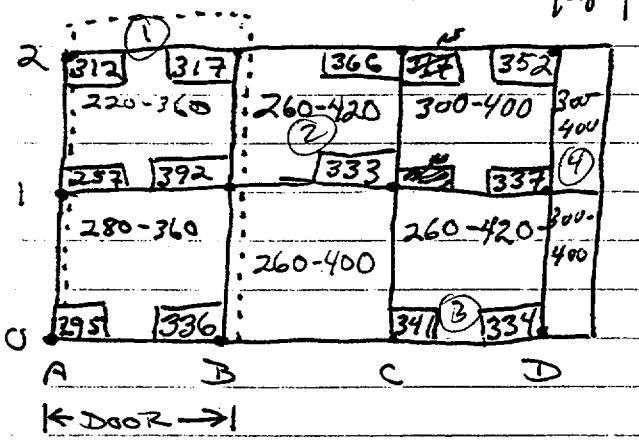


6-21-99

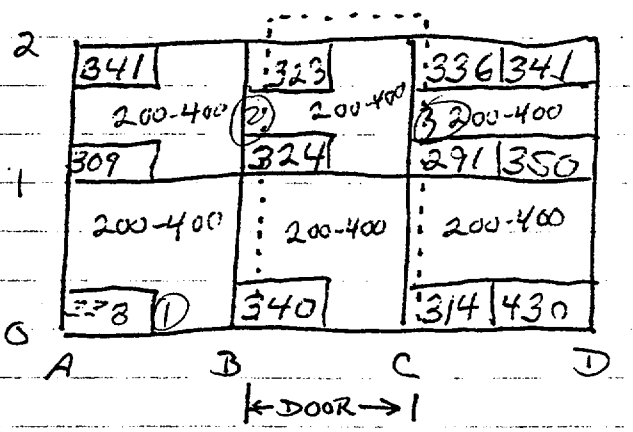
West WALL



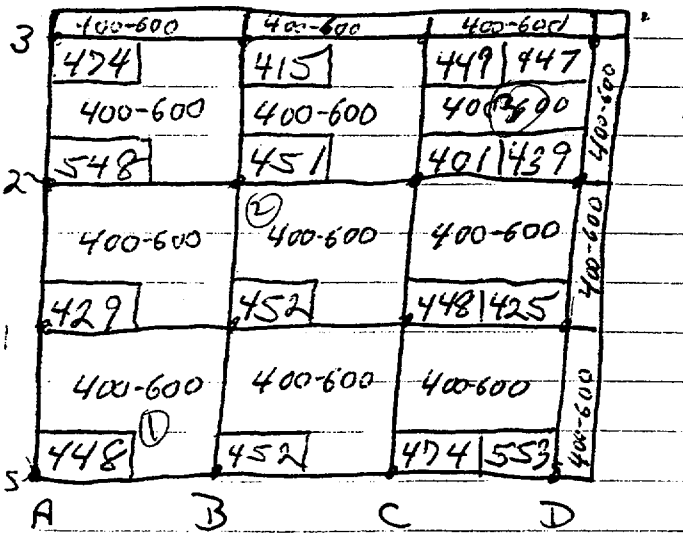
North WALL



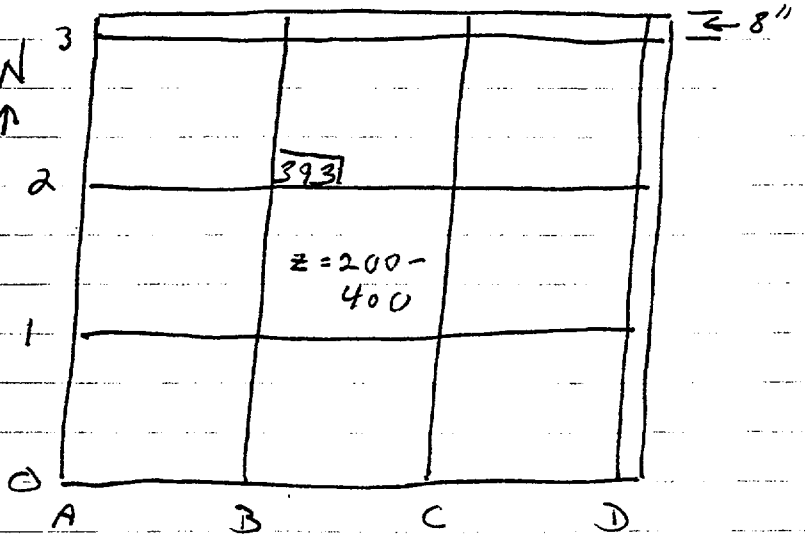
East WALL



FLOOR



Ceiling



		TAYLOR DATA PT	SILVIO SCAN
EAST WALL →			
FLOOR	2221 #	84458	154207
CEILING	43-68 #	124497	159019

16"

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/15/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Breezeway west-east hall, floor
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	^{99}Tc	23,400	14.2	535	961

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	418	169	1188	
2	580	331	2326	
3	664	415	2916	
4	777	528	3710	
5	981	732	**5144**	2nd step, unscabbled meets hotspot criteria
6	889	640	4497	2nd step scabbled & adjacent to survey point 5
7	474	225	1581	
8	766	517	3633	
9	1110	861	**6050**	2nd step, 2nd scabbled reading meets hotspot criteria
10	1023	774	**5439**	recount of survey point 5
11	819	570	4005	
12	783	534	3752	
13	336	87	611	
14	551	302	2122	
15	494	245	1722	
16				
17				
18				
19				Survey points with elevated counts met hotspot criteria. Associated demo
20				debris disposed of as non-radwaste
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				

Signature: Steven A. Bostjanic Date: 12/29/00

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/15/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Breezeway west-east hall, walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	^{99}Tc	23,400	14.2	535	961

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments	
1	356	107	752		north wall
2	386	137	963		north wall
3	316	67	471	<MDA	north wall
4	244	-5	-35	<MDA <BKGND	north wall
5	276	27	190	<MDA	north wall
6	340	91	639		south wall
7	257	8	56	<MDA	south wall
8	270	21	148	<MDA	south wall
9	339	90	632		south wall
10	371	122	857		east wall
11	310	61	429	<MDA	east wall
12	357	108	759		east wall
13	347	98	689		west wall
14					
15					
16					
17					
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33					
34					
35					

Signature: Steven A. Boatright Date: 12/29/00

7/15/99 Cheswick (W) Inst. Efficiency Chk.

Ludlum 2241-2 SN 137745
Ludlum 44-16 SN 147559

Bkgnd	Gross	Net
223	3567	3330
251	3533	
272	3677	
249	3579	

$$Eff = \frac{3330 \text{ cpm}}{23{,}400 \text{ dpm}} = 14.2\%$$

THIS IS THE WEST-EAST HALL CONNECTING TO BUILDING 12.

1m μR readings. 12 to 25 mR/hr (25 @ W. Wall)

Admin BREEZWAY FLOOR DATE 6-21-99

N↑

	A	B	C	D	E	F	G	H
2	709	1082	1071 (6)	1223	757 (3)	657	763	823
1st Step unscabbled	700-1000 (8)	800-1200	800-1200	1-24 (5)	1267	700-900	700-900	
1st Step scabbled	899	819	778	901 (6)	1857 (8)	777	581	610
2nd Step unscabbled			(12) 1899					
2nd Step scabbled	700-1300	700-1000	800-1200 (7)	900-1900	700-1200	700-900 (2)	700-900	
1	1257	854	927	990	1091	744	766	656
0	A	B	C	D	E	F	G	H

(1) 418 (2) 580 (3) 664 (4) 777 (5) 981 (6) 889 (7) 474 (8) 766 (9) 1110 (10) 1023 (11) 819 (12) 783 (13) 376 (14) 551 (15) 494

(14) adjac to expan joint

(13) straddling expan joint

(9) 2nd Step 2nd scabble reading

(10) N side of (5)

(11) 2nd step scabble

(12) adjacn to expan joint

(15) straddling expan joint

* EXPANSION JOINT

NORTH WALL

	A	B	C	D	E	F	G	H
2	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	
	375	382	360	359	443	452	405	438
	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	
1	362	439	372	356	440	467	397	423
	Z 400-500 (5)	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500 (2)	Z 400-500	
0	400	476	400	396	446	571	412	434
	A	B	C	D	E	F	G	H

13'4"

(1) 356 (2) 386 (3) 316 (4) 244 (5) 276

Z 400-500 (1) 16'8"

SOUTH WALL DATE 6-21-99

	A	B	C	D	E	F	G	H
2	Z 400-500	Z 400-500	Z 400-500	Z	Z	Z	Z	
	424	375	472	385	390	355	398	497
	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500 (2)	Z 400-500	Z 400-500	
1	417	359	415	336	343	367	379	463
	Z 400-500	Z 400-500	Z 400-500	Z 400-500 (6)	Z 400-500	Z 400-500	Z 400-500 (7)	
0	455	421	482	392	423	477	523	572
	Z 400-500	Z 400-500	Z 400-500					
	A	B	C	D	E	F	G	H

(1) 300 (2) 257 (3) 270 (4) 339

TAYLOR, SILVIO

DATE 6-21-99

222# 84458

436# 124497

6-22-99

TAYLOR DATA PT

SILVIO SCAN

① 371

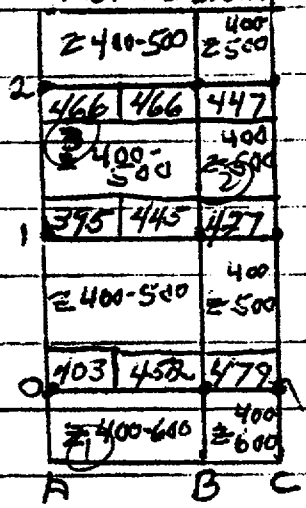
② 310

③ 357

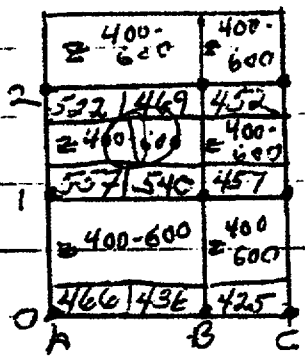
PRF ADMIN ~~EAST WALL~~

EAST WALL

BREEZWAY

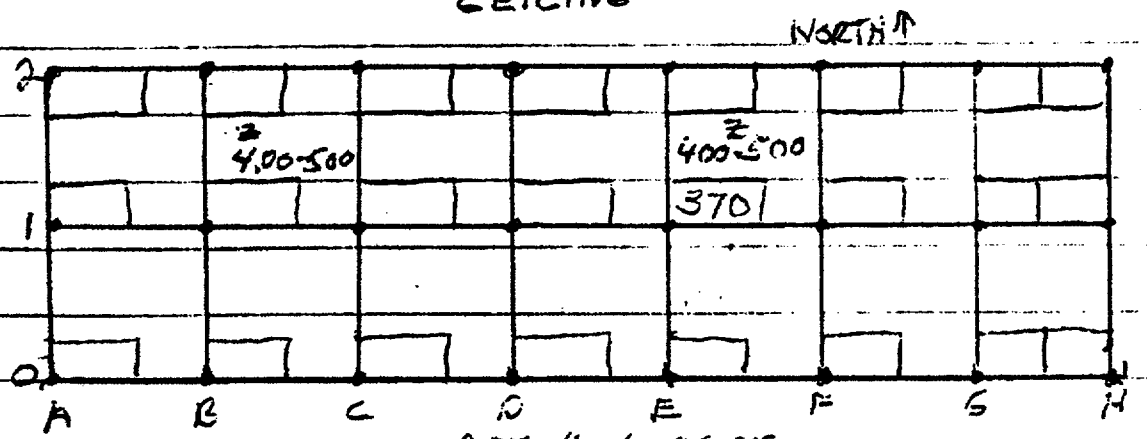


WEST WALL



① 347

BREEZWAY CEILING



DATE # 6-22-99

2221 # 84458

4248 # 124497

BKGCPM 318

EFF 25%

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/15/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Supervisor's Office/Conf. Room, floor & walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	^{99}Tc	23,400	14.2	535	961

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)		Comments
1	397	148	1040		floor
2	367	118	829		floor
3	348	99	696		floor
4	338	89	625		floor
5	383	134	942		floor
6	362	113	794		floor
7	325	76	534	<MDA	floor
8	337	88	618		floor
9	334	85	597		floor
10	343	94	661		floor
11	391	142	998		floor
12	362	113	794		floor
13	382	133	935		floor
14	396	147	1033		floor
15	341	92	646		floor
16	380	131	921		floor
17	364	115	808		floor
18	368	119	836		floor
19	411	162	1138		floor
20	365	116	815		floor
21	408	159	1117		floor
22	350	101	710		floor
23	350	101	710		floor
24	340	91	639		south wall
25	340	91	639		south wall
26	314	65	457	<MDA	north wall
27	297	48	337	<MDA	north wall
28	353	104	731		west wall
29	347	98	689		west wall
30	312	63	443	<MDA	west wall
31	322	73	513	<MDA	west wall
32	308	59	415	<MDA	east wall
33	254	5	35	<MDA	east wall
34	317	68	478	<MDA	east wall
35	314	65	457	<MDA	east wall

Signature: Steven A. Bodymin Date: 12/29/00

7/15/99 Chesnick (H) Inst. Efficiency Chk.

Ludlum 2241-2 SN 137745
Ludlum 44-16 SN 147859

Bkgnd	Gross	Net
223	3567	3330
251	3533	
272	3677	
249	3579	

$$Eff = \frac{3330 \text{ cpm}}{23{,}400 \text{ dpm}} = 14.2\%$$

PRF ADMIN

SUPERVISORS OFFICE & CONF. ROOM

FLOOR

N

6-14-99
TAYLOR SILVIO
DATA SCAN
2221#84458 13E347
43-68#124497 142522
BKGCPM350 339

(1) 397 (11) 391
(2) 367 (12) 362
(3) 348 (13) 382
(4) 338 (14) 396
(5) 383 (15) 341
(6) 362 (16) 380
(7) 325 (17) 364
(8) 337 (18) 368
(9) 334 (19) 411
(10) 343 (20) 365
(21) 408
(22) 350

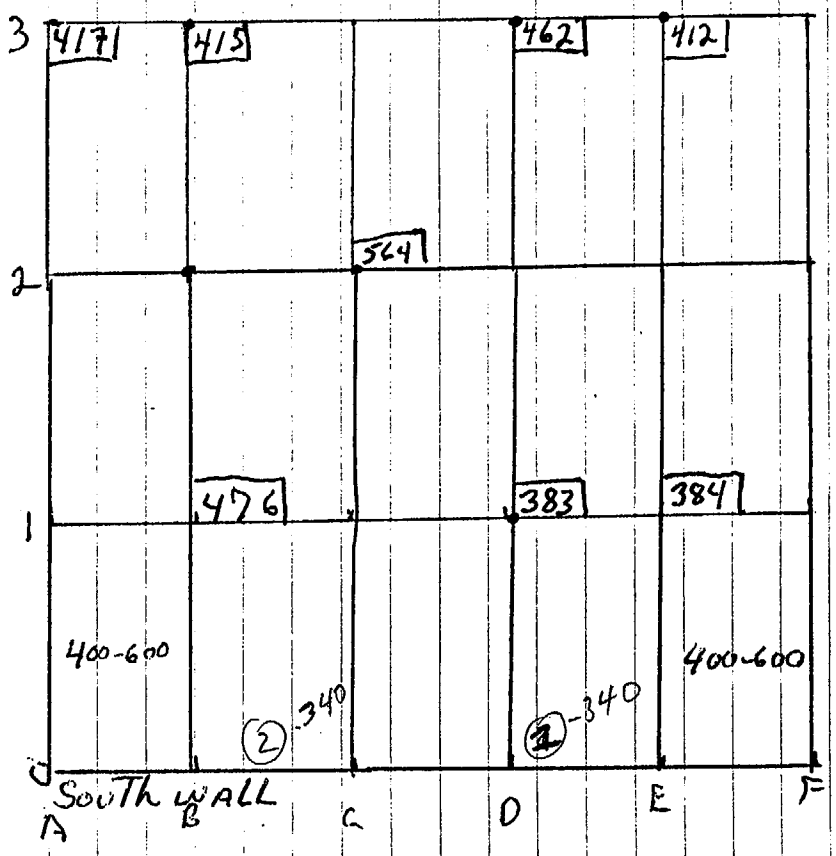
1200 on bottom WALL Frame
(23) 350

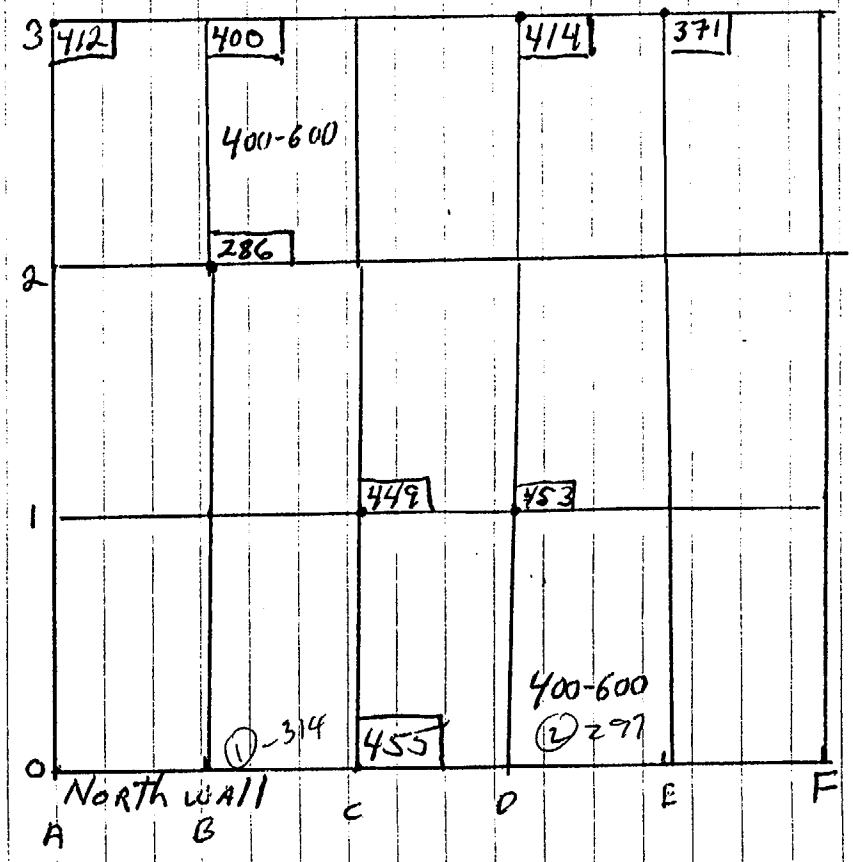
1 m uR readings
8 to 12 uR/hr.

