

Additional Appendices

These are appendices to augment Finklea 2014¹. These appendices account for ingrowth of specific radionuclides over a 100 year period. The nuclides along with their progenies () are should in Table 1. Finklea 2014 highlights the methodology behind the calculation of the room air kerma as well as the derivation of the room ratios. Room factors were calculated for 5 room sizes; a) 10 x 10 x 10, b) 50 x 50 x 10, c) 100 x100 x10, d) 200 x 200 x 20 and 400 x 400 x 40 ft for photons of energies ranging between 10 keV and 10 MeV. Monoenergetic photons were used in the original room factor calculations. From the monoenergetic room factor, radionuclide specific factors were derived using interpolation methods. The relative radionuclide specific room factor was computed as:

$$R = \frac{\sum_{i=1}^n Y(E_i)R(E_i)D_p(h, E_i)}{\sum_{i=1}^n Y(E_i)D_p(h, E_i)}$$

where $Y(E_i)$ is the yield of photons of energy E_i in the decay of the radionuclide (ICRP 107), $R(E_i)$ is the room factor for the room and location of interest at energy E_i and D_p is the dose rate for an infinite planar source emitting photons of energy E_i with the same source thickness as that in the room. Radionuclides and their respective photon emissions are provided in ICRP 107. It is recommended that an applicable dose rate coefficient for a room with surface or volume contamination be approximated by multiplying the external dose coefficients of FGR 12 by the room factor provided in the following tables. This will yield a conservative estimate of the dose rate as well as relative risk.

Material compositions are provided in section 3.3 of Finklea 2014. The materials are adobe mud brick, concrete, drywall, glass, wood and two composites. Composite one is made of a mixture of drywall, concrete, wood and glass. Composite two is made of a mixture of wood, drywall, and concrete. The specific contributions of each material to the composite is explained in the materials section.

In these appendixes, Room Factors are presented for:

Adobe.....A

Glass.....D

Concrete.....B

Wood.....E

Drywall.....C

Composite 1.....F

Composite 2.....G

¹ Finklea, L. *Room Radiation Dose Coefficients for External Exposure*. Master's Thesis, Georgia Institute of Technology, 2014.

Contents for Plus D Appendices

Table 1: Adobe Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	8
Table 2: Adobe Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	10
Table 3: Adobe Surface Contamination 400x400x40 ft room.....	12
Table 4: Adobe 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	14
Table 5: Adobe 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	16
Table 6: Adobe 1cm Contamination Thickness 400x400x40 ft room.....	18
Table 7: Adobe 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	20
Table 8: Adobe 5cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	22
Table 9: Adobe 5cm Contamination Thickness for 400x400x40 ft room	24
Table 10: Adobe 15cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	26
Table 11: Adobe 15cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	28
Table 12: Adobe 15cm Contamination Thickness 400x400x40 ft room.....	30
Table 13: Adobe Infinite Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms.....	32
Table 14: Adobe Infinite Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms.....	34
Table 15: Adobe infinite Contamination Thickness 400x400x40 ft rooms	36
Table 16: Concrete Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	38
Table 17: Concrete Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	40
Table 18: Concrete Surface Contamination Thickness 400x400x40 ft room.....	42
Table 19: Concrete 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms.....	44
Table 20: Concrete 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms.....	46
Table 21: Concrete 1cm Contamination Thickness 400x400x40 ft room.....	48
Table 22: Concrete 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms.....	50
Table 23: Concrete 5cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms.....	52
Table 24: Concrete 5cm Contamination Thickness for 400x400x40 ft room	54
Table 25: Concrete 15cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms.....	56
Table 26: Concrete 15cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms.....	58
Table 27: Concrete 15cm Contamination Thickness for 400x400x40 ft room	60
Table 28: Concrete Infinite Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms.....	62
Table 29: Concrete Infinite Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms.....	64
Table 30: Concrete Infinite Contamination Thickness for 400x400x40 ft room	66
Table 31: Drywall Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms.....	68
Table 32: Drywall Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms.....	70
Table 33: Drywall Surface Contamination Thickness for 400x400x40 ft room	72
Table 34: Drywall 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	74
Table 35: Drywall 1cm Contamination Thickness for 100x100x100 ft and 200x200x20 ft rooms.....	76
Table 36: Drywall 1cm Contamination Thickness for 400x400x40 ft room.....	78
Table 37: Drywall 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	80
Table 38: Drywall 5cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms.....	82
Table 39: Drywall 5cm Contamination Thickness for 400x400x40 ft room.....	84
Table 40: Glass Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms.....	86
Table 41: Glass Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms.....	88
Table 42: Glass Surface Contamination Thickness for 400x400x40 ft room.....	90
Table 43: Glass 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	92
Table 44: Glass 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	94

Table 45: Glass 1cm Contamination Thickness for 400x400x40 ft room.....	96
Table 46: Wood Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	98
Table 47: Wood Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	100
Table 48: Wood Surface Contamination Thickness for 400x400x40 ft room.....	102
Table 49: Wood 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	104
Table 50: Wood 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	106
Table 51: Wood 1cm Contamination Thickness for 400x400x40 ft room.....	108
Table 52: Wood 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	110
Table 53: Wood 5cm Contamination Thickness fot 100x100x10 ft and 200x200x20 ft rooms	112
Table 54: Wood 5cm Contamination Thickness for 400x400x40 ft room.....	114
Table 55: Composite 1 Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	116
Table 56: Composite 1 Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	118
Table 57: Composite 1 Surface Contamination Thickness for 400x400x40 ft.....	120
Table 58: Composite 1- 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	122
Table 59: Composite 1- 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	124
Table 60: Composite 1- 1cm Contamination Thickness for 400x400x40 ft room.....	126
Table 61: Composite 1- 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	128
Table 62: Composite 1- 5cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	130
Table 63: Composite 1- 5cm Contamination Thickness for 400x400x40 ft room.....	132
Table 64: Composite 1- 15cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	134
Table 65: Composite 1- 15cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	136
Table 66: Composite 1- 15cm Contamination Thickness for 400x400x40 ft room.....	138
Table 67: Composite 1—Infinite Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	140
Table 68: Composite 1—Infinite Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	142
Table 69: Composite 1—Infinite Contamination Thickness for 400x400x40 ft room.....	144
Table 70: Composite 2 Surface Contamination for 10x10x10 ft and 50x50x10 ft rooms.....	146
Table 71: Composite 2 Surface Contamination for 100x100x10 ft and 200x200x20 ft rooms.....	148
Table 72: Composite 2 Surface Contamination 400x400x40 ft room.....	150
Table 73: Composite 2 – 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms.....	152
Table 74: Composite 2 – 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms.....	154
Table 75: Composite 2 – 1cm Contamination Thickness 400x400x40 ft room.....	156
Table 76: Composite 2 - 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	158
Table 77: Composite 2 - 5cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	160
Table 78: Composite 2 - 5cm Contamination Thickness 400x400x40 ft room.....	162
Table 79: Composite 2 - 15cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms	164
Table 80: Composite 2 - 15cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms	166
Table 81: Composite 2 - 15cm Contamination Thickness 400x400x40 ft room.....	168
Table 82: Composite 2 - Infinite Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms.....	170
Table 83: Composite 2 - Infinite Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms.....	172
Table 84: Composite 2 - Infinite Contamination Thickness 400x400x40 ft room.....	174

Decay Chain for Plus D Radionuclides over 100 year Ingrowth

Parent Nuclide	Half Life/ Progeny Nuclide	Progeny Half Life	Intensity
Ac-223+D	2.10m		

Parent Nuclide	Half Life/ Progeny Nuclide	Progeny Half Life	Intensity
2	Fr-219	2.0E-2s	9.90E-01
3	At-215	1.00E-4s	9.90E-01
Ac-225+D	10.0d		
2	Fr-221	4.9m	1.00E+00
3	At-217	3.23E-2s	1.00E+00
Ag-108m+D	418y		
2	Ag-108	2.37m	8.70E-02
Ag-110m+D	249.76d		
2	Ag-110	24.6s	1.36E-02
Am-242m+D	141y		
2	Am-242	16.02h	9.96E-01
3	Np-238	2.117d	4.50E-03
Am-243+D	7.37E+3y		
2	Np-239	2.3565d	1.00E+00
Ar-42+D	32.9y		
2	K-42	12.360h	1.00E+00
At-211+D	7.214h		
2	Po-211	0.516s	5.82E-01
Bi-210m+D	3.04E+6y		
2	Tl-206	4.200m	1.00E+00
Bi-212+D	60.55m		
2	Po-212	2.99E-7s	6.41E-01
Bi-213+D	45.59m		
2	Po-213	4.2E-6s	9.79E-01
Bi-214+D	19.9m		
2	Po-214	1.643E-4s	1.00E+00
Bi-215+D	7.6m		
2	Po-215	1.781E-3s	1.00E+00
Ce-144+D	284.91d		
2	Pr-144m	7.2m	9.77E-03
3	Pr-144	17.28m	1.00E+00
Cm-247+D	1.56E+7y		
2	Pu-243	4.956h	1.00E+00
Cm-250+D	8300y		
2	Pu-246	10.84d	1.80E-01
3	Bk-250	3.212h	8.00E-02
4	Am-246m	25.0m	1.80E-01
Cs-137+D	30.1671y		
2	Ba-137m	2.552m	9.44E-01

Parent Nuclide		Half Life/ Progeny Nuclide	Progeny Half Life	Intensity
Es-254+D		275.7d		
	2	Bk-250	3.212h	1.00E+00
	3	Fm-254	3.240h	1.74E-06
Fe-60+D		1.5E+6y		
	2	Co-60m	10.467m	1.00E+00
	3	Co-60	5.2713y	9.98E-01
Fr-220+D		27.4s		
	2	At-216	3.00E-4s	9.97E-01
Fr-221+D		4.9m		
	2	At-217	3.23E-2s	1.00E+00
Ge-68+D		270.95d		
	2	Ga-68	67.71m	1.00E+00
Hf-172+D		1.87y		
	2	Lu-172m	3.7m	1.00E+00
Hf-182+D		9E+6y		
	2	Ta-182	114.43d	1.00E+00
Hg-193+D		3.80h		
	2	Au-193m	3.9s	3.54E-02
Hg-194+D		440y		
	2	Au-194	38.02h	1.00E+00
In-114m+D		49.51d		
	2	In-114	71.9s	9.68E-01
Kr-76+D		14.8h		
	2	Br-76m	1.31s	8.11E-03
Np-235+D		396.1d		
	2	U-235m	26m	3.99E-03
Np-237+D		2.144E+6y		
	2	Pa-233	26.967d	1.00E+00
Os-194+D		6.0y		
	2	Ir-194	19.28h	1.00E+00
Pb-202+D		5.25E+4y		
	2	Tl-202	12.23d	9.90E-01
Pt-202+D		44h		
	2	Au-202	28.8s	1.00E+00
Pu-239+D		2.411E+4y		
	2	U-235m	26m	9.99E-01
Pu-244+D		8.00E+7y		
	2	U-240	14.1h	9.99E-01
	3	Np-240m	7.22m	9.99E-01
	4	Np-240	61.9m	1.10E-03

Parent Nuclide		Half Life/ Progeny Nuclide	Progeny Half Life	Intensity
Ra-219+D		10ms		
	2	Rn-215	2.30us	1.00E+00
Ra-221+D		28s		
	2	Rn-217	5.40E-4s	1.00E+00
	3	Po-213	4.2E-6s	1.00E+00
Ra-223+D		11.43d		
	2	Rn-219	3.96s	1.00E+00
	3	Po-215	1.781E-3s	1.00E+00
Ra-224+D		3.66d		
	2	Rn-220	55.6s	1.00E+00
	3	Po-216	0.145s	1.00E+00
Ra-226+D		1600y		
	2	Rn-222	3.8235d	1.00E+00
	3	Po-218	3.10m	1.00E+00
	4	Pb-214	26.8m	1.00E+00
	5	At-218	1.5s	2.00E-04
	6	Bi-214	19.9m	1.00E+00
	7	Rn-218	3.5E-2s	2.00E-07
	8	Po-214	1.643E-4s	1.00E+00
	9	Tl-210	1.30m	2.10E-04
Ra-228+D		5.75y		
	2	Ac-228	6.15h	1.00E+00
Re-186m+D		2.00E+5y		
	2	Re-186	3.7183d	1.00E+00
Rn-219+D		3.96s		
	2	Po-215	1.781E-3s	1.00E+00
Rn-222+D		3.8235d		
	2	Po-218	3.10m	1.00E+00
Ru-106+D		373.59d		
	2	Rh-106	29.80s	1.00E+00
Si-32+D		132y		
	2	P-32	14.263d	1.00E+00
Sn-121m+D		43.9y		
	2	Sn-121	27.03h	7.76E-01
Sn-126+D		2.30E+5y		
	2	Sb-126m	19.15m	1.00E+00
	3	Sb-126	12.35d	1.40E-01
Sr-82+D		25.36d		
	2	Rb-82	1.273m	1.00E+00
Sr-90+D		28.79y		

Parent Nuclide	Half Life/ Progeny Nuclide	Progeny Half Life	Intensity
2	Y-90	64.10h	1.00E+00
Te-118+D	6.00d		
2	Sb-118	3.6m	1.00E+00
Th-229+D	7.34E+3y		
2	Ra-225	14.9d	1.00E+00
Th-232+D	1.405E10y		
2	Ra-228	5.75y	1.00E+00
3	Ac-228	6.15h	1.00E+00
Th-234+D	24.10d		
2	Pa-234m	1.17m	1.00E+00
Ti-44+D	60.0y		
2	Sc-44	3.97h	1.00E+00
U-235+D	7.04E+8y		
2	Th-231	25.52h	1.00E+00
U-238+D	4.468E+9y		
2	Th-234	24.10d	1.00E+00
3	Pa-234m	1.17m	1.00E+00
4	Pa-234	6.70h	1.60E-03
W-178+D	21.6d		
2	Ta-178	9.31m	1.00E+00

APPENDIX A

These are appendices to augment Finklea 2014 Room Radiation Dose Coefficients for External Exposure as utilized in <http://epa-bprg.ornl.gov/> and <http://epa-bdcc.ornl.gov/> .”

Table 1: Adobe Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.5911	0.3394	0.5112	0.5992	0.4850	0.3382	0.5562	0.6302
Ac-225+D	1.0684	0.6547	0.9386	1.0817	0.9410	0.7073	1.0576	1.1644
Ag-108m+D	3.6153	2.5833	3.3189	3.6431	4.1518	3.7419	4.4145	4.4218
Ag-110m+D	2.9653	2.1387	2.7379	2.9875	3.5666	3.2659	3.7759	3.7204
Am-242m+D	1.7805	1.0663	1.5550	1.7981	1.5425	1.1456	1.7363	1.9139
Am-243+D	4.6948	3.1140	4.2050	4.7499	4.5817	3.7722	5.0242	5.3360
Ar-42+D	0.1679	0.1192	0.1545	0.1689	0.2039	0.1865	0.2154	0.2111
At-211+D	1.1286	0.7119	0.9974	1.1438	1.0271	0.7965	1.1452	1.2497
Bi-210m+D	1.2417	0.8852	1.1368	1.2588	1.3565	1.1942	1.4606	1.5001
Bi-212+D	0.4039	0.2312	0.3497	0.4093	0.3440	0.2453	0.3921	0.4384
Bi-213+D	0.3698	0.2627	0.3386	0.3741	0.4108	0.3637	0.4407	0.4493
Bi-214+D	1.2612	0.9023	1.1610	1.2703	1.5066	1.3739	1.5959	1.5759
Bi-215+D	0.9958	0.6932	0.9054	1.0083	1.0584	0.9154	1.1443	1.1838
Ce-144+D	0.3129	0.2239	0.2864	0.3159	0.3447	0.3076	0.3700	0.3751
Cm-247+D	1.5432	1.0851	1.4069	1.5609	1.6644	1.4561	1.7922	1.8446
Cm-250+D	14.9057	10.8318	13.7580	15.0386	17.5889	16.0500	18.6531	18.5343
Cs-137+D	1.9997	1.4454	1.8472	2.0158	2.3799	2.1765	2.5337	2.4757
Es-254+D	4.2338	2.5480	3.7101	4.2754	3.8342	2.9337	4.2844	4.6532
Fe-60+D	2.7136	1.7280	2.4177	2.7408	2.8211	2.3630	3.0753	3.1992
Fr-220+D	0.4952	0.2974	0.4326	0.5016	0.4244	0.3107	0.4802	0.5348
Fr-221+D	0.2472	0.1731	0.2249	0.2507	0.2588	0.2229	0.2804	0.2913
Ge-68+D	1.7512	0.8311	1.4531	1.7845	1.1725	0.6011	1.4376	1.7727
Hf-172+D	4.5209	2.6550	3.9291	4.5941	3.9279	2.8846	4.4426	4.9733
Hf-182+D	4.6589	3.1664	4.2095	4.7216	4.8917	4.1888	5.3081	5.5266
Hg-193+D	3.9338	2.4844	3.4846	3.9889	3.7299	2.9590	4.1395	4.4636
Hg-194+D	4.0717	2.5490	3.5996	4.1281	3.8449	3.0314	4.2749	4.6219
In-114m+D	0.8211	0.5642	0.7442	0.8260	0.8802	0.7696	0.9404	0.9656
Kr-76+D	3.5004	2.2087	3.1006	3.5429	3.2476	2.5352	3.6086	3.9119
Np-235+D	1.1921	0.6742	1.0274	1.2048	0.9518	0.6477	1.0943	1.2428
Np-237+D	4.8905	3.0762	4.3241	4.9406	4.4786	3.4943	4.9761	5.3916
Os-194+D	1.0177	0.5622	0.8728	1.0339	0.8230	0.5565	0.9523	1.0919
Pb-202+D	3.6773	2.2654	3.2364	3.7313	3.3691	2.5959	3.7709	4.1233
Pt-202+D	0.2299	0.1659	0.2119	0.2320	0.2710	0.2469	0.2877	0.2867

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Pu-239+D	0.1993	0.1091	0.1705	0.2018	0.1543	0.1008	0.1793	0.2067
Pu-244+D	2.5158	1.5387	2.2117	2.5399	2.2690	1.7365	2.5335	2.7517
Ra-219+D	0.9964	0.6928	0.9049	1.0086	1.0468	0.9004	1.1335	1.1789
Ra-221+D	1.1389	0.6969	1.0002	1.1534	0.9981	0.7467	1.1243	1.2406
Ra-223+D	2.2286	1.4715	1.9948	2.2585	2.1688	1.7724	2.3860	2.5452
Ra-224+D	1.1971	0.8755	1.1098	1.2054	1.4201	1.3082	1.5067	1.4755
Ra-226+D	3.7315	2.6229	3.4165	3.7637	4.2045	3.7327	4.5063	4.5338
Ra-228+D	3.3585	2.2676	3.0403	3.3818	3.5740	3.0702	3.8559	3.9443
Re-186m+D	3.0058	1.5693	2.5438	3.0589	2.2479	1.3830	2.6603	3.1442
Rn-219+D	0.2404	0.1733	0.2209	0.2436	0.2670	0.2373	0.2864	0.2924
Rn-222+D	0.0007	0.0005	0.0007	0.0008	0.0009	0.0008	0.0009	0.0009
Ru-106+D	0.3175	0.2321	0.2939	0.3204	0.3793	0.3478	0.4017	0.3976
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3222	0.2004	0.2844	0.3241	0.3104	0.2513	0.3388	0.3616
Sn-126+D	4.3517	3.1224	3.9984	4.3918	4.9961	4.5027	5.3176	5.3465
Sr-82+D	1.6464	1.0098	1.4475	1.6573	1.4077	1.0318	1.5792	1.7377
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002
Te-118+D	1.3695	0.9159	1.2320	1.3717	1.4496	1.2600	1.5426	1.5874
Th-229+D	4.5737	2.7892	4.0111	4.6250	4.0158	3.0177	4.5081	4.9612
Th-232+D	4.2603	2.9187	3.8751	4.2899	4.6602	4.0663	5.0071	5.0611
Th-234+D	0.5027	0.3138	0.4436	0.5082	0.4544	0.3507	0.5065	0.5516
Ti-44+D	3.3739	2.4458	3.0988	3.4138	3.8076	3.4325	4.0601	4.1087
U-235+D	3.9726	2.5773	3.5425	4.0185	3.7727	3.0507	4.1559	4.4212
U-238+D	1.4823	1.0392	1.3615	1.5028	1.6124	1.4232	1.7221	1.7710
W-178+D	3.0722	1.8137	2.6730	3.1237	2.6825	1.9784	3.0312	3.3907

Table 2: Adobe Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.4848	0.3736	0.5877	0.6566	0.3451	0.3222	0.5689	0.6583
Ac-225+D	0.9632	0.7944	1.1251	1.2134	0.7319	0.7081	1.1051	1.2359
Ag-108m+D	4.7112	4.5782	4.9311	4.7029	4.3715	4.6068	5.1785	4.9743
Ag-110m+D	4.1635	4.1187	4.3167	4.0428	4.0559	4.3599	4.6624	4.3636
Am-242m+D	1.5513	1.2508	1.8094	1.9817	1.0984	1.0329	1.7406	1.9688
Am-243+D	4.8725	4.3576	5.4137	5.5821	4.0799	4.1045	5.4386	5.8360
Ar-42+D	0.2400	0.2381	0.2471	0.2299	0.2351	0.2530	0.2700	0.2506
At-211+D	1.0692	0.9082	1.2287	1.3026	0.8597	0.8447	1.2179	1.3660
Bi-210m+D	1.5187	1.4557	1.6410	1.5979	1.4131	1.4765	1.7005	1.7006
Bi-212+D	0.3544	0.2833	0.4218	0.4612	0.2699	0.2618	0.4184	0.4667
Bi-213+D	0.4637	0.4453	0.4952	0.4781	0.4335	0.4548	0.5219	0.5099
Bi-214+D	1.7570	1.7335	1.8242	1.7100	1.7072	1.8304	1.9727	1.8477
Bi-215+D	1.1737	1.1044	1.2738	1.2567	1.0692	1.1107	1.3169	1.3388
Ce-144+D	0.3851	0.3699	0.4092	0.3977	0.3580	0.3771	0.4264	0.4279
Cm-247+D	1.8477	1.7491	1.9883	1.9480	1.6792	1.7446	2.0626	2.0677
Cm-250+D	20.3062	20.0148	21.1916	19.9809	19.5845	20.9139	22.7139	21.5450
Cs-137+D	2.7606	2.7611	2.8765	2.7110	2.6730	2.8571	3.1016	2.9341
Es-254+D	3.9828	3.3398	4.5676	4.8812	3.0476	2.9857	4.5078	4.9020
Fe-60+D	3.1707	2.9249	3.4676	3.4545	2.8798	3.0077	3.6509	3.6347
Fr-220+D	0.4304	0.3463	0.5087	0.5559	0.3211	0.3067	0.4971	0.5674
Fr-221+D	0.2840	0.2664	0.3111	0.3078	0.2557	0.2646	0.3196	0.3296
Ge-68+D	1.0867	0.6324	1.5049	1.8554	0.6120	0.4806	1.3987	1.7932
Hf-172+D	4.0692	3.3601	4.7776	5.2230	3.2197	3.1723	4.7463	5.2533
Hf-182+D	5.4338	5.1087	5.9170	5.8893	4.9715	5.1769	6.1501	6.2184
Hg-193+D	3.9935	3.5193	4.5208	4.7060	3.3934	3.4280	4.5906	4.9024
Hg-194+D	4.1192	3.6163	4.6722	4.8784	3.4933	3.5289	4.7505	5.0502
In-114m+D	0.9646	0.9080	1.0289	1.0088	0.8369	0.8658	1.0408	1.0455
Kr-76+D	3.4199	2.9427	3.9032	4.0919	2.7704	2.7654	3.9190	4.1990
Np-235+D	0.9247	0.6835	1.1278	1.2837	0.5900	0.5249	1.0655	1.2551
Np-237+D	4.6364	3.9333	5.2874	5.6193	3.5900	3.5172	5.2145	5.7169
Os-194+D	0.8315	0.6353	1.0209	1.1469	0.6109	0.5788	0.9982	1.1477
Pb-202+D	3.5621	3.0558	4.1009	4.3341	2.9447	2.9318	4.1303	4.4759
Pt-202+D	0.3137	0.3087	0.3283	0.3092	0.3031	0.3232	0.3527	0.3322
Pu-239+D	0.1488	0.1063	0.1853	0.2141	0.0931	0.0814	0.1744	0.2087
Pu-244+D	2.3389	1.9534	2.6829	2.8716	1.7637	1.7129	2.6376	2.8816
Ra-219+D	1.1528	1.0771	1.2527	1.2468	1.0389	1.0762	1.2924	1.3231
Ra-221+D	1.0201	0.8379	1.1937	1.2927	0.7758	0.7497	1.1737	1.3146
Ra-223+D	2.3212	2.0728	2.6015	2.6749	1.9813	2.0016	2.6276	2.8143
Ra-224+D	1.6445	1.6806	1.7215	1.5969	1.5920	1.6996	1.8530	1.8076

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	4.8116	4.6460	5.1000	4.8477	4.5449	4.8032	5.4112	5.2374
Ra-228+D	3.9784	3.7959	4.3010	4.2105	3.5734	3.7215	4.5009	4.4529
Re-186m+D	2.1924	1.5369	2.8127	3.2906	1.4764	1.3239	2.6947	3.2455
Rn-219+D	0.3004	0.2896	0.3227	0.3112	0.2810	0.2945	0.3361	0.3321
Rn-222+D	0.0010	0.0010	0.0011	0.0010	0.0010	0.0010	0.0011	0.0011
Ru-106+D	0.4403	0.4356	0.4583	0.4299	0.4276	0.4564	0.4933	0.4606
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3296	0.2897	0.3662	0.3776	0.2655	0.2677	0.3607	0.3821
Sn-126+D	5.7006	5.5500	5.9931	5.7180	5.4009	5.7226	6.3370	6.1214
Sr-82+D	1.3978	1.1051	1.6311	1.7765	0.9475	0.8824	1.5778	1.7792
Sr-90+D	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.5791	1.4684	1.6802	1.6547	1.3341	1.3761	1.6750	1.6900
Th-229+D	4.0981	3.3620	4.7672	5.1614	3.0797	2.9769	4.6678	5.2575
Th-232+D	5.2478	5.0857	5.5887	5.4043	4.8116	5.0472	5.9583	5.8297
Th-234+D	0.4684	0.3952	0.5361	0.5739	0.3609	0.3520	0.5289	0.5843
Ti-44+D	4.3086	4.2022	4.5403	4.3719	4.1053	4.3221	4.7750	4.7814
U-235+D	3.9674	3.4747	4.4553	4.6675	3.2203	3.1837	4.4182	4.7423
U-238+D	1.8052	1.7200	1.9227	1.8446	1.6593	1.7462	2.0341	1.9668
W-178+D	2.7906	2.3243	3.2659	3.5669	2.2400	2.2185	3.2642	3.5967

Table 3: Adobe Surface Contamination 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2473	0.3162	0.5683	0.6845
Ac-225+D	0.5582	0.6958	1.1132	1.2956
Ag-108m+D	3.9305	4.6563	5.3127	5.5444
Ag-110m+D	3.8556	4.5820	4.8732	5.0080
Am-242m+D	0.7385	0.9581	1.7212	2.0232
Am-243+D	3.3997	4.0484	5.4582	6.1960
Ar-42+D	0.2258	0.2672	0.2862	0.2879
At-211+D	0.7036	0.8433	1.2118	1.4372
Bi-210m+D	1.2975	1.5022	1.7567	1.8884
Bi-212+D	0.2115	0.2689	0.4234	0.4966
Bi-213+D	0.3997	0.4658	0.5374	0.5672
Bi-214+D	1.6243	1.9174	2.0725	2.1142
Bi-215+D	0.9675	1.1307	1.3522	1.4722
Ce-144+D	0.3252	0.3881	0.4374	0.4777
Cm-247+D	1.5050	1.7575	2.1023	2.2687
Cm-250+D	18.4612	21.7311	23.7761	24.4699
Cs-137+D	2.5221	2.9459	3.2613	3.3764
Es-254+D	2.2961	2.8947	4.5309	5.1895
Fe-60+D	2.6358	3.1658	3.8317	4.0584
Fr-220+D	0.2427	0.3036	0.4950	0.5923
Fr-221+D	0.2284	0.2671	0.3322	0.3588
Ge-68+D	0.3359	0.4912	1.3874	1.8413
Hf-172+D	2.6113	3.1625	4.7368	5.5514
Hf-182+D	4.5397	5.3318	6.3273	6.8634
Hg-193+D	2.9358	3.5132	4.6566	5.2913
Hg-194+D	3.0198	3.6094	4.8310	5.4597
In-114m+D	0.6907	0.8270	1.0524	1.1459
Kr-76+D	2.2673	2.7734	3.9814	4.4880
Np-235+D	0.3460	0.4820	1.0497	1.2757
Np-237+D	2.7466	3.3893	5.2148	5.9949
Os-194+D	0.4656	0.5876	1.0068	1.2101
Pb-202+D	2.4918	2.9843	4.1647	4.7947
Pt-202+D	0.2866	0.3361	0.3688	0.3773
Pu-239+D	0.0539	0.0756	0.1720	0.2123
Pu-244+D	1.3036	1.6524	2.6429	3.0192
Ra-219+D	0.9303	1.0866	1.3238	1.4439
Ra-221+D	0.5952	0.7532	1.1784	1.3883
Ra-223+D	1.7031	2.0207	2.6566	3.0267
Ra-224+D	1.5063	1.7386	1.9444	2.0662

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.2349	4.9768	5.7626	5.9461
Ra-228+D	3.1853	3.8153	4.7072	4.9352
Re-186m+D	1.0330	1.3492	2.6832	3.3768
Rn-219+D	0.2588	0.2997	0.3471	0.3702
Rn-222+D	0.0009	0.0011	0.0012	0.0012
Ru-106+D	0.4047	0.4728	0.5146	0.5229
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2034	0.2468	0.3558	0.4120
Sn-126+D	4.9956	5.8541	6.5070	6.8756
Sr-82+D	0.6087	0.8382	1.5658	1.8235
Sr-90+D	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.0513	1.2537	1.6517	1.8523
Th-229+D	2.3069	2.9063	4.6541	5.4709
Th-232+D	4.3717	5.2027	6.3112	6.6042
Th-234+D	0.2771	0.3424	0.5261	0.6101
Ti-44+D	3.8583	4.4493	4.8638	5.2777
U-235+D	2.5931	3.1162	4.4716	5.1555
U-238+D	1.5073	1.7744	2.3413	2.3444
W-178+D	1.8574	2.2320	3.2580	3.7957

Table 4: Adobe 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.5090	0.4050	0.4884	0.5404	0.4131	0.3415	0.4755	0.5489
Ac-225+D	0.9855	0.8124	0.9540	1.0364	0.8593	0.7510	0.9642	1.0700
Ag-108m+D	4.4422	3.7057	4.3426	4.5900	4.8408	4.7019	5.1981	5.1632
Ag-110m+D	4.0263	3.1706	3.9065	4.1807	4.6467	4.5354	5.0293	4.9096
Am-242m+D	1.5117	1.2861	1.4652	1.5828	1.2243	1.0360	1.3722	1.5691
Am-243+D	4.8603	4.1461	4.7492	5.0588	4.6208	4.2845	5.0334	5.3274
Ar-42+D	0.2166	0.1658	0.2086	0.2247	0.2543	0.2468	0.2756	0.2680
At-211+D	1.0972	0.9107	1.0655	1.1515	0.9944	0.8944	1.1026	1.1998
Bi-210m+D	1.5428	1.2770	1.5081	1.6052	1.6467	1.5884	1.7829	1.7959
Bi-212+D	0.3688	0.2826	0.3523	0.3920	0.3214	0.2732	0.3688	0.4128
Bi-213+D	0.4531	0.3704	0.4420	0.4712	0.4905	0.4735	0.5316	0.5323
Bi-214+D	1.6603	1.2996	1.6072	1.7238	1.9137	1.8611	2.0727	2.0270
Bi-215+D	1.1825	0.9758	1.1538	1.2314	1.2381	1.1835	1.3446	1.3666
Ce-144+D	0.3733	0.3225	0.3670	0.3857	0.3889	0.3774	0.4141	0.4187
Cm-247+D	1.8031	1.5086	1.7631	1.8721	1.8870	1.8099	2.0405	2.0685
Cm-250+D	19.4803	15.7077	18.9510	20.1860	21.9153	21.3678	23.6260	23.2189
Cs-137+D	2.2166	1.8811	2.1912	2.2942	2.4546	2.4254	2.6031	2.5449
Es-254+D	3.8661	3.1616	3.7303	4.0555	3.4020	2.9691	3.8058	4.2000
Fe-60+D	3.0714	2.3193	2.9429	3.2254	3.2526	3.0275	3.6034	3.6840
Fr-220+D	0.4427	0.3622	0.4277	0.4671	0.3753	0.3226	0.4239	0.4773
Fr-221+D	0.2918	0.2447	0.2855	0.3037	0.3007	0.2870	0.3261	0.3337
Ge-68+D	1.3004	0.8986	1.2102	1.4263	0.8376	0.5370	1.0679	1.3981
Hf-172+D	4.2118	3.3797	4.0580	4.4588	3.6273	3.1527	4.0838	4.5717
Hf-182+D	5.4498	4.4374	5.3009	5.6886	5.6594	5.3778	6.1649	6.2994
Hg-193+D	4.0869	3.2849	3.9535	4.2967	3.9132	3.5734	4.3388	4.6166
Hg-194+D	4.2215	3.3607	4.0763	4.4442	4.0431	3.6776	4.4973	4.7907
In-114m+D	0.8432	0.7520	0.8295	0.8661	0.8323	0.7949	0.8821	0.9096
Kr-76+D	3.4336	2.8043	3.3279	3.6035	3.2005	2.8857	3.5602	3.8272
Np-235+D	0.9266	0.7626	0.8904	0.9800	0.6824	0.5328	0.7918	0.9527
Np-237+D	4.5739	3.8667	4.4481	4.7789	4.0664	3.6213	4.5003	4.9243
Os-194+D	0.9023	0.6844	0.8593	0.9653	0.7437	0.6119	0.8651	0.9970
Pb-202+D	3.6777	2.9317	3.5498	3.8806	3.4160	3.0667	3.8212	4.1305
Pt-202+D	0.2993	0.2385	0.2909	0.3109	0.3400	0.3312	0.3679	0.3614
Pu-239+D	0.1538	0.1230	0.1469	0.1637	0.1104	0.0836	0.1302	0.1592
Pu-244+D	2.2852	1.9010	2.2130	2.3925	1.9976	1.7472	2.2296	2.4625
Ra-219+D	1.1701	0.9736	1.1430	1.2180	1.2103	1.1542	1.3142	1.3418
Ra-221+D	1.0463	0.8612	1.0125	1.1012	0.9090	0.7930	1.0210	1.1353
Ra-223+D	2.3712	1.9699	2.3090	2.4793	2.2989	2.1327	2.5219	2.6571
Ra-224+D	1.0915	0.9835	1.0940	1.1224	1.1757	1.1726	1.2280	1.1895

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.3049	3.5339	4.2144	4.4775	4.6846	4.5393	5.0472	5.0333
Ra-228+D	3.4278	2.8649	3.3581	3.5670	3.5102	3.3314	3.7929	3.8763
Re-186m+D	2.4655	1.8318	2.3326	2.6609	1.8354	1.4001	2.1959	2.6650
Rn-219+D	0.2998	0.2483	0.2931	0.3116	0.3235	0.3132	0.3497	0.3503
Rn-222+D	0.0010	0.0008	0.0010	0.0010	0.0011	0.0011	0.0012	0.0012
Ru-106+D	0.4277	0.3427	0.4165	0.4440	0.4885	0.4780	0.5278	0.5167
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2817	0.2489	0.2751	0.2918	0.2450	0.2209	0.2637	0.2898
Sn-126+D	5.5114	4.5278	5.3803	5.7143	6.0661	5.9013	6.5342	6.4827
Sr-82+D	1.3061	1.1189	1.2691	1.3636	1.0588	0.8889	1.1947	1.3615
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.2468	1.1578	1.2309	1.2720	1.1626	1.1015	1.2129	1.2757
Th-229+D	4.1100	3.4355	3.9846	4.3140	3.5055	3.0469	3.9199	4.3839
Th-232+D	4.3477	3.6714	4.2793	4.5231	4.5292	4.3547	4.8614	4.9251
Th-234+D	0.4645	0.3912	0.4513	0.4860	0.4082	0.3615	0.4529	0.4985
Ti-44+D	4.2131	3.5282	4.1264	4.3646	4.5555	4.4463	4.8803	4.8673
U-235+D	3.2447	2.8467	3.1752	3.3716	2.8349	2.5359	3.0939	3.3957
U-238+D	1.1814	1.0452	1.1753	1.2265	1.1844	1.1337	1.2417	1.2884
W-178+D	2.9170	2.3297	2.8110	3.0891	2.5472	2.2289	2.8656	3.1871

Table 5: Adobe 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.4046	0.3540	0.4809	0.5517	0.3147	0.3083	0.4518	0.5436
Ac-225+D	0.8578	0.7886	0.9827	1.0796	0.7109	0.7075	0.9360	1.0652
Ag-108m+D	5.2029	5.3158	5.5227	5.3111	4.9745	5.1770	5.5402	5.3888
Ag-110m+D	5.1515	5.3553	5.4635	5.1069	5.0459	5.3489	5.5924	5.2590
Am-242m+D	1.1741	1.0269	1.3642	1.5658	0.8937	0.8539	1.2612	1.5285
Am-243+D	4.7074	4.5470	5.1711	5.3824	4.2086	4.2409	5.0068	5.3471
Ar-42+D	0.2861	0.2982	0.3026	0.2805	0.2814	0.3010	0.3138	0.2923
At-211+D	1.0032	0.9446	1.1329	1.2118	0.8713	0.8749	1.0864	1.2010
Bi-210m+D	1.7562	1.7832	1.8828	1.8409	1.6790	1.7414	1.8801	1.8609
Bi-212+D	0.3281	0.3002	0.3823	0.4195	0.2724	0.2761	0.3694	0.4192
Bi-213+D	0.5277	0.5380	0.5656	0.5476	0.5058	0.5272	0.5673	0.5559
Bi-214+D	2.1265	2.2076	2.2555	2.1106	2.0811	2.2112	2.3164	2.1795
Bi-215+D	1.3152	1.3249	1.4196	1.3998	1.2431	1.2873	1.4120	1.4133
Ce-144+D	0.4065	0.4092	0.4311	0.4261	0.3890	0.3979	0.4274	0.4268
Cm-247+D	1.9971	2.0116	2.1467	2.1154	1.8837	1.9442	2.1307	2.1327
Cm-250+D	24.0244	24.8300	25.4457	24.0468	23.4356	24.6978	25.9169	24.6572
Cs-137+D	2.6328	2.7274	2.7584	2.6446	2.5773	2.6865	2.7928	2.8038
Es-254+D	3.4257	3.1584	3.8993	4.2392	2.8304	2.8255	3.7308	4.2148
Fe-60+D	3.5596	3.5760	3.8878	3.8114	3.3467	3.5332	3.9458	3.9204
Fr-220+D	0.3710	0.3350	0.4307	0.4808	0.3020	0.2986	0.4071	0.4734
Fr-221+D	0.3162	0.3166	0.3415	0.3405	0.2969	0.3057	0.3380	0.3418
Ge-68+D	0.7689	0.5318	1.0568	1.3905	0.4500	0.4054	0.9545	1.3715
Hf-172+D	3.6066	3.2832	4.1342	4.5888	3.0564	3.0320	3.9541	4.5489
Hf-182+D	6.0126	6.0286	6.4952	6.4433	5.6891	5.8922	6.4864	6.5190
Hg-193+D	4.0620	3.9251	4.5205	4.6946	3.6641	3.7482	4.4347	4.7103
Hg-194+D	4.2089	4.0654	4.6927	4.8769	3.7894	3.8832	4.6113	4.9013
In-114m+D	0.8489	0.8340	0.9039	0.9194	0.7764	0.7805	0.8784	0.9094
Kr-76+D	3.2851	3.1346	3.6859	3.8963	2.8701	2.9175	3.5778	3.8743
Np-235+D	0.6350	0.5132	0.7790	0.9492	0.4263	0.3936	0.7047	0.9199
Np-237+D	4.0612	3.7799	4.5783	4.9641	3.4077	3.3852	4.3619	4.8940
Os-194+D	0.7417	0.6545	0.8839	1.0054	0.5944	0.5912	0.8417	1.0000
Pb-202+D	3.5132	3.3418	3.9624	4.1909	3.1036	3.1553	3.8567	4.1933
Pt-202+D	0.3739	0.3870	0.3972	0.3747	0.3647	0.3849	0.4045	0.3846
Pu-239+D	0.1023	0.0806	0.1280	0.1584	0.0671	0.0615	0.1156	0.1541
Pu-244+D	1.9963	1.8364	2.2726	2.4848	1.6344	1.6237	2.1635	2.4556
Ra-219+D	1.2774	1.2815	1.3810	1.3712	1.2001	1.2373	1.3671	1.3800
Ra-221+D	0.9061	0.8310	1.0401	1.1455	0.7513	0.7467	0.9898	1.1302
Ra-223+D	2.3749	2.3138	2.6190	2.6988	2.1539	2.1939	2.5564	2.6965
Ra-224+D	1.2276	1.2509	1.2624	1.2433	1.2056	1.2279	1.2583	1.2291

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.0479	5.1485	5.3898	5.1800	4.8657	5.0734	5.4105	5.2384
Ra-228+D	3.6960	3.6719	3.9912	4.0030	3.4391	3.5200	3.9389	4.0647
Re-186m+D	1.7599	1.4315	2.1992	2.6633	1.2843	1.2326	2.0460	2.6309
Rn-219+D	0.3462	0.3530	0.3703	0.3598	0.3321	0.3452	0.3705	0.3642
Rn-222+D	0.0012	0.0013	0.0013	0.0012	0.0012	0.0012	0.0013	0.0012
Ru-106+D	0.5369	0.5570	0.5693	0.5355	0.5250	0.5535	0.5797	0.5489
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2378	0.2178	0.2625	0.2894	0.2010	0.1945	0.2473	0.2816
Sn-126+D	6.5549	6.7209	6.9686	6.6781	6.3369	6.6188	7.0246	6.7897
Sr-82+D	1.0253	0.9013	1.2041	1.3799	0.7581	0.7396	1.1163	1.3319
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.1454	1.0942	1.2142	1.2774	1.0168	0.9948	1.1565	1.2418
Th-229+D	3.4519	3.1314	3.9611	4.4065	2.8154	2.7697	3.7422	4.3258
Th-232+D	4.7789	4.7858	5.1127	5.1011	4.5085	4.6206	5.1162	5.1145
Th-234+D	0.4062	0.3756	0.4597	0.5018	0.3393	0.3365	0.4376	0.4943
Ti-44+D	4.8676	4.9714	5.1710	4.9820	4.7303	4.9134	5.1841	5.0520
U-235+D	2.7774	2.5602	3.1320	3.4106	2.3351	2.2708	2.9484	3.3736
U-238+D	1.2116	1.1906	1.2448	1.3350	1.1354	1.1416	1.2699	1.2670
W-178+D	2.5496	2.3421	2.9102	3.2035	2.1898	2.1855	2.7997	3.1821

Table 6: Adobe 1cm Contamination Thickness 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2467	0.2896	0.4397	0.5599
Ac-225+D	0.5893	0.6663	0.9082	1.0868
Ag-108m+D	4.6252	4.9532	5.4484	5.4000
Ag-110m+D	4.8406	5.2472	5.5825	5.3340
Am-242m+D	0.6477	0.7524	1.2014	1.5514
Am-243+D	3.7316	4.0278	4.8767	5.3892
Ar-42+D	0.2717	0.2987	0.3167	0.2976
At-211+D	0.7649	0.8420	1.0634	1.2202
Bi-210m+D	1.5817	1.6858	1.8549	1.8766
Bi-212+D	0.2303	0.2661	0.3645	0.4331
Bi-213+D	0.4770	0.5121	0.5602	0.5600
Bi-214+D	1.9983	2.1770	2.3199	2.2101
Bi-215+D	1.1621	1.2478	1.3936	1.4273
Ce-144+D	0.3659	0.3828	0.4201	0.4283
Cm-247+D	1.7478	1.8720	2.0939	2.1438
Cm-250+D	22.4045	24.1672	25.8123	24.9426
Cs-137+D	2.4710	2.5938	2.8243	2.8691
Es-254+D	2.2990	2.6175	3.6309	4.3097
Fe-60+D	3.1393	3.4893	3.9661	4.0243
Fr-220+D	0.2485	0.2830	0.3961	0.4840
Fr-221+D	0.2757	0.2948	0.3317	0.3450
Ge-68+D	0.2570	0.3866	0.9502	1.4615
Hf-172+D	2.6508	2.9144	3.8962	4.6643
Hf-182+D	5.3509	5.7491	6.4291	6.6101
Hg-193+D	3.3326	3.6453	4.3796	4.8041
Hg-194+D	3.4403	3.7753	4.5596	5.0014
In-114m+D	0.6827	0.7154	0.8457	0.9095
Kr-76+D	2.5106	2.7891	3.4962	3.9409
Np-235+D	0.2601	0.3394	0.6689	0.9458
Np-237+D	2.8212	3.1465	4.2139	4.9594
Os-194+D	0.4905	0.5678	0.8311	1.0368
Pb-202+D	2.7764	3.0574	3.8005	4.2806
Pt-202+D	0.3488	0.3768	0.4027	0.3892
Pu-239+D	0.0403	0.0536	0.1107	0.1595
Pu-244+D	1.3103	1.4951	2.0896	2.4948
Ra-219+D	1.1148	1.1948	1.3453	1.3904
Ra-221+D	0.6257	0.7061	0.9624	1.1529
Ra-223+D	1.9519	2.1138	2.5094	2.7300
Ra-224+D	1.1596	1.1979	1.2746	1.4848