8100 ON BO WALL F

	A	B	C	D	E	F
11	400-600 (1) / 485	400-600 / 480 (6)	400-600 / 505	400-600 (16) / 533	400-600 / 490 | 409	
10	400-600 / 522	400-600 / 501	400-600 (15) / 550	400-600 / 505	400-600 / 488 | 409	
9	400-600 / 521	400-600 / 522 (8)	400-600 / 528	400-600 / 509	400-600 (23) / 507 | 422	
8	400-600 (7) / 576	400-600 / 505	400-600 / 498	400-600 / 540 (17)	400-600 / 533 | 461	
7	400-600 / 469	400-600 / 530	400-600 (14) / 541	400-600 / 514	400-600 / 498 | 489	
6	400-600 (4) / 500	400-600 (9) / 524	400-600 / 487	400-600 / 503	400-600 (22) / 547 | 446	
5	400-600 / 555	400-600 / 522	400-600 / 501	400-600 (18) / 529	400-600 / 533 | 379	
4	400-600 (3) / 541	400-600 / 508	400-600 (13) / 513	400-600 / 494	400-600 / 464 | 415	
3	400-600 / 534	400-600 (10) / 509	400-600 / 511	400-600 / 547	400-600 (21) / 532 | 496	
2	400-600 (2) / 557	400-600 / 541	400-600 / 509	400-600 (19) / 521	400-600 / 511 | 418	
1	400-600 / 550	400-600 / 542	400-600 (12) / 519	400-600 / 495	400-600 / 537 | 528	
0	400-600 / 543 (1)	400-600 / 561 (11)	400-600 / 534	400-600 / 541	400-600 (20) / 556 | 530	

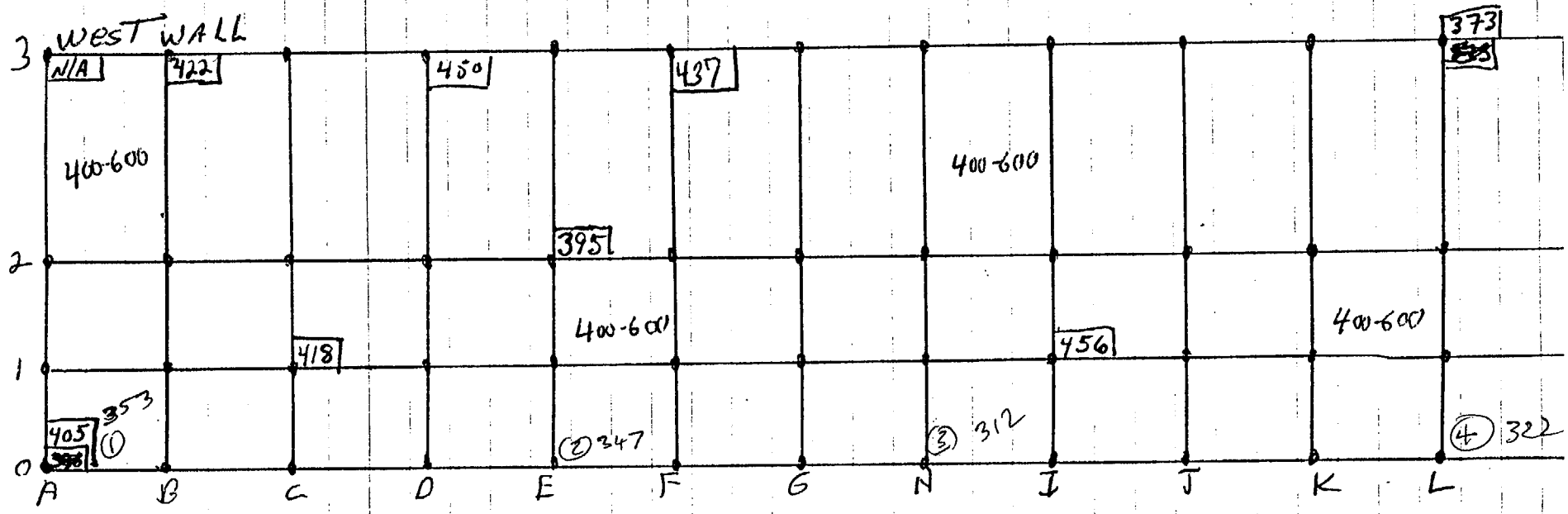
C06

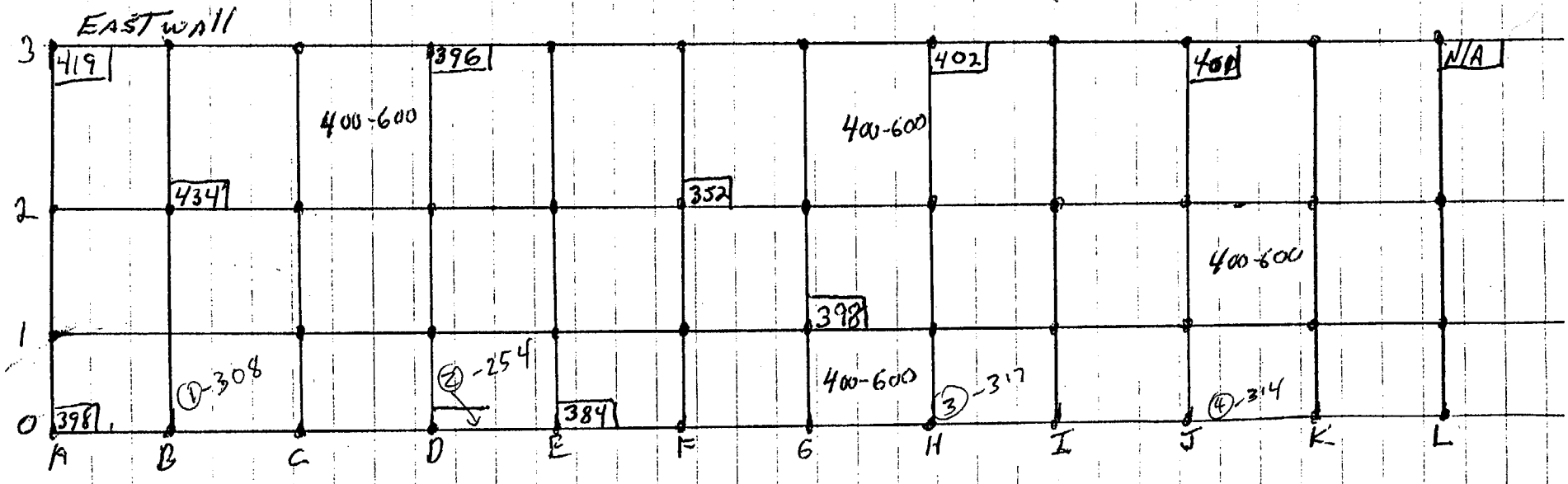




DATE - 6-14-99
Tec - TAYLOR - Silvio
43-68 - 124497 - 124522
2221 - 84458 - 138347
Bkg - 329 - 334
Eff - 25%

PRF-ADMIN
Supervisors offices + conf. Room
1





DATE - 6-14-99
Tec - TAYLOR - Silvio
43-68 - 124497 - 124522
2221 - 84458 - 138347
Bkg - 329 - 334

PRF-Admin
Supervisor's office's + Conf. Room

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/15/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: PRF Admin. Bldg. – Main hallway, floor and walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	^{99}Tc	23,400	14.2	535	961

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments	
1	302	53	372	<MDA	floor
2	295	46	323	<MDA	floor
3	283	34	239	<MDA	floor
4	298	49	344	<MDA	floor
5	321	72	506	<MDA	floor
6	297	48	337	<MDA	floor
7	287	38	267	<MDA	floor
8	297	48	337	<MDA	floor
9	301	52	365	<MDA	floor
10	264	15	105	<MDA	floor
11	435	186	1307		floor
12	423	174	1223		floor
13	311	62	436	<MDA	floor
14	339	90	632		floor
15	269	20	141	<MDA	floor
16	282	33	232	<MDA	west wall
17	288	39	274	<MDA	west wall
18	298	49	344	<MDA	west wall
19	291	42	295	<MDA	west wall
20	335	86	604		west wall
21	313	64	450	<MDA	west wall
22	293	44	309	<MDA	west wall
23	293	44	309	<MDA	west wall
24	306	57	401	<MDA	west wall
25	254	5	35	<MDA	west wall
26	255	6	42	<MDA	west wall
27	292	43	302	<MDA	west wall
28	283	34	239	<MDA	west wall
29	396	147	1033		west wall
30	245	-4	-28	<MDA <BKGND	west wall
31	348	99	696		west wall
32	285	36	253	<MDA	west wall
33	374	125	878		west wall
34	264	15	105	<MDA	west wall
35	260	11	77	<MDA	Continued on Survey Sheet Page 2 west wall

Signature: Steven A. Boatgmin Date: 12/29/00

Survey Data Continued

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
36	229	-20	-141	<MDA <BKGND west wall
37	220	-29	-204	<MDA <BKGND west wall
38	302	53	372	<MDA west wall
39	310	61	429	<MDA east wall
40	308	59	415	<MDA east wall
41	273	24	169	<MDA east wall
42	322	73	513	<MDA east wall
43	297	48	337	<MDA east wall
44	256	7	49	<MDA east wall
45	331	82	576	east wall
46	309	60	422	<MDA east wall
47	289	40	281	<MDA east wall
48	376	127	892	east wall
49	354	105	738	east wall
50	353	104	731	east wall
51	418	169	1188	east wall
52	392	143	1005	east wall
53	338	89	625	east wall
54	312	63	443	<MDA east wall
55	343	94	661	east wall
56	369	120	843	east wall
57	348	99	696	east wall
58	315	66	464	<MDA east wall
59	337	88	618	east wall
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7/15/99 Chesnick (H) Inst. Efficiency Chk.

Ludlum 2241-2 SN 137245
Ludlum 44-116 SN 147559

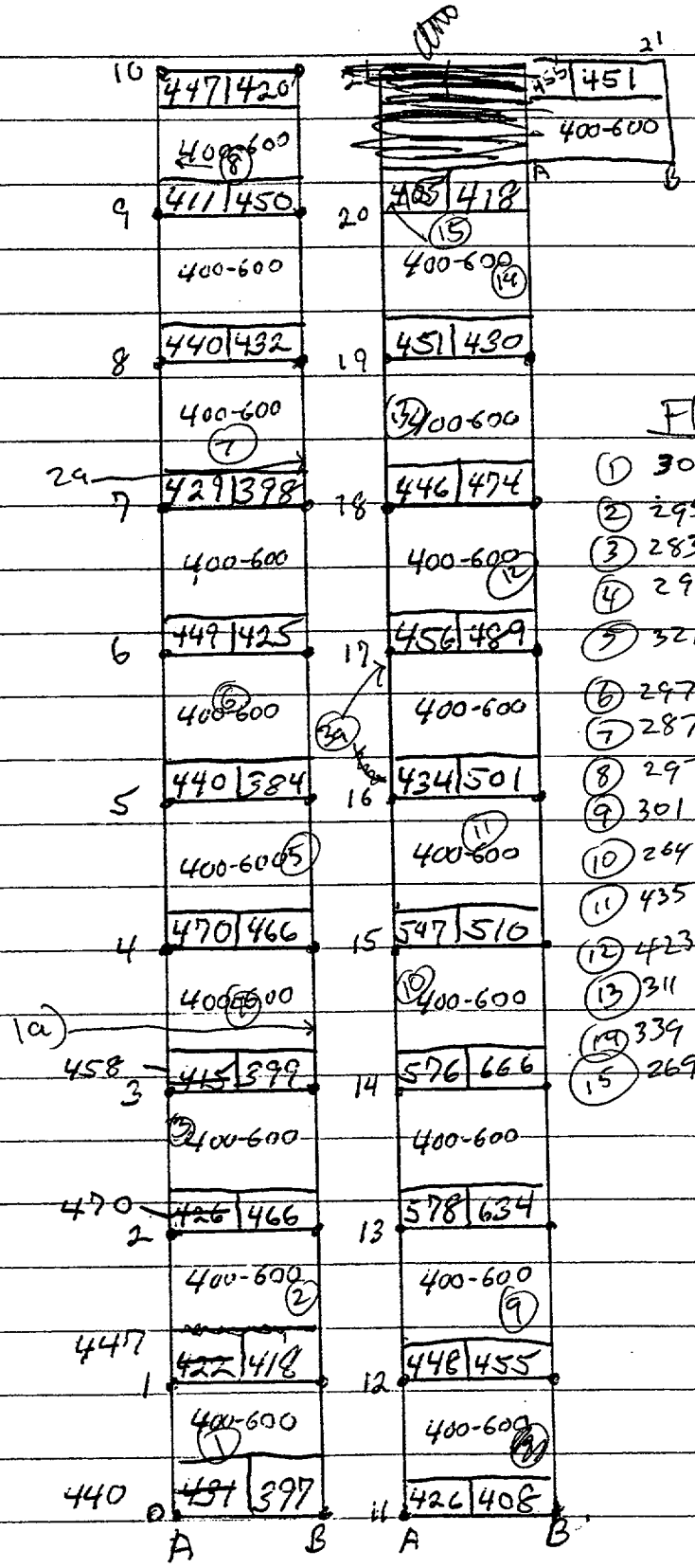
Bkgnd	Gross	Net
223	3567	3330
251	3533	
272	3677	
249	3579	

$$Eff = \frac{3330 \text{ cpm}}{23{,}400 \text{ dpm}} = 14.2\%$$

PRF ADMIN BLDG HALLWAY

5323

FLOOR



	TAYLOR	SILVIO
DATE - 6-16-99	DATA PT.	SCAN
2221#	84458	138347
43-68#	124477	142522
BKGCPM	303	284
EFF.	25%	25%

Floor

1) 302
2) 295
3) 283
4) 298
5) 321
6) 297
7) 287
8) 297
9) 301
10) 264
11) 435
12) 423
13) 311
14) 339
15) 269

Baseboard

1a) 267
2a) 269
3a) 363

1m uR readings
9 to 16 uR/hr

WEST WALL

290	277	289	342	337	398	431	442	367	389	405	422	380	392	434	398	462	384	468	444	400
22	292	292	320	342	375	445	436	389	394	396	360	398	357	404	418	488	403	448	384	458
	330	299	334	353	389	398	441	386	344	361	318	380	369	338	476	393	371	392	363	
Door	340	353	378	346	368	380	340	381	421	354	334	348	367	389	414	422	355	360	360	Door

B C D E F G H I J K L M N O P Q R S T U

WEST WALL — 2221# 43-68# BKG EFF — TAYLOR DATA PT. 84458 124497 303 25% — SILVIO SCRIV 138347 142522 284 25%

EAST WALL

400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	19.5"
142	492	507	596	344	498	468	585	404	450	450	532		417	451	447	416	444	446	405	313	
400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	
118	509			498	473	487	461	461	467	317		473	418	445	399	411	384	432	404		
400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	
96	393			468	487	477	533	353	344	401		372	333	365	361	334	329	367	339		

B C D E F G H I J K L M N O P Q R S T U

EAST WALL — 2221# 43-68# BKG CPM EFF — TAYLOR DATA PT. 84458 124497 303 25% — SILVIO SCRIV 84458 124497 303 25%

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/19/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Pump Repair Facility, Bunker int.&ext. walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
248	3869	3621	^{99}Tc	23,400	15.5	491	1022

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	506	258	1667	interior west wall
2	395	147	950	interior west wall
3	571	323	2087	interior west wall
4	587	339	2191	interior north wall
5	377	129	834	interior north wall
6	1378	1130	**7302**	int. north wall, bottom 3 blocks may be excluded
7	1231	983	**6352**	int.east wall,NW corner of floor exceeds fixed limits
8	443	195	1260	interior east wall
9	458	210	1357	interior east wall
10	456	208	1344	interior south wall
11	377	129	834	interior south wall
12	528	280	1809	interior south wall
13	750	502	3244	exterior west wall
14	468	220	1422	exterior west wall, scabbled block
15	537	289	1868	exterior west wall, scabbled block
16	704	456	2947	exterior west wall
17	6193	5945	**38418**	ext. S wall,at floor/wall juncture,contamination is on floor *
18	875	627	4052	exterior south wall
19	464	216	1396	exterior south wall
20	452	204	1318	exterior south wall
21	602	354	2288	exterior north wall
22	476	228	1473	exterior north wall
23	767	519	3354	exterior north wall
24	757	509	3289	exterior north wall
25	604	356	2301	exterior east wall
26	423	175	1131	exterior east wall
27	464	216	1396	exterior east wall
28	717	469	3031	exterior east wall
29				
30				* Wall has orange border around 1st 3 lower blocks
31				
32				bunker/PRF floor in new building to be surveyed for segregation into rad
33				and non-rad waste after demo of rest of bldg.
34				
35				15 to 20 uR/hr @ 1 m from bunker walls

Signature: Steven A. Bostyanin Date: 12/29/00

(W) Cheswick 7/19/99 Inst. Eff. Check
Ludlum 2241-2 SN 137745 Det. Ludlum 44-116 SN 147859

Bkgnd.	Gross	Net
240	3888	3621
259	3944	
245	3794	
248	3869	

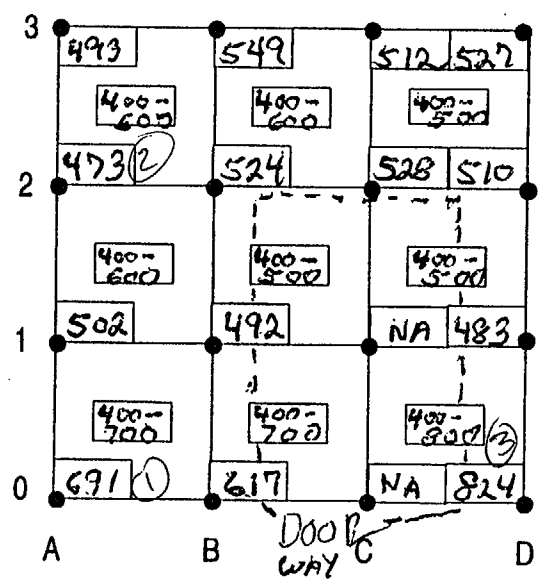
$$Eff = \frac{3621 \text{ cpm}}{23{,}400 \text{ dpm}} = 15.5\%$$

● Data Measurement Point
○ Additional Measurement Point

Location: BUNKER IN PRF (INTERIOR)
Classification: Affected
Technician's Name: TAYLOR
Legend: Z= CPM range for 100% scan of grid block
Date: 6-24-99
Model 43-68 #: 84458
Model 2221 #: 124497
Efficiency 25%
Background CPM 336

Comments: All readings in CPM, grids are 1M x 1M.