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.6236	4.9738	5.4830	5.4861
Ra-228+D	3.1642	3.4049	3.9360	4.1239
Re-186m+D	0.9781	1.1839	2.0224	2.7529
Rn-219+D	0.3131	0.3341	0.3654	0.3669
Rn-222+D	0.0011	0.0012	0.0013	0.0013
Ru-106+D	0.5021	0.5400	0.5751	0.5525
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1637	0.1722	0.2363	0.2853
Sn-126+D	6.0014	6.4196	6.9475	6.8351
Sr-82+D	0.5329	0.6677	1.0523	1.3540
Sr-90+D	0.0000	0.0001	0.0001	0.0001
Te-118+D	0.8527	0.8744	1.0967	1.2411
Th-229+D	2.2883	2.5859	3.6169	4.4062
Th-232+D	4.2030	4.4912	5.0637	5.3803
Th-234+D	0.2818	0.3154	0.4231	0.5016
Ti-44+D	4.5431	4.8239	5.1455	5.0853
U-235+D	1.9463	2.1216	2.9488	3.5254
U-238+D	1.0552	1.0888	1.3619	1.4990
W-178+D	1.9330	2.1218	2.7653	3.2623

Table 7: Adobe 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.5039	0.4199	0.4713	0.5195	0.4295	0.3115	0.4223	0.4550
Ac-225+D	0.9921	0.8625	0.9356	1.0113	0.9110	0.6771	0.8507	0.9161
Ag-108m+D	5.7269	5.1914	5.2270	5.3321	6.0379	5.5383	5.9722	8.9197
Ag-110m+D	5.2746	4.6103	4.7165	4.6930	5.8205	5.5065	5.3885	9.7923
Am-242m+D	1.4909	1.3055	1.4410	1.5471	1.3077	0.9339	1.3325	1.1483
Am-243+D	4.9968	4.5605	4.6431	5.0156	4.8582	3.6834	4.4178	5.0077
Ar-42+D	0.2720	0.2291	0.2514	0.2483	0.3155	0.2850	0.3090	0.5477
At-211+D	1.0626	0.9364	0.9255	1.0548	0.9700	0.6773	0.7809	1.1067
Bi-210m+D	1.8943	1.6790	1.6784	1.7699	1.9433	1.6494	1.8710	2.3458
Bi-212+D	0.3919	0.3197	0.3591	0.3864	0.3556	0.2919	0.3565	0.5049
Bi-213+D	0.5937	0.5387	0.5434	0.5633	0.6060	0.5449	0.5963	0.8611
Bi-214+D	2.1409	1.8519	1.9347	1.9312	2.3739	2.1999	2.2164	3.9832
Bi-215+D	1.3962	1.2386	1.2369	1.3069	1.4131	1.1841	1.3057	1.8126
Ce-144+D	0.3960	0.3788	0.3723	0.3900	0.4059	0.3314	0.3928	0.4377
Cm-247+D	2.2127	2.0325	2.0331	2.1221	2.2309	1.9212	2.1444	2.8895
Cm-250+D	24.5022	21.7284	22.5199	22.5696	26.6734	24.1995	25.4361	40.4096
Cs-137+D	2.9825	2.6659	2.8098	2.8818	3.2368	3.1256	3.1379	4.2239
Es-254+D	4.1241	3.5214	3.8848	4.0645	3.8726	3.0709	3.8856	4.7322
Fe-60+D	3.6146	3.0109	3.3315	3.3161	3.8855	3.4494	3.7319	6.5614
Fr-220+D	0.4242	0.3641	0.3865	0.4310	0.3726	0.2626	0.3292	0.3914
Fr-221+D	0.3259	0.2967	0.3062	0.3219	0.3384	0.2740	0.3180	0.3743
Ge-68+D	1.1928	0.8377	1.1028	1.2964	0.7976	0.5153	1.0079	1.0134
Hf-172+D	3.9940	3.4300	3.7262	4.1887	3.6157	2.6231	3.6637	4.1814
Hf-182+D	6.0801	5.3660	5.5167	5.8256	6.3947	5.3225	5.9020	8.2695
Hg-193+D	4.2789	3.7040	3.8226	4.2147	4.2268	3.3330	3.8225	5.4198
Hg-194+D	4.5448	3.8867	4.0614	4.4523	4.4422	3.5567	4.1623	5.7497
In-114m+D	0.9609	0.8995	0.9380	0.9558	0.9748	0.8128	1.0874	1.1489
Kr-76+D	3.7541	3.2614	3.4701	3.6727	3.5598	2.8953	3.4679	4.1821
Np-235+D	0.8771	0.7308	0.8401	0.9224	0.7106	0.4730	0.7055	0.5971
Np-237+D	4.7481	4.2068	4.4823	4.7730	4.3925	3.3158	4.1272	4.3758
Os-194+D	0.9330	0.7504	0.8581	0.9458	0.7866	0.6082	0.8428	0.9875
Pb-202+D	3.9877	3.4529	3.5826	3.9736	3.7565	2.9913	3.5758	4.8334
Pt-202+D	0.3991	0.3552	0.3665	0.3666	0.4294	0.3979	0.4184	0.6747
Pu-239+D	0.1451	0.1175	0.1381	0.1536	0.1136	0.0751	0.1187	0.1020
Pu-244+D	2.4558	2.1327	2.3143	2.4534	2.2734	1.7936	2.2324	2.5773
Ra-219+D	1.3643	1.2179	1.2190	1.2874	1.3517	1.1199	1.2441	1.6520
Ra-221+D	1.0287	0.8915	0.9602	1.0375	0.9289	0.6961	0.8439	0.9407
Ra-223+D	2.5459	2.2668	2.2931	2.4793	2.4517	1.9246	2.2030	2.8195
Ra-224+D	1.6194	1.4671	1.6061	1.6543	1.7472	1.7287	1.8066	1.7731

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	5.4401	4.7757	5.0226	5.1769	5.7968	5.2909	5.5840	7.9056
Ra-228+D	4.1839	3.6798	3.9723	4.0813	4.3474	3.9262	4.2467	5.3857
Re-186m+D	2.2774	1.7684	2.1039	2.4406	1.7802	1.2204	1.9633	2.0407
Rn-219+D	0.3807	0.3424	0.3427	0.3571	0.3915	0.3402	0.3833	0.4911
Rn-222+D	0.0014	0.0013	0.0013	0.0013	0.0015	0.0014	0.0015	0.0022
Ru-106+D	0.5958	0.5310	0.5419	0.5521	0.6328	0.5980	0.6218	0.9933
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2989	0.2727	0.2926	0.3068	0.2749	0.2078	0.3196	0.3004
Sn-126+D	6.9983	6.3269	6.3154	6.5040	7.3885	6.7113	6.9654	11.0412
Sr-82+D	1.2196	1.0620	1.1565	1.2247	1.1135	0.8040	0.8989	1.0589
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.3972	1.3294	1.3782	1.4062	1.3697	1.0806	1.6076	1.5600
Th-229+D	4.0193	3.5246	3.8051	4.1209	3.5653	2.5663	3.2884	3.4562
Th-232+D	5.3906	4.7360	5.1699	5.3251	5.6871	5.2648	5.6452	6.7653
Th-234+D	0.4548	0.4025	0.4254	0.4655	0.4279	0.3109	0.3777	0.4220
Ti-44+D	4.4817	4.0899	3.8170	4.2062	4.8627	3.8411	3.8237	6.7029
U-235+D	3.8187	3.4427	3.7177	3.9242	3.5969	3.0462	3.6084	3.4605
U-238+D	1.6947	1.5337	1.6644	1.7336	1.7700	1.6495	1.7416	1.7952
W-178+D	2.7282	2.3292	2.5173	2.8644	2.5388	1.8256	2.3954	2.9446

Table 8: Adobe 5cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.3963	0.3315	0.4447	0.4169	0.3158	0.2815	0.5526	0.4185
Ac-225+D	0.8468	0.7295	0.9248	0.8739	0.7037	0.6264	1.1523	0.8015
Ag-108m+D	6.1895	4.7332	6.9899	8.2791	6.0067	4.3934	15.8770	10.4547
Ag-110m+D	6.0858	4.8401	7.4141	8.3413	6.0443	4.0853	18.6734	12.1696
Am-242m+D	1.1976	0.9621	1.1244	1.2052	0.9009	0.8625	1.2772	1.1943
Am-243+D	4.6330	4.0137	5.1109	5.1282	4.1371	3.6132	6.9954	4.0606
Ar-42+D	0.3243	0.2756	0.3333	0.3641	0.3204	0.2377	0.8537	0.3882
At-211+D	0.9106	0.7179	1.0488	0.9754	0.7858	0.5405	1.5668	0.9406
Bi-210m+D	1.9013	1.6076	2.4072	2.1687	1.8882	1.7405	3.3149	1.6394
Bi-212+D	0.3446	0.2802	0.4080	0.4256	0.3005	0.2242	0.8031	0.5640
Bi-213+D	0.6243	0.4742	0.6865	0.7997	0.6129	0.4916	1.3653	0.8233
Bi-214+D	2.4751	1.9982	2.8632	3.1661	2.4463	1.7268	6.9818	4.1934
Bi-215+D	1.3874	1.1516	1.7986	1.6157	1.3582	1.1520	2.6964	1.4540
Ce-144+D	0.4058	0.3390	0.4629	0.4616	0.3870	0.3083	0.6889	0.3848
Cm-247+D	2.2619	1.7404	2.4956	2.7019	2.1781	1.9483	3.8991	2.0516
Cm-250+D	27.3987	22.5001	31.6677	34.0277	27.0727	20.9039	67.6816	39.5071
Cs-137+D	3.3670	3.0456	3.8611	4.0994	3.3275	2.7795	6.9456	5.2304
Es-254+D	3.7451	2.9235	3.8198	4.1528	3.1194	2.4922	7.0897	5.9015
Fe-60+D	4.0372	3.2840	4.5479	4.8567	3.8083	3.0654	8.6277	5.1360
Fr-220+D	0.3439	0.2807	0.3866	0.3543	0.2807	0.2257	0.5024	0.3467
Fr-221+D	0.3239	0.2918	0.3672	0.3474	0.3032	0.2612	0.5068	0.2728
Ge-68+D	0.6990	0.5650	0.8400	0.7370	0.4353	0.3871	0.9421	0.9733
Hf-172+D	3.3554	3.0738	3.7955	4.1528	2.8307	2.3316	4.7597	2.9770
Hf-182+D	6.3381	5.4684	7.3161	7.6669	6.0356	5.2590	11.3434	6.2295
Hg-193+D	4.0993	3.4356	4.7812	5.0733	3.7301	2.9514	7.7966	4.6454
Hg-194+D	4.2871	3.6731	5.5279	5.3230	3.9921	3.4093	7.9039	4.3788
In-114m+D	0.9553	0.7959	0.9027	1.0850	0.8509	0.6405	1.4929	0.9332
Kr-76+D	3.3764	2.8845	4.2709	3.8003	3.1291	2.8646	5.5338	3.3767
Np-235+D	0.6319	0.4954	0.6055	0.6033	0.4202	0.4054	0.5701	0.6879
Np-237+D	4.1156	3.5086	4.7151	4.4057	3.5246	3.2892	5.6114	3.7376
Os-194+D	0.7367	0.6274	0.9810	0.8454	0.6347	0.5761	1.1829	0.8045
Pb-202+D	3.6734	2.9098	4.1440	4.6124	3.3263	2.6398	6.8778	4.3046
Pt-202+D	0.4496	0.3497	0.5019	0.5819	0.4445	0.3472	1.0816	0.6742
Pu-239+D	0.1008	0.0788	0.0993	0.0978	0.0660	0.0634	0.0947	0.1130
Pu-244+D	2.1776	1.7140	2.2516	2.4898	1.8087	1.4715	3.9452	3.1221
Ra-219+D	1.3038	1.1332	1.9382	1.5219	1.2957	1.1752	2.3292	1.1295
Ra-221+D	0.8741	0.7135	0.9710	0.8773	0.7240	0.6409	1.2301	0.8250
Ra-223+D	2.3702	1.9496	2.7750	2.5771	2.1880	1.8589	3.9737	2.1524
Ra-224+D	1.8117	1.8309	1.8804	1.8400	1.7806	1.8023	1.8931	1.7759

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.9299	5.1651	6.9684	6.9506	5.8280	4.9333	11.9039	7.4562
Ra-228+D	4.4049	3.9108	4.9105	4.9825	4.1716	3.6452	7.9866	5.9534
Re-186m+D	1.6108	1.3952	1.9041	1.8761	1.2019	1.0669	2.1181	1.7084
Rn-219+D	0.3916	0.3147	0.4522	0.4494	0.3872	0.3582	0.6734	0.3351
Rn-222+D	0.0015	0.0012	0.0016	0.0021	0.0015	0.0010	0.0045	0.0031
Ru-106+D	0.6609	0.5137	0.7491	0.9204	0.6574	0.4255	1.9925	1.3795
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2647	0.2149	0.2079	0.3028	0.2197	0.1510	0.3255	0.2270
Sn-126+D	7.6170	6.0005	8.9423	10.2203	7.4721	5.4849	19.5135	12.1200
Sr-82+D	0.9860	0.8136	1.0645	1.0126	0.7520	0.6341	1.5080	1.3750
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.3465	1.0797	1.0031	1.5534	1.1517	0.7592	1.7644	1.1197
Th-229+D	3.3305	2.8416	3.5060	3.4522	2.7136	2.3740	4.2874	3.2036
Th-232+D	5.8239	5.3652	6.3983	6.4253	5.5732	5.0741	9.5377	7.3783
Th-234+D	0.3995	0.3471	0.4244	0.4578	0.3315	0.2967	0.5622	0.3951
Ti-44+D	4.8727	3.9409	5.6668	6.1457	4.6495	3.2979	9.9105	5.4629
U-235+D	3.4794	3.1671	3.4836	3.4596	3.0094	2.8819	3.6227	3.5564
U-238+D	1.7946	1.7617	1.8207	1.8920	1.7092	1.6842	1.9838	1.7501
W-178+D	2.3498	2.2219	2.7007	3.0841	2.0084	1.7138	3.3611	2.0080

Table 9: Adobe 5cm Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2570	0.2143	0.4369	0.5180
Ac-225+D	0.6067	0.5159	0.7808	0.9363
Ag-108m+D	5.6218	3.3412	6.1600	10.9789
Ag-110m+D	5.8728	3.3128	7.6247	11.3734
Am-242m+D	0.6684	0.6105	1.3291	1.3592
Am-243+D	3.7787	2.9502	3.9589	5.5708
Ar-42+D	0.3146	0.1955	0.2954	0.7696
At-211+D	0.7136	0.6072	0.8485	1.0262
Bi-210m+D	1.8255	1.4407	1.5606	1.9961
Bi-212+D	0.2634	0.1781	0.4601	0.5737
Bi-213+D	0.5865	0.3266	0.5672	1.1831
Bi-214+D	2.3837	1.3912	2.7770	4.8212
Bi-215+D	1.3052	0.9590	1.2319	1.7020
Ce-144+D	0.3691	0.3164	0.3460	0.3947
Cm-247+D	2.0674	1.2140	1.8816	4.1751
Cm-250+D	26.3778	16.4695	29.0213	46.0294
Cs-137+D	3.1835	2.5601	3.2314	4.9825
Es-254+D	2.6272	1.9243	5.2537	5.0519
Fe-60+D	3.7634	2.2191	6.5560	7.8002
Fr-220+D	0.2383	0.2110	0.3540	0.3965
Fr-221+D	0.2937	0.2340	0.2190	0.3075
Ge-68+D	0.2551	0.2931	1.3544	1.1099
Hf-172+D	2.4898	2.1526	3.7398	3.4525
Hf-182+D	5.8648	4.3588	6.9683	8.1852
Hg-193+D	3.4785	2.6553	4.3039	5.4807
Hg-194+D	3.6942	2.7486	4.1002	5.9784
In-114m+D	0.7618	0.6332	0.9101	0.8884
Kr-76+D	2.8391	2.0922	3.1207	4.3522
Np-235+D	0.2616	0.2907	0.7803	0.6814
Np-237+D	3.0102	2.3509	3.7027	5.0737
Os-194+D	0.5420	0.4119	0.8495	1.0242
Pb-202+D	3.0371	2.1106	3.6743	5.8177
Pt-202+D	0.4344	0.2352	0.5416	0.8674
Pu-239+D	0.0403	0.0458	0.1346	0.1143
Pu-244+D	1.4911	1.1256	2.3465	3.0102
Ra-219+D	1.2306	0.8742	0.8813	1.5865
Ra-221+D	0.6209	0.5652	0.8649	0.9815
Ra-223+D	2.0513	1.6006	2.0656	2.9267
Ra-224+D	1.7201	1.7445	1.7566	2.0149

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	5.6261	4.1929	5.8829	9.0502
Ra-228+D	3.9254	3.0926	4.9445	6.0418
Re-186m+D	0.9216	0.9104	2.2724	2.0532
Rn-219+D	0.3748	0.2648	0.3337	0.5487
Rn-222+D	0.0014	0.0008	0.0015	0.0026
Ru-106+D	0.6271	0.3528	0.6432	1.2059
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1805	0.1716	0.3137	0.2217
Sn-126+D	7.1316	4.2112	7.3216	13.8010
Sr-82+D	0.5618	0.4791	1.2052	1.2092
Sr-90+D	0.0001	0.0001	0.0001	0.0001
Te-118+D	0.9738	0.9025	1.5881	1.0801
Th-229+D	2.2795	1.8490	3.1647	3.9064
Th-232+D	5.2862	4.4927	6.3996	7.6794
Th-234+D	0.2818	0.2261	0.3912	0.5040
Ti-44+D	4.6076	3.4067	5.2832	6.3170
U-235+D	2.6198	2.6288	3.7885	3.8152
U-238+D	1.6208	1.5669	1.7898	2.0271
W-178+D	1.7986	1.4863	2.4826	2.6306

Table 10: Adobe 15cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.4834	0.3973	0.4808	0.5207	0.4457	0.3276	0.4544	0.4856
Ac-225+D	0.8954	0.7881	0.9016	0.9642	0.8983	0.6957	0.8797	0.8884
Ag-108m+D	6.1894	5.7172	5.4049	5.1898	7.0063	5.3906	5.7278	7.8846
Ag-110m+D	5.3881	5.0637	4.4710	4.1526	6.1935	5.0126	5.3359	8.4126
Am-242m+D	1.3702	1.1506	1.4490	1.6646	1.3316	0.9676	1.2189	1.0957
Am-243+D	4.7142	4.2488	4.3606	4.7383	4.8449	3.8343	4.9233	4.2871
Ar-42+D	0.2783	0.2532	0.2365	0.2225	0.3188	0.2697	0.2926	0.4676
At-211+D	0.9997	0.8753	0.8859	1.0097	1.0117	0.7211	1.0945	0.9260
Bi-210m+D	1.9718	1.8196	1.7589	1.5794	2.1254	1.8197	2.0074	2.1667
Bi-212+D	0.4039	0.3309	0.3682	0.3887	0.3870	0.2917	0.3772	0.5101
Bi-213+D	0.6610	0.6186	0.6124	0.5242	0.7458	0.5636	0.6276	0.8489
Bi-214+D	2.2353	2.0771	1.8696	1.7362	2.5609	2.0678	2.2788	3.5035
Bi-215+D	1.4316	1.3162	1.2716	1.1807	1.5486	1.2403	1.5002	1.6115
Ce-144+D	0.4131	0.3712	0.3561	0.3756	0.4400	0.3284	0.4657	0.3968
Cm-247+D	2.2767	2.1097	2.2027	1.9010	2.5035	1.9034	2.1823	2.6727
Cm-250+D	25.7138	24.0321	22.4705	20.4308	29.2011	23.5904	26.0280	36.2795
Cs-137+D	3.9403	3.7957	3.4906	3.4603	4.3610	4.0334	4.0780	4.7685
Es-254+D	3.9933	3.4245	3.9102	4.2468	4.0801	3.0314	3.5928	4.2644
Fe-60+D	3.7509	3.3688	3.2165	3.1281	4.0624	3.2086	3.7098	5.8078
Fr-220+D	0.3930	0.3345	0.3830	0.4273	0.3829	0.2763	0.4091	0.3757
Fr-221+D	0.3058	0.2880	0.2713	0.2698	0.3326	0.2773	0.2922	0.3173
Ge-68+D	1.3633	0.8918	1.2006	1.4292	0.9201	0.5933	1.0095	1.3585
Hf-172+D	4.1370	3.2914	3.5727	4.2988	3.9103	2.9463	3.8243	3.6766
Hf-182+D	6.2813	5.6620	5.2760	5.3306	6.6969	5.6678	6.3756	7.2233
Hg-193+D	4.4413	3.8218	3.7308	4.0092	4.5184	3.6244	4.4483	4.8738
Hg-194+D	4.8733	4.1362	4.1769	4.2644	4.8848	3.9045	4.9516	5.3710
In-114m+D	0.9883	0.9212	0.9372	1.0751	1.1033	0.8434	0.9086	0.8816
Kr-76+D	3.7781	3.3358	3.7319	3.5533	3.9553	3.0580	3.8858	4.2421
Np-235+D	0.7619	0.6201	0.8750	0.9946	0.7154	0.5032	0.6905	0.6718
Np-237+D	4.4016	3.8860	4.5155	4.7094	4.4689	3.4081	4.5018	4.1916
Os-194+D	1.0183	0.7889	0.9212	0.9550	0.8980	0.6487	0.9310	1.0646
Pb-202+D	4.3442	3.7218	3.8246	3.8939	4.3842	3.3185	4.1615	4.7844
Pt-202+D	0.4382	0.4137	0.3932	0.3388	0.5041	0.3922	0.4226	0.6319
Pu-239+D	0.1342	0.1038	0.1448	0.1669	0.1175	0.0811	0.1144	0.1186
Pu-244+D	2.3441	2.0592	2.3684	2.5265	2.4549	1.8344	2.1830	2.4968
Ra-219+D	1.4056	1.2747	1.2727	1.1475	1.4869	1.1474	1.5304	1.4574
Ra-221+D	0.9416	0.8248	0.9402	1.0132	0.9403	0.6933	0.9617	0.9034
Ra-223+D	2.4827	2.2430	2.2647	2.2823	2.5722	1.9955	2.5876	2.5152
Ra-224+D	2.2856	2.2694	2.1444	2.1529	2.4908	2.5132	2.4098	2.3759

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	5.9450	5.5563	5.2948	5.0243	6.5830	5.6538	6.1794	7.4891
Ra-228+D	4.2717	4.0259	4.0455	3.9880	4.6898	4.0730	4.3664	5.1256
Re-186m+D	2.5129	1.7990	2.1749	2.5852	1.9760	1.4245	2.1415	2.3645
Rn-219+D	0.3952	0.3701	0.3710	0.3154	0.4350	0.3619	0.3857	0.4659
Rn-222+D	0.0017	0.0016	0.0015	0.0014	0.0020	0.0015	0.0016	0.0023
Ru-106+D	0.6913	0.6546	0.5788	0.5326	0.8025	0.6177	0.6648	0.9682
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3302	0.2783	0.3172	0.3897	0.3319	0.2410	0.3175	0.2745
Sn-126+D	7.3041	6.7941	6.3267	5.9254	8.1798	6.4315	7.1613	9.7012
Sr-82+D	0.9026	0.8720	1.2282	1.2905	1.0815	0.8222	1.1233	1.1770
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.5027	1.3708	1.5101	1.8592	1.6552	1.2370	1.4921	1.2582
Th-229+D	3.6740	3.1271	3.6972	4.0542	3.6116	2.6490	3.8288	3.3832
Th-232+D	5.6852	5.3990	5.3571	5.3204	6.2641	5.6701	5.8923	6.7347
Th-234+D	0.4162	0.3635	0.4091	0.4593	0.4209	0.3379	0.4339	0.3915
Ti-44+D	4.5562	4.2176	3.4442	3.7871	5.1353	4.1054	5.1358	5.0382
U-235+D	3.7341	3.4926	3.8658	4.1365	3.8729	3.4031	3.7582	3.5970
U-238+D	1.7381	1.6743	1.6460	1.7115	1.8732	1.8145	1.8298	1.7933
W-178+D	2.8548	2.2427	2.3469	2.8458	2.6932	2.1371	2.7002	2.5934

Table 11: Adobe 15cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.4022	0.3578	0.4516	0.3518	0.3217	0.2907	0.5290	0.4063
Ac-225+D	0.8255	0.7884	0.8637	0.6768	0.6956	0.6440	1.0699	0.7490
Ag-108m+D	6.5939	6.3226	8.6012	6.7638	6.3654	5.0178	16.4369	7.7746
Ag-110m+D	6.0788	5.2470	9.2832	7.2698	6.0338	4.5146	17.3312	7.6698
Am-242m+D	1.1244	1.0018	1.1214	0.8872	0.8637	0.8136	1.0813	1.0885
Am-243+D	4.5299	4.2190	4.4754	3.9600	4.1006	3.6352	5.8426	3.5166
Ar-42+D	0.3174	0.2274	0.3247	0.3711	0.3117	0.2541	0.7031	0.2973
At-211+D	0.9313	0.8260	0.8857	0.8251	0.8255	0.7015	1.2100	0.7661
Bi-210m+D	2.0710	2.0861	2.5273	1.8798	1.9891	1.8682	3.7728	1.7517
Bi-212+D	0.3596	0.2962	0.4904	0.3921	0.3099	0.2476	0.7350	0.4406
Bi-213+D	0.7117	0.6775	0.9592	0.6974	0.7101	0.5897	1.4911	0.6888
Bi-214+D	2.5305	2.1516	3.1693	2.8977	2.4728	1.7934	7.1394	3.0456
Bi-215+D	1.4899	1.4034	1.8636	1.4568	1.4334	1.3075	2.7662	1.2899
Ce-144+D	0.4266	0.4009	0.3820	0.4250	0.4078	0.3429	0.6118	0.3376
Cm-247+D	2.3818	2.2869	3.0180	2.1813	2.3156	2.0077	4.4900	2.0627
Cm-250+D	28.6265	25.3318	37.0719	31.6990	28.2730	22.7740	65.9849	29.4078
Cs-137+D	4.3747	4.3940	4.8358	4.3747	4.2794	3.7960	8.1815	4.9793
Es-254+D	3.6728	2.9654	5.0381	3.6259	3.1471	2.6958	5.8092	3.7887
Fe-60+D	4.0096	2.8481	5.2092	4.8647	3.8569	2.7250	11.2128	4.7982
Fr-220+D	0.3469	0.3090	0.3433	0.3023	0.2876	0.2553	0.4209	0.3155
Fr-221+D	0.3236	0.3397	0.3482	0.2628	0.3054	0.2852	0.5001	0.2530
Ge-68+D	0.8037	0.5815	1.0606	0.8055	0.4880	0.4082	0.9759	1.1176
Hf-172+D	3.5650	2.9902	3.4451	3.9663	3.0003	2.4493	3.7088	3.2302
Hf-182+D	6.5315	5.8835	7.6007	6.5547	6.2550	5.2112	12.2223	5.8808
Hg-193+D	4.2794	3.7663	4.9800	4.1904	3.9470	3.2863	7.0041	3.9537
Hg-194+D	4.6191	4.0247	5.4681	4.6240	4.2412	3.7027	7.7571	4.2020
In-114m+D	1.0308	0.9320	0.8970	1.0421	0.9180	0.8775	1.2701	0.8575
Kr-76+D	3.6996	3.4728	4.5353	3.5221	3.3400	3.0835	6.1670	3.4258
Np-235+D	0.5896	0.5077	0.6128	0.4421	0.4008	0.3823	0.5354	0.6720
Np-237+D	4.0505	3.6806	4.3856	3.5902	3.4753	3.2722	5.2105	3.4567
Os-194+D	0.8268	0.7024	1.0450	0.8279	0.6836	0.6168	1.2995	0.8599
Pb-202+D	4.0946	3.7227	4.9216	3.8598	3.7823	3.1261	6.9107	3.9416
Pt-202+D	0.4899	0.4271	0.7028	0.5352	0.4936	0.3885	1.1849	0.5170
Pu-239+D	0.0973	0.0817	0.1054	0.0766	0.0646	0.0607	0.0905	0.1150
Pu-244+D	2.1846	1.9983	2.5453	1.9652	1.8613	1.5742	3.8462	2.4627
Ra-219+D	1.4137	1.3171	1.7880	1.4052	1.3545	1.3343	2.3539	1.0754
Ra-221+D	0.8604	0.8132	0.8537	0.7496	0.7275	0.6902	1.0467	0.7549
Ra-223+D	2.4453	2.3286	2.6481	2.2059	2.2626	2.0491	3.7335	1.9776
Ra-224+D	2.5395	2.5617	2.5184	2.4376	2.5146	2.5133	2.6056	2.4003

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	6.5005	6.0389	7.6213	6.7291	6.3366	5.5353	12.5736	6.6173
Ra-228+D	4.5739	4.1736	5.7862	4.7085	4.3966	4.0066	7.2326	4.5289
Re-186m+D	1.7768	1.4388	1.9662	1.7349	1.3096	1.0925	1.9549	1.9829
Rn-219+D	0.4237	0.4276	0.5344	0.3795	0.4119	0.3737	0.8103	0.3670
Rn-222+D	0.0019	0.0018	0.0026	0.0020	0.0019	0.0015	0.0044	0.0021
Ru-106+D	0.7714	0.7418	1.0329	0.8057	0.7718	0.5808	2.0340	0.9323
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3054	0.2356	0.2073	0.3386	0.2508	0.2231	0.2495	0.2497
Sn-126+D	7.9153	7.4905	10.2244	8.3093	7.6882	5.9833	19.9351	9.0719
Sr-82+D	0.9277	0.8156	1.1083	0.8135	0.7250	0.6547	1.3741	1.0990
Sr-90+D	0.0001	0.0001	0.0001	0.0000	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.5410	1.1891	0.9801	1.7761	1.3081	1.2010	1.3424	1.2086
Th-229+D	3.2801	2.8840	3.1185	2.7335	2.7121	2.3460	3.7839	2.9043
Th-232+D	6.1922	5.8859	7.3715	6.2477	6.0097	5.6323	8.9352	6.1096
Th-234+D	0.3815	0.3368	0.3894	0.3259	0.3251	0.2801	0.4532	0.3348
Ti-44+D	4.9689	4.1630	5.4093	5.0576	4.9315	3.8094	9.2566	4.2074
U-235+D	3.6479	3.4299	3.5237	3.3040	3.2419	3.1606	3.5049	3.6312
U-238+D	1.8659	1.8280	1.8369	1.7773	1.8011	1.7698	1.9167	1.7742
W-178+D	2.4673	2.0582	2.4289	2.6839	2.1183	1.6523	2.6626	2.1877

Table 12: Adobe 15cm Contamination Thickness 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2592	0.2346	0.4059	0.5106
Ac-225+D	0.5917	0.5214	0.7118	0.8694
Ag-108m+D	6.0949	5.0544	5.1332	7.1264
Ag-110m+D	5.9546	4.4932	6.2161	7.6217
Am-242m+D	0.6343	0.6042	1.0460	1.3244
Am-243+D	3.7203	2.9241	3.8701	3.5085
Ar-42+D	0.3049	0.2166	0.7904	0.1667
At-211+D	0.7478	0.5622	0.8397	0.8156
Bi-210m+D	1.9167	1.5371	2.1808	1.6342
Bi-212+D	0.2733	0.2287	0.4150	0.5495
Bi-213+D	0.6737	0.5707	0.5561	0.4866
Bi-214+D	2.4390	1.8683	3.1254	2.3883
Bi-215+D	1.3688	1.0685	1.6921	1.2804
Ce-144+D	0.3921	0.3185	0.3602	0.3850
Cm-247+D	2.1916	1.7933	1.7916	1.6188
Cm-250+D	27.4788	21.6011	31.5738	24.3301
Cs-137+D	4.2169	3.8687	3.9012	5.1355
Es-254+D	2.6149	2.0994	3.8099	3.8606
Fe-60+D	3.6328	2.5657	5.7481	2.9975
Fr-220+D	0.2434	0.2028	0.3389	0.3970
Fr-221+D	0.2891	0.2415	0.2165	0.2089
Ge-68+D	0.2828	0.3343	1.0352	1.6975
Hf-172+D	2.6388	2.0060	4.4557	3.7057
Hf-182+D	5.9891	4.5440	6.7754	4.9902
Hg-193+D	3.6887	2.8819	4.3394	4.1497
Hg-194+D	3.9516	3.1064	6.0303	4.6713
In-114m+D	0.8142	0.7114	0.8208	1.0408
Kr-76+D	3.0160	2.5326	4.3152	3.8181
Np-235+D	0.2486	0.2767	0.6296	0.9111
Np-237+D	2.9588	2.5013	4.4107	4.3170
Os-194+D	0.5801	0.4966	1.1077	1.1530
Pb-202+D	3.4655	2.8890	3.6094	3.6539
Pt-202+D	0.4725	0.3767	0.4632	0.3522
Pu-239+D	0.0393	0.0446	0.1073	0.1602
Pu-244+D	1.5664	1.4036	2.1172	2.5528
Ra-219+D	1.2821	0.9972	1.9922	1.3673
Ra-221+D	0.6225	0.5583	0.8247	1.1127
Ra-223+D	2.1050	1.6817	2.2488	2.1131
Ra-224+D	2.4415	2.4049	2.3499	2.3962

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	6.1520	5.2382	7.3382	6.1827
Ra-228+D	4.1359	3.6030	4.7602	4.7496
Re-186m+D	1.0106	0.9251	2.0921	2.8248
Rn-219+D	0.3961	0.3245	0.3580	0.2891
Rn-222+D	0.0018	0.0016	0.0016	0.0013
Ru-106+D	0.7422	0.6332	0.6515	0.6670
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2084	0.1829	0.2789	0.3735
Sn-126+D	7.5099	5.9949	6.1947	8.7332
Sr-82+D	0.5489	0.5229	0.9677	1.4646
Sr-90+D	0.0000	0.0000	0.0001	0.0001
Te-118+D	1.1131	0.9546	1.3639	1.6770
Th-229+D	2.2594	1.9019	3.0161	3.6574
Th-232+D	5.7150	5.1629	6.2951	6.3554
Th-234+D	0.2782	0.2249	0.3602	0.3838
Ti-44+D	4.8450	3.3250	4.9866	2.8062
U-235+D	2.8638	2.8951	3.6664	4.1206
U-238+D	1.7201	1.6934	1.9054	1.7493
W-178+D	1.9089	1.3971	3.1859	2.4715

Table 13: Adobe Infinite Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.2569	0.2312	0.4573	0.2901	0.3219	0.2742	0.3378	0.4372
Ac-225+D	0.5319	0.4893	0.8002	0.6392	0.6976	0.6326	0.7537	0.8870
Ag-108m+D	3.7843	3.7510	3.8554	4.8907	5.5452	5.1004	6.3200	6.7622
Ag-110m+D	3.8872	4.0335	4.1095	5.4189	6.0657	5.4457	7.0984	7.0205
Am-242m+D	0.7923	0.6597	1.2026	0.8004	0.9230	0.7899	0.8406	0.9957
Am-243+D	2.8032	2.6761	4.0609	3.2711	3.8247	3.3048	4.1910	4.4249
Ar-42+D	0.2418	0.2296	0.2453	0.3373	0.3724	0.3568	0.4205	0.3300
At-211+D	0.5881	0.5801	0.8774	0.6197	0.8155	0.6364	0.8798	0.9394
Bi-210m+D	1.1197	1.1406	1.2777	1.5936	1.6830	1.6575	2.4141	2.5383
Bi-212+D	0.2351	0.2226	0.3674	0.2870	0.3234	0.2717	0.3441	0.4006
Bi-213+D	0.3652	0.3717	0.4028	0.4883	0.5425	0.5068	0.6807	0.7738
Bi-214+D	1.6225	1.6372	1.6973	2.3085	2.5056	2.3076	2.9017	2.7825
Bi-215+D	0.8308	0.8507	0.9648	1.0912	1.2521	1.1648	1.6761	1.7383
Ce-144+D	0.2026	0.2116	0.2593	0.2586	0.3179	0.2652	0.3133	0.3181
Cm-247+D	1.2935	1.3040	1.4867	1.6848	1.9241	1.7724	2.2094	2.3437
Cm-250+D	17.1246	17.2815	18.1551	23.8789	26.1390	24.2733	31.2663	31.1110
Cs-137+D	2.1224	2.1707	2.1861	2.5836	3.2175	3.0596	3.3848	3.5641
Es-254+D	2.4367	2.2292	3.3568	2.9010	3.3329	2.8180	3.6461	3.8586
Fe-60+D	2.4293	2.5082	3.1314	3.4357	3.8106	3.3779	4.2453	4.1704
Fr-220+D	0.2261	0.2130	0.3648	0.2439	0.2953	0.2384	0.3044	0.3705
Fr-221+D	0.1818	0.1745	0.2181	0.2531	0.2662	0.2694	0.3273	0.3248
Ge-68+D	0.4640	0.3459	1.4995	0.4670	0.4593	0.3002	0.3768	0.7989
Hf-172+D	2.0201	1.8818	3.7672	2.2262	2.7360	1.9272	2.6007	3.5677
Hf-182+D	3.7044	3.7754	4.9228	5.2168	5.6050	4.9591	6.8226	7.4223
Hg-193+D	2.5583	2.5137	3.6557	3.3076	3.7169	3.0710	4.1795	4.6923
Hg-194+D	2.6762	2.6278	3.7834	3.4677	3.9118	3.3133	4.6667	5.2919
In-114m+D	0.5671	0.4892	0.5570	0.5581	0.7773	0.7205	0.7574	0.7091
Kr-76+D	2.1287	2.1014	2.7489	2.6618	3.0383	2.7676	3.7759	4.4325
Np-235+D	0.4474	0.3722	0.7390	0.4566	0.5064	0.4158	0.4483	0.6391
Np-237+D	2.5994	2.4249	3.6724	2.9249	3.4549	3.0552	3.8283	4.2988
Os-194+D	0.4508	0.4192	0.8621	0.5324	0.6104	0.5058	0.6999	0.9047
Pb-202+D	2.2413	2.1915	3.3556	2.7972	3.1530	2.6232	3.6110	4.4426
Pt-202+D	0.2676	0.2772	0.2863	0.3748	0.4141	0.3813	0.5114	0.5433
Pu-239+D	0.0701	0.0568	0.1326	0.0708	0.0771	0.0615	0.0666	0.1009
Pu-244+D	1.4274	1.3026	1.8893	1.6828	1.8584	1.6510	1.9964	2.3684
Ra-219+D	0.7559	0.7769	0.8858	0.9305	1.1465	1.0642	1.5660	1.6501
Ra-221+D	0.5402	0.5039	0.8424	0.6211	0.6918	0.6053	0.7100	0.9175
Ra-223+D	1.4262	1.4118	1.9825	1.7408	2.0143	1.8054	2.4239	2.6108
Ra-224+D	1.0865	1.0776	1.0837	1.1206	1.5912	1.5738	1.6035	1.6227

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	3.8024	3.8380	4.0873	4.8215	5.7519	5.4221	6.6414	6.6902
Ra-228+D	2.8444	2.8189	3.1900	3.3881	4.1667	3.8951	4.6931	4.7659
Re-186m+D	1.0016	0.8535	2.5437	1.1174	1.1856	0.8098	1.0606	1.8115
Rn-219+D	0.2276	0.2317	0.2520	0.3247	0.3418	0.3372	0.4613	0.4852
Rn-222+D	0.0009	0.0009	0.0010	0.0012	0.0013	0.0013	0.0019	0.0023
Ru-106+D	0.4018	0.4112	0.4267	0.5611	0.5968	0.5654	0.7917	0.9302
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1627	0.1396	0.2083	0.1260	0.2272	0.1755	0.1858	0.1676
Sn-126+D	4.5621	4.6805	5.0369	6.0748	6.9409	6.2566	7.8624	8.3151
Sr-82+D	0.8154	0.7761	0.8669	0.8865	1.0525	0.8916	1.0541	1.3466
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	0.8386	0.7181	0.8036	0.6184	1.1788	0.9604	0.9972	0.8008
Th-229+D	2.1082	1.9789	3.3629	2.3463	2.8317	2.2937	2.7584	3.2407
Th-232+D	6.3443	6.3179	6.6943	6.9349	9.3180	9.0532	9.7901	9.9956
Th-234+D	0.2624	0.2456	0.3954	0.3068	0.3476	0.2816	0.3569	0.4262
Ti-44+D	2.8811	3.0741	3.4080	3.7702	4.5982	3.6253	5.2678	5.2426
U-235+D	3.4897	3.3458	4.0490	3.5259	4.8616	4.5837	4.6979	5.2256
U-238+D	1.2170	1.1967	1.3388	1.2585	1.7532	1.6741	1.7465	1.8929
W-178+D	1.4414	1.3846	2.7166	1.7311	2.0203	1.3813	1.9846	2.7645

Table 14: Adobe Infinite Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.0566	0.0476	0.0523	0.0752	0.2918	0.2666	0.3034	0.4350
Ac-225+D	0.1259	0.1105	0.1119	0.1533	0.6790	0.6291	0.6777	0.8998
Ag-108m+D	1.0004	0.8640	0.7183	0.9550	6.0102	4.6664	5.2672	7.5911
Ag-110m+D	1.0635	0.9251	0.8182	1.0684	6.5007	4.7426	5.8083	8.5825
Am-242m+D	0.1562	0.1363	0.1439	0.1649	0.7635	0.7345	0.8274	1.2301
Am-243+D	0.6926	0.6176	0.5451	0.7863	3.9433	3.7179	3.8145	4.4242
Ar-42+D	0.0662	0.0596	0.0609	0.0555	0.4225	0.2925	0.4280	0.3985
At-211+D	0.1457	0.1313	0.1124	0.1707	0.7942	0.7849	0.8769	0.9810
Bi-210m+D	0.3157	0.2775	0.2580	0.3294	1.9774	1.6015	1.6804	1.9574
Bi-212+D	0.0553	0.0469	0.0491	0.0644	0.3089	0.2402	0.3001	0.4384
Bi-213+D	0.1013	0.0848	0.0720	0.1125	0.6177	0.4868	0.5832	0.5985
Bi-214+D	0.4459	0.3897	0.3651	0.4438	2.7543	2.0297	2.6374	3.3965
Bi-215+D	0.2283	0.1990	0.1788	0.2485	1.3946	1.1441	1.2606	1.4947
Ce-144+D	0.0559	0.0486	0.0446	0.0635	0.3495	0.3083	0.3032	0.3207
Cm-247+D	0.3571	0.2998	0.2633	0.3934	2.1344	1.7352	2.2439	2.2623
Cm-250+D	4.7006	4.0655	3.7986	5.0575	29.1318	22.3265	27.4874	31.3425
Cs-137+D	2.0283	1.9580	1.9232	1.9568	3.5454	3.0656	3.3525	4.4733
Es-254+D	0.5497	0.4845	0.5247	0.6203	2.9879	2.4229	3.0409	4.6574
Fe-60+D	0.6613	0.5701	0.6521	0.8292	3.9536	2.8396	3.8378	5.1033
Fr-220+D	0.0520	0.0453	0.0442	0.0663	0.2716	0.2618	0.2944	0.3899
Fr-221+D	0.0511	0.0466	0.0443	0.0563	0.3076	0.2766	0.2729	0.2849
Ge-68+D	0.0732	0.0513	0.1108	0.1718	0.2929	0.2524	0.2915	0.7225
Hf-172+D	0.4556	0.4008	0.4057	0.5858	2.5306	2.2093	1.9068	2.8103
Hf-182+D	1.0095	0.8985	0.8685	1.2409	6.1425	4.9851	5.1400	6.6877
Hg-193+D	0.6531	0.5846	0.5390	0.7993	3.8172	3.1658	3.4248	4.3972
Hg-194+D	0.6817	0.5957	0.5562	0.8325	4.0446	3.1965	3.5381	4.7203
In-114m+D	0.1335	0.1256	0.1179	0.1243	0.7819	0.7166	0.7220	0.7772
Kr-76+D	0.5411	0.4577	0.4487	0.6199	3.1226	2.5473	2.9219	3.8826
Np-235+D	0.0826	0.0702	0.0826	0.0958	0.3588	0.3399	0.4347	0.7721
Np-237+D	0.6055	0.5211	0.4971	0.6792	3.2937	2.9817	3.3655	4.4155
Os-194+D	0.1039	0.0840	0.1001	0.1456	0.5744	0.4647	0.5193	0.8052
Pb-202+D	0.5664	0.4874	0.4406	0.7092	3.2655	2.7251	3.0053	3.6311
Pt-202+D	0.0747	0.0635	0.0591	0.0846	0.4586	0.3418	0.4285	0.4978
Pu-239+D	0.0125	0.0104	0.0134	0.0162	0.0536	0.0505	0.0629	0.1167
Pu-244+D	0.3228	0.2792	0.2710	0.3316	1.7399	1.4669	1.6605	2.5842
Ra-219+D	0.2057	0.1741	0.1485	0.2382	1.2537	1.0318	1.1081	1.3834
Ra-221+D	0.1249	0.1056	0.1069	0.1801	0.6756	0.6326	0.6569	0.9582
Ra-223+D	0.3730	0.3251	0.2955	0.4457	2.1845	1.9739	2.1380	2.4059
Ra-224+D	1.6473	1.6357	1.6768	1.6777	1.7974	1.7419	1.7645	1.8144

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	2.4739	2.3461	2.2915	2.4859	6.3718	5.2756	6.0651	7.1980
Ra-228+D	2.0917	1.9858	1.9946	2.1063	4.4061	3.7017	4.2015	5.1975
Re-186m+D	0.1955	0.1591	0.2174	0.3513	0.9722	0.8532	0.7679	1.5377
Rn-219+D	0.0648	0.0559	0.0522	0.0679	0.4027	0.3225	0.3784	0.3937
Rn-222+D	0.0002	0.0002	0.0002	0.0003	0.0016	0.0012	0.0011	0.0013
Ru-106+D	0.1106	0.0948	0.0768	0.1146	0.6839	0.5291	0.5200	0.7673
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.0352	0.0336	0.0350	0.0268	0.1943	0.1905	0.2161	0.1875
Sn-126+D	1.2535	1.0810	0.8973	1.2665	7.5705	5.9483	6.8687	9.5797
Sr-82+D	0.1750	0.1531	0.1424	0.1759	0.8306	0.7111	1.0273	1.6642
Sr-90+D	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001
Te-118+D	0.1837	0.1799	0.1725	0.1193	1.0434	1.0032	1.1612	0.9572
Th-229+D	0.4872	0.4254	0.4303	0.5651	2.5498	2.5059	2.7740	3.5787
Th-232+D	7.7119	7.4670	7.5330	7.3733	10.2346	9.2778	9.9701	10.9779
Th-234+D	0.0600	0.0537	0.0489	0.0711	0.3194	0.2936	0.3116	0.4486
Ti-44+D	0.8054	0.7452	0.6223	0.9414	4.8266	4.1081	4.4272	5.3461
U-235+D	4.0628	3.9731	3.9150	4.0477	5.0180	4.8094	5.2838	5.5011
U-238+D	1.5679	1.5535	1.4646	1.6002	1.8982	1.8234	1.7232	1.8961
W-178+D	0.3373	0.3010	0.2898	0.4481	1.8852	1.6144	1.3314	2.1136