SURVEY UNIT W1



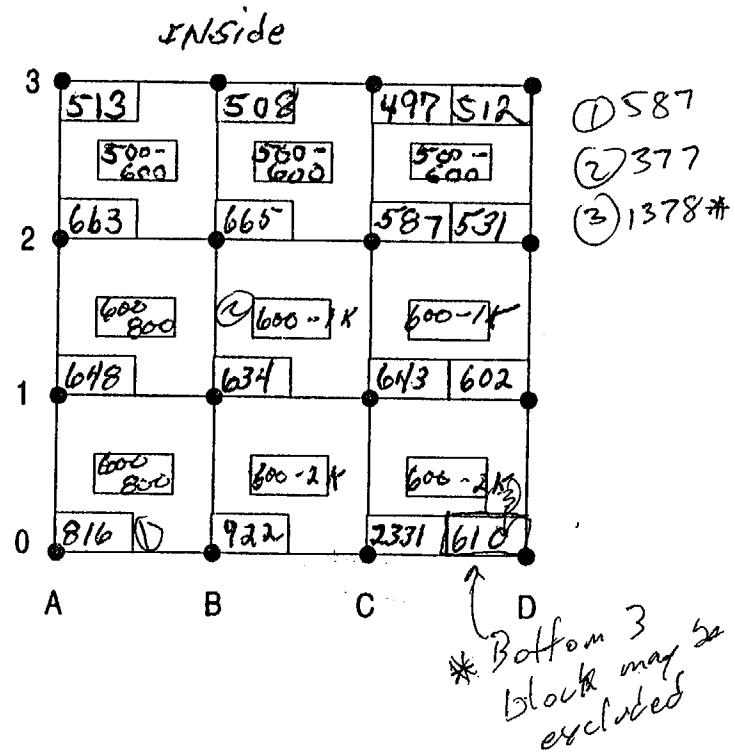
(1) 506
(2) 395
(3) 571

● Data Measurement Point
○ Additional Measurement Point

Location: BUNKER IN PRF (INTERIOR)
Classification: Affected
Technician's Name: Shankwiler
Legend: Z= CPM range for 100% scan of grid block
Date: 6-24-99
Model 43-68 #: 142522
Model 2221 #: 138347
Efficiency 25%
Background CPM 316

Comments: All readings in CPM, grids are 1M x 1M.

SURVEY UNIT N1



● Data Measurement Point
○ Additional Measurement Point

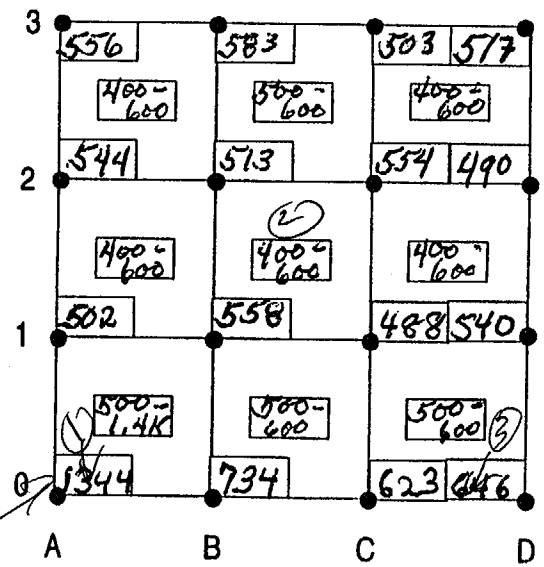
Location: BUNKER IN PRF (INTERIOR)
Classification: Affected
Technician's Name: TAYLOR
Legend: Z= CPM range for 100% scan of grid block
Date: 6-24-99 DATA & SCAN - SAME METER
Model 43-68 #: 84458
Model 2221 #: 124497
Efficiency 25%
Background CPM 336

Comments: All readings in CPM, grids are 1M x 1M.

(NW Corner of floor excluded - exceeds fixed limit)

SURVEY UNIT E1

Inside



① 1231 *
② 443
③ 458

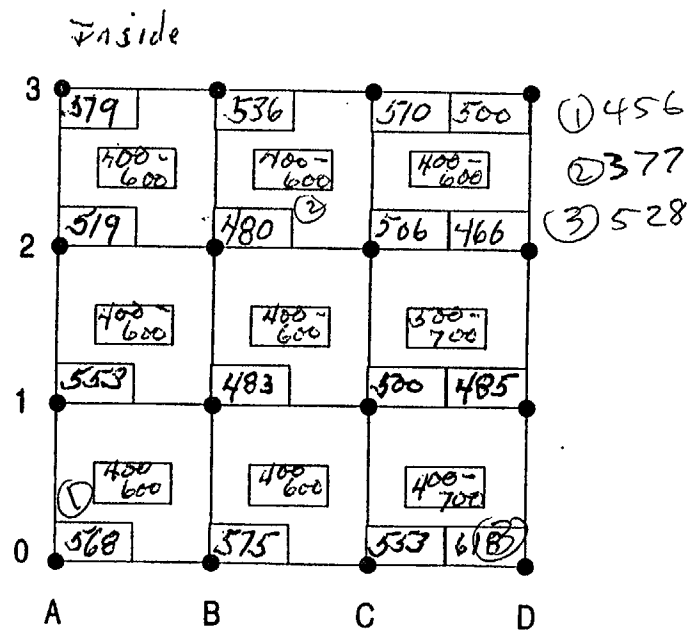
Block excluded?

● Data Measurement Point
○ Additional Measurement Point

Location: BUNKER IN PRF (INTERIOR)
Classification: Affected
Technician's Name: TAYLOR
Legend: Z= CPM range for 100% scan of grid block
Date: 6-23-99 DATA-SCAN - SAME METER
Model 43-68 #: 84458
Model 2221 #: 124497
Efficiency 25%
Background CPM 356

Comments: All readings in CPM, grids are 1M x 1M.

SURVEY UNIT S1

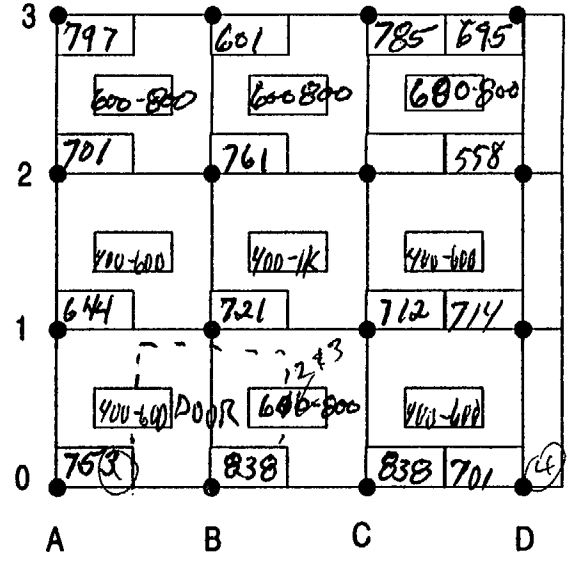


● Data Measurement Point
○ Additional Measurement Point

Location: BUNKER IN PRF (EXTERIOR)
Classification: Affected
Technician's Name: SL ANKWILER
Legend: Z= CPM range for 100% scan of grid block
Date: 6-24-99
Model 43-68 #: 142522
Model 2221 #: 138347
Efficiency 25%
Background CPM 316

Comments: All readings in CPM, grids are 1M x 1M.

SURVEY UNIT W1



① 750
② 468
③ 537
④ 704

scabbled block

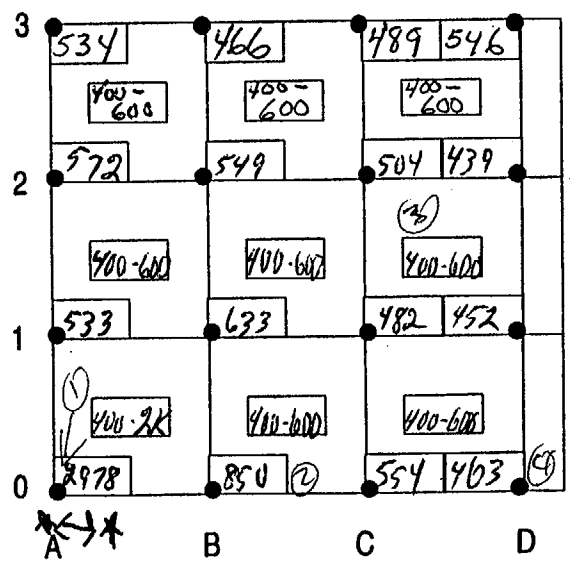
● Data Measurement Point
○ Additional Measurement Point

Location: BUNKER IN PRF (EXTERIOR)
Classification: Affected

Technician's Name:
Legend: Z= CPM range for 100% scan of grid block
Date: 6-28-99
Model 43-68 #: 159109
Model 2221 #: 154207
Efficiency 25%
Background CPM 279

Comments: All readings in CPM, grids are 1M x 1M.

SURVEY UNIT S1



① 6193 *
② 875
③ 464
④ 452

* Floor is 5Kcpm ~~@ this point~~ in this area, giving elevated reading in A,Ø grid. All >600cpm reading during scan are at bottom of grid (Ø line)

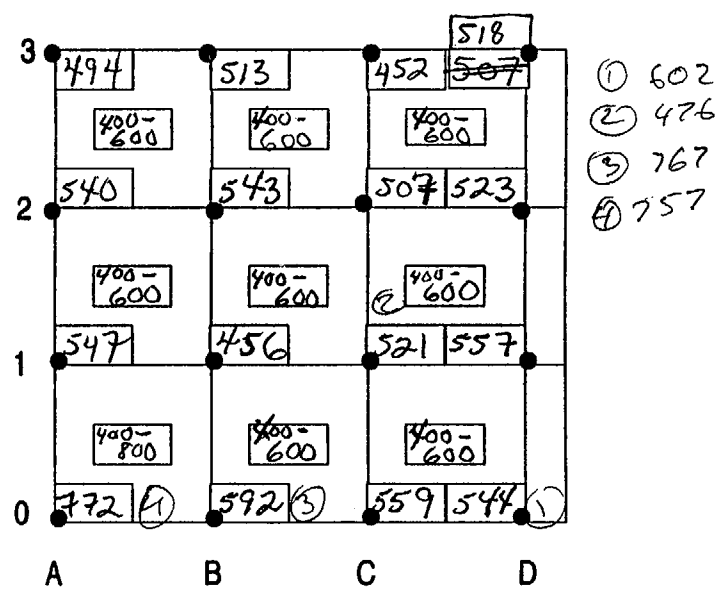
(Wall has orange border around 1st 3 lower block) *

● Data Measurement Point
○ Additional Measurement Point

Location: BUNKER IN PRF (EXTERIOR)
Classification: Affected
Technician's Name: Shonkwiler
Legend: Z= CPM range for 100% scan of grid block
Date: 6/24/99
Model 43-68 #: ~~154207~~ 159009
Model 2221 #: 154267
Efficiency 25%
Background CPM 279 cpm

Comments: All readings in CPM, grids are 1M x 1M.

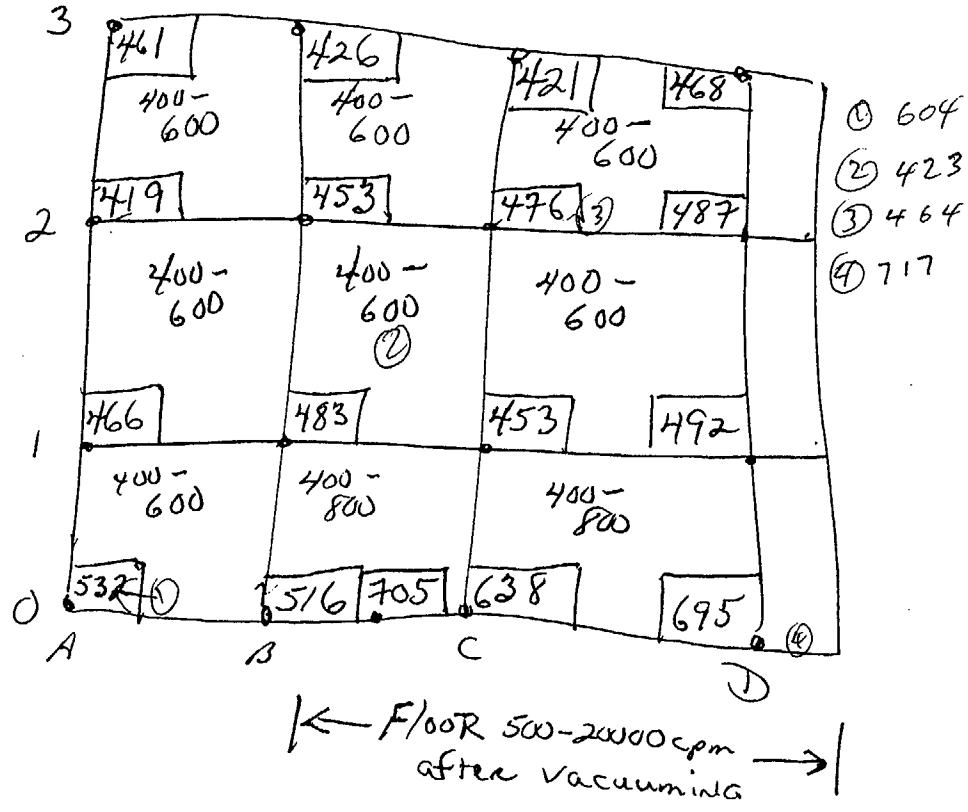
SURVEY UNIT N1



Bunker Exterior
E1

Shankwiler

6-24-99
Model 2221
S.N. 154207
Probe 43-68
S.N. 159019
bkgd 279 cpm
eff. 25%



Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 7/19/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Pump Repair Facility, New Bldg., walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
248	3869	3621	^{99}Tc	23,400	15.5	491	1022

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	1937	1689	**10915**	survey unit W10 * * due to re-contamination
2	591	343	2217	survey unit W10 with dirt/dust.Will vac.
3	537	289	1868	survey unit W10
4	775	527	3406	survey unit W10
5	355	107	691	survey unit W10
6	403	155	1002	survey unit W10
7	930	682	4407	survey unit W10
8	769	521	3367	survey unit W7
9	371	123	795	survey unit W7
10	402	154	995	survey unit W7
11	671	423	2734	survey unit W7
12	293	45	291	<MDA survey unit W7
13	449	201	1299	survey unit W7
14	966	718	4640	survey unit W7
15	760	512	3309	survey unit W4
16	436	188	1215	survey unit W4
17	423	175	1131	survey unit W4
18	578	330	2133	survey unit W4
19	368	120	775	survey unit W4
20	347	99	640	survey unit W4
21	909	661	4272	survey unit W4
22	579	331	2139	survey unit W1
23	577	329	2126	survey unit W1
24	387	139	898	survey unit W1
25	417	169	1092	survey unit W1
26	507	259	1674	survey unit W1
27	375	127	821	survey unit W1
28	385	137	885	survey unit W1
29	447	199	1286	survey unit W1
30	604	356	2301	survey unit S4
31	323	75	485	<MDA survey unit S4
32	382	134	866	survey unit S4
33	472	224	1448	survey unit S4
34	372	124	801	survey unit S4
35	579	331	2139	survey unit S4 Continued on sheet 2

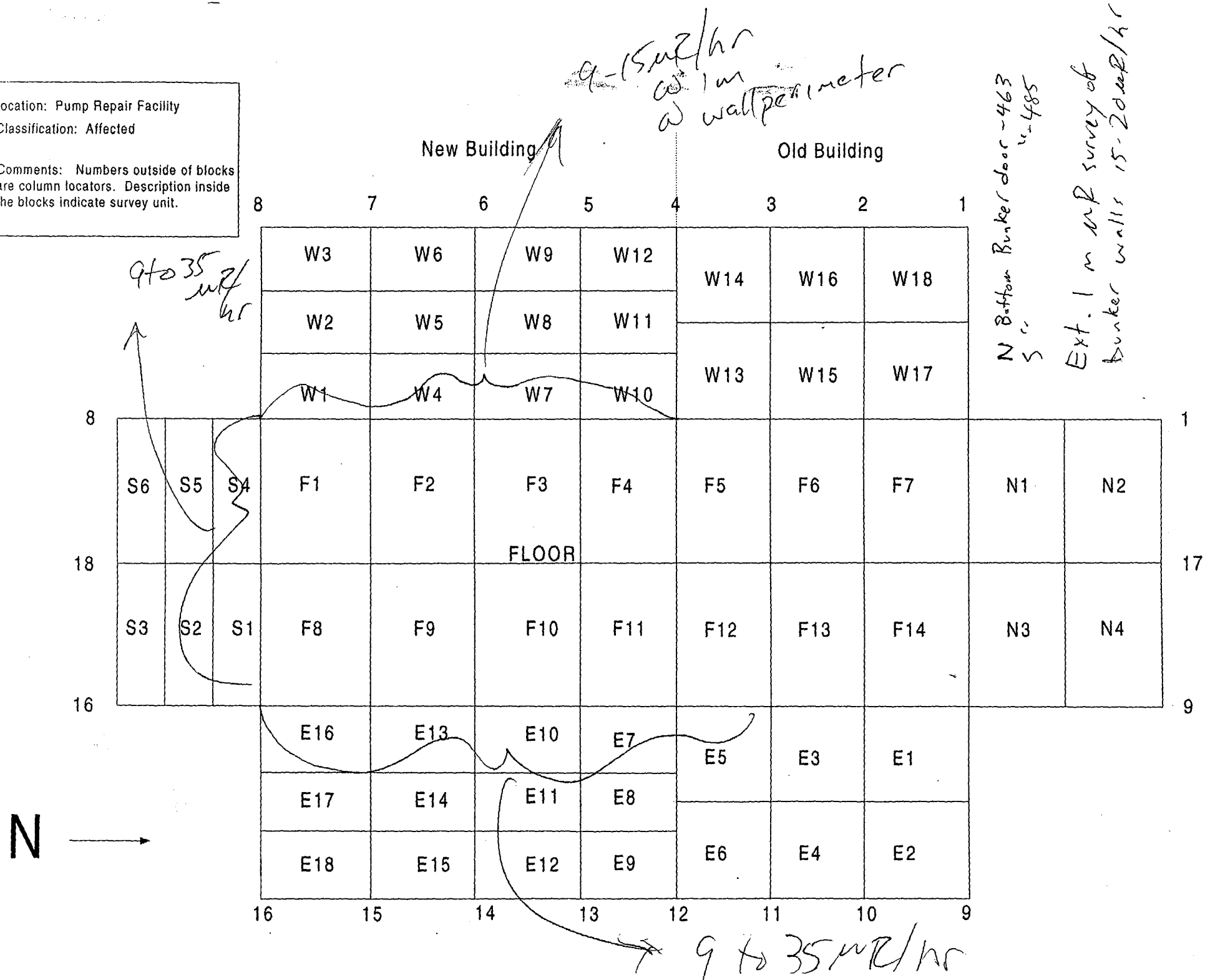
Signature: Steven A. Bostgamin Date: 12/29/00