Table 15: Adobe infinite Contamination Thickness 400x400x40 ft rooms

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2486	0.2079	0.1482	0.2529
Ac-225+D	0.5900	0.4845	0.3383	0.5584
Ag-108m+D	5.9643	3.6990	3.6902	4.1086
Ag-110m+D	6.4584	3.7483	3.6847	4.0748
Am-242m+D	0.5897	0.5531	0.5130	0.8783
Am-243+D	3.6775	2.7739	2.0244	2.5554
Ar-42+D	0.4048	0.2237	0.2071	0.2619
At-211+D	0.7338	0.6365	0.3935	0.5285
Bi-210m+D	1.9180	1.3401	1.0888	0.9806
Bi-212+D	0.2816	0.1936	0.1683	0.2308
Bi-213+D	0.6196	0.3761	0.3603	0.3754
Bi-214+D	2.7375	1.5975	1.8075	1.7977
Bi-215+D	1.3640	0.9648	0.7980	0.8261
Ce-144+D	0.3340	0.2336	0.1997	0.1651
Cm-247+D	2.0970	1.3299	1.0595	1.2851
Cm-250+D	28.8416	17.6722	19.4142	18.2043
Cs-137+D	3.5594	2.7788	2.8054	2.7325
Es-254+D	2.6415	1.9963	2.0821	2.7188
Fe-60+D	3.7667	2.2644	1.8705	3.3001
Fr-220+D	0.2358	0.2046	0.1322	0.2093
Fr-221+D	0.2908	0.2226	0.1537	0.2106
Ge-68+D	0.1876	0.2412	0.0855	0.3557
Hf-172+D	2.2654	1.9883	1.5008	1.5781
Hf-182+D	5.8984	4.0551	3.0237	3.5674
Hg-193+D	3.6097	2.7051	1.9580	2.4430
Hg-194+D	3.8931	2.8769	2.3258	2.7085
In-114m+D	0.7143	0.5932	0.5006	0.7034
Kr-76+D	2.9124	2.1291	1.8452	2.1941
Np-235+D	0.2299	0.2718	0.2382	0.5060
Np-237+D	2.9462	2.3262	1.9376	2.7370
Os-194+D	0.5283	0.4218	0.3395	0.4537
Pb-202+D	3.1332	2.2659	1.7277	2.1027
Pt-202+D	0.4570	0.2670	0.2662	0.3050
Pu-239+D	0.0338	0.0416	0.0344	0.0759
Pu-244+D	1.5301	1.1485	1.1622	1.5840
Ra-219+D	1.2576	0.9255	0.7798	0.8533
Ra-221+D	0.5875	0.4565	0.2905	0.4813
Ra-223+D	2.0790	1.5150	1.0659	1.2290
Ra-224+D	1.7784	1.6280	1.7289	1.5160

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	6.3008	4.5170	4.4430	4.4387
Ra-228+D	4.2485	3.2856	3.0617	3.5051
Re-186m+D	0.7923	0.7665	0.4059	0.7584
Rn-219+D	0.3908	0.2547	0.2050	0.1987
Rn-222+D	0.0016	0.0009	0.0012	0.0010
Ru-106+D	0.7027	0.4087	0.4814	0.4333
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1664	0.1651	0.1423	0.1739
Sn-126+D	7.5802	4.6541	4.1377	4.5801
Sr-82+D	0.6179	0.5462	0.4735	0.9547
Sr-90+D	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.9073	0.8581	0.7576	0.9493
Th-229+D	2.1950	1.8636	1.4431	2.1097
Th-232+D	10.0917	8.7262	8.5313	8.9254
Th-234+D	0.2807	0.2273	0.1675	0.2535
Ti-44+D	4.7307	3.5570	2.4583	2.9989
U-235+D	4.7395	4.4220	4.5667	4.9178
U-238+D	1.8527	1.8223	2.0098	1.4241
W-178+D	1.7221	1.4871	1.0564	1.1209

APPENDIX B

These are appendices to augment Finklea 2014 Room Radiation Dose Coefficients for External Exposure as utilized in <http://epa-bprg.ornl.gov/> and <http://epa-bdcc.ornl.gov/> .”

Table 16: Concrete Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.5887	0.3390	0.5101	0.5977	0.4831	0.3375	0.5549	0.6284
Ac-225+D	1.0648	0.6540	0.9368	1.0794	0.9378	0.7060	1.0549	1.1616
Ag-108m+D	3.6161	2.5850	3.3194	3.6461	4.1505	3.7413	4.4120	4.4227
Ag-110m+D	2.9697	2.1422	2.7400	2.9930	3.5679	3.2657	3.7782	3.7256
Am-242m+D	1.7739	1.0651	1.5519	1.7939	1.5371	1.1439	1.7322	1.9091
Am-243+D	4.6804	3.1088	4.1955	4.7388	4.5670	3.7630	5.0089	5.3233
Ar-42+D	0.1682	0.1194	0.1547	0.1692	0.2039	0.1865	0.2158	0.2115
At-211+D	1.1242	0.7103	0.9944	1.1405	1.0231	0.7942	1.1418	1.2452
Bi-210m+D	1.2409	0.8852	1.1363	1.2583	1.3546	1.1933	1.4586	1.5005
Bi-212+D	0.4025	0.2312	0.3492	0.4086	0.3429	0.2451	0.3915	0.4377
Bi-213+D	0.3697	0.2627	0.3386	0.3744	0.4105	0.3636	0.4403	0.4491
Bi-214+D	1.2629	0.9036	1.1617	1.2724	1.5069	1.3737	1.5966	1.5779
Bi-215+D	0.9946	0.6929	0.9046	1.0074	1.0565	0.9143	1.1430	1.1829
Ce-144+D	0.3122	0.2234	0.2858	0.3155	0.3439	0.3076	0.3687	0.3744
Cm-247+D	1.5414	1.0846	1.4059	1.5609	1.6618	1.4546	1.7899	1.8418
Cm-250+D	14.9163	10.8400	13.7620	15.0548	17.5825	16.0448	18.6501	18.5460
Cs-137+D	2.0007	1.4466	1.8453	2.0184	2.3806	2.1770	2.5266	2.4806
Es-254+D	4.2213	2.5469	3.7031	4.2689	3.8237	2.9310	4.2786	4.6456
Fe-60+D	2.7113	1.7294	2.4172	2.7418	2.8184	2.3604	3.0765	3.1987
Fr-220+D	0.4932	0.2970	0.4315	0.5002	0.4227	0.3100	0.4789	0.5332
Fr-221+D	0.2469	0.1730	0.2247	0.2505	0.2583	0.2226	0.2797	0.2909
Ge-68+D	1.7409	0.8301	1.4488	1.7786	1.1656	0.5999	1.4335	1.7667
Hf-172+D	4.4989	2.6485	3.9162	4.5779	3.9100	2.8783	4.4258	4.9647
Hf-182+D	4.6499	3.1636	4.2031	4.7159	4.8808	4.1810	5.2957	5.5264
Hg-193+D	3.9214	2.4811	3.4770	3.9812	3.7183	2.9536	4.1283	4.4595
Hg-194+D	4.0596	2.5465	3.5932	4.1201	3.8333	3.0267	4.2656	4.6203
In-114m+D	0.8196	0.5638	0.7433	0.8253	0.8790	0.7689	0.9390	0.9638
Kr-76+D	3.4913	2.2076	3.0965	3.5373	3.2389	2.5330	3.6029	3.9071
Np-235+D	1.1871	0.6736	1.0252	1.2018	0.9480	0.6470	1.0917	1.2396
Np-237+D	4.8753	3.0730	4.3166	4.9300	4.4647	3.4878	4.9657	5.3794
Os-194+D	1.0133	0.5617	0.8710	1.0312	0.8197	0.5557	0.9504	1.0895
Pb-202+D	3.6650	2.2624	3.2297	3.7241	3.3581	2.5917	3.7609	4.1171
Pt-202+D	0.2301	0.1661	0.2120	0.2325	0.2710	0.2469	0.2878	0.2869

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Pu-239+D	0.1984	0.1090	0.1701	0.2012	0.1536	0.1006	0.1789	0.2062
Pu-244+D	2.5086	1.5380	2.2082	2.5357	2.2629	1.7351	2.5290	2.7471
Ra-219+D	0.9950	0.6924	0.9041	1.0072	1.0446	0.8991	1.1326	1.1778
Ra-221+D	1.1348	0.6960	0.9980	1.1507	0.9946	0.7452	1.1213	1.2371
Ra-223+D	2.2223	1.4694	1.9909	2.2542	2.1625	1.7686	2.3803	2.5387
Ra-224+D	1.1976	0.8758	1.1055	1.2083	1.4218	1.3059	1.5057	1.4819
Ra-226+D	3.7324	2.6237	3.4118	3.7688	4.2107	3.7431	4.5013	4.5530
Ra-228+D	3.3548	2.2693	3.0334	3.3866	3.5688	3.0688	3.8533	3.9585
Re-186m+D	2.9894	1.5665	2.5360	3.0489	2.2359	1.3801	2.6510	3.1365
Rn-219+D	0.2403	0.1733	0.2209	0.2437	0.2667	0.2372	0.2861	0.2924
Rn-222+D	0.0007	0.0005	0.0007	0.0008	0.0009	0.0008	0.0009	0.0009
Ru-106+D	0.3180	0.2324	0.2941	0.3209	0.3794	0.3477	0.4016	0.3982
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3211	0.2001	0.2838	0.3234	0.3096	0.2509	0.3382	0.3605
Sn-126+D	4.3514	3.1231	3.9976	4.3942	4.9932	4.4990	5.3127	5.3455
Sr-82+D	1.6414	1.0092	1.4454	1.6544	1.4035	1.0310	1.5761	1.7347
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002
Te-118+D	1.3659	0.9146	1.2300	1.3693	1.4472	1.2583	1.5401	1.5832
Th-229+D	4.5562	2.7848	4.0017	4.6131	4.0008	3.0110	4.4964	4.9467
Th-232+D	4.2589	2.9222	3.8651	4.2962	4.6552	4.0654	5.0009	5.0856
Th-234+D	0.5009	0.3133	0.4425	0.5069	0.4528	0.3499	0.5049	0.5507
Ti-44+D	3.3671	2.4407	3.0907	3.4079	3.7980	3.4237	4.0490	4.1057
U-235+D	3.9614	2.5752	3.5326	4.0121	3.7619	3.0410	4.1687	4.4140
U-238+D	1.4777	1.0379	1.3468	1.4978	1.6136	1.4222	1.7261	1.7679
W-178+D	3.0570	1.8090	2.6639	3.1122	2.6698	1.9726	3.0187	3.3870

Table 17: Concrete Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.4829	0.3730	0.5862	0.6547	0.3440	0.3215	0.5678	0.6546
Ac-225+D	0.9600	0.7931	1.1224	1.2104	0.7298	0.7051	1.1039	1.2285
Ag-108m+D	4.7084	4.5797	4.9331	4.7058	4.3686	4.6038	5.1754	4.9752
Ag-110m+D	4.1649	4.1208	4.3198	4.0471	4.0543	4.3566	4.6622	4.3689
Am-242m+D	1.5458	1.2493	1.8053	1.9764	1.0951	1.0317	1.7354	1.9628
Am-243+D	4.8573	4.3422	5.3998	5.5659	4.0699	4.0974	5.4400	5.7728
Ar-42+D	0.2401	0.2381	0.2472	0.2300	0.2351	0.2531	0.2700	0.2503
At-211+D	1.0652	0.9054	1.2243	1.2971	0.8578	0.8444	1.2229	1.3345
Bi-210m+D	1.5167	1.4526	1.6374	1.5972	1.4112	1.4782	1.7038	1.6893
Bi-212+D	0.3534	0.2831	0.4212	0.4603	0.2692	0.2615	0.4175	0.4655
Bi-213+D	0.4630	0.4449	0.4956	0.4782	0.4333	0.4547	0.5216	0.5071
Bi-214+D	1.7573	1.7342	1.8249	1.7115	1.7065	1.8295	1.9735	1.8496
Bi-215+D	1.1716	1.1029	1.2711	1.2549	1.0679	1.1123	1.3200	1.3242
Ce-144+D	0.3843	0.3696	0.4089	0.3965	0.3572	0.3763	0.4266	0.4243
Cm-247+D	1.8443	1.7471	1.9874	1.9466	1.6777	1.7444	2.0606	2.0506
Cm-250+D	20.2971	20.0090	21.1946	19.9840	19.5717	20.8940	22.7099	21.5306
Cs-137+D	2.7600	2.7609	2.8866	2.7197	2.6720	2.8547	3.1159	2.9352
Es-254+D	3.9724	3.3370	4.5609	4.8728	3.0417	2.9827	4.4955	4.8931
Fe-60+D	3.1676	2.9232	3.4604	3.4513	2.8773	3.0070	3.6480	3.6370
Fr-220+D	0.4288	0.3456	0.5074	0.5539	0.3203	0.3064	0.4973	0.5601
Fr-221+D	0.2835	0.2661	0.3104	0.3076	0.2552	0.2625	0.3201	0.3273
Ge-68+D	1.0798	0.6311	1.5010	1.8489	0.6081	0.4794	1.3930	1.7876
Hf-172+D	4.0518	3.3329	4.7631	5.2103	3.2062	3.1611	4.7280	5.2311
Hf-182+D	5.4227	5.0790	5.9027	5.8800	4.9613	5.1669	6.1441	6.1915
Hg-193+D	3.9819	3.4955	4.5098	4.6964	3.3851	3.4195	4.5861	4.8572
Hg-194+D	4.1079	3.5933	4.6620	4.8707	3.4851	3.5291	4.7417	5.0208
In-114m+D	0.9629	0.9078	1.0271	1.0071	0.8355	0.8615	1.0382	1.0456
Kr-76+D	3.4110	2.9401	3.8968	4.0860	2.7646	2.7667	3.9124	4.1885
Np-235+D	0.9209	0.6827	1.1251	1.2802	0.5880	0.5244	1.0616	1.2518
Np-237+D	4.6218	3.9277	5.2762	5.6050	3.5814	3.5176	5.2055	5.6882
Os-194+D	0.8282	0.6343	1.0188	1.1442	0.6089	0.5792	0.9954	1.1447
Pb-202+D	3.5505	3.0391	4.0937	4.3258	2.9381	2.9280	4.1257	4.4332
Pt-202+D	0.3135	0.3086	0.3285	0.3095	0.3030	0.3231	0.3523	0.3323
Pu-239+D	0.1481	0.1062	0.1848	0.2135	0.0928	0.0813	0.1738	0.2081
Pu-244+D	2.3325	1.9521	2.6790	2.8667	1.7599	1.7115	2.6318	2.8770
Ra-219+D	1.1506	1.0761	1.2502	1.2446	1.0375	1.0798	1.2940	1.3103
Ra-221+D	1.0164	0.8369	1.1911	1.2869	0.7736	0.7483	1.1729	1.3038
Ra-223+D	2.3143	2.0693	2.5951	2.6657	1.9775	2.0010	2.6333	2.7739
Ra-224+D	1.6440	1.6801	1.7272	1.6061	1.5924	1.6949	1.8467	1.7492

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	4.8045	4.6448	5.0967	4.8637	4.5413	4.8003	5.4078	5.2074
Ra-228+D	3.9713	3.7714	4.2853	4.2209	3.5691	3.7224	4.4655	4.4271
Re-186m+D	2.1808	1.5264	2.8050	3.2802	1.4688	1.3194	2.6836	3.2336
Rn-219+D	0.2999	0.2893	0.3223	0.3112	0.2808	0.2946	0.3364	0.3301
Rn-222+D	0.0010	0.0010	0.0011	0.0010	0.0010	0.0010	0.0011	0.0011
Ru-106+D	0.4402	0.4359	0.4592	0.4306	0.4275	0.4561	0.4938	0.4618
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3287	0.2894	0.3654	0.3767	0.2648	0.2672	0.3593	0.3815
Sn-126+D	5.6961	5.5467	5.9936	5.7189	5.3961	5.7178	6.3357	6.1025
Sr-82+D	1.3936	1.1040	1.6277	1.7729	0.9453	0.8819	1.5730	1.7747
Sr-90+D	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.5757	1.4672	1.6763	1.6512	1.3318	1.3740	1.6689	1.6889
Th-229+D	4.0831	3.3565	4.7555	5.1447	3.0705	2.9710	4.6614	5.2165
Th-232+D	5.2402	5.0603	5.5737	5.4206	4.8089	5.0546	5.9104	5.7605
Th-234+D	0.4667	0.3929	0.5348	0.5724	0.3599	0.3513	0.5276	0.5808
Ti-44+D	4.2993	4.1695	4.5240	4.3609	4.0993	4.3177	4.7905	4.6765
U-235+D	3.9576	3.4756	4.4497	4.6479	3.2117	3.1787	4.3981	4.7326
U-238+D	1.8018	1.7159	1.9102	1.8399	1.6592	1.7346	2.0130	1.9482
W-178+D	2.7783	2.2973	3.2552	3.5589	2.2301	2.2100	3.2485	3.5836

Table 18: Concrete Surface Contamination Thickness 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2466	0.3148	0.5664	0.6748
Ac-225+D	0.5569	0.6902	1.1028	1.2740
Ag-108m+D	3.9283	4.6456	5.3144	5.5487
Ag-110m+D	3.8549	4.5761	4.8804	5.0079
Am-242m+D	0.7362	0.9529	1.7072	2.0157
Am-243+D	3.3905	4.0314	5.4287	6.1560
Ar-42+D	0.2257	0.2673	0.2862	0.2885
At-211+D	0.7011	0.8403	1.2079	1.4202
Bi-210m+D	1.2958	1.5014	1.7553	1.8825
Bi-212+D	0.2111	0.2683	0.4241	0.4910
Bi-213+D	0.3992	0.4656	0.5386	0.5656
Bi-214+D	1.6237	1.9153	2.0725	2.1164
Bi-215+D	0.9660	1.1295	1.3504	1.4650
Ce-144+D	0.3246	0.3825	0.4365	0.4717
Cm-247+D	1.5025	1.7547	2.1026	2.2603
Cm-250+D	18.4487	21.6452	23.7417	24.3354
Cs-137+D	2.5236	2.9509	3.2782	3.3234
Es-254+D	2.2917	2.8856	4.5093	5.1574
Fe-60+D	2.6329	3.1622	3.8308	4.0582
Fr-220+D	0.2419	0.3011	0.4925	0.5844
Fr-221+D	0.2282	0.2651	0.3277	0.3479
Ge-68+D	0.3335	0.4908	1.4036	1.7907
Hf-172+D	2.6014	3.1516	4.7530	5.4682
Hf-182+D	4.5310	5.2998	6.3195	6.7896
Hg-193+D	2.9287	3.4970	4.6534	5.2090
Hg-194+D	3.0130	3.6042	4.8365	5.3978
In-114m+D	0.6901	0.8185	1.0458	1.1218
Kr-76+D	2.2631	2.7658	3.9632	4.4616
Np-235+D	0.3447	0.4796	1.0404	1.2674
Np-237+D	2.7400	3.3785	5.1795	5.9692
Os-194+D	0.4643	0.5870	1.0112	1.1892
Pb-202+D	2.4850	2.9788	4.1756	4.7360
Pt-202+D	0.2863	0.3359	0.3692	0.3778
Pu-239+D	0.0537	0.0753	0.1711	0.2101
Pu-244+D	1.3011	1.6462	2.6257	3.0098
Ra-219+D	0.9288	1.0860	1.3211	1.4339
Ra-221+D	0.5935	0.7369	1.1709	1.3581
Ra-223+D	1.6988	2.0059	2.6500	2.9896
Ra-224+D	1.5059	1.7407	1.9070	2.0967

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.2314	4.9746	5.7280	5.9235
Ra-228+D	3.1828	3.8024	4.7227	4.8972
Re-186m+D	1.0280	1.3411	2.7017	3.2976
Rn-219+D	0.2584	0.2994	0.3470	0.3695
Rn-222+D	0.0009	0.0011	0.0012	0.0012
Ru-106+D	0.4045	0.4727	0.5158	0.5235
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2030	0.2463	0.3569	0.4083
Sn-126+D	4.9914	5.8449	6.5217	6.8557
Sr-82+D	0.6075	0.8332	1.5357	1.8334
Sr-90+D	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.0499	1.2518	1.6538	1.8457
Th-229+D	2.2998	2.8880	4.6220	5.4125
Th-232+D	4.3681	5.1957	6.2792	6.5886
Th-234+D	0.2763	0.3411	0.5225	0.6067
Ti-44+D	3.8485	4.4370	4.8567	5.2388
U-235+D	2.5877	3.1193	4.4051	5.2188
U-238+D	1.5062	1.7650	2.2362	2.2626
W-178+D	1.8501	2.2262	3.2689	3.7357

Table 19: Concrete 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.4189	0.3387	0.3992	0.4371	0.3517	0.2583	0.3579	0.3902
Ac-225+D	0.8339	0.6975	0.8037	0.8602	0.7554	0.5935	0.7624	0.8586
Ag-108m+D	4.0033	3.4855	3.7338	3.9787	4.5769	4.1358	4.2657	5.8098
Ag-110m+D	3.7677	3.1181	3.4480	3.6832	4.5548	4.2230	4.2842	5.8121
Am-242m+D	1.1977	1.0212	1.1614	1.2452	0.9898	0.7294	1.1149	1.0250
Am-243+D	4.2489	3.6839	4.0884	4.2859	4.1444	3.4731	3.9863	4.6726
Ar-42+D	0.2035	0.1624	0.1901	0.1923	0.2530	0.2290	0.2466	0.3010
At-211+D	0.9559	0.8174	0.9059	0.9633	0.8826	0.7002	0.8233	0.9703
Bi-210m+D	1.4354	1.2253	1.3515	1.3893	1.5932	1.4232	1.4215	2.1506
Bi-212+D	0.3094	0.2436	0.2886	0.3201	0.2842	0.2214	0.2791	0.3361
Bi-213+D	0.4191	0.3617	0.3915	0.4155	0.4742	0.4279	0.4282	0.6376
Bi-214+D	1.5551	1.2746	1.4350	1.5047	1.8816	1.7225	1.7620	2.3214
Bi-215+D	1.0899	0.9296	1.0242	1.0613	1.1842	1.0406	1.0735	1.5308
Ce-144+D	0.3352	0.2952	0.3317	0.3226	0.3556	0.3066	0.3289	0.4705
Cm-247+D	1.6423	1.4384	1.5533	1.6229	1.7892	1.5864	1.6494	2.4333
Cm-250+D	18.1452	15.2016	17.0440	17.6269	21.3956	19.4957	19.8413	27.3917
Cs-137+D	2.4574	2.0275	2.3351	2.4995	2.8507	2.7057	2.8458	3.2488
Es-254+D	3.1793	2.6199	3.0020	3.2279	2.8942	2.3036	3.1172	3.3890
Fe-60+D	2.7822	2.1705	2.5673	2.6892	3.1160	2.7293	2.9908	3.9193
Fr-220+D	0.3716	0.3103	0.3551	0.3810	0.3235	0.2443	0.3194	0.3535
Fr-221+D	0.2700	0.2315	0.2621	0.2729	0.2870	0.2526	0.2646	0.3618
Ge-68+D	1.0053	0.6950	0.9346	1.0988	0.6405	0.3352	0.6468	0.6613
Hf-172+D	3.5303	2.8746	3.3254	3.6737	3.0798	2.3644	2.7548	3.6565
Hf-182+D	4.9708	4.1448	4.6516	4.9022	5.3457	4.7104	4.8021	6.7364
Hg-193+D	3.6088	2.9789	3.3477	3.6419	3.5801	2.9972	3.2676	4.3109
Hg-194+D	3.7269	3.0456	3.4336	3.7349	3.7270	3.1083	3.3869	4.5880
In-114m+D	0.7179	0.6458	0.7053	0.7287	0.7221	0.5888	0.6513	0.8877
Kr-76+D	2.9780	2.4929	2.8231	2.9949	2.9181	2.3834	2.7592	3.7410
Np-235+D	0.7123	0.5859	0.6832	0.7522	0.5314	0.3480	0.6323	0.5414
Np-237+D	3.8444	3.2914	3.6957	3.9162	3.5583	2.8161	3.6003	4.0726
Os-194+D	0.7528	0.5844	0.7044	0.7804	0.6460	0.4783	0.6078	0.8048
Pb-202+D	3.2080	2.6534	2.9738	3.2695	3.0982	2.5468	2.8173	3.7949
Pt-202+D	0.2804	0.2349	0.2591	0.2730	0.3330	0.3066	0.3073	0.4467
Pu-239+D	0.1181	0.0944	0.1127	0.1256	0.0854	0.0541	0.0995	0.0872
Pu-244+D	1.8746	1.5821	1.7842	1.9270	1.7151	1.3566	1.8335	1.9240
Ra-219+D	1.0786	0.9242	1.0142	1.0517	1.1591	1.0074	1.0445	1.4939
Ra-221+D	0.8846	0.7403	0.8598	0.9002	0.7958	0.6188	0.7972	0.8826
Ra-223+D	2.1191	1.8129	2.0289	2.1101	2.1207	1.7848	1.9603	2.5410
Ra-224+D	1.4236	1.1611	1.3915	1.4702	1.6011	1.5735	1.6976	1.6977

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.3404	3.5752	4.0932	4.3081	4.9387	4.5321	4.7756	5.9579
Ra-228+D	3.4357	2.8201	3.2731	3.4740	3.7132	3.3780	3.8233	4.3348
Re-186m+D	1.9844	1.4893	1.8533	2.1135	1.4949	0.9949	1.4251	1.6600
Rn-219+D	0.2791	0.2408	0.2639	0.2709	0.3138	0.2826	0.2828	0.4378
Rn-222+D	0.0009	0.0008	0.0009	0.0009	0.0011	0.0010	0.0010	0.0013
Ru-106+D	0.3999	0.3385	0.3683	0.3984	0.4789	0.4440	0.4345	0.5856
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2222	0.1981	0.2173	0.2296	0.1942	0.1305	0.1613	0.2474
Sn-126+D	5.0684	4.3691	4.7106	5.0292	5.8227	5.2537	5.2443	7.4926
Sr-82+D	1.0349	0.8916	0.9884	1.0695	0.8834	0.6318	1.0131	0.9304
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	0.9897	0.9263	0.9754	1.0032	0.9287	0.6542	0.7605	1.1842
Th-229+D	3.4127	2.8925	3.2972	3.5264	2.9841	2.2818	3.0219	3.3675
Th-232+D	4.6252	3.7618	4.4279	4.7083	5.0774	4.7168	5.2791	5.7580
Th-234+D	0.3886	0.3304	0.3679	0.4002	0.3526	0.2798	0.3555	0.3792
Ti-44+D	3.9274	3.3872	3.6062	3.7998	4.3015	3.8346	3.7952	5.2058
U-235+D	3.3152	2.8344	3.2357	3.4478	3.1217	2.7138	3.3920	3.2449
U-238+D	1.4171	1.1851	1.3732	1.4617	1.5016	1.4251	1.5789	1.5819
W-178+D	2.4699	2.0019	2.2901	2.5825	2.1978	1.7228	1.9133	2.5832

Table 20: Concrete 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.3493	0.2590	0.3548	0.4046	0.2731	0.2261	0.4920	0.4309
Ac-225+D	0.7544	0.5830	0.7270	0.8489	0.6273	0.5042	1.1540	0.8728
Ag-108m+D	4.8277	4.1910	5.4316	5.1903	4.6615	3.4684	11.1906	6.6799
Ag-110m+D	4.9391	4.3662	5.8768	5.0920	4.8640	3.7116	13.1176	7.2092
Am-242m+D	0.9511	0.6954	0.9072	1.1909	0.7239	0.5910	1.1059	1.1503
Am-243+D	4.2724	3.3164	4.0355	4.3852	3.7904	3.0443	6.6216	4.4554
Ar-42+D	0.2787	0.2471	0.2964	0.2760	0.2766	0.2149	0.6823	0.3183
At-211+D	0.9168	0.6754	0.8107	0.9657	0.7963	0.5503	1.5450	1.0211
Bi-210m+D	1.6713	1.4300	1.6744	1.6157	1.5889	1.3602	2.9170	1.8261
Bi-212+D	0.2921	0.2314	0.3390	0.3323	0.2468	0.1937	0.5861	0.4074
Bi-213+D	0.5030	0.4283	0.5186	0.5019	0.4825	0.3652	1.0204	0.6648
Bi-214+D	2.0400	1.8039	2.3222	2.1111	2.0084	1.5502	5.1615	2.7761
Bi-215+D	1.2505	1.0405	1.2386	1.2369	1.1748	0.9792	2.3221	1.3951
Ce-144+D	0.3676	0.2991	0.3952	0.3615	0.3454	0.2568	0.6508	0.4488
Cm-247+D	1.8844	1.5624	1.8800	1.8700	1.7791	1.3601	3.8869	2.3127
Cm-250+D	22.8621	20.0873	25.0834	23.0734	22.3446	17.6698	51.9193	29.2187
Cs-137+D	3.0911	2.9621	3.5085	3.1182	3.0220	2.7718	5.5460	3.7573
Es-254+D	2.8916	2.3479	3.2135	3.4494	2.4373	1.9098	5.3522	4.0316
Fe-60+D	3.3421	2.9434	3.8515	3.8034	3.2068	2.4970	8.2554	4.8603
Fr-220+D	0.3265	0.2387	0.3047	0.3703	0.2667	0.2013	0.4919	0.3807
Fr-221+D	0.2943	0.2522	0.2868	0.2890	0.2763	0.2126	0.5505	0.3137
Ge-68+D	0.6016	0.4207	0.8432	0.7367	0.3544	0.2926	0.6704	0.9748
Hf-172+D	3.0585	2.3806	3.6406	3.3542	2.6544	1.8077	5.0245	3.4325
Hf-182+D	5.5721	4.7594	6.0906	5.6656	5.3022	4.1593	11.0092	6.5134
Hg-193+D	3.6900	3.0184	4.0291	3.8176	3.3562	2.4709	7.2365	4.3510
Hg-194+D	3.8523	3.1547	4.2497	3.9556	3.4789	2.8446	7.2234	4.2695
In-114m+D	0.7232	0.6232	0.7935	1.0148	0.6675	0.5109	1.3336	0.7438
Kr-76+D	2.9860	2.3846	3.0217	3.2878	2.6118	2.2666	4.9710	3.3905
Np-235+D	0.4951	0.3340	0.4754	0.6906	0.3267	0.2680	0.5043	0.6771
Np-237+D	3.5839	2.6957	3.4413	4.0811	2.9891	2.6442	5.1301	3.9143
Os-194+D	0.6513	0.5027	0.7541	0.7094	0.5273	0.4634	1.0475	0.7881
Pb-202+D	3.1901	2.5576	3.4142	3.3235	2.8445	2.0703	5.7974	3.9872
Pt-202+D	0.3572	0.3154	0.3951	0.3699	0.3502	0.2700	0.8259	0.5023
Pu-239+D	0.0793	0.0539	0.0824	0.1078	0.0513	0.0416	0.0804	0.1122
Pu-244+D	1.7080	1.3315	1.7506	2.0469	1.4152	1.1156	2.7489	2.2958
Ra-219+D	1.2229	0.9934	1.1892	1.1844	1.1288	1.0392	2.1266	1.1758
Ra-221+D	0.7950	0.6127	0.7603	0.8858	0.6626	0.5237	1.1981	0.9466
Ra-223+D	2.2100	1.7535	2.0775	2.2201	1.9987	1.5798	3.7347	2.4429
Ra-224+D	1.7438	1.7993	1.8251	1.7389	1.7059	1.7617	1.9210	1.7901

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.3266	4.8536	5.6621	5.3420	5.1422	4.5312	9.9953	6.2397
Ra-228+D	3.9621	3.6412	4.2305	4.1113	3.7217	3.4083	6.5992	4.6895
Re-186m+D	1.4484	1.0740	1.8369	1.6309	1.0714	0.8156	1.9676	1.9037
Rn-219+D	0.3303	0.2839	0.3297	0.3214	0.3165	0.2567	0.6259	0.3937
Rn-222+D	0.0012	0.0010	0.0012	0.0012	0.0011	0.0009	0.0020	0.0016
Ru-106+D	0.5132	0.4520	0.5749	0.5261	0.5017	0.3856	1.0754	0.7399
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1881	0.1397	0.2428	0.3269	0.1580	0.1225	0.2883	0.2067
Sn-126+D	6.2174	5.3007	7.0436	6.5189	6.0152	4.5574	14.8145	8.3585
Sr-82+D	0.8593	0.5910	0.7275	1.2820	0.6288	0.5310	1.2782	1.1257
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0001	0.0001
Te-118+D	0.9105	0.7141	1.1393	1.7106	0.8070	0.6260	1.4943	0.9482
Th-229+D	3.0033	2.1432	2.8481	3.4374	2.4265	1.9684	4.3216	3.2956
Th-232+D	5.4727	5.2131	5.7997	5.5859	5.2096	4.9917	8.2997	6.2250
Th-234+D	0.3538	0.2642	0.3518	0.4017	0.2946	0.2393	0.5292	0.3861
Ti-44+D	4.5754	3.7776	4.6874	4.5737	4.4425	3.0355	9.9723	5.2942
U-235+D	3.1798	2.8814	3.1982	3.7127	2.7861	2.6941	3.4806	3.5671
U-238+D	1.5971	1.5533	1.6148	1.6271	1.5146	1.5159	1.8618	1.6446
W-178+D	2.1874	1.6959	2.6569	2.2987	1.9235	1.3239	3.7666	2.3299

Table 21: Concrete 1cm Contamination Thickness 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2198	0.2557	0.3716	0.4623
Ac-225+D	0.5340	0.5990	0.7863	0.9221
Ag-108m+D	4.3496	4.6272	5.0640	5.0015
Ag-110m+D	4.6653	5.0119	5.3256	5.1047
Am-242m+D	0.5369	0.6268	0.9780	1.2343
Am-243+D	3.4041	3.6575	4.3118	4.7119
Ar-42+D	0.2630	0.2864	0.3079	0.2841
At-211+D	0.6971	0.7613	0.9263	1.0530
Bi-210m+D	1.5038	1.5884	1.7327	1.7534
Bi-212+D	0.2129	0.2429	0.3209	0.3707
Bi-213+D	0.4547	0.4836	0.5243	0.5242
Bi-214+D	1.9273	2.0807	2.2252	2.1116
Bi-215+D	1.1002	1.1712	1.2914	1.3194
Ce-144+D	0.3357	0.3483	0.3797	0.3872
Cm-247+D	1.6450	1.7481	1.9285	1.9695
Cm-250+D	21.4610	22.9598	24.5499	23.6860
Cs-137+D	2.8893	3.0786	3.2249	3.3255
Es-254+D	2.0494	2.3171	3.1268	3.6091
Fe-60+D	3.0134	3.3127	3.7731	3.7042
Fr-220+D	0.2226	0.2519	0.3373	0.4057
Fr-221+D	0.2602	0.2759	0.3075	0.3165
Ge-68+D	0.2083	0.3110	0.7566	1.1277
Hf-172+D	2.3436	2.5487	3.3201	3.8774
Hf-182+D	5.0425	5.3708	5.9595	6.0468
Hg-193+D	3.1014	3.3562	3.9457	4.2473
Hg-194+D	3.2132	3.4871	4.1241	4.4329
In-114m+D	0.6001	0.6264	0.7348	0.7787
Kr-76+D	2.3260	2.5636	3.1169	3.4608
Np-235+D	0.2014	0.2684	0.5210	0.7288
Np-237+D	2.5224	2.8021	3.6215	4.1993
Os-194+D	0.4463	0.5089	0.7185	0.8695
Pb-202+D	2.5763	2.8034	3.3897	3.7476
Pt-202+D	0.3354	0.3590	0.3843	0.3701
Pu-239+D	0.0311	0.0421	0.0863	0.1225
Pu-244+D	1.1657	1.3220	1.7896	2.0879
Ra-219+D	1.0522	1.1191	1.2406	1.2806
Ra-221+D	0.5671	0.6350	0.8322	0.9793
Ra-223+D	1.8175	1.9529	2.2599	2.4390
Ra-224+D	1.6324	1.7448	1.7884	1.9988

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.8936	5.2685	5.7088	5.8158
Ra-228+D	3.4749	3.7785	4.2264	4.4207
Re-186m+D	0.8518	1.0146	1.6747	2.2076
Rn-219+D	0.2984	0.3155	0.3423	0.3441
Rn-222+D	0.0011	0.0011	0.0012	0.0012
Ru-106+D	0.4830	0.5145	0.5473	0.5286
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1299	0.1360	0.1856	0.2237
Sn-126+D	5.6859	6.0353	6.4794	6.4009
Sr-82+D	0.4569	0.5803	0.8585	1.0993
Sr-90+D	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.6827	0.6970	0.8676	0.9835
Th-229+D	2.0121	2.2646	3.0467	3.6615
Th-232+D	4.9110	5.3441	5.9548	6.2890
Th-234+D	0.2510	0.2799	0.3614	0.4215
Ti-44+D	4.2638	4.4908	4.7659	4.6976
U-235+D	2.4376	2.6523	3.2554	3.8789
U-238+D	1.4282	1.5605	1.7937	1.9504
W-178+D	1.7257	1.8735	2.3781	2.7354

Table 22: Concrete 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.4066	0.3433	0.3798	0.4172	0.3536	0.2535	0.3227	0.3482
Ac-225+D	0.8117	0.7169	0.7686	0.8263	0.7588	0.5598	0.6592	0.7058
Ag-108m+D	5.1462	4.7010	4.6695	4.6745	5.3549	4.8376	5.3819	7.5683
Ag-110m+D	4.8594	4.3671	4.4642	4.2848	5.2542	5.0154	5.4542	8.7759
Am-242m+D	1.1639	1.0242	1.1246	1.2066	1.0465	0.7448	0.9609	0.8210
Am-243+D	4.0976	3.8224	3.8557	4.1231	4.0666	3.0211	3.3963	3.9073
Ar-42+D	0.2548	0.2179	0.2328	0.2297	0.2861	0.2579	0.2790	0.4902
At-211+D	0.8397	0.7828	0.7773	0.8666	0.7897	0.5363	0.6368	0.8254
Bi-210m+D	1.7277	1.5182	1.4871	1.5654	1.7527	1.4282	1.4987	1.9148
Bi-212+D	0.3306	0.2757	0.3056	0.3216	0.3034	0.2526	0.3128	0.4284
Bi-213+D	0.5425	0.4879	0.4765	0.4902	0.5476	0.4685	0.5007	0.6976
Bi-214+D	1.9823	1.7515	1.8009	1.7674	2.1461	1.9885	2.1364	3.5504
Bi-215+D	1.2436	1.1130	1.0943	1.1466	1.2583	1.0202	1.0846	1.4790
Ce-144+D	0.3325	0.3246	0.3151	0.3271	0.3429	0.2768	0.3320	0.3635
Cm-247+D	1.9787	1.7956	1.7537	1.8117	1.9871	1.6320	1.7121	2.2839
Cm-250+D	22.5191	20.1078	20.4376	20.2312	23.9912	21.5601	22.9240	35.0422
Cs-137+D	2.7337	2.5037	2.6196	2.6280	2.9086	2.8217	3.0461	3.7707
Es-254+D	3.3927	2.9291	3.2218	3.2955	3.1861	2.6243	3.2437	3.8052
Fe-60+D	3.2595	2.7841	2.9852	2.9409	3.4398	3.0903	3.3420	5.7665
Fr-220+D	0.3365	0.2983	0.3144	0.3474	0.3030	0.2097	0.2583	0.2919
Fr-221+D	0.2844	0.2626	0.2687	0.2800	0.2943	0.2356	0.2512	0.3001
Ge-68+D	0.9249	0.6530	0.8525	1.0037	0.6125	0.3992	0.7279	0.7838
Hf-172+D	3.1500	2.7432	2.9124	3.2573	2.7449	2.1230	2.8013	2.9108
Hf-182+D	5.3359	4.7568	4.7644	4.9741	5.4907	4.5891	4.9157	6.8908
Hg-193+D	3.6099	3.2061	3.2442	3.5015	3.5230	2.8203	3.2454	4.4718
Hg-194+D	3.9169	3.3916	3.4323	3.7258	3.7748	3.0292	3.4591	4.7723
In-114m+D	0.7913	0.7461	0.7695	0.7827	0.7779	0.6589	0.8265	0.8904
Kr-76+D	3.2620	2.8158	2.9149	3.0871	3.1007	2.4684	2.7722	3.2862
Np-235+D	0.6734	0.5616	0.6437	0.7080	0.5571	0.3728	0.5228	0.4136
Np-237+D	3.9011	3.4742	3.6444	3.8785	3.6720	2.7276	3.1717	3.3546
Os-194+D	0.7806	0.6304	0.7006	0.7720	0.6650	0.5074	0.6527	0.7800
Pb-202+D	3.3828	2.9715	2.9945	3.2782	3.1690	2.4835	2.9256	3.8458
Pt-202+D	0.3705	0.3296	0.3305	0.3262	0.3892	0.3527	0.3735	0.5745
Pu-239+D	0.1113	0.0903	0.1058	0.1179	0.0886	0.0589	0.0867	0.0716
Pu-244+D	2.0254	1.7741	1.8983	1.9978	1.9054	1.5042	1.8291	2.0420
Ra-219+D	1.2136	1.0881	1.0613	1.1233	1.2110	0.9578	0.9996	1.3292
Ra-221+D	0.8339	0.7394	0.7811	0.8440	0.7723	0.5635	0.6539	0.7178
Ra-223+D	2.1555	1.9588	1.9579	2.0981	2.1129	1.5950	1.7385	2.2056
Ra-224+D	1.4861	1.3705	1.4846	1.5017	1.5712	1.5568	1.6194	1.5690

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.9694	4.4192	4.5777	4.6581	5.2150	4.7266	5.0107	6.8453
Ra-228+D	3.7362	3.3273	3.5527	3.5805	3.8474	3.5076	3.7938	4.6383
Re-186m+D	1.7857	1.4037	1.6332	1.8938	1.3776	0.9644	1.4651	1.5666
Rn-219+D	0.3503	0.3094	0.3031	0.3143	0.3555	0.2942	0.3055	0.3962
Rn-222+D	0.0013	0.0012	0.0011	0.0012	0.0013	0.0012	0.0013	0.0018
Ru-106+D	0.5508	0.4973	0.4932	0.4982	0.5759	0.5268	0.5856	0.8560
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2292	0.2094	0.2241	0.2351	0.1946	0.1563	0.2447	0.2209
Sn-126+D	6.2966	5.7669	5.6979	5.7293	6.5458	5.8711	6.4522	9.4725
Sr-82+D	0.9745	0.8565	0.9295	0.9706	0.9085	0.6788	0.8015	0.8277
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000
Te-118+D	1.0812	1.0302	1.0648	1.0848	0.9692	0.8186	1.2330	1.1578
Th-229+D	3.1813	2.8400	3.0453	3.2837	2.9256	2.0571	2.5151	2.5914
Th-232+D	4.8589	4.3324	4.6783	4.7385	5.0680	4.7414	5.0623	5.8698
Th-234+D	0.3638	0.3275	0.3407	0.3692	0.3456	0.2535	0.2985	0.3309
Ti-44+D	3.7792	3.6254	3.3707	3.5843	4.0461	3.2484	3.4773	5.5437
U-235+D	3.1596	2.8743	3.0886	3.2350	2.9821	2.5641	2.9156	2.7525
U-238+D	1.4797	1.3634	1.4617	1.5098	1.5340	1.4287	1.4898	1.5422
W-178+D	2.1606	1.8699	1.9585	2.2153	1.9200	1.4879	1.8752	2.1049

Table 23: Concrete 5cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.3229	0.2728	0.3400	0.3342	0.2610	0.2338	0.4259	0.3878
Ac-225+D	0.6949	0.6077	0.7250	0.7107	0.5917	0.5239	0.9336	0.7915
Ag-108m+D	5.4653	4.0877	6.1544	7.4240	5.2971	3.8615	14.7859	9.1700
Ag-110m+D	5.4715	4.2965	6.7834	7.5165	5.4402	3.6079	18.2615	10.5960
Am-242m+D	0.9239	0.7726	0.8185	0.9429	0.7066	0.6715	0.8898	1.0047
Am-243+D	3.8102	3.5035	4.0983	3.7253	3.4307	3.0852	4.9520	3.6772
Ar-42+D	0.2979	0.2409	0.2939	0.3506	0.2972	0.2029	0.8745	0.4150
At-211+D	0.7473	0.6569	0.8550	0.6568	0.6544	0.5278	1.1218	0.7190
Bi-210m+D	1.6802	1.6115	2.1214	1.9947	1.6712	1.4710	3.1616	2.1471
Bi-212+D	0.2954	0.2345	0.3424	0.3733	0.2606	0.1895	0.7440	0.5069
Bi-213+D	0.5601	0.4103	0.5960	0.7132	0.5427	0.4395	1.2162	0.7419
Bi-214+D	2.2383	1.7575	2.5643	2.9213	2.2269	1.4832	7.0287	3.9063
Bi-215+D	1.2178	1.0905	1.5385	1.4073	1.1973	1.0131	2.4634	1.5181
Ce-144+D	0.3394	0.3015	0.3699	0.3793	0.3304	0.2768	0.5376	0.3463
Cm-247+D	1.9900	1.5344	2.1382	2.3748	1.8880	1.7467	3.2491	1.9661
Cm-250+D	24.4964	19.9101	27.8742	30.9343	24.2899	18.1939	64.9181	37.1382
Cs-137+D	3.0231	2.7019	3.4376	3.6461	2.9822	2.4851	6.4993	4.5570
Es-254+D	3.0428	2.4363	3.1076	3.5623	2.6031	2.0615	6.4575	4.7053
Fe-60+D	3.5975	2.8268	4.0635	4.7784	3.5068	2.3644	10.8302	6.3694
Fr-220+D	0.2778	0.2451	0.3044	0.2602	0.2308	0.1998	0.3646	0.2873
Fr-221+D	0.2811	0.2461	0.3019	0.3118	0.2681	0.2263	0.4640	0.3354
Ge-68+D	0.5550	0.4150	0.5774	0.6308	0.3398	0.2950	0.7110	0.9935
Hf-172+D	2.5866	2.3507	2.8084	2.8706	2.2147	1.9341	3.0953	2.7620
Hf-182+D	5.4229	4.9530	6.4367	6.3979	5.2539	4.2870	11.1593	7.3197
Hg-193+D	3.4535	2.9302	4.0706	3.8778	3.1884	2.5590	6.7303	4.4098
Hg-194+D	3.6569	3.1038	4.5639	4.1684	3.4372	2.9233	6.8110	4.3047
In-114m+D	0.7690	0.6182	0.6940	0.9389	0.7206	0.5911	1.3233	0.9858
Kr-76+D	2.9042	2.5291	3.4756	3.4392	2.7051	2.4143	4.9295	3.4373
Np-235+D	0.4753	0.3842	0.4271	0.4742	0.3230	0.3058	0.4287	0.5750
Np-237+D	3.3600	2.9595	3.6541	3.4382	2.9151	2.7418	4.1557	3.3238
Os-194+D	0.6211	0.5122	0.7529	0.7363	0.5391	0.4820	1.0011	0.7965
Pb-202+D	3.1320	2.4451	3.4631	3.6162	2.8391	2.3295	5.6347	3.8756
Pt-202+D	0.4053	0.3027	0.4487	0.5402	0.4003	0.2974	1.0920	0.6446
Pu-239+D	0.0761	0.0604	0.0692	0.0779	0.0506	0.0477	0.0697	0.0984
Pu-244+D	1.7866	1.4191	1.8032	2.0989	1.5225	1.1904	3.5159	2.6696
Ra-219+D	1.1415	1.0060	1.5553	1.2576	1.1327	1.0549	1.8967	1.0676
Ra-221+D	0.7072	0.6405	0.7783	0.6876	0.6019	0.5538	0.9124	0.7190
Ra-223+D	2.0146	1.8409	2.3329	2.0651	1.8721	1.6546	3.1506	2.1007
Ra-224+D	1.6226	1.6554	1.6833	1.6160	1.5964	1.6102	1.7284	1.6735