Survey Data Continued

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
36	804	556	3593	survey unit S4
37	949	701	4530	survey unit S1
38	531	283	1829	survey unit S1
39	651	403	2604	survey unit S1
40	820	572	3696	survey unit S1
41	594	346	2236	survey unit S1
42	441	193	1247	survey unit S1
43	715	467	3018	survey unit S1
44	630	382	2469	survey unit E16
45	558	310	2003	survey unit E16
46	634	386	2494	survey unit E16
47	1104	856	**5532**	survey unit E16
48	504	256	1654	survey unit E16
49	1049	801	**5176**	survey unit E16
50	6603	6355	**41068**	survey unit E13, south wall
51	673	425	2746	survey unit E13, south wall
52	1127	879	**5680**	survey unit E13, south wall
53	4205	3957	**25571**	survey unit E13, east wall
54	566	318	2055	survey unit E13, east wall
55	2676	2428	**15690**	survey unit E13, east wall
56	1085	837	**5409**	survey unit E13, east wall
57	841	593	3832	survey unit E13, east wall
58	381	133	859	survey unit E13, east wall
59	595	347	2242	survey unit E13, north wall
60	387	139	898	survey unit E13, north wall
61	538	290	1874	survey unit E13, north wall
62	783	535	3457	survey unit E13, north wall
63	927	679	4388	survey unit E13
64	687	439	2837	survey unit E13
65	671	423	2734	survey unit E13
66	425	177	1144	survey unit E13
67	739	491	3173	survey unit E13
68	804	556	3593	survey unit E10
69	361	113	730	survey unit E10
70	424	176	1137	survey unit E10
71	704	456	2947	survey unit E10
72	672	424	2740	survey unit E10
73	484	236	1525	survey unit E10
74	619	371	2398	survey unit E10
75	430	182	1176	survey unit E10
76	747	499	3225	survey unit E10
77	1002	754	4873	survey unit E7
78	512	264	1706	survey unit E7
79				
80				hotspots in E13 and E16 due to floor
81				contamination. To be addressed with
82				slab/soil remediation.
83				
84				W survey units - 9 to 15 uR/hr @ 1 meter
85				S survey units - 9 to 35 uR/hr @ 1 meter
86				E survey unit - 9 to 35 uR/hr @ 1 meter except for
87				alcove area with hotspots - 250 uR/hr @ contact and
88				45 uR/hr @ 1 meter
89				
90				

.ocation: Pump Repair Facility
Classification: Affected

Comments: Numbers outside of blocks are column locators. Description inside the blocks indicate survey unit.



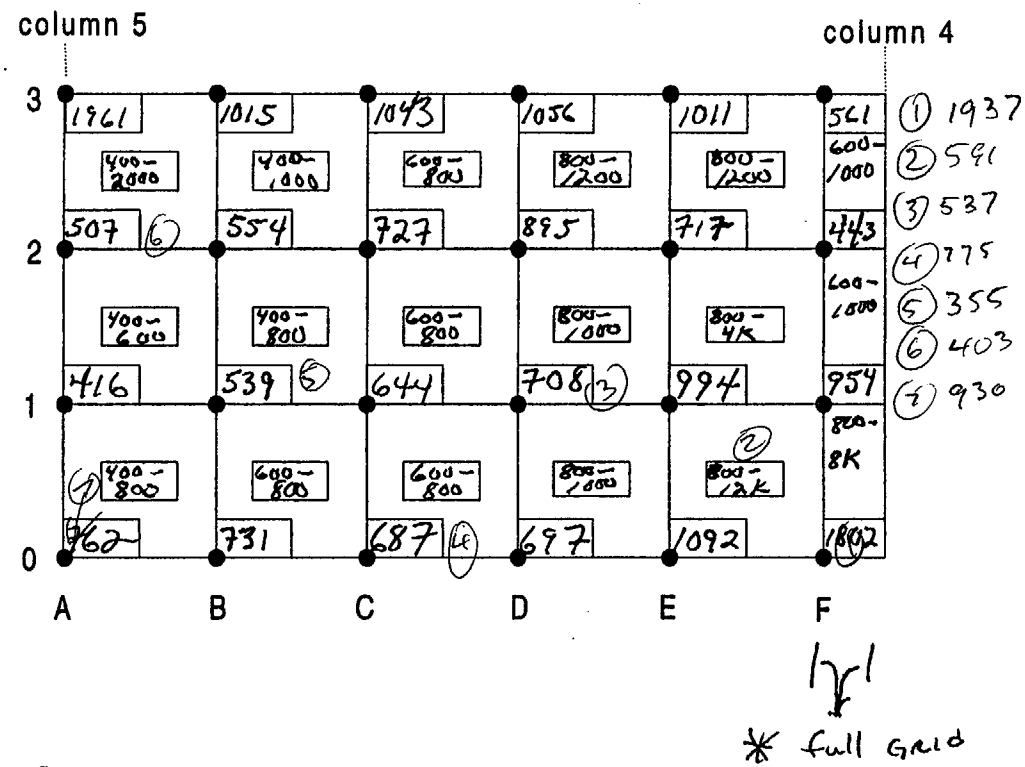
● Data Measurement Point
○ Additional Measurement Point

Location: PUMP REPAIR FACILITY
Classification: Affected
Technician's Name: Shank
Legend: Z= CPM range for 100% scan of grid block
Date: 5-24-99
Model 43-68 #: 159019
Model 2221 #: 154207
Efficiency 25%
Background CPM 269

Comments: All readings are CPM, grids are 1m x1M

SURVEY UNIT W10

✱ = swipe



① 1937 ✱ (10,396 dpm)
② 591
③ 537
④ 775
⑤ 355
⑥ 403
⑦ 930

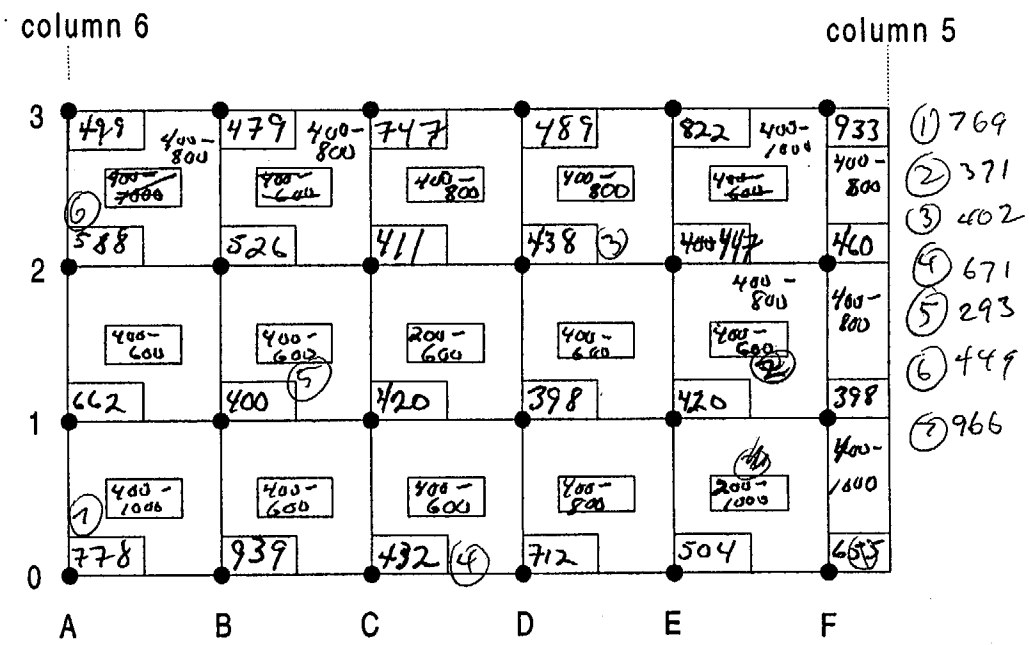
✱ full Grid

● Data Measurement Point
○ Additional Measurement Point

Location: PUMP REPAIR FACILITY
Classification: Affected
Technician's Name: Shank
Legend: Z= CPM range for 100% scan of grid block
Date: 5-24-99
Model 43-68 #: 159019
Model 2221 #: 154207
Efficiency 25%
Background CPM 269

Comments: All readings are CPM, grids are 1m x1M

SURVEY UNIT W7

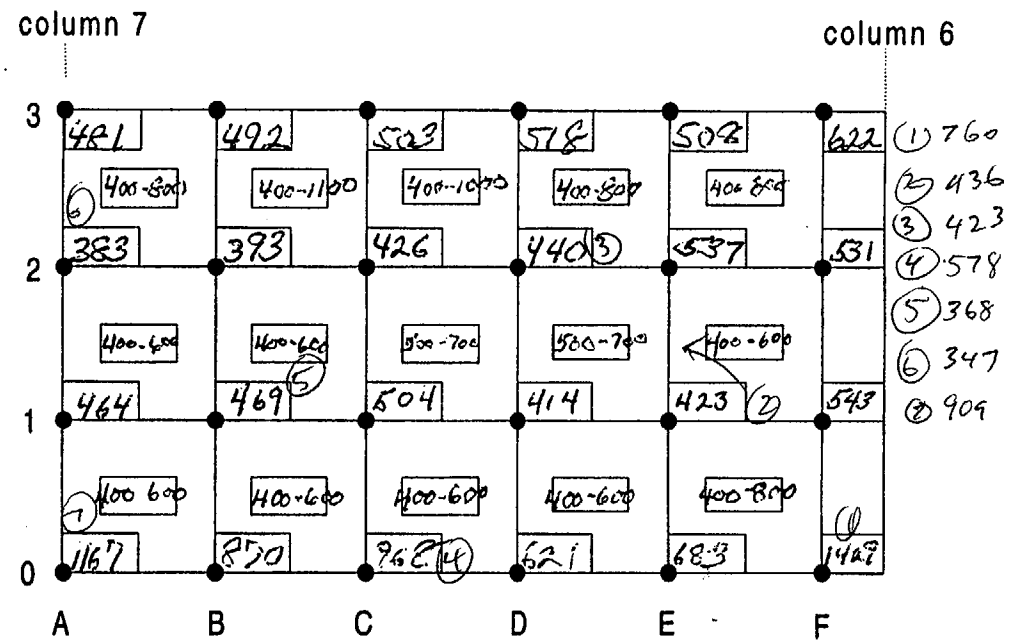


● Data Measurement Point
○ Additional Measurement Point

Location: PUMP REPAIR FACILITY
Classification: Affected
Technician's Name: SILVIO, TAYLOR
Legend: Z= CPM range for 100% scan of grid block
Date: 5-21-99 SCAN DATA PT
Model 43-68 #: 124497 142582
Model 2221 #: 84458 138347
Efficiency 25%
Background CPM 306 302

Comments: All readings are CPM, grids are 1m x1M

SURVEY UNIT W4



● Data Measurement Point
○ Additional Measurement Point

Location: PUMP REPAIR FACILITY
Classification: Affected
Technician's Name:
Legend: Z= CPM range for 100% scan of grid block
Date:
Model 43-68 #:
Model 2221 #:
Efficiency 25%
Background CPM

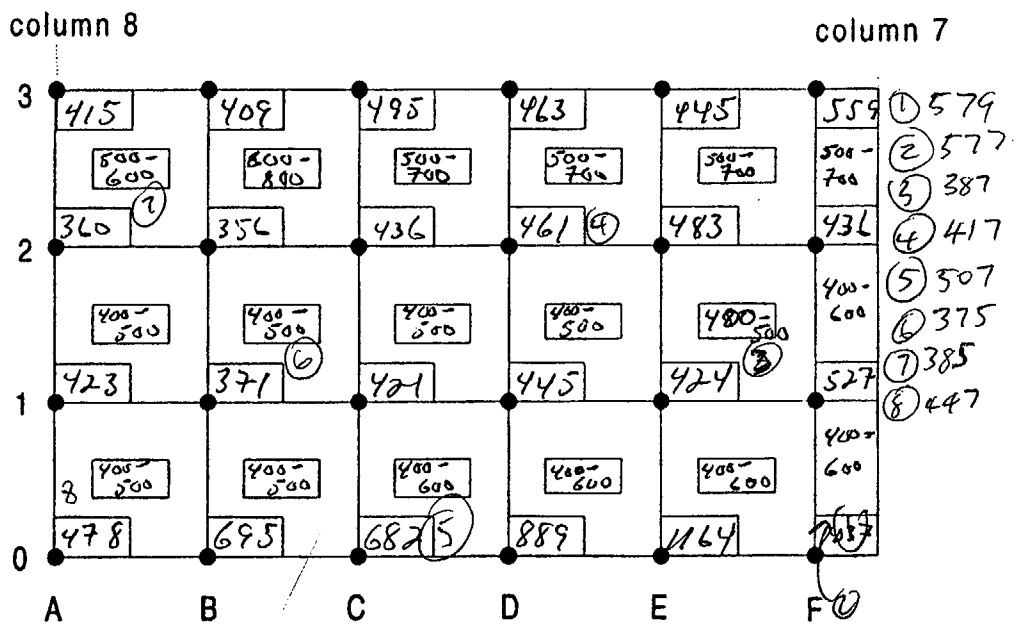
Comments: All readings are CPM, grids are 1m x1M

5-20-99

Taylor data pts.
Model 2221
S.N. 138347
Probe 43-68
S.N. 142522
bkgd
305
eff
25%

Silvio Scan
Model 2221
S.N. 84458
Probe 43-68
S.N. 124497
bkgd.
265
eff.
25%

SURVEY UNIT W1



● Data Measurement Point
○ Additional Measurement Point

Location: PUMP REPAIR FACILITY
Classification: Affected

Technician's Name:
Legend: Z= CPM range for 100% scan of grid block

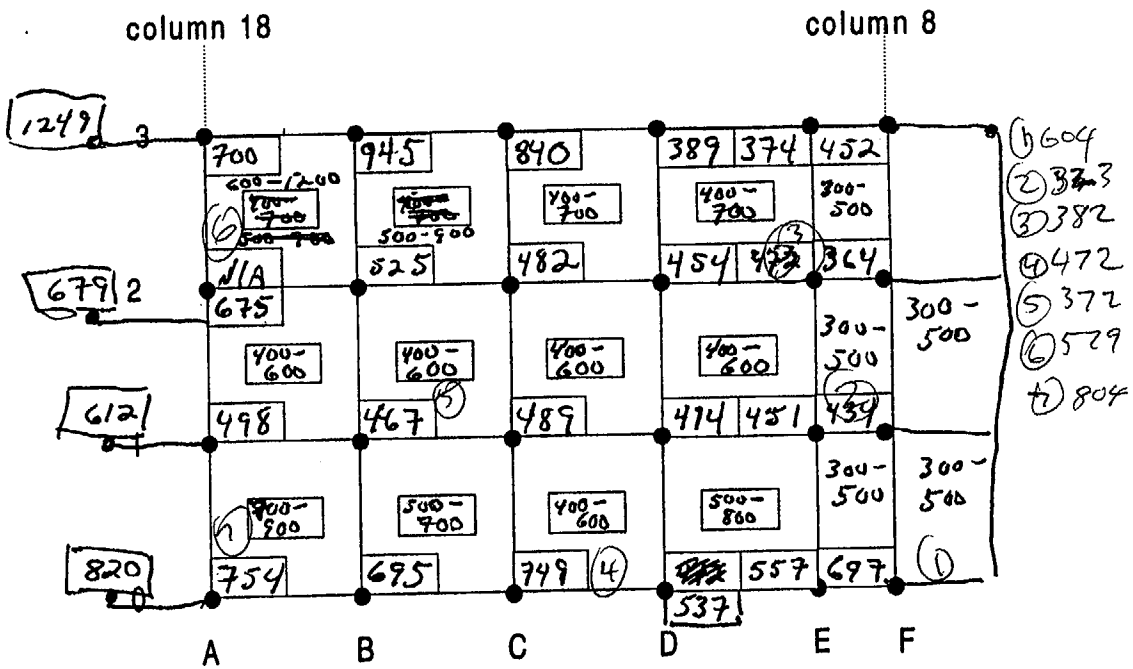
Date:
Model 43-68 #:
Model 2221 #:
Efficiency 25%
Background CPM

Comments: All readings in CPM, grids are 1M x 1M.

5-20-99
Silno-Scan
MODEL 2221
S.N.: 84458
PROBE: 43-68
S.N.: 124497
bkgd.: 265
eff.: 25%

Taylor data pt.
MODEL 2221
S.N.: 138347
PROBE 43-68
S.N. 142522
bkgd.: 305
eff.: 25%

SURVEY UNIT S4

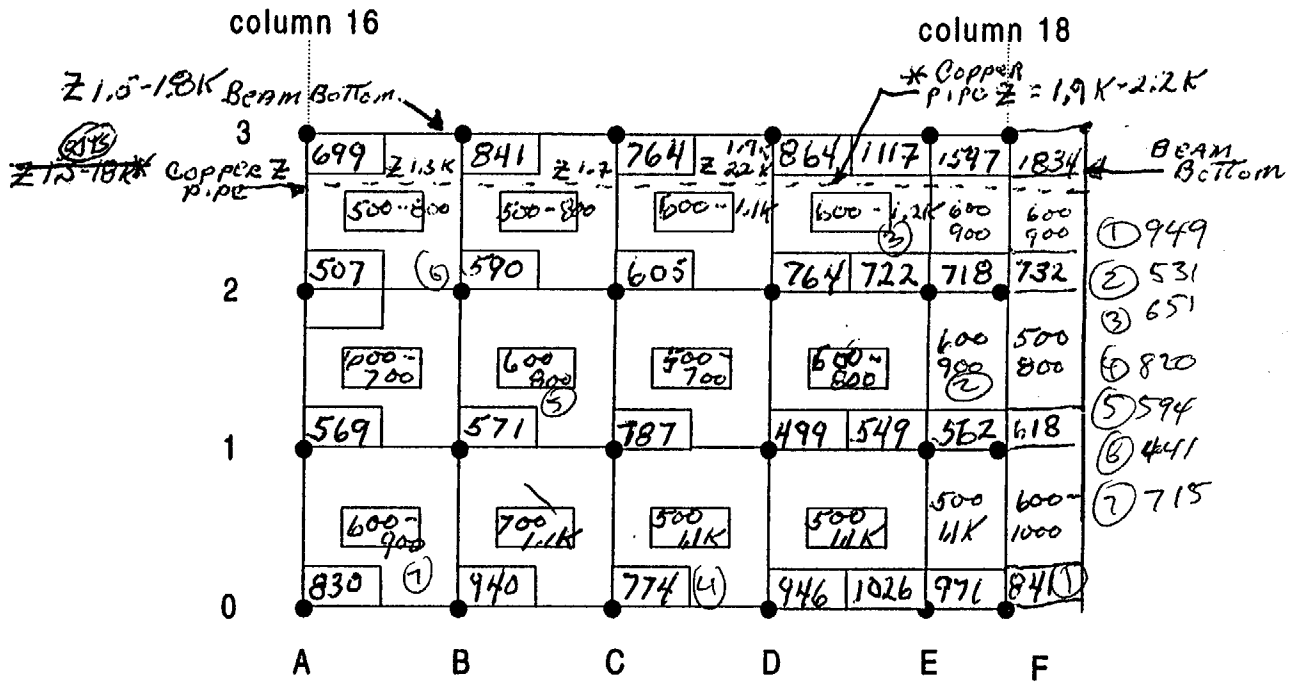


● Data Measurement Point
○ Additional Measurement Point

Location: PUMP REPAIR FACILITY
Classification: Affected
Technician's Name: Taylor
Legend: Z= CPM range for 100% scan of grid block DATA + SCAN
Date: 6-23-99 Taylor
Model 43-68 #: 124497
Model 2221 #: 84458
Efficiency 25%
Background CPM 336

Comments: All readings in CPM, grids are 1M x 1M.

SURVEY UNIT S1

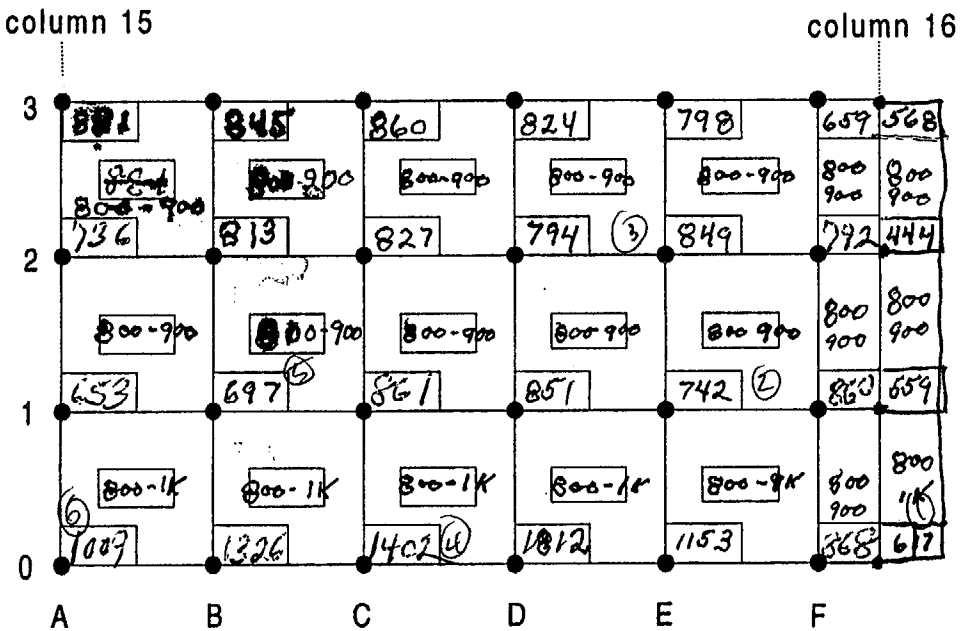


● Data Measurement Point
○ Additional Measurement Point

Location: PUMP REPAIR FACILITY
Classification: Affected
Technician's Name: TAYLOR/SILVIO
Legend: Z= CPM range for 100% scan of grid block
Date 5-24-99 DATA OF SCAN
Model 43-68 #: 124497 – 142522
Model 2221 #: 84458 – 138347
Efficiency 25%
Background CPM 339 – 353

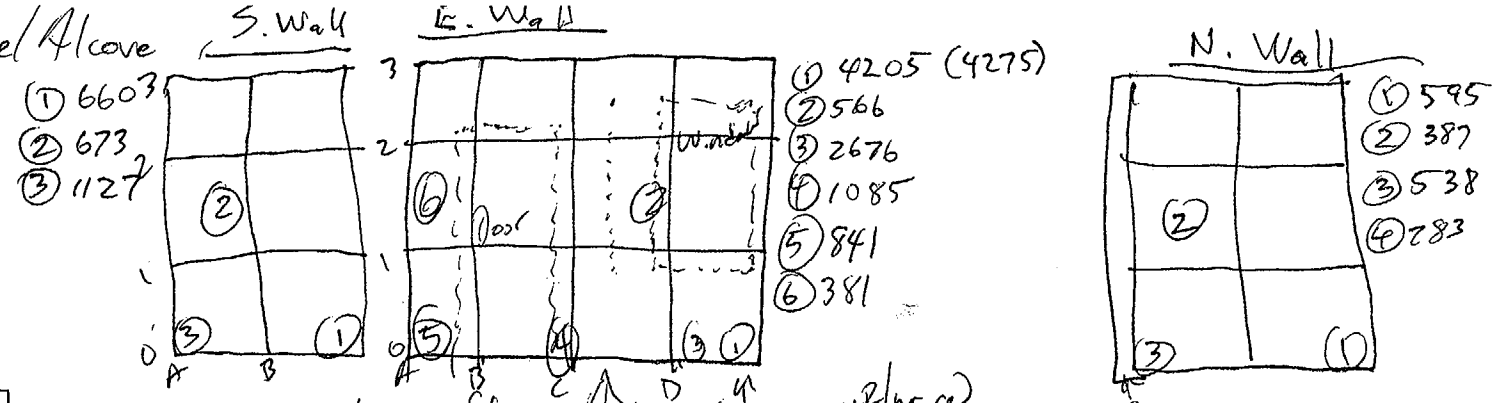
Comments: All readings are CPM, grids are 1m x1M

SURVEY UNIT E16



(1) 630
(2) 558
(3) 634
(4) 1104 → 5522 dpm
(5) 504
(6) 1049 → 5167 dpm

Entrance/Alcove



reading on floor adjacent to wall hotspot = 7421

~250 mR/hr @ contact
45 μR/hr @ 1 meter

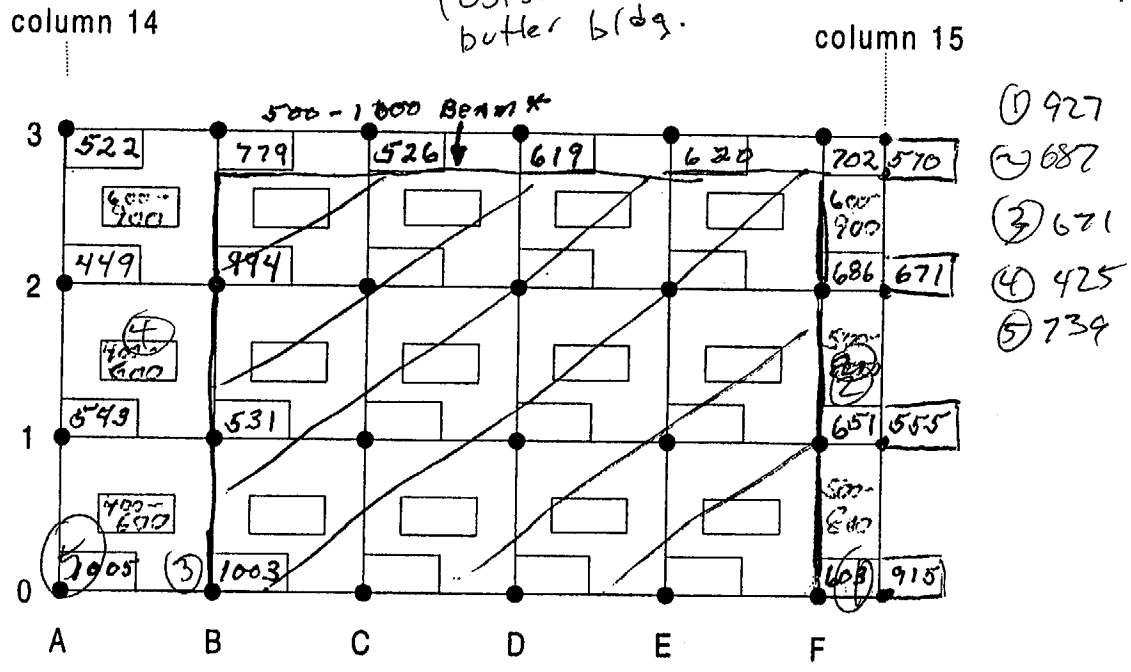
SURVEY UNIT E13

Outside wall of old butler bldg.

● Data Measurement Point
○ Additional Measurement Point

Location: PUMP REPAIR FACILITY
Classification: Affected
Technician's Name: TAYLOR, SILVIO
Legend: Z= CPM range for 100% scan of grid block
Date: 5-24-99 DETAIL SCAN
Model 43-68 #: 124457-1583426
Model 2221 #: 84458-142522
Efficiency 25%
Background CPM 339-359

Comments: All readings are CPM, grids are 1m x1M



7/22/99
Phone with W.
Will re-survey
Alcove walls
prior to disposal
(think h

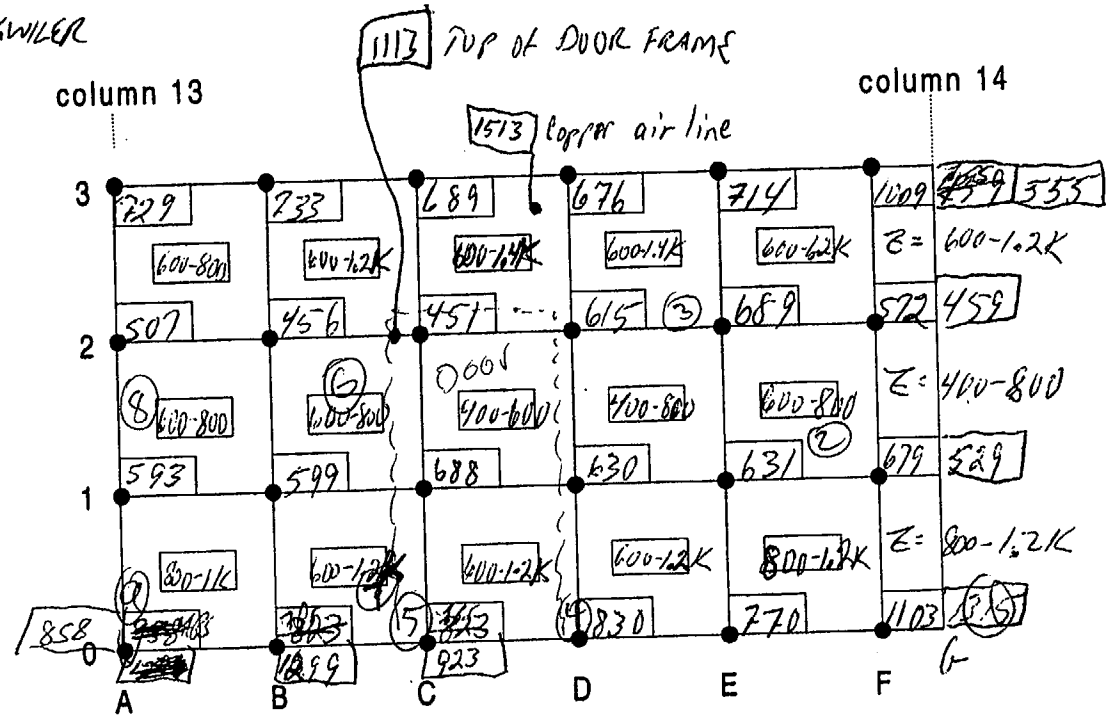
● Data Measurement Point
○ Additional Measurement Point

Location: PUMP REPAIR FACILITY
Classification: Affected
Technician's Name: ~~Taylor & Sikes~~ SHONKWILER
Legend: Z= CPM range for 100% scan of grid block
Date: ~~[illegible]~~ DATA SCAN
Model 43-68 #: ~~[illegible]~~
Model 2221 #: ~~[illegible]~~
Efficiency 25%
Background CPM ~~[illegible]~~

Comments: All readings are CPM, grids are 1m x1M

43-68 # 159019
2221 # 154207
EFF 25%
BKG 255 cpm

SURVEY UNIT E10



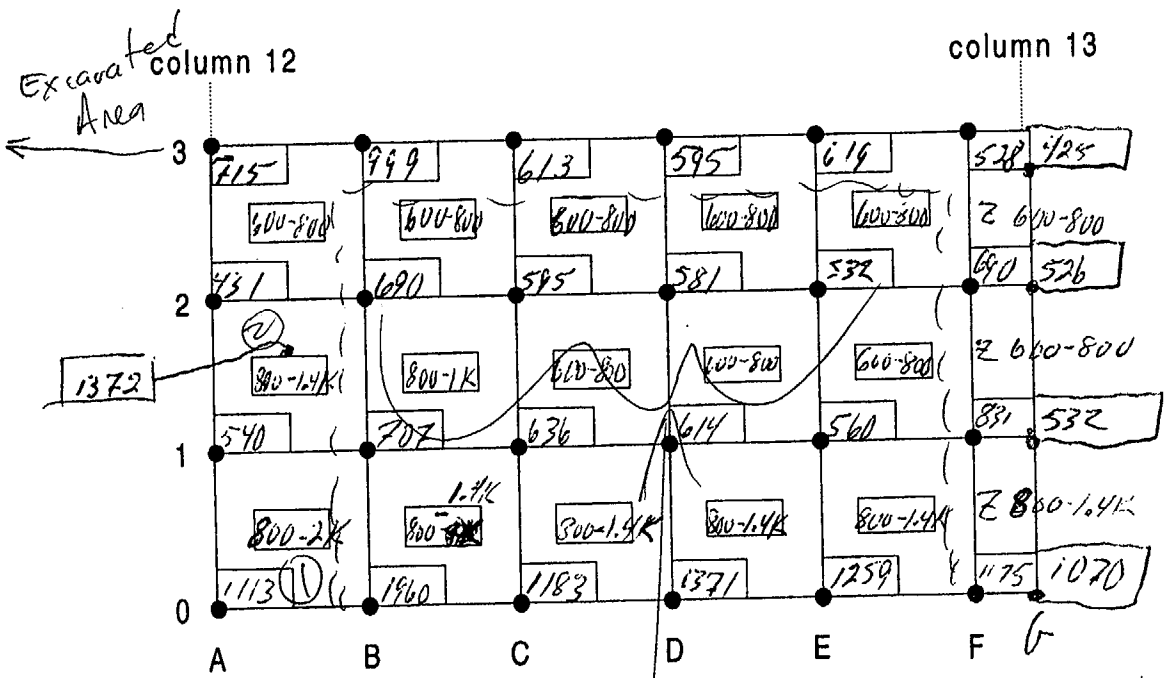
*F-6 IS Full size grid
* Z = SCAN

● Data Measurement Point
○ Additional Measurement Point

Location: PUMP REPAIR FACILITY
Classification: Affected
Technician's Name: SHONKWILER
Legend: Z= CPM range for 100% scan of grid block
Date: 29 May 99
Model 43-68 #: 159019
Model 2221 #: 154207
Efficiency 25%
Background CPM 255

Comments: All readings are CPM, grids are 1m x1M

SURVEY UNIT E7



① 1002
② 512

B1; G1 ARE BOUNDARY LINES FOR ROLL-UP DOOR

* Z: SCAN

* F→G is full size grid

Roll Up Door — Going Rad Waste Did not survey

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 9/2/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Small Butler Bldg. Floor
Count times: 1 minute

(3)

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
463	3833	3370	^{99}Tc	23,400	14.4	714	1183

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	675	212	1472	
2	952	489	3395	
3	450	-13	-90	<MDA <BKGND
4	443	-20	-139	<MDA <BKGND
5	552	89	618	<MDA
6	617	154	1069	
7	799	336	2333	
8	456	-7	-49	<MDA <BKGND
9	438	-25	-174	<MDA <BKGND
10	626	163	1132	
11	536	73	507	<MDA
12	377	-86	-597	<MDA <BKGND
13	445	-18	-125	<MDA <BKGND
14	780	317	2201	
15	815	352	2444	
16	392	-71	-493	<MDA <BKGND
17	360	-103	-715	<MDA <BKGND
18	551	88	611	<MDA
19	426	-37	-257	<MDA <BKGND
20	583	120	833	
21	447	-16	-111	<MDA <BKGND
22	431	-32	-222	<MDA <BKGND
23	544	81	562	<MDA
24	388	-75	-521	<MDA <BKGND
25	613	150	1042	
26	484	21	146	<MDA
27	8010	7547	**52404**	known hotspot-to be addressed with slab/soil remediation
28	389	-74	-514	<MDA <BKGND
29	460	-3	-21	<MDA <BKGND
30	844	381	2646	
31	740	277	1923	
32	468	5	35	<MDA
33	528	65	451	<MDA
34	402	-61	-424	<MDA <BKGND
35	609	146	1014	cont. on page 2

Signature: Steven A. Bostgenin Date: 12/29/00

Survey Data Continued

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
36	609	146	1014	
37	516	53	368	<MDA
38	369	-94	-653	<MDA <BKGND
39	828	365	2534	
40	526	63	437	<MDA
41	609	146	1014	
42	813	350	2430	
43	848	385	2673	
44	586	123	854	
45	4687	4224	**29330**	known hotspot-to be addressed with slab/soil remediation
46	9225	8762	**60840**	known hotspot-to be addressed with slab/soil remediation
47	670	207	1437	
48	833	370	2569	
49	659	196	1361	
50	3809	3346	**23233**	due to known wall hotspot
51	889	426	2958	
52	424	-39	-271	<MDA <BKGND step off area from PRF
53	475	12	83	<MDA step off area from PRF
54	332	-131	-910	<MDA <BKGND step off area from PRF
55	556	93	646	<MDA step off area from PRF
56	512	49	340	<MDA step off area from PRF
57	652	189	1312	step off area from PRF
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C07

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 9/2/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Small Butler Bldg. Walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
463	3833	3370	^{99}Tc	23,400	14.4	714	1183