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.3028	4.6435	6.1112	6.2070	5.2330	4.3752	11.3375	7.0113
Ra-228+D	3.8554	3.4375	4.2961	4.3405	3.6874	3.2110	7.3086	5.1608
Re-186m+D	1.2668	1.0677	1.3948	1.3814	0.9474	0.8464	1.4361	1.6961
Rn-219+D	0.3492	0.3107	0.4052	0.4261	0.3425	0.3075	0.6363	0.4238
Rn-222+D	0.0014	0.0010	0.0014	0.0019	0.0014	0.0008	0.0042	0.0027
Ru-106+D	0.5982	0.4397	0.6575	0.8172	0.5946	0.3676	1.8831	1.1690
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1997	0.1624	0.1480	0.2394	0.1746	0.1405	0.2524	0.2425
Sn-126+D	6.7397	5.2434	7.9043	8.8391	6.5841	4.9309	17.7923	10.7352
Sr-82+D	0.7895	0.6634	0.8683	0.8638	0.6216	0.5009	1.4415	1.0947
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.0150	0.8295	0.7330	1.2454	0.9273	0.7370	1.4936	1.2692
Th-229+D	2.6553	2.3478	2.6609	2.5788	2.2109	1.9626	3.0717	2.6328
Th-232+D	5.1373	4.7508	5.6085	5.6875	4.9616	4.5213	8.6605	6.3705
Th-234+D	0.3174	0.2848	0.3381	0.3097	0.2670	0.2396	0.3984	0.3300
Ti-44+D	4.1166	3.5350	5.0222	4.4215	4.0238	2.9702	9.2129	5.0903
U-235+D	2.8555	2.6672	2.7836	2.7943	2.5252	2.4271	2.9256	2.9731
U-238+D	1.5436	1.5294	1.5293	1.5306	1.4814	1.4557	1.6323	1.4492
W-178+D	1.8135	1.6772	2.0738	1.9774	1.5659	1.3610	2.1820	1.8684

Table 24: Concrete 5cm Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2134	0.1929	0.3667	0.4241
Ac-225+D	0.5078	0.4593	0.6656	0.8057
Ag-108m+D	5.0078	3.0551	9.8173	5.0606
Ag-110m+D	5.2926	3.0713	9.8949	7.1482
Am-242m+D	0.5248	0.5270	0.8917	1.1137
Am-243+D	3.1093	2.7148	3.5015	3.8079
Ar-42+D	0.2940	0.1751	0.5679	0.3549
At-211+D	0.5864	0.5036	0.7450	0.8243
Bi-210m+D	1.6107	1.2884	1.5922	1.7028
Bi-212+D	0.2311	0.1570	0.4744	0.4357
Bi-213+D	0.5202	0.3092	1.0787	0.4295
Bi-214+D	2.1700	1.2818	4.1741	2.6170
Bi-215+D	1.1443	0.8738	1.3548	1.3627
Ce-144+D	0.3120	0.2654	0.3603	0.3076
Cm-247+D	1.8145	1.1313	3.3863	1.6200
Cm-250+D	23.5932	15.1524	39.9176	27.6362
Cs-137+D	2.8786	2.3664	4.3479	3.1529
Es-254+D	2.2050	1.6130	4.2272	4.6144
Fe-60+D	3.3692	1.9408	6.8140	6.1890
Fr-220+D	0.1951	0.1792	0.2809	0.3325
Fr-221+D	0.2543	0.2094	0.2454	0.2899
Ge-68+D	0.2031	0.2297	0.8263	1.3234
Hf-172+D	1.9620	1.6084	2.7417	3.2528
Hf-182+D	5.0537	3.7192	6.8239	6.6334
Hg-193+D	2.9776	2.1715	4.6923	4.2253
Hg-194+D	3.2102	2.3705	4.8909	4.5237
In-114m+D	0.6346	0.5151	0.7511	0.8786
Kr-76+D	2.4667	1.9232	3.4915	3.2080
Np-235+D	0.2010	0.2307	0.4965	0.6600
Np-237+D	2.4990	2.2320	3.1929	3.8034
Os-194+D	0.4666	0.3729	0.7939	0.9320
Pb-202+D	2.6090	1.7870	5.1619	3.1159
Pt-202+D	0.3877	0.2195	0.7968	0.4529
Pu-239+D	0.0309	0.0359	0.0840	0.1173
Pu-244+D	1.2707	0.9893	2.5142	1.9430
Ra-219+D	1.0765	0.8610	1.0938	1.3087
Ra-221+D	0.5190	0.4899	0.7029	0.7969
Ra-223+D	1.7473	1.4440	2.0760	2.0469
Ra-224+D	1.5441	1.5547	1.6338	1.8740

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	5.0589	3.8346	7.6548	5.9818
Ra-228+D	3.4721	2.8299	5.0365	4.7808
Re-186m+D	0.7363	0.7015	1.6072	2.1435
Rn-219+D	0.3323	0.2380	0.4549	0.3105
Rn-222+D	0.0013	0.0008	0.0028	0.0009
Ru-106+D	0.5628	0.3455	1.1872	0.4604
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1394	0.1263	0.1673	0.2680
Sn-126+D	6.3363	3.9132	11.6772	6.5112
Sr-82+D	0.4681	0.4059	0.9892	0.9971
Sr-90+D	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.7610	0.6605	0.8298	1.3018
Th-229+D	1.8335	1.6674	2.6132	2.9297
Th-232+D	4.7122	4.1142	6.3905	6.2414
Th-234+D	0.2273	0.1990	0.3376	0.3527
Ti-44+D	3.9171	2.6927	5.7095	4.9971
U-235+D	2.2116	2.2457	2.8186	3.4397
U-238+D	1.4058	1.3825	1.7374	1.8327
W-178+D	1.4191	1.1058	2.0712	2.2181

Table 25: Concrete 15cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.3327	0.3002	0.3535	0.4083	0.3368	0.2549	0.3233	0.4074
Ac-225+D	0.6586	0.6000	0.6680	0.7543	0.6829	0.5307	0.6306	0.7898
Ag-108m+D	5.0114	4.6833	4.7610	4.1768	5.7050	4.5040	4.6769	5.9728
Ag-110m+D	4.5651	4.2953	4.1491	3.4748	5.3174	4.0868	4.4774	6.7556
Am-242m+D	0.9177	0.8539	1.0392	1.3199	1.0002	0.7388	0.8968	0.9487
Am-243+D	3.4531	3.1741	3.2168	3.6459	3.7541	2.9163	3.3011	3.7352
Ar-42+D	0.2390	0.2288	0.2010	0.1916	0.2737	0.2211	0.2325	0.3927
At-211+D	0.7208	0.6374	0.6371	0.7514	0.7386	0.5507	0.7035	0.7348
Bi-210m+D	1.5647	1.4237	1.2915	1.2372	1.6655	1.4735	1.4003	1.7154
Bi-212+D	0.2936	0.2649	0.2950	0.3115	0.3123	0.2326	0.2975	0.4096
Bi-213+D	0.5501	0.5069	0.5048	0.4148	0.5780	0.4918	0.4812	0.6269
Bi-214+D	1.8976	1.7901	1.7282	1.4563	2.1798	1.6988	1.8623	2.8490
Bi-215+D	1.1297	1.0357	0.9597	0.9317	1.2070	1.0164	1.0235	1.2434
Ce-144+D	0.3120	0.2866	0.2781	0.3039	0.3399	0.2543	0.3139	0.3728
Cm-247+D	1.8189	1.6732	1.6411	1.4728	1.9121	1.6747	1.5882	1.9661
Cm-250+D	21.5478	20.1485	19.1269	16.9422	24.0467	19.4648	20.5803	30.0962
Cs-137+D	3.2922	3.1989	3.2647	2.9346	3.6561	3.3103	3.4280	3.8281
Es-254+D	2.8955	2.6752	2.9137	3.4680	3.1826	2.3688	2.8267	3.6236
Fe-60+D	2.9674	2.8576	2.6373	2.6387	3.4656	2.5717	2.8551	4.9420
Fr-220+D	0.2771	0.2483	0.2789	0.3265	0.2836	0.2109	0.2762	0.3265
Fr-221+D	0.2461	0.2235	0.2036	0.2121	0.2588	0.2136	0.2160	0.2763
Ge-68+D	0.7555	0.6438	0.8384	1.1406	0.6937	0.4510	0.7589	1.1347
Hf-172+D	2.7959	2.4506	2.5430	3.2966	2.9804	2.2445	2.9730	3.0715
Hf-182+D	4.8789	4.4555	4.0331	4.2252	5.3964	4.3898	4.7337	6.5332
Hg-193+D	3.3373	2.9603	2.8257	3.1248	3.5234	2.8114	3.3166	4.0555
Hg-194+D	3.6356	3.2539	3.1457	3.3722	3.8097	3.1396	3.5508	4.1652
In-114m+D	0.7462	0.7094	0.7052	0.8608	0.8710	0.6396	0.6821	0.7515
Kr-76+D	2.9087	2.6523	2.8075	2.7754	3.0437	2.5335	2.7614	3.2440
Np-235+D	0.5095	0.4634	0.6275	0.7869	0.5193	0.3835	0.5201	0.5582
Np-237+D	3.1856	2.9743	3.3321	3.7373	3.4081	2.6974	3.0645	3.4165
Os-194+D	0.6868	0.6072	0.6730	0.7640	0.6887	0.5352	0.6631	0.8282
Pb-202+D	3.2563	2.8953	2.9496	3.0100	3.3348	2.7070	3.0885	3.6640
Pt-202+D	0.3709	0.3480	0.3335	0.2780	0.4087	0.3339	0.3355	0.4933
Pu-239+D	0.0856	0.0768	0.1029	0.1326	0.0856	0.0619	0.0867	0.0990
Pu-244+D	1.7525	1.6233	1.8910	2.0291	1.9029	1.4531	1.7024	2.0415
Ra-219+D	1.0840	1.0020	0.9427	0.9188	1.1404	0.9760	0.9589	1.0420
Ra-221+D	0.6748	0.6217	0.7031	0.7969	0.7081	0.5320	0.6575	0.9782
Ra-223+D	1.8616	1.6989	1.6696	1.7581	1.9653	1.5845	1.7201	2.2109
Ra-224+D	1.9118	1.9065	1.8881	1.8340	2.0501	2.0558	2.0212	1.9897

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.9206	4.6539	4.5342	4.1864	5.3963	4.7067	4.8296	5.9886
Ra-228+D	3.4996	3.3349	3.3717	3.3323	3.8197	3.3336	3.5008	4.2425
Re-186m+D	1.5375	1.3140	1.5451	2.0267	1.4992	1.0681	1.5976	2.0514
Rn-219+D	0.3203	0.2929	0.2727	0.2446	0.3383	0.3040	0.2800	0.3608
Rn-222+D	0.0015	0.0014	0.0014	0.0011	0.0016	0.0013	0.0013	0.0018
Ru-106+D	0.5938	0.5545	0.5753	0.4402	0.6566	0.5103	0.5445	0.7575
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2206	0.2090	0.2295	0.3174	0.2552	0.1767	0.2320	0.1999
Sn-126+D	5.9478	5.5398	5.5452	4.7454	6.7087	5.3419	5.6395	7.4336
Sr-82+D	0.7612	0.7135	0.9572	0.9725	0.8186	0.6297	0.8502	0.8755
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.0601	1.0402	1.0947	1.5040	1.2926	0.9016	1.0806	0.8706
Th-229+D	2.6246	2.3427	2.7449	3.1744	2.7277	2.0242	2.6590	3.0437
Th-232+D	4.7180	4.5281	4.5836	4.5159	5.1485	4.6755	4.8238	5.4968
Th-234+D	0.3022	0.2739	0.3051	0.3557	0.3246	0.2520	0.3116	0.3411
Ti-44+D	3.6318	3.2453	2.6278	2.8987	4.0006	3.1388	3.6014	4.1370
U-235+D	2.8122	2.7184	3.0220	3.3172	2.9741	2.6325	2.8760	2.9206
U-238+D	1.4022	1.3729	1.4020	1.4246	1.5230	1.4598	1.4568	1.5246
W-178+D	1.9529	1.6776	1.6958	2.1787	2.0689	1.6121	2.1554	2.2273

Table 26: Concrete 15cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.3148	0.2773	0.3534	0.3334	0.2556	0.2203	0.4019	0.3794
Ac-225+D	0.6493	0.5878	0.7404	0.6335	0.5576	0.4801	0.8993	0.6610
Ag-108m+D	5.4252	5.1274	7.2085	5.4071	5.2088	4.8385	8.0054	4.5086
Ag-110m+D	5.1240	4.5674	7.4188	5.4574	5.0534	4.5017	8.7048	3.9902
Am-242m+D	0.8624	0.7846	0.8676	0.7549	0.6767	0.6314	0.8819	0.9135
Am-243+D	3.5456	3.2542	3.7478	3.3307	3.2953	2.7217	4.5708	3.0881
Ar-42+D	0.2697	0.1905	0.2859	0.3136	0.2642	0.2279	0.4560	0.2161
At-211+D	0.7311	0.6336	0.7439	0.7761	0.6632	0.4988	0.8064	0.6196
Bi-210m+D	1.6970	1.6570	2.0476	1.6063	1.6206	1.3412	3.0378	2.4565
Bi-212+D	0.2921	0.2503	0.3647	0.3260	0.2538	0.2128	0.4487	0.3245
Bi-213+D	0.5801	0.5461	0.7763	0.5897	0.5638	0.5242	0.8403	0.5588
Bi-214+D	2.1198	1.7634	2.8291	2.3642	2.0743	1.9011	3.4350	1.6217
Bi-215+D	1.2159	1.1462	1.4814	1.2129	1.1622	0.9705	2.0578	1.5387
Ce-144+D	0.3228	0.2857	0.3703	0.3190	0.3129	0.2534	0.6059	0.2363
Cm-247+D	1.9431	1.8784	2.3917	1.7985	1.8388	1.6623	2.6812	1.7686
Cm-250+D	23.6694	20.6535	31.4092	25.2276	23.2058	20.4432	41.4809	21.7294
Cs-137+D	3.6272	3.5330	4.1609	3.6805	3.5669	3.4871	4.5641	3.0806
Es-254+D	2.9285	2.4960	3.8145	2.9257	2.4806	2.4182	3.3659	2.8379
Fe-60+D	3.3136	2.5705	4.7474	3.9060	3.1717	3.1314	4.6179	2.4796
Fr-220+D	0.2692	0.2342	0.2858	0.2787	0.2284	0.1819	0.3346	0.2740
Fr-221+D	0.2621	0.2468	0.3221	0.2521	0.2487	0.2140	0.4177	0.2312
Ge-68+D	0.6187	0.4586	0.7233	0.9016	0.3790	0.3158	0.6632	1.0927
Hf-172+D	2.7331	2.2516	2.5808	2.7697	2.3482	1.9050	2.9045	2.7425
Hf-182+D	5.2655	4.6454	6.5685	5.2725	5.0845	4.3950	7.9724	5.2508
Hg-193+D	3.4428	2.9724	3.9918	3.5525	3.2041	2.6375	4.7373	3.2746
Hg-194+D	3.7339	3.2701	4.1871	3.8772	3.4374	2.8758	5.6005	4.4550
In-114m+D	0.8153	0.7366	0.8489	0.7733	0.7253	0.6767	1.0163	0.5819
Kr-76+D	2.9657	2.7940	3.5071	2.8744	2.6541	2.3119	4.7910	3.9707
Np-235+D	0.4501	0.3945	0.4514	0.4157	0.3102	0.2937	0.4346	0.5862
Np-237+D	3.1831	2.9561	3.3716	2.9620	2.7692	2.4149	4.3918	3.7031
Os-194+D	0.6549	0.5753	0.7498	0.7394	0.5389	0.4566	0.9800	0.9795
Pb-202+D	3.2733	2.9244	3.9017	3.4431	3.0109	2.6135	4.1233	3.3260
Pt-202+D	0.4039	0.3610	0.5775	0.4270	0.3970	0.3793	0.6020	0.3519
Pu-239+D	0.0742	0.0634	0.0760	0.0754	0.0499	0.0463	0.0724	0.1038
Pu-244+D	1.7314	1.5615	2.0789	1.6974	1.4923	1.4024	2.2263	1.8003
Ra-219+D	1.1478	1.1083	1.3230	1.1340	1.0881	0.9019	2.0790	1.6308
Ra-221+D	0.6616	0.5861	0.7958	0.6621	0.5733	0.4664	1.1215	0.6712
Ra-223+D	1.9464	1.8003	2.2502	1.9397	1.8201	1.4679	2.9894	2.0698
Ra-224+D	2.0869	2.0858	2.0952	2.2644	2.0666	2.0498	2.1586	1.9936

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.3887	4.9680	6.3821	5.5689	5.2408	4.8158	7.8516	5.3006
Ra-228+D	3.7680	3.5143	4.5325	3.7388	3.5976	3.3637	5.1005	3.6888
Re-186m+D	1.3570	1.0794	1.4391	1.6439	1.0216	0.8131	1.5907	1.8636
Rn-219+D	0.3485	0.3423	0.4354	0.3229	0.3323	0.2875	0.5764	0.4360
Rn-222+D	0.0015	0.0014	0.0022	0.0018	0.0016	0.0015	0.0023	0.0016
Ru-106+D	0.6277	0.5681	0.9100	0.7069	0.6262	0.6041	0.9531	0.5749
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2342	0.1948	0.1732	0.2370	0.1924	0.1767	0.1984	0.2000
Sn-126+D	6.5349	6.1244	8.5358	6.6139	6.3288	5.6885	9.7757	5.1465
Sr-82+D	0.7370	0.6830	0.8336	0.5878	0.5846	0.5267	0.9812	0.7792
Sr-90+D	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000	0.0001	0.0001
Te-118+D	1.1965	1.0164	0.8971	1.1486	1.0118	0.9654	0.9778	0.8550
Th-229+D	2.5066	2.1996	2.4930	2.4440	2.1231	1.7472	2.9591	2.4172
Th-232+D	5.1277	4.8758	5.8849	5.1558	4.9566	4.7282	6.6438	4.9888
Th-234+D	0.2976	0.2636	0.3027	0.2718	0.2618	0.2221	0.3233	0.2729
Ti-44+D	4.0022	3.3517	4.7111	4.1496	4.0063	3.3354	4.6972	2.6140
U-235+D	2.8665	2.7018	2.7771	2.6876	2.5554	2.4657	2.7506	2.8935
U-238+D	1.5103	1.4722	1.4419	1.4918	1.4741	1.4403	1.5319	1.3448
W-178+D	1.9034	1.5443	1.7484	1.8989	1.6850	1.3341	1.8981	1.9134

Table 27: Concrete 15cm Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2034	0.1609	0.3517	0.2804
Ac-225+D	0.4650	0.3773	0.7040	0.5794
Ag-108m+D	4.8871	3.8161	4.8065	3.4185
Ag-110m+D	4.8897	3.8946	5.2692	3.9881
Am-242m+D	0.4921	0.4316	0.9554	0.7925
Am-243+D	2.9203	2.2474	4.0517	2.7935
Ar-42+D	0.2589	0.2031	0.4337	0.2977
At-211+D	0.5856	0.3988	0.7058	0.5345
Bi-210m+D	1.5289	1.2752	1.2514	1.5351
Bi-212+D	0.2213	0.1774	0.3183	0.2562
Bi-213+D	0.5358	0.4325	0.5685	0.3872
Bi-214+D	2.0201	1.5791	2.2339	1.7281
Bi-215+D	1.0968	0.8739	0.9664	0.9893
Ce-144+D	0.3039	0.2292	0.2465	0.2075
Cm-247+D	1.7308	1.3474	2.1327	1.3595
Cm-250+D	22.4393	18.1821	24.5583	19.0834
Cs-137+D	3.4485	3.0680	3.3129	3.0860
Es-254+D	2.1045	1.9152	3.1140	2.5946
Fe-60+D	3.0671	2.4035	3.5667	3.9890
Fr-220+D	0.1893	0.1388	0.2795	0.2345
Fr-221+D	0.2302	0.1874	0.2512	0.1947
Ge-68+D	0.2216	0.1422	0.7513	0.5053
Hf-172+D	2.0330	1.5944	2.7791	1.9257
Hf-182+D	4.7970	3.8730	5.1394	4.8137
Hg-193+D	2.9333	2.2753	3.5398	2.4981
Hg-194+D	3.1614	2.4518	3.5523	2.6312
In-114m+D	0.6377	0.5174	0.7006	0.5663
Kr-76+D	2.3913	2.0008	2.5343	2.6600
Np-235+D	0.1906	0.1818	0.4770	0.4891
Np-237+D	2.3287	1.9050	3.3832	2.8361
Os-194+D	0.4597	0.3592	0.5909	0.4997
Pb-202+D	2.7288	2.1008	3.2887	2.1517
Pt-202+D	0.3839	0.3163	0.4073	0.3312
Pu-239+D	0.0301	0.0273	0.0793	0.0748
Pu-244+D	1.2454	1.0530	1.6550	1.4559
Ra-219+D	1.0245	0.7849	0.8609	0.7578
Ra-221+D	0.4790	0.3532	0.6821	0.5677
Ra-223+D	1.6565	1.2516	1.9063	1.5792
Ra-224+D	2.0036	1.9534	2.0159	2.0418