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments	
1	1034	571	3965		north wall
2	599	136	944		north wall
3	816	353	2451		north wall
4	409	-54	-375	<MDA <BKGND	north wall
5	437	-26	-181	<MDA <BKGND	north wall
6	437	-26	-181	<MDA <BKGND	north wall
7	386	-77	-535	<MDA <BKGND	north wall
8	370	-93	-646	<MDA <BKGND	north wall
9	453	-10	-69	<MDA <BKGND	north wall
10	429	-34	-236	<MDA <BKGND	south wall
11	349	-114	-792	<MDA <BKGND	south wall
12	346	-117	-812	<MDA <BKGND	south wall
13	532	69	479	<MDA	south wall
14	414	-49	-340	<MDA <BKGND	south wall
15	383	-80	-555	<MDA <BKGND	south wall
16	407	-56	-389	<MDA <BKGND	south wall
17	428	-35	-243	<MDA <BKGND	south wall
18	579	116	805		south wall
19	426	-37	-257	<MDA <BKGND	east wall
20	352	-111	-771	<MDA <BKGND	east wall
21	2075	1612	**11193**		east wall window-light bias from window
22	275	-188	-1305	<MDA <BKGND	east wall
23	375	-88	-611	<MDA <BKGND	east wall
24	277	-186	-1292	<MDA <BKGND	east wall
25	296	-167	-1160	<MDA <BKGND	east wall
26	314	-149	-1035	<MDA <BKGND	east wall
27	325	-138	-958	<MDA <BKGND	east wall
28	328	-135	-937	<MDA <BKGND	east wall
29	341	-122	-847	<MDA <BKGND	east wall
30	328	-135	-937	<MDA <BKGND	east wall
31	436	-27	-187	<MDA <BKGND	east wall
32	330	-133	-924	<MDA <BKGND	east wall
33	355	-108	-750	<MDA <BKGND	east wall
34	398	-65	-451	<MDA <BKGND	east wall
35	445	-18	-125	<MDA <BKGND	east wall

cont. on page 2

Signature: Steven A. Bostjanic Date: 12/29/00

Survey Data Continued

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments	
36	686	223	1548		west wall
37	441	-22	-153	<MDA <BKGND	west wall
38	2106	1643	**11408**		west wall-due to PRF floor hot spot
39	471	8	56	<MDA	west wall
40	331	-132	-917	<MDA <BKGND	west wall
41	327	-136	-944	<MDA <BKGND	west wall
42	488	25	174	<MDA	west wall
43	375	-88	-611	<MDA <BKGND	west wall
44	581	118	819		west wall
45	401	-62	-431	<MDA <BKGND	west wall
46	375	-88	-611	<MDA <BKGND	west wall
47	717	254	1764		west wall
48	571	108	750		west wall-inside step off area from PRF
49	393	-70	-486	<MDA <BKGND	west wall-inside step off area from PRF
50	316	-147	-1021	<MDA <BKGND	west wall-inside step off area from PRF
51	546	83	576	<MDA	west wall-inside step off area from PRF
52	413	-50	-347	<MDA <BKGND	west wall-inside step off area from PRF
53					
54					
55					
56					
57					Exposure rates:
58					15 to 35 uR/hr @ 1 meter
59					35 uR/hr in SW corner by known
60					wall/floor hot spots
61					25 uR/hr in NW corner by known
62					wall/floor hot spots
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Westinghouse Cheswick 9/2/99

SN-147859

Meter - Ludlum 2241-2 Serial # 137745 Detector Ludlum 44-116

	Bkgnd (cpm)	Gross (cpm)	Net (cpm)
	430	3864	3370
	483	3863	
	476	3773	
Avg	463	3833	

Eff - $\frac{3370}{23,400}$

= 14.4 %

(Interior)

Westinghouse Cheswick Small Butler Bldg. 9/2/99

Floor (Survey Unit F2) 5000 dpm > Bkgnd ≅ 1183 cpm

By painted wall

* Known Hotspots

1 675	*27 8,010
2 952	28 389 (crack next to hotspot)
3 450	29 460
4 443	30 844
5 552	31 740
6 617	32 468
7 799	33 528
8 456	34 402
9 438	35 609
10 626	36 609
11 536	37 516
12 377	38 369
13 445	39 828
14 780	40 526
15 815	41 609
16 392	42 813
17 360	43 848
18 551	44 586
19 426	*45 4687
20 583	*46 9225
21 447	47 670
22 431	48 833
23 544	49 659
24 388	50 3809 (Floor by wall hotspot)
25 613	51 889
26 484	

Unit F2

N. Wall	E. Wall	W. Wall (From Floor?)
*1 1034	1 426	1 686
2 599	2 352	2 441
*3 816	3 2075 (Window-Light bans?)	*3 2106
4 409	4 275	4 471
5 437	5 375	5 331
6 437	6 277	6 327
7 386	7 296	7 488
8 370	8 314	8 375
9 453	9 325	9 581
	10 328	10 401
S. Wall	11 341	11 375
1 429	12 328	*12 717
2 349	13 436	
3 346	14 330	
4 532	15 355	
5 414	16 398	
6 383	17 445	
7 407		
8 428		
9 574		

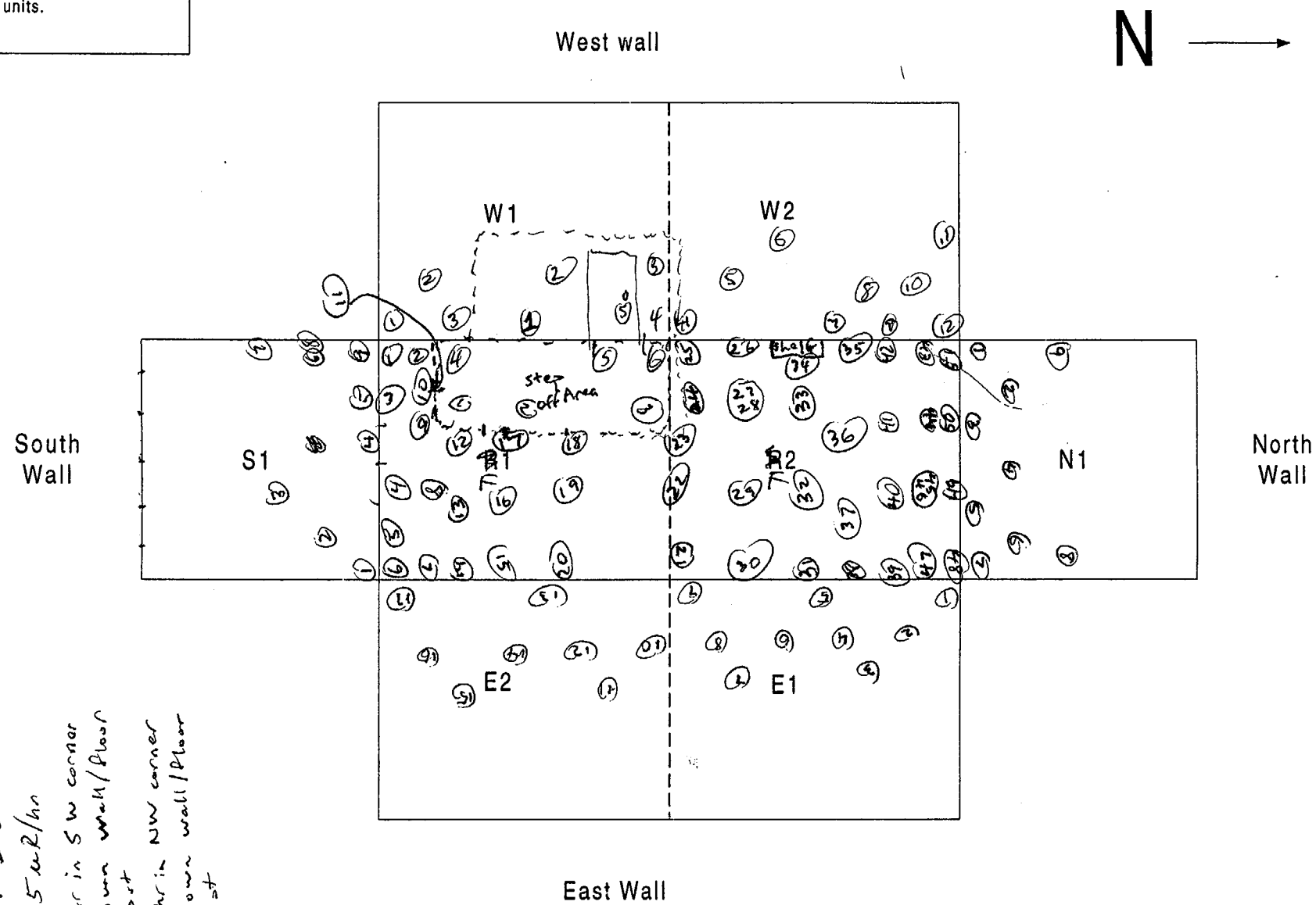
Contaminated side of step area

Floor	W. Wall
1 424	1 571
2 475	2 393
3 332	3 316
4 556	4 546
5 512	5 413
6 652	

Note - (20) · (21) not to scale
same spacing as other
survey pts.

Location: SMALL BUTLER BUILDING
EXTERIOR
Classification: Unaffected

Comments: Numbers inside the blocks are survey units.



1 mR readings
Bicron Micro Analyst
Serial # B 6015
15 to 35 mR/hr
35 mR/hr in SW corner
by known wall/floor
hot spot
25 mR/hr in NW corner
by known wall/floor
hot spot

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 9/2/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Small Butler Bldg. Exterior Walls
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
463	3833	3370	^{99}Tc	23,400	14.4	714	1183

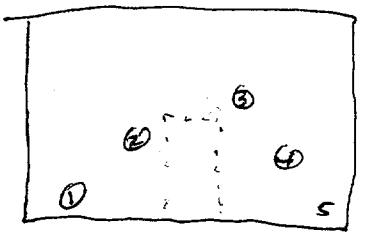
Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	850	387	2687	south wall
2	359	-104	-722	<MDA <BKGND south wall
3	342	-121	-840	<MDA <BKGND south wall
4	370	-93	-646	<MDA <BKGND south wall
5	675	212	1472	south wall
6	671	208	1444	north wall
7	2981	2518	**17484**	north wall-opposite interior hot spot
8	1820	1357	**9422**	not on wall-asphalt below wall-also due to interior hot spot
9	393	-70	-486	<MDA <BKGND north wall
10	466	3	21	<MDA north wall
11	696	233	1618	west wall
12	416	-47	-326	<MDA <BKGND west wall
13	534	71	493	<MDA west wall
14	339	-124	-861	<MDA <BKGND west wall
15	581	118	819	west wall
16	538	75	521	<MDA
17	347	-116	-805	<MDA <BKGND
18	490	27	187	<MDA
19	332	-131	-910	<MDA <BKGND
20	519	56	389	<MDA
21	316	-147	-1021	<MDA <BKGND
22	408	-55	-382	<MDA <BKGND
23	417	-46	-319	<MDA <BKGND
24	383	-80	-555	<MDA <BKGND
25				
26				Exposure rates:
27				SW corner-20 uR/hr
28				NW corner-35 uR/hr
29				Rest of exterior-10 to 15 uR/hr
30				
31				
32				
33				
34				
35				

Signature: Steven A. Bostjanic Date: 12/29/00

9/2/99 Westing Choswick Small Butler Exterior

S. Wall

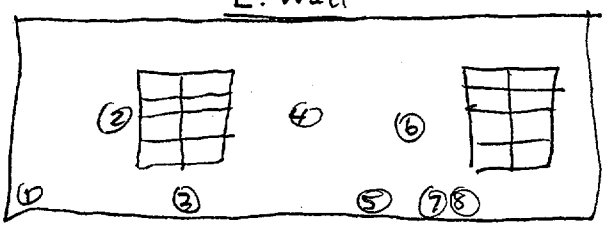


(1) 850 (4) 370

(2) 359 (5) 675

(3) 342 ~~(6)~~

E. Wall

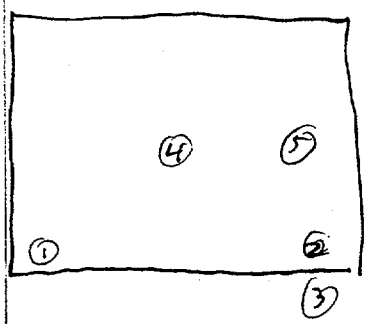


(1) 538 (4) 332 (7) 408

(2) 347 (5) 519 (8) 417

(3) 490 (6) 314 (9) 383

N. Wall



(1) 671

(2) 2981 Ext wall opposite internally marked hot spot

(3) 1820 Ext. Asphalt adjacent to (2)

(4) 393 (5) 466

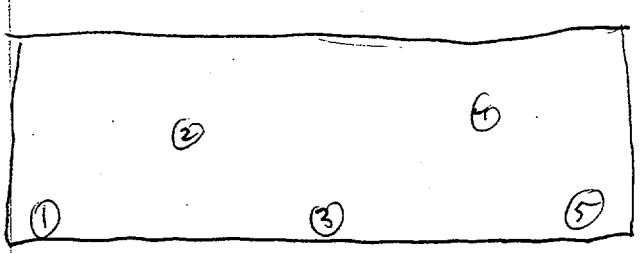
mR readings

SW corner 20 mR/hr

NW corner 35 mR/hr

All else 10.15 mR/hr

W. Wall



(1) 696

(2) 414

(3) 534

(4) 339

(5) 581

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division
Date: 9/30/99
Meter Model and Serial Number: Ludlum 2241-2, SN - 137745
Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm^2), SN-147859
Area/Building Surveyed: Demolished High Bay beams & concrete rubble
Count times: 1 minute

Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
281	2114	1833	^{99}Tc	11,400	16.1	502	1085

Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	271	-10	-62	<MDA <BKGND Clean scrap beam pile
2	285	4	25	<MDA Clean scrap beam pile
3	224	-57	-355	<MDA <BKGND Clean scrap beam pile
4	263	-18	-112	<MDA <BKGND Clean scrap beam pile
5	229	-52	-323	<MDA <BKGND Clean scrap beam pile
6	230	-51	-317	<MDA <BKGND Clean scrap beam pile
7	265	-16	-100	<MDA <BKGND Clean scrap beam pile
8	221	-60	-373	<MDA <BKGND Clean scrap beam pile
9	294	13	81	<MDA Clean scrap beam pile
10	292	11	68	<MDA Clean scrap beam pile
11	245	-36	-224	<MDA <BKGND Clean scrap beam pile
12	314	33	205	<MDA Clean scrap beam pile
13	284	3	19	<MDA Clean scrap beam pile
14	261	-20	-124	<MDA <BKGND Clean scrap beam pile
15	679	398	2475	Clean scrap beam pile
16	611	330	2052	Clean scrap beam pile
17	383	102	634	Clean scrap beam pile
18	349	68	423	<MDA Clean scrap beam pile
19	525	244	1518	Clean scrap beam pile
20	315	34	211	<MDA Clean scrap beam pile
21	295	14	87	<MDA Clean scrap beam pile
22	222	-59	-367	<MDA <BKGND Clean scrap beam pile
23	333	52	323	<MDA Clean concrete rubble
24	339	58	361	<MDA Clean concrete rubble
25	349	68	423	<MDA Clean concrete rubble
26	172261	171980	**1069597**	Clean concrete rubble-probable hole in scintillator mylar;instrument
27				over responding on previously surveyed areas too; uR readings at point
28				where meter began over responding don't indicate this level of contamination
29				Survey terminated.
30				
31				Exposure rates: clean concrete rubble pile - 3 to 4 uR/hr
32				concrete in rolloff box - 3 to 5 uR/hr, around perimeter of beam pile
33				3 to 19 uR/hr @ 1m, 35 to 50 uR/hr @ contact. Elevated exposure rate
34				probably due to ground underneath pile in this area. Elevated readings
35				were noted in bldgs in this area prior to demo.

Signature: Steven C. Bontzmin Date: 12/29/00

Westinghouse Cheswick 9/30/99
Survey of High Bay Beams (After demolition)

Instrument Efficiency Check
Meter Ludlum 2241-2 SN 137745
Detector Ludlum 44-116 SN 147859

Bkgnd	Gross	Net
268	2071	1833
283	2155	
291	2115	
281 - Avg	2114 - Avg	

$$Eff = \frac{1833\ cpm}{11{,}400\ dpm} = 16.1\ \%$$

(5000 dpm) 0.161 = 805 cpm 5000 dpm = bkgnd = 805 cpm + 281 cpm = 1086 cpm

Clean Scrap Beam Pile - (to

Reading #	Reading (cpm)		
1	271	15	679
2	285	16	611
3	224	17	383
4	263	18	349
5	229	19	525
6	230	20	315
7	265	21	295
8	221	22	222
9	294		
10	292		
11	245		
12	314		
13	284		
14	261		

Pile on Ground
Clean Concrete Rubble
(To Valley Landfill)

1. 333
2. 339
3. 349
4. 172261

Probable hole in detector mylar. Instrument also over-responding on previously surveyed areas. but readings at point where meter began over-responding do not indicate this level of contamination

Westinghouse Cheswick cont. 9/30/99

mR/hr readings

Clean concrete rubble pile 3-4 mR/hr

Clean concrete rubble in roll off box - 3.5 mR/hr

Around perimeter of clean scrap beam pile - 3-19 mR/hr @ 1m

at surface of beam 35 to 50 mR/hr.

Elevated exposure rate is most likely from ground underneath pile in this area, This soil will be excavated

(This was area of small butterfly & high bay where elevated ~~there were~~ ~~previou~~ exposure rates were previously noted.

C08

West Chesuich.

DEP 004 ⟷ 06-0108W-A (W)

1760 ± 25 pCi/kg ^{60}Co
845 ± 16 pCi/kg ^{137}Cs

DEP 005 ⟷ 06-0087W-A (W)

912 ± 23 pCi/kg ^{60}Co
7,010 ± 44 pCi/kg ^{137}Cs

Note:

The following sample results are not final survey data. They were intended to be used only as a comparison of the Antech Ltd. and DEP laboratories.

Steve Bastyanin 12/20/00

C09

!p
Sample ID : 9906-0087W

Page : I

Acquisition date : 8-JUN-1999 20:10:53

ANTECH Ltd. Waltz Mill Lab

8-JUN-1999 21:11:15.47

GAMMA Spectrometry Report

****

Sample Title: 99-0336W EXT14-1A
Antech Sample ID: 9906-0087W
System File: DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_99060087W_D_500SSJSOILA_2768.CNF;1
Acquisition Time : 8-JUN-1999 20:10:53.60

Sample Quantity : 8.15070E+02 GRAM
Sample Matrix : SOIL
Detector name : D
Live time : 0 01:00:00.00

Sample Time : 27-MAY-1999 00:00:00
Decay Time : 12 20:10:53.60
Geometry : 500SSJ-SOIL-A
% Dead Time : 0.1%

Library File : DKA100:[GAMMA.SCUSR.LIB]BIG-5.NLB;
Background File : DKA100:[GAMMA.SCUSR.ARCHIVE]BKG_LONGBKG_D__2691.CNF;1
Analysis File : DKA0:[gamma.scusr.asf]BIG-5.asf

Tolerance *(FWHM): 0.85
Abundance limit : 60.0
Half life ratio : 12.0

Propagate errors? : Yes
Systematic Error : 1.00
Peak Sensitivity : 2.80

****

Brief Report

Nuclide	Activity pCi/GRAM	2-Sigma Error	
K-40	6.09	1.03	
CO-60	1.92	0.125	→ DEP Lab Result 0.912 pCi/g
CS-137	19.5	0.994	→ DEP Lab Result 7.010 pCi/g
TL-208	0.316	9.323E-02	
BI-212	1.42	0.778	
PB-212	0.930	0.153	
BI-214	1.75	0.154	
PB-214	1.55	0.214	
RA-226S	6.44	2.11	
AC-228	0.839	0.239	
TH-234	2.56	1.77	
Total Activity :	43.3		

Approved by: [signature] Approval Date: 6 / 8 / 99

Minimum Detectable Activity Report

Nuclide	Bckgnd Sum	Energy (keV)	MDA (pCi/GRAM)
MN-54	52.	834.83	8.5354E-02
CO-58	50.	810.75	9.0776E-02
AM-241	458.	59.54	2.0343E-01

** TOTAL PAGE.03 **

C10

!p

Sample ID : 9906-0108W Acquisition date : 9-JUN-1999 15:18:17

ANTECH Ltd. Waltz Mill Lab 9-JUN-1999 15:48:38.92

GAMMA Spectrometry Report

****

Sample Title: 99-0336W EXT12-3A Antech Sample ID: 9906-0108W
System File: DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_99060108W_C_500SSJSOILA_2792.CNF;1
Acquisition Time : 9-JUN-1999 15:18:17.05

Sample Quantity : 9.49070E+02 GRAM Sample Time : 1-JUN-1999 00:00:00.
Sample Matrix : SOIL Decay Time : 8 15:18:17.05
Detector name : C Geometry : 500SSJ-Soil-A
Live time : 0 00:30:00.00 % Dead Time : 0.1%

STV

Library File : DKA100:[GAMMA.SCUSR.LIB]BIG-5.NLB;
Background File : DKA100:[GAMMA.SCUSR.ARCHIVE]BKG_LONGBKG_C__2548.CNF;1
Analysis File : DKA0:[gamma.scusr.asf]BIG-5.asf

Tolerance *(FWHM): 0.85 Propagate errors? : Yes
Abundance limit : 60.0 Systematic Error : 1.00
Half life ratio : 12.0 Peak Sensitivity : 2.80

****

Brief Report

Nuclide	Activity pCi/GRAM	2-Sigma Error	
K-40	9.45	1.15	
CO-60	4.63	0.178	→ DEP Lab Result 1.76 pCi/g
CS-137	3.85	0.262	→ DEP Lab Result 0.845 pCi/g
TL-208	0.274	8.572E-02	
PB-212	0.667	0.179	
BI-214	0.730	0.135	
PB-214	0.682	0.161	
AC-228	0.729	0.215	
Total Activity :	21.0		

Approved by: Mark J. McLaughlin Approval Date: 6 / 9 / 99

Minimum Detectable Activity Report

Nuclide	Bckgnd Sum	Energy (keV)	MDA (pCi/GRAM)
MN-54	143.	834.83	1.0878E-01
CO-58	122.	810.75	1.0636E-01
AM-241	292.	59.54	5.7239E-01

C11

1

Fixed:
HNO_3
HCHO

DEP Laboratory
Sample Submission Sheet

Lab Use Only

Lab Number: 1647

Date Received: 7/15/99

* Collector ID.:	Seq. No.:	* Date Collected:(MM-DD-YY)	Time Collected:	* SAC or Suite Code:
5510	004	07079 9	1530	RAD66

* Reason:	*Cost Center:	* Program:	Legal Seal Number:	Seal Broken?
03	031	0014		yes / no
				yes / no
				yes / no

Gross γ for 137Cs & 60Co conc.

* Matrix Code: 009

Custody Log Date: 7/13/99

How Shipped: U.S. Cargo

Received by:

Additional Information:

**Radon Vial Number:

**Radon Duplicate Number:

**Radon Duplicate Date/Time:

Collector Name: Steve Bostjancic SWRO 400 Waterfront Dr. Pgh 15222

Collector Phone Number: 412-442-5824

Project Facility Monitoring Pt.	
Project Unit:	
Project ID:	
Primary Facility #	
Sub Facility:#	
Monitoring Point ID#	
Monitoring Point Alias:	

Location Code:

Air Volume: 1063.06 l

Utility Code: 121.10

941.96 .99196 Kf

County:	
Municipality:	
Quadrangle:	
Latitude:	
Longitude:	
Datum:	
Stream:	
River Mile :	
Location:	

Sampling Method:

Medium Type:

Medium:

Homeowner's name:	
Address:	
Address:	
City:	
State:	
Zip Code:	
Phone Number:	
Well depth:	

Contact (open/close):	
1 Meter (open/close):	
3 Meters(open/close):	
Wipe (smear):	
Field Gamma Spec:	

Signature: Steve Bostjancic

* Required information for ALL sample submissions.

**Required information for RADON DUPLICATES.

Note - sample belongs to licensee. Please return to S. Bostjancic at DEP SWRO Thanks

Radiation Analysis Results

Laboratory Number : 1649 Sample Number : 5510004

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
54 Mn **	11.00	0.00	0.00
59 Fe **	26.00	0.00	0.00
58 Co **	11.00	0.00	0.00
60 Co	9.00	1760.00	25.00
65 Zn **	25.00	0.00	0.00
95 Zr **	19.00	0.00	0.00
95 Nb **	12.00	0.00	0.00
131 I **	16.00	0.00	0.00
134 Cs **	9.00	0.00	0.00
137 Cs	10.00	845.00	16.00
140 Ba **	45.00	0.00	0.00
140 La **	196.00	0.00	0.00
133 Ba **	11.00	0.00	0.00

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 07-19-1999 Reviewed By : TJM 7/19/99

C12

Radiation Analysis Results

Laboratory Number : 1649 Sample Number : 5510004

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
54 Mn **	11.00	0.00	0.00
59 Fe **	26.00	0.00	0.00
58 Co **	11.00	0.00	0.00
60 Co	9.00	1760.00	25.00
65 Zn **	25.00	0.00	0.00
95 Zr **	19.00	0.00	0.00
95 Nb **	12.00	0.00	0.00
131 I **	16.00	0.00	0.00
134 Cs **	9.00	0.00	0.00
137 Cs	10.00	845.00	16.00
140 Ba **	45.00	0.00	0.00
140 La **	196.00	0.00	0.00
133 Ba **	11.00	0.00	0.00

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 07-19-1999 Reviewed By : TJM 7/19/99

1

Fixed:
~~HNO_3~~
HCHO

DEP Laboratory
Sample Submission Sheet

Lab Use Only

Lab Number: 1650

Date Received: 7/15/99

* Collector ID.:	Seq. No.:	* Date Collected: (MM-DD-YY)	Time Collected:	* SAC or Suite Code:
5510005		070799	1530	RADG6

* Reason:	*Cost Center:	* Program:	Legal Seal Number:	Seal Broken?
03	031	0014		yes / no
				yes / no
				yes / no

Gross γ for ^{137}Cs and ^{60}Co conc.

* Matrix Code: 009

Custody Log Date: 7/13/99

How Shipped: U.S. Cargo

Received by:

Additional Information:

**Radon Vial Number:

**Radon Duplicate Number:

**Radon Duplicate Date/Time:

Collector Name: Steve Bostjancic SWRO 400 Waterfront Dr. Pgh 15222

Collector Phone Number: 412-442-5824

Project Facility Monitoring Pt.	
Project Unit:	
Project ID:	
Primary Facility #	
Sub Facility:#	
Monitoring Point ID#	
Monitoring Point Alias:	

Location Code:

Air Volume: 848.50 ft^3

Utility Code: 120.79
727.71 .7277 Kp

County:	
Municipality:	
Quadrangle:	
Latitude:	
Longitude:	
Datum:	
Stream:	
River Mile :	
Location:	

Sampling Method:

Medium Type:

Medium:

Homeowner's name:	
Address:	
Address:	
City:	
State:	
Zip Code:	
Phone Number:	
Well depth:	

Contact (open/close):	
1 Meter (open/close):	
3 Meters(open/close):	
Wipe (smear):	
Field Gamma Spec:	

Signature: Steve Bostjancic

* Required information for ALL sample submissions. **Required information for RADON DUPLICATES.

Note - sample belongs to licensee. Please return to S. Bostjancic at DEP SWRO Thanks

Radiation Analysis Results

Laboratory Number : 1650 Sample Number : 5510005

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
54 Mn **	12.00	0.00	0.00
59 Fe **	26.00	0.00	0.00
58 Co **	11.00	0.00	0.00
60 Co	10.00	912.00	23.00
65 Zn **	27.00	0.00	0.00
95 Zr **	19.00	0.00	0.00
95 Nb **	13.00	0.00	0.00
131 I **	26.00	0.00	0.00
134 Cs **	10.00	0.00	0.00
137 Cs	13.00	7010.00	44.00
140 Ba **	65.00	0.00	0.00
140 La **	275.00	0.00	0.00
133 Ba **	17.00	0.00	0.00

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 07-19-1999 Reviewed By : TJM 7/19/99

C13

Radiation Analysis Results

Laboratory Number : 1650 Sample Number : 5510005

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
54 Mn **	12.00	0.00	0.00
59 Fe **	26.00	0.00	0.00
58 Co **	11.00	0.00	0.00
60 Co	10.00	912.00	23.00
65 Zn **	27.00	0.00	0.00
95 Zr **	19.00	0.00	0.00
95 Nb **	13.00	0.00	0.00
131 I **	26.00	0.00	0.00
134 Cs **	10.00	0.00	0.00
137 Cs	13.00	7010.00	44.00
140 Ba **	65.00	0.00	0.00
140 La **	275.00	0.00	0.00
133 Ba **	17.00	0.00	0.00

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 07-19-1999 Reviewed By : TJM 7/19/99

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Summary Sheet

Facility/Site: **Westinghouse Cheswick**

Date: **7/20/1999** **Contact Person:** **Wayne Bickerstaff** **Phone #:** **724-275-5323**

At Westinghouse Cheswick to survey and sample bottom & sides of excavation under old portion of pump repair facility (see attached drawing and photo).

Equipment: Ludlum Model 2221 with Model 44-10 NaI detector; background ~ 7.3 kC/min
: Bicron Micro-Analyst; background ~ 15 μR/hr

Performed gamma survey of bottom and sides of excavation; collected four soil samples from bottom in areas where count rate was noticeably elevated above background (see attached sketch). Performed exposure rate survey with microR meter; general area exposure rate was 15 to 25 μR/hr, although rates up to 100 μR/hr were noted near an area of known contamination. (See sketch and attached lab reports.)

Name: Steven A. Bostjancic **Signature:** Steven A. Bostjancic 12/27/00 **Date:** 12/27/2000

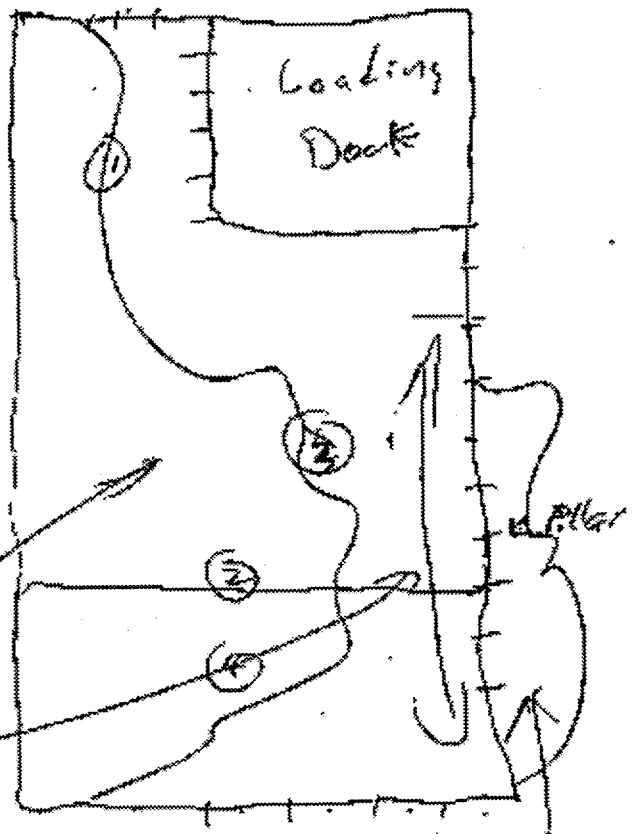
7/20/99 Cheswick

Inst Lud. 2221 SN 67413
Det Lud. 44-10 SN 058053

Bkgnd - Outside PRF Step off. ↑N

7254
7470
7366

(5510.006) Sample # 1 6,005 cpm
(5510 007) Sample # 2 9816 cpm
(5510 008) Sample # 3 10,172 cpm
(5510 009) Sample #4 11,708



1m high mR readings in excavation 15 to 25 mR/hr

45 to 100 mR/hr near contaminated face at excavation

contaminated soils on dirt wall high bkgnd ~ 14,000 cpm

Radiation Analysis Results

Laboratory Number : 1960 Sample Number : 5510006

Unless otherwise noted all values reported are picocuries per received kilogram.

	95% LLD	Sample Value	95% CE
54 Mn **	15.00	0.00	0.00
59 Fe **	51.00	0.00	0.00
58 Co **	18.00	0.00	0.00
60 Co	15.00	141.00	16.00
65 Zn **	34.00	0.00	0.00
95 Zr **	37.00	0.00	0.00
95 Nb **	32.00	0.00	0.00
131 I **	448.00	0.00	0.00
134 Cs **	12.00	0.00	0.00
137 Cs	13.00	627.00	13.00
140 Ba **	419.00	0.00	0.00
40 K	113.00	8590.00	314.00
212 Pb	49.00	649.00	60.00
214 Pb	100.00	446.00	128.00

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 09-10-1999 Reviewed By : TJM 9/10/99

Radiation Analysis Results

Laboratory Number : 1961 Sample Number : 5510007

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
54 Mn **	13.00	0.00	0.00
59 Fe **	44.00	0.00	0.00
58 Co **	16.00	0.00	0.00
60 Co	13.00	441.00	13.00
65 Zn **	30.00	0.00	0.00
95 Zr **	33.00	0.00	0.00
95 Nb **	29.00	0.00	0.00
131 I **	390.00	0.00	0.00
134 Cs **	12.00	0.00	0.00
137 Cs **	13.00	0.00	0.00
140 Ba **	376.00	0.00	0.00
40 K	106.00	8440.00	291.00
212 Pb	44.00	565.00	63.00
214 Pb	90.00	527.00	104.00

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 09-10-1999 Reviewed By : TJM 9/10/99

Radiation Analysis Results

Laboratory Number : 1962 Sample Number : 5510008

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
54 Mn **	26.00	0.00	0.00
59 Fe **	93.00	0.00	0.00
58 Co **	33.00	0.00	0.00
60 Co	16.00	2410.00	50.00
65 Zn **	60.00	0.00	0.00
95 Zr **	60.00	0.00	0.00
95 Nb **	53.00	0.00	0.00
131 I **	629.00	0.00	0.00
134 Cs **	19.00	0.00	0.00
137 Cs	22.00	46.00	19.00
140 Ba **	650.00	0.00	0.00
40 K	122.00	10500.00	333.00
212 Pb	91.00	879.00	103.00
214 Pb	17.00	913.00	19.00

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 09-10-1999 Reviewed By : TJM 9/10/99

Radiation Analysis Results

Laboratory Number : 1963 Sample Number : 5510009

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
54 Mn **	24.00	0.00	0.00
59 Fe **	82.00	0.00	0.00
58 Co **	30.00	0.00	0.00
60 Co	18.00	1170.00	43.00
65 Zn **	53.00	0.00	0.00
95 Zr **	56.00	0.00	0.00
95 Nb **	48.00	0.00	0.00
131 I **	621.00	0.00	0.00
134 Cs **	19.00	0.00	0.00
137 Cs	22.00	618.00	30.00
140 Ba **	64.00	0.00	0.00
40 K	130.00	10300.00	377.00
212 Pb	82.00	907.00	109.00
214 Pb	154.00	571.00	165.00

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 09-10-1999 Reviewed By : TJM 9/10/99

C14

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Summary Sheet

Facility/Site: Westinghouse Cheswick

Date: 11/10/1999 **Contact Person:** Wayne Bickerstaff **Phone #:** 724-275-5323

At site to survey and sample soils under the now demolished pump repair facility and administration building.

Equipment: Ludlum 2221s with 44-10 2x2 NaI detectors; background – 4.5 to 5.5 kC/min
: Bicron Micro-analyst; background – 8 to 10 μR/hr

Performed gamma survey of bottom and sides of excavation where buildings used to be. Maximum count rate noted was about 7 to 8 kC/min. Collected 4 soil samples (split with Westinghouse) in areas with highest count rates (see attached lab reports). Took exposure rate readings at 1 meter from excavation surfaces. Exposure rate ranged from 10 to 13 μR/hr. No areas requiring additional decontamination were noted pending lab results.

Name: Steven A. Bostjancic **Signature:** Steven A. Bostjancic 12/27/00 **Date:** 12/27/2000

11/10/99 (W) Cheswick

Survey of soils under demolished bldg.

Meters - Ludlum 2221s with 44-10 2x2 NaI (Tl) detectors

Bkgnd ~ ~~5000 cpm~~ 4500-5500. Max readings noted ~ 7k-8k cpm

Took 4 soil samples in areas with highest count rates (Split with Westinghouse)

mR readings 10-13 mR/hr @ 1m

Sample ID: 5510 014 11/10/1999 Status: COMPLETED

Collector: Steven A Bostjancic
Collected: 11/10/1999 10:00:00 AM

County: Allegheny State: PA
Municipality: Cheswick Boro

WESTINGHOUSE ELEC CHESWICK PLT
1000 CHESWICK AVE
CHESWICK PA 15024-

Facility/Permit ID: 37-05809-01 FIX ID: 543575
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1
Sub-Facility: 37-05809-01 FIX ID: 436114
Name: WESTINGHOUSE GOV SER CO NRC LIC #1

Location: NOT INDICATED
Reason: Routine Sampling

North of Admin. entrance

Laboratory Sample ID: R1999002808 COMPLETED
Suite: RAD66
Matrix: Soil

****

A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

****

Test	95% LLD	Sample Value	95% CE
BA 133**	7	0.0000 PCI/KG	0
BA 140**	354	0.0000 PCI/KG	0
CO 58**	10	0.0000 PCI/KG	0
CO 60	6	209.0000 PCI/KG	10
CS 134**	6	0.0000 PCI/KG	0
CS 137	6	85.0000 PCI/KG	6
FE 59**	30	0.0000 PCI/KG	0
I 131**	571	0.0000 PCI/KG	0

Sample ID: 5510 014 11/10/1999 Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
LA 140	0	0.0000 PCI/KG	0
MN 54**	7	0.0000 PCI/KG	0
NB 95**	20	0.0000 PCI/KG	0
ZN 65**	16	0.0000 PCI/KG	0
ZR 95**	19	0.0000 PCI/KG	0

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Sample ID: 5510 015 11/10/1999 Status: COMPLETED

Collector: Steven A Bostjancic
Collected: 11/10/1999 10:05:00 AM

County: Allegheny State: PA
Municipality: Cheswick Boro

WESTINGHOUSE ELEC CHESWICK PLT
1000 CHESWICK AVE
CHESWICK PA 15024-

Facility/Permit ID: 37-05809-01 FIX ID: 543575
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1
Sub-Facility: 37-05809-01 FIX ID: 436114
Name: WESTINGHOUSE GOV SER CO NRC LIC #1

Location: NOT INDICATED
Reason: Routine Sampling

North end of PRF

Laboratory Sample ID: R1999002809 COMPLETED
Suite: RAD66
Matrix: Soil

****

A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

****

Test	95% LLD	Sample Value	95% CE
BA 133**	7	0.0000 PCI/KG	0
BA 140**	349	0.0000 PCI/KG	0
CO 58**	10	0.0000 PCI/KG	0
CO 60	6	278.0000 PCI/KG	12
CS 134**	6	0.0000 PCI/KG	0
CS 137	6	66.0000 PCI/KG	7
FE 59**	30	0.0000 PCI/KG	0
I 131**	588	0.0000 PCI/KG	0

Sample ID: 5510 015 11/10/1999 Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
LA 140	0	0.0000 PCI/KG	0
MN 54**	7	0.0000 PCI/KG	0
NB 95**	18	0.0000 PCI/KG	0
ZN 65**	17	0.0000 PCI/KG	0
ZR 95**	19	0.0000 PCI/KG	0

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Sample ID: 5510 016 11/10/1999 Status: COMPLETED

Collector: Steven A Bostjancic
Collected: 11/10/1999 10:10:00 AM

County: Allegheny State: PA
Municipality: Cheswick Boro

WESTINGHOUSE ELEC CHESWICK PLT
1000 CHESWICK AVE
CHESWICK PA 15024-

Facility/Permit ID: 37-05809-01 FIX ID: 543575
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1
Sub-Facility: 37-05809-01 FIX ID: 436114
Name: WESTINGHOUSE GOV SER CO NRC LIC #1

Location: NOT INDICATED
Reason: Routine Sampling

Under west PRF footer

Laboratory Sample ID: R1999002810 COMPLETED
Suite: RAD66
Matrix: Soil

****

A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

****

Test	95% LLD	Sample Value	95% CE
BA 133**	7	0.0000 PCI/KG	0
BA 140**	342	0.0000 PCI/KG	0
CO 58**	8	0.0000 PCI/KG	0
CO 60	6	67.0000 PCI/KG	9
CS 134**	5	0.0000 PCI/KG	0
CS 137	6	14.0000 PCI/KG	4
FE 59**	26	0.0000 PCI/KG	0
I 131**	547	0.0000 PCI/KG	0

Sample ID: 5510 016 11/10/1999 Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
LA 140	0	0.0000 PCI/KG	0
MN 54**	6	0.0000 PCI/KG	0
NB 95**	18	0.0000 PCI/KG	0
ZN 65**	15	0.0000 PCI/KG	0
ZR 95**	18	0.0000 PCI/KG	0

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Sample ID: 5510 017 11/10/1999 Status: COMPLETED

Collector: Steven A Bostjancic
Collected: 11/10/1999 10:15:00 AM

County: Allegheny State: PA
Municipality: Cheswick Boro

WESTINGHOUSE ELEC CHESWICK PLT
1000 CHESWICK AVE
CHESWICK PA 15024-

Facility/Permit ID: 37-05809-01 FIX ID: 543575
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1
Sub-Facility: 37-05809-01 FIX ID: 436114
Name: WESTINGHOUSE GOV SER CO NRC LIC #1

Location: NOT INDICATED
Reason: Routine Sampling

under men's locker room

Laboratory Sample ID: R1999002811 COMPLETED
Suite: RAD66
Matrix: Soil

****

A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

****

Test	95% LLD	Sample Value	95% CE
BA 133**	8	0.0000 PCI/KG	0
BA 140**	400	0.0000 PCI/KG	0
CO 58**	10	0.0000 PCI/KG	0
CO 60	8	52.0000 PCI/KG	9
CS 134**	6	0.0000 PCI/KG	0
CS 137**	7	0.0000 PCI/KG	0
FE 59**	33	0.0000 PCI/KG	0
I 131**	642	0.0000 PCI/KG	0

Sample ID: 5510 017 11/10/1999 Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
LA 140	0	0.0000 PCI/KG	0
MN 54**	8	0.0000 PCI/KG	0
NB 95**	22	0.0000 PCI/KG	0
ZN 65**	19	0.0000 PCI/KG	0
ZR 95**	21	0.0000 PCI/KG	0

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

C19

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Summary Sheet

Facility/Site: Westinghouse Cheswick

Date: 1/14/2000 **Contact Person:** Wayne Bickerstaff **Phone #:** 724-275-5323

At site to survey and sample soil underneath excavated catch basin that was part of the PRF drainage system.

Equipment: Ludlum 2221s with 44-10 2x2 NaI detectors; background ~8.5 kC/min.
: Bicron Micro-analyst; background ~ 10 μR/hr.

Performed gamma survey on soils under removed catch basin and along excavation of gas line (see attached photo). One spot a few square inches in area was noted to have a count rate more than 3 times background, ~ 25 to 30 kC/min. We requested that the facility do additional decontamination of this area, which they did by excavating additional soil with a shovel until the count rate was indistinguishable from background. Collected a soil sample from another area of the trench which seemed to have a slightly elevated count rate (~ 9.5 kC/min). See attached lab report. Exposure rate measurements at 1 meter from bottom and sides ranged from 10 to 15 μR/hr.

Name: Steven A. Bostjancic, Roy Woods **Signature:** Steven A. Bostjancic 12/27/00 **Date:** 12/27/2000

Sample ID: 5510 022 01/14/2000 Status: COMPLETED

Collector: Steven A Bostjancic
Collected: 01/14/2000 01:44:00 PM

County: Allegheny State: PA
Municipality: Cheswick Boro

WESTINGHOUSE ELEC CHESWICK PLT
1000 CHESWICK AVE
CHESWICK PA 15024-

Facility/Permit ID: 37-05809-01 FIX ID: 543575
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1
Sub-Facility: 37-05809-01 FIX ID: 436114
Name: WESTINGHOUSE GOV SER CO NRC LIC #1

Location: Under catch basin
Reason: Routine Sampling

Gross count rate at area sampled was approximately background.

Appearance: Clay/soil

Laboratory Sample ID: R2000000541 COMPLETED
Suite: RAD66
Matrix: Soil

****

A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

****

Test	95% LLD	Sample Value	95% CE
BA 133**	12	0.0000 PCI/KG	0
BA 140**	727	0.0000 PCI/KG	0
CO 58**	11	0.0000 PCI/KG	0
CO 60	6	722.0000 PCI/KG	14
CS 134	8	12.0000 PCI/KG	6
CS 137	9	5170.0000 PCI/KG	29

Sample ID: 5510 022 01/14/2000 Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
FE 59**	35	0.0000 PCI/KG	0
I 131**	1590	0.0000 PCI/KG	0
LA 140	0	0.0000 PCI/KG	0
MN 54**	8	0.0000 PCI/KG	0
NB 95**	22	0.0000 PCI/KG	0
ZN 65**	18	0.0000 PCI/KG	0
ZR 95**	22	0.0000 PCI/KG	0

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

C20

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Summary Sheet

Facility/Site: Westinghouse Cheswick

Date: 3/10/2000 **Contact Person:** Wayne Bickerstaff **Phone #:** 724275-5323

Requested by facility to view excavation of a sanitary sewer line in the now demolished PRF area. Routine procedure has been to remove any defunct piping encountered whether it is contaminated or not. However, they are requesting permission to leave 3 2ft. sections of this pipe in place because it is below release limits and they are concerned that expanding the excavation to the extent necessary to remove the pipe will endanger the nearby phone pole and gas line (see attached photo showing proximity of pole to excavation). Their conclusion that the pipe is below release limits is based on the following survey results: 1) surveyed at both ends with 2x2 NaI detector – background is 12 kC/min, Inside pipe ends the count rates ranged from 12 to 15 kC/min. 2) Smearable result – 15 dpm/100 cm^2, which is 2 counts over background. 3) Seven soil samples from under and around the pipe ends analyzed with the on-site Exploranium GR-256 MCA yielded 1300 to 1900 cpm whereas their threshold gross count rate for samples with potential contamination above release limits is ≥ 2400 cpm. I verified these readings on their sample log.

A section of this line that was bowed and leaking has been removed along with the associated contaminated soil.

Granted DEP's approval of their request pending final lab analysis of the soil samples.

Name: Steven A. Bostjancic **Signature:** Steven A. Bostjancic 12/28/00 **Date:** 12/28/2000

Photo taken 3/10/2000 showing proximity of phone pole to excavation of sanitary drain line.
3.11.2000

C21

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Summary Sheet

Facility/Site: Westinghouse Cheswick

Date: 3/20/2000 **Contact Person:** Wayne Bickerstaff **Phone #:** 724-275-5323

At site to perform survey of excavated pipe trench along Lemon Lane. Performed gamma and micro R survey of sections to east and west of facility parking lot driveway (see attached photos).

Equipment: Ludlum Model 2221 with Model 44-10 2x2 NaI detector; background 3.9kC/min.
: Bicron Micro-Analyst; background 10-12 μR/hr.

Maximum gross gamma count rate noted in east trench was 7 to 7.2 kC/min and exposure rate was 18 to 20 μR/hr. Collected two soil samples (see attached lab reports). Noted count rate of 50 kC/min and exposure rate of 30 μR/hr inside pipe at manhole end of trench (see attached photo). Asked facility to perform additional decontamination in this area or provide justification for leaving the contamination in place. They stated that they would evaluate the options and inform the DEP how they would proceed. Also surveyed portions of west trench but was unable to survey the entire length due to water pooling in the bottom. Readings noted were ≤ 8.0 kC/min and 13 to 15 μR/hr.

Name: Steven A. Bostjancic **Signature:** Steven A. Bostjancic 12/29/00 **Date:** 12/29/2000

Sample ID: 5510 027 03/20/2000 Status: COMPLETED

Collector: Steven A Bostjancic
Collected: 03/20/2000 10:00:00 AM

County: Allegheny State: PA
Municipality: Cheswick Boro

WESTINGHOUSE ELEC CHESWICK PLT
1000 CHESWICK AVE
CHESWICK PA 15024-

Facility/Permit ID: 37-05809-01 FIX ID: 543575
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1
Sub-Facility: 37-05809-01 FIX ID: 436114
Name: WESTINGHOUSE GOV SER CO NRC LIC #1

Location: E. end of Lemon Lane pipe trench
Reason: Self Monitoring

Laboratory Sample ID: R2000001048 COMPLETED
Suite: RAD66
Matrix: Soil

****

A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

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Test	95% LLD	Sample Value	95% CE
BA 133**	7	0.0000 PCI/KG	0
BA 140**	385	0.0000 PCI/KG	0
CO 58**	9	0.0000 PCI/KG	0
CO 60	6	230.0000 PCI/KG	10
CS 134**	5	0.0000 PCI/KG	0
CS 137	6	98.0000 PCI/KG	6
FE 59**	27	0.0000 PCI/KG	0
I 131**	670	0.0000 PCI/KG	0
LA 140	0	0.0000 PCI/KG	0
MN 54**	7	0.0000 PCI/KG	0
NB 95**	17	0.0000 PCI/KG	0

Sample ID: 5510 027 03/20/2000 Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
ZN 65**	15	0.0000 PCI/KG	0
ZR 95**	17	0.0000 PCI/KG	0

** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Sample ID: 5510 028 03/20/2000 Status: COMPLETED

Collector: Steven A Bostjancic
Collected: 03/20/2000 10:15:00 AM

County: Allegheny State: PA
Municipality: Cheswick Boro

WESTINGHOUSE ELEC CHESWICK PLT
1000 CHESWICK AVE
CHESWICK PA 15024-

Facility/Permit ID: 37-05809-01 FIX ID: 543575
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1
Sub-Facility: 37-05809-01 FIX ID: 436114
Name: WESTINGHOUSE GOV SER CO NRC LIC #1

Location: Lemon Lane pipe trench 16 joint marks W of manhole
Reason: Self Monitoring

Laboratory Sample ID: R2000001049 COMPLETED
Suite: RAD66
Matrix: Soil

****

A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

****

Test	95% LLD	Sample Value	95% CE
BA 133**	6	0.0000 PCI/KG	0
BA 140**	1210	0.0000 PCI/KG	0
CO 58**	13	0.0000 PCI/KG	0
CO 60	6	903.0000 PCI/KG	16
CS 134**	5	0.0000 PCI/KG	0
CS 137	6	37.0000 PCI/KG	6
FE 59**	48	0.0000 PCI/KG	0
I 131	0	0.0000 PCI/KG	0
LA 140	0	0.0000 PCI/KG	0
MN 54**	8	0.0000 PCI/KG	0
NB 95**	30	0.0000 PCI/KG	0

Sample ID: 5510 028 03/20/2000 Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
ZN 65**	20	0.0000 PCI/KG	0
ZR 95**	25	0.0000 PCI/KG	0

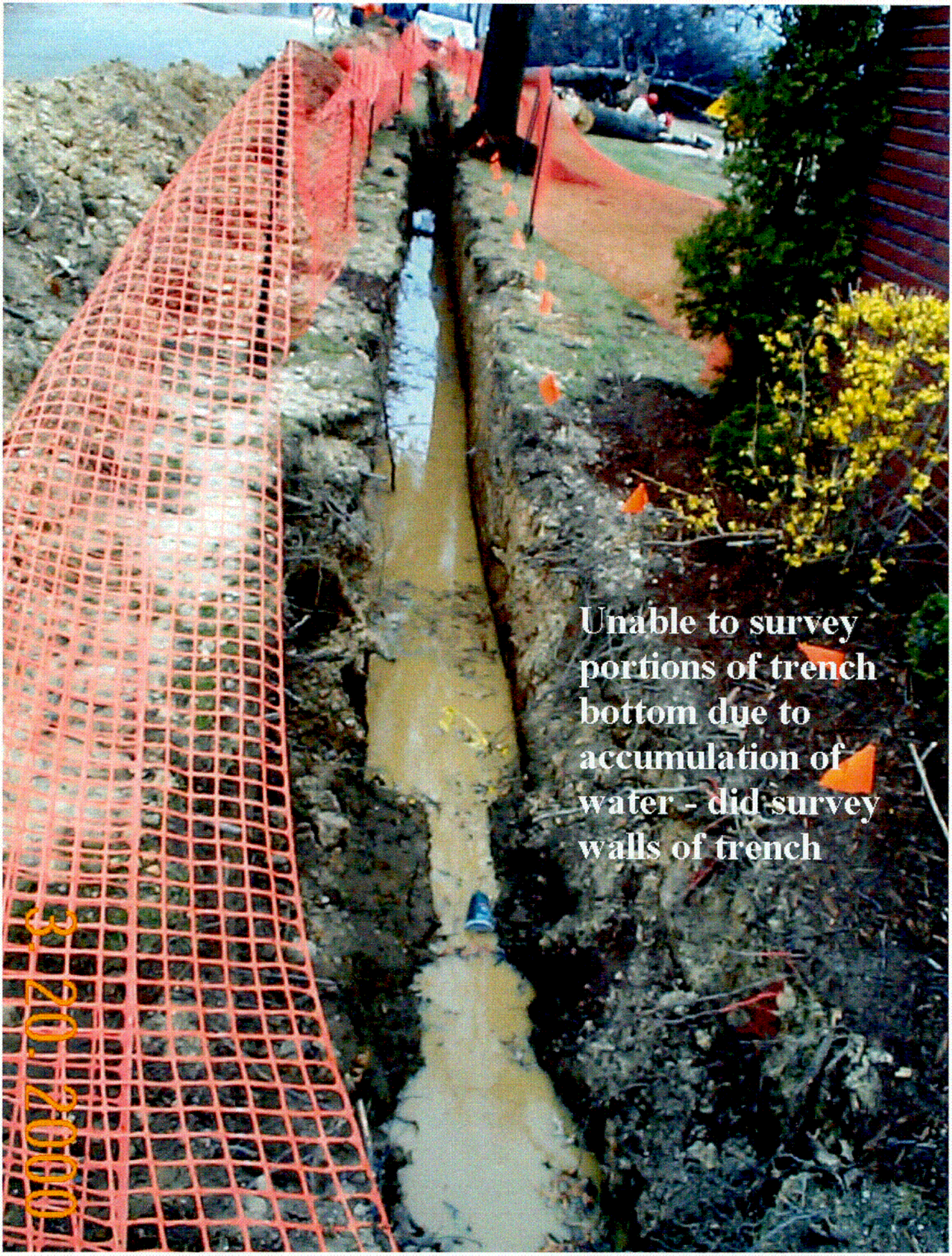
** - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

C22

C23

Pipe with elevated
count rate and exposure
rate noted 3/20/2000.
3. 20. 2000

C24


Unable to survey portions of trench bottom due to accumulation of water - did survey walls of trench

C25

Pennsylvania DEP Bureau of Radiation Protection
Facility Survey Summary Sheet

Facility/Site: Westinghouse Cheswick

Date: 3/28/2000 **Contact Person:** Wayne Bickerstaff **Phone #:** 724-275-5323

At site to re-survey pipe in Lemon Lane trench which was noted to have an elevated count rate and exposure rate on 3/20/2000.

Equipment: Ludlum Model 2221 with Model 44-10 2x2 NaI detector; background – 3.7 kC/min.
: Bicron Micro-Analyst; background 5 μR/hr.
: Exploranium GR-130 MiniSpec

Maximum gross count rate noted in end of pipe opening was 9.7 kC/min (down from 50 kC/min noted on 3/20/2000) Exposure rate inside pipe end was noted to be 15 μR/hr (down from 30 μR/hr noted on 3/20). Also performed gamma spec analysis at end of pipe with GR-130 (see attached photo). No nuclides were identified. Gave DEP approval to backfill trenches.

Name: Steven A. Bostjancic **Signature:** Steven A. Bostjancic 12/29/00 **Date:** 12/29/2000

C26