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	5.0521	4.3070	5.1828	4.6727
Ra-228+D	3.3906	3.0736	3.9025	3.4995
Re-186m+D	0.7759	0.5599	1.5125	0.9793
Rn-219+D	0.3149	0.2615	0.3098	0.3101
Rn-222+D	0.0015	0.0012	0.0012	0.0010
Ru-106+D	0.5978	0.4848	0.5084	0.3824
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1593	0.1359	0.2063	0.2104
Sn-126+D	6.0168	4.5581	6.3890	4.2381
Sr-82+D	0.4382	0.4298	0.7844	1.0559
Sr-90+D	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.8592	0.7316	1.0200	1.1093
Th-229+D	1.7457	1.4102	2.8168	2.2705
Th-232+D	4.7193	4.4107	5.2200	4.8835
Th-234+D	0.2175	0.1771	0.3713	0.2604
Ti-44+D	3.8844	2.8640	3.6927	2.9219
U-235+D	2.2538	2.1404	2.7736	2.9547
U-238+D	1.4001	1.3506	1.5846	1.4897
W-178+D	1.4728	1.1667	2.1251	1.3320

Table 28: Concrete Infinite Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.2089	0.1855	0.3503	0.0554	0.2534	0.2085	0.2769	0.3586
Ac-225+D	0.4478	0.4081	0.6225	0.1109	0.5615	0.4757	0.5719	0.7670
Ag-108m+D	2.7682	2.7080	2.7567	0.7704	4.2691	3.9788	5.3924	5.9775
Ag-110m+D	2.8271	2.8154	2.7933	0.8997	4.6030	4.1792	5.8223	6.4183
Am-242m+D	0.5839	0.5338	0.8547	0.1251	0.7160	0.6052	0.6553	0.7862
Am-243+D	2.2297	2.1811	2.8773	0.5797	3.0936	2.5529	3.2409	3.6555
Ar-42+D	0.1639	0.1808	0.1777	0.0675	0.2747	0.2709	0.3691	0.3493
At-211+D	0.5230	0.4828	0.7597	0.1454	0.6474	0.5066	0.6925	0.7837
Bi-210m+D	0.9449	0.9219	1.0465	0.2620	1.3758	1.2506	1.8239	1.9289
Bi-212+D	0.1819	0.1629	0.2746	0.0542	0.2445	0.2075	0.2830	0.3396
Bi-213+D	0.2491	0.2781	0.3113	0.0886	0.4156	0.3938	0.5805	0.6867
Bi-214+D	1.1844	1.2092	1.2198	0.3872	1.9089	1.8021	2.5754	2.6125
Bi-215+D	0.6722	0.6670	0.7821	0.1964	1.0078	0.8889	1.3486	1.4198
Ce-144+D	0.1602	0.1666	0.1977	0.0487	0.2550	0.2130	0.2492	0.2868
Cm-247+D	0.9166	1.0055	1.1679	0.3112	1.4635	1.3703	1.9744	2.2172
Cm-250+D	12.4198	12.9592	13.2305	4.0129	20.2477	18.7235	26.2144	28.4234
Cs-137+D	1.7477	1.6701	1.7433	1.1810	2.5114	2.3823	2.8590	3.0305
Es-254+D	1.7064	1.6787	2.4516	0.4695	2.5012	2.1659	2.8953	3.4710
Fe-60+D	1.6574	1.7792	2.2077	0.6343	2.8777	2.6110	3.8581	3.8801
Fr-220+D	0.1939	0.1744	0.2957	0.0523	0.2354	0.1856	0.2422	0.3014
Fr-221+D	0.1597	0.1528	0.1828	0.0389	0.2195	0.1985	0.2353	0.3147
Ge-68+D	0.3664	0.2572	1.1615	0.1188	0.3360	0.2207	0.3936	0.6095
Hf-172+D	1.5347	1.4174	2.8047	0.3936	2.2122	1.4711	2.1981	2.6630
Hf-182+D	2.8694	2.9128	3.5984	0.8844	4.5236	3.7747	5.3972	6.0835
Hg-193+D	2.0335	1.9603	2.8673	0.6166	2.9276	2.3491	3.3879	4.0655
Hg-194+D	2.0695	2.0145	2.9295	0.6356	3.1062	2.5278	4.1057	4.5043
In-114m+D	0.4964	0.3880	0.4253	0.0800	0.6054	0.5695	0.5846	0.7715
Kr-76+D	1.7035	1.6292	2.1770	0.4676	2.4365	2.1021	3.1344	3.5784
Np-235+D	0.3539	0.3012	0.5708	0.0767	0.3856	0.3165	0.3505	0.4834
Np-237+D	2.0507	1.9308	2.6437	0.4946	2.7626	2.3397	3.1458	3.5725
Os-194+D	0.3509	0.3136	0.6702	0.1036	0.4817	0.3844	0.6478	0.7339
Pb-202+D	1.7017	1.6859	2.6618	0.5458	2.4521	2.0394	3.0552	3.7486
Pt-202+D	0.1769	0.1993	0.2058	0.0654	0.3140	0.2948	0.4356	0.4948
Pu-239+D	0.0547	0.0456	0.1025	0.0126	0.0584	0.0466	0.0543	0.0758
Pu-244+D	1.0715	1.0045	1.3884	0.2656	1.4408	1.2749	1.5988	1.9087
Ra-219+D	0.5940	0.5984	0.6975	0.1702	0.9463	0.8060	1.3978	1.4034
Ra-221+D	0.4422	0.4106	0.6547	0.1290	0.5697	0.4616	0.5711	0.7680
Ra-223+D	1.1827	1.1512	1.5718	0.3456	1.6306	1.3923	1.9130	2.1547
Ra-224+D	0.9077	0.9086	0.9637	0.8990	1.2422	1.2646	1.2596	1.3395

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	2.9654	2.9871	3.2780	1.5835	4.4715	4.2107	5.7031	5.8744
Ra-228+D	2.1702	2.1843	2.4736	1.2812	3.2175	2.9816	3.7512	4.1531
Re-186m+D	0.7908	0.6479	1.9330	0.2388	0.9330	0.6114	0.9662	1.3637
Rn-219+D	0.1808	0.1854	0.2073	0.0554	0.2696	0.2561	0.3591	0.3960
Rn-222+D	0.0006	0.0007	0.0007	0.0002	0.0011	0.0010	0.0014	0.0018
Ru-106+D	0.2832	0.2956	0.2943	0.0878	0.4721	0.4453	0.6463	0.7593
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1581	0.1073	0.1585	0.0187	0.1676	0.1501	0.1392	0.1815
Sn-126+D	3.5094	3.3883	3.6020	1.0020	5.3535	4.8896	6.7752	7.5377
Sr-82+D	0.7051	0.6043	0.6966	0.1564	0.8094	0.6786	0.7582	1.0725
Sr-90+D	0.0001	0.0001	0.0001	0.0000	0.0001	0.0001	0.0001	0.0001
Te-118+D	0.8239	0.5470	0.6010	0.0841	0.8627	0.8220	0.7297	0.9261
Th-229+D	1.7413	1.6048	2.5080	0.4233	2.2485	1.8042	2.1789	2.6384
Th-232+D	5.1033	5.0915	5.5916	4.3220	7.2575	6.9781	8.0457	8.3051
Th-234+D	0.2070	0.1950	0.2766	0.0515	0.2772	0.2166	0.2787	0.3429
Ti-44+D	2.2991	2.3825	2.7955	0.7381	3.6295	2.8633	4.3023	4.5932
U-235+D	2.9184	2.7721	3.3897	2.2933	3.7542	3.5633	3.9039	4.1764
U-238+D	1.0014	0.9844	1.1253	0.8639	1.3760	1.3442	1.4036	1.4943
W-178+D	1.0850	1.0395	1.9735	0.2921	1.6577	1.0425	1.6816	2.0420

Table 29: Concrete Infinite Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.0440	0.0361	0.0393	0.0554	0.2283	0.2003	0.1748	0.2606
Ac-225+D	0.0976	0.0826	0.0769	0.1109	0.5254	0.4427	0.4124	0.5580
Ag-108m+D	0.7680	0.6524	0.4977	0.7704	4.7122	3.6094	3.6905	6.9301
Ag-110m+D	0.7969	0.6855	0.5474	0.8997	5.0192	3.6767	4.5490	7.9273
Am-242m+D	0.1193	0.1069	0.1127	0.1251	0.5899	0.5645	0.5199	0.7427
Am-243+D	0.5384	0.4671	0.3920	0.5797	3.0833	2.7145	2.1242	3.0643
Ar-42+D	0.0497	0.0453	0.0457	0.0675	0.3149	0.2211	0.2918	0.4089
At-211+D	0.1140	0.0924	0.0830	0.1454	0.6279	0.5434	0.3861	0.6824
Bi-210m+D	0.2509	0.1961	0.1605	0.2620	1.5713	1.1775	1.0454	1.2366
Bi-212+D	0.0420	0.0348	0.0365	0.0542	0.2385	0.1885	0.2082	0.3546
Bi-213+D	0.0800	0.0656	0.0508	0.0886	0.4940	0.3682	0.3694	0.5161
Bi-214+D	0.3383	0.2926	0.2670	0.3872	2.1273	1.5528	1.9784	3.0582
Bi-215+D	0.1798	0.1442	0.1196	0.1964	1.1071	0.8533	0.7706	1.0492
Ce-144+D	0.0436	0.0376	0.0318	0.0487	0.2685	0.2396	0.2137	0.2668
Cm-247+D	0.2844	0.2328	0.1862	0.3112	1.7039	1.2675	1.3679	1.7820
Cm-250+D	3.6104	3.0789	2.6087	4.0129	22.7360	16.9395	20.4172	26.7349
Cs-137+D	1.5713	1.5270	1.4681	1.5553	2.7606	2.4088	2.5166	3.7763
Es-254+D	0.4116	0.3614	0.3629	0.4695	2.3040	1.8518	2.4060	2.8637
Fe-60+D	0.4926	0.4318	0.4593	0.6343	3.0192	2.2039	3.3924	3.7078
Fr-220+D	0.0406	0.0330	0.0336	0.0523	0.2127	0.1903	0.1572	0.2568
Fr-221+D	0.0395	0.0341	0.0241	0.0389	0.2371	0.1763	0.1608	0.1710
Ge-68+D	0.0552	0.0389	0.0856	0.1188	0.2279	0.2310	0.1051	0.1915
Hf-172+D	0.3543	0.2799	0.3248	0.3936	1.9309	1.8135	1.2743	1.4607
Hf-182+D	0.7802	0.6452	0.5800	0.8844	4.7766	3.7673	3.9314	4.3910
Hg-193+D	0.5060	0.4154	0.3899	0.6166	2.9728	2.3681	2.2987	3.0777
Hg-194+D	0.5353	0.4317	0.4320	0.6356	3.1816	2.5338	2.3937	3.2046
In-114m+D	0.1035	0.0947	0.0771	0.0800	0.5945	0.5271	0.4750	0.6076
Kr-76+D	0.4292	0.3402	0.3270	0.4676	2.4701	1.9620	1.9670	2.6143
Np-235+D	0.0635	0.0532	0.0684	0.0767	0.2765	0.2671	0.2927	0.4241
Np-237+D	0.4730	0.4048	0.3818	0.4946	2.5922	2.3046	2.0594	2.9345
Os-194+D	0.0816	0.0632	0.0756	0.1036	0.4548	0.3795	0.3216	0.4457
Pb-202+D	0.4459	0.3577	0.3313	0.5458	2.5932	2.0776	1.8048	2.5923
Pt-202+D	0.0575	0.0487	0.0407	0.0654	0.3608	0.2626	0.3268	0.4153
Pu-239+D	0.0096	0.0079	0.0109	0.0126	0.0413	0.0405	0.0397	0.0582
Pu-244+D	0.2468	0.2115	0.2034	0.2656	1.3532	1.1409	1.1522	1.8916
Ra-219+D	0.1645	0.1317	0.1092	0.1702	1.0081	0.8121	0.6370	0.9437
Ra-221+D	0.0979	0.0800	0.0777	0.1290	0.5247	0.4799	0.4145	0.6792
Ra-223+D	0.2940	0.2395	0.2011	0.3456	1.7273	1.4276	1.1551	1.7042
Ra-224+D	1.2822	1.2780	1.2591	1.2509	1.4022	1.3458	1.3988	1.3537

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	1.9193	1.7917	1.7150	1.9921	4.9785	4.0234	4.3166	5.7625
Ra-228+D	1.6241	1.5507	1.5186	1.6519	3.4275	2.8811	3.2176	3.9633
Re-186m+D	0.1513	0.1146	0.1730	0.2388	0.7502	0.7277	0.4544	0.6364
Rn-219+D	0.0517	0.0408	0.0328	0.0554	0.3204	0.2320	0.2367	0.2722
Rn-222+D	0.0002	0.0002	0.0001	0.0002	0.0012	0.0010	0.0007	0.0013
Ru-106+D	0.0846	0.0719	0.0526	0.0878	0.5398	0.4200	0.3702	0.7147
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.0274	0.0254	0.0270	0.0187	0.1474	0.1566	0.1366	0.1354
Sn-126+D	0.9656	0.8131	0.6229	1.0020	5.9332	4.5654	4.6924	8.6673
Sr-82+D	0.1359	0.1121	0.1225	0.1564	0.6393	0.5410	0.8182	1.3102
Sr-90+D	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001	0.0001
Te-118+D	0.1438	0.1356	0.1329	0.0841	0.7899	0.8204	0.7626	0.7890
Th-229+D	0.3774	0.3237	0.3246	0.4233	1.9807	1.8280	1.6514	2.3223
Th-232+D	5.9769	5.8245	6.0061	5.9191	7.9826	7.3448	7.6718	8.1151
Th-234+D	0.0463	0.0399	0.0388	0.0515	0.2484	0.2251	0.2079	0.2972
Ti-44+D	0.6197	0.5160	0.4408	0.7381	3.7694	2.9947	3.0018	3.7511
U-235+D	3.1578	3.1323	2.9071	3.2747	3.8885	3.7676	3.6978	3.8193
U-238+D	1.2326	1.2212	1.1607	1.2219	1.4743	1.4308	1.4671	1.4813
W-178+D	0.2614	0.2064	0.2366	0.2921	1.4438	1.3356	0.9813	1.0922

Table 30: Concrete Infinite Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.1887	0.1370	0.1592	0.3406
Ac-225+D	0.4488	0.3160	0.3467	0.5935
Ag-108m+D	4.6180	3.1850	2.8664	3.6614
Ag-110m+D	5.0444	2.9285	2.7783	3.3762
Am-242m+D	0.4429	0.3311	0.6838	1.0849
Am-243+D	2.8150	2.0989	2.2386	2.7221
Ar-42+D	0.3153	0.1843	0.2506	0.4052
At-211+D	0.5594	0.4537	0.4160	0.5822
Bi-210m+D	1.5165	1.0574	0.7797	0.6243
Bi-212+D	0.2180	0.1337	0.1279	0.2846
Bi-213+D	0.4824	0.3869	0.3332	0.4535
Bi-214+D	2.1177	1.2759	1.5415	1.8084
Bi-215+D	1.0690	0.7635	0.6309	0.6085
Ce-144+D	0.2556	0.1767	0.1549	0.1363
Cm-247+D	1.6540	1.3181	1.1334	1.6877
Cm-250+D	22.4398	14.6446	15.8968	16.8541
Cs-137+D	2.7599	2.1173	2.2193	1.9341
Es-254+D	2.0335	1.2818	2.0809	2.8145
Fe-60+D	2.9803	1.7130	2.1492	2.7101
Fr-220+D	0.1791	0.1354	0.1394	0.2631
Fr-221+D	0.2233	0.1576	0.1100	0.1197
Ge-68+D	0.1343	0.0750	0.0378	0.8327
Hf-172+D	1.7231	1.3271	1.3288	1.9522
Hf-182+D	4.6255	3.1004	2.7810	2.6751
Hg-193+D	2.7935	2.0020	1.8250	2.4432
Hg-194+D	3.0176	2.1864	2.1047	2.7488
In-114m+D	0.5429	0.4234	0.3546	0.4964
Kr-76+D	2.2686	1.6422	1.2827	2.1157
Np-235+D	0.1695	0.1202	0.3625	0.7002
Np-237+D	2.2605	1.6830	2.1537	3.0669
Os-194+D	0.4081	0.2951	0.2403	0.5479
Pb-202+D	2.4167	1.9560	1.6879	2.6483
Pt-202+D	0.3579	0.2523	0.2433	0.2981
Pu-239+D	0.0248	0.0176	0.0513	0.1124
Pu-244+D	1.1626	0.8009	1.2521	1.7737
Ra-219+D	0.9802	0.7435	0.6213	0.6027
Ra-221+D	0.4493	0.3076	0.3195	0.6192
Ra-223+D	1.6152	1.1971	1.0018	1.3062
Ra-224+D	1.3872	1.2394	1.4539	1.2004

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.9057	3.6485	3.8510	4.0038
Ra-228+D	3.3083	2.4962	3.1081	3.1252
Re-186m+D	0.5926	0.4249	0.3482	1.3561
Rn-219+D	0.3105	0.2257	0.1668	0.1930
Rn-222+D	0.0012	0.0010	0.0010	0.0009
Ru-106+D	0.5330	0.3796	0.3715	0.3771
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1259	0.1147	0.1093	0.1759
Sn-126+D	5.8899	3.9987	3.3628	4.3519
Sr-82+D	0.4725	0.2872	0.4058	1.0423
Sr-90+D	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.6918	0.6169	0.5959	0.8300
Th-229+D	1.6581	1.2571	1.6667	2.6325
Th-232+D	7.8437	6.8180	7.7749	6.7945
Th-234+D	0.2136	0.1572	0.2160	0.3052
Ti-44+D	3.6771	2.7021	2.6970	1.9966
U-235+D	3.6579	3.4285	4.0216	5.6171
U-238+D	1.4357	1.3695	1.5973	1.2811
W-178+D	1.3150	1.0206	1.0485	1.3668

APPENDIX C

These are appendices to augment Finklea 2014 Room Radiation Dose Coefficients for External Exposure as utilized in <http://epa-bprg.ornl.gov/> and <http://epa-bdcc.ornl.gov/> .”

Table 31: Drywall Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.5750	0.3307	0.4995	0.5851	0.4707	0.3285	0.5430	0.6146
Ac-225+D	1.0352	0.6332	0.9120	1.0509	0.9095	0.6837	1.0275	1.1303
Ag-108m+D	3.5590	2.5349	3.2640	3.5869	4.0901	3.6903	4.3500	4.3468
Ag-110m+D	2.9433	2.1159	2.7121	2.9645	3.5385	3.2354	3.7467	3.6865
Am-242m+D	1.7389	1.0449	1.5255	1.7615	1.5059	1.1231	1.7022	1.8724
Am-243+D	4.4662	2.9324	3.9993	4.5229	4.3482	3.5705	4.7832	5.0662
Ar-42+D	0.1673	0.1185	0.1538	0.1682	0.2030	0.1856	0.2149	0.2103
At-211+D	1.0693	0.6662	0.9448	1.0852	0.9674	0.7448	1.0859	1.1823
Bi-210m+D	1.1977	0.8472	1.0955	1.2152	1.3099	1.1535	1.4123	1.4475
Bi-212+D	0.3965	0.2283	0.3450	0.4033	0.3379	0.2421	0.3868	0.4320
Bi-213+D	0.3597	0.2537	0.3288	0.3640	0.4000	0.3541	0.4294	0.4364
Bi-214+D	1.2506	0.8919	1.1494	1.2592	1.4935	1.3606	1.5834	1.5618
Bi-215+D	0.9584	0.6617	0.8708	0.9710	1.0191	0.8806	1.1045	1.1396
Ce-144+D	0.2949	0.2081	0.2694	0.2976	0.3256	0.2908	0.3481	0.3540
Cm-247+D	1.4888	1.0384	1.3557	1.5065	1.6067	1.4056	1.7326	1.7743
Cm-250+D	14.6010	10.5484	13.4529	14.7262	17.2469	15.7252	18.2914	18.1448
Cs-137+D	1.9748	1.4221	1.8194	1.9921	2.3519	2.1499	2.4880	2.4558
Es-254+D	4.1641	2.5202	3.6639	4.2180	3.7768	2.8990	4.2335	4.5883
Fe-60+D	2.6855	1.7146	2.3980	2.7174	2.7961	2.3423	3.0573	3.1706
Fr-220+D	0.4764	0.2847	0.4173	0.4839	0.4063	0.2966	0.4628	0.5148
Fr-221+D	0.2368	0.1643	0.2152	0.2402	0.2479	0.2132	0.2693	0.2797
Ge-68+D	1.7147	0.8250	1.4356	1.7595	1.1483	0.5952	1.4198	1.7486
Hf-172+D	4.3011	2.5013	3.7460	4.3870	3.7152	2.7123	4.2206	4.7129
Hf-182+D	4.4517	2.9966	4.0195	4.5166	4.6766	3.9960	5.0817	5.2719
Hg-193+D	3.7640	2.3567	3.3365	3.8251	3.5602	2.8148	3.9641	4.2674
Hg-194+D	3.9195	2.4387	3.4712	3.9847	3.6949	2.9087	4.1208	4.4486
In-114m+D	0.7981	0.5471	0.7242	0.8037	0.8573	0.7507	0.9164	0.9393
Kr-76+D	3.4119	2.1516	3.0308	3.4628	3.1634	2.4743	3.5274	3.8177
Np-235+D	1.1710	0.6681	1.0155	1.1884	0.9356	0.6416	1.0813	1.2257
Np-237+D	4.7437	2.9786	4.2053	4.8036	4.3379	3.3877	4.8400	5.2315
Os-194+D	0.9927	0.5508	0.8562	1.0136	0.8022	0.5443	0.9335	1.0692
Pb-202+D	3.5334	2.1616	3.1141	3.5950	3.2281	2.4813	3.6278	3.9601
Pt-202+D	0.2267	0.1628	0.2086	0.2288	0.2674	0.2433	0.2840	0.2822

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Pu-239+D	0.1956	0.1082	0.1685	0.1990	0.1516	0.0998	0.1772	0.2039
Pu-244+D	2.4709	1.5178	2.1806	2.5016	2.2303	1.7146	2.4989	2.7095
Ra-219+D	0.9572	0.6599	0.8692	0.9699	1.0057	0.8644	1.0920	1.1325
Ra-221+D	1.0988	0.6699	0.9673	1.1158	0.9595	0.7168	1.0863	1.1981
Ra-223+D	2.1253	1.3892	1.9018	2.1565	2.0633	1.6811	2.2797	2.4256
Ra-224+D	1.1783	0.8571	1.0878	1.1877	1.4038	1.2885	1.4842	1.4738
Ra-226+D	3.6552	2.5560	3.3385	3.6916	4.1345	3.6737	4.4234	4.4622
Ra-228+D	3.3016	2.2280	2.9877	3.3355	3.5182	3.0243	3.7994	3.9028
Re-186m+D	2.9075	1.5196	2.4748	2.9758	2.1638	1.3292	2.5791	3.0496
Rn-219+D	0.2329	0.1666	0.2137	0.2361	0.2589	0.2303	0.2781	0.2830
Rn-222+D	0.0007	0.0005	0.0007	0.0007	0.0009	0.0008	0.0009	0.0009
Ru-106+D	0.3140	0.2285	0.2900	0.3168	0.3752	0.3437	0.3975	0.3936
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3130	0.1948	0.2773	0.3157	0.3020	0.2451	0.3304	0.3517
Sn-126+D	4.2336	3.0175	3.8829	4.2723	4.8673	4.3864	5.1831	5.1916
Sr-82+D	1.6231	1.0021	1.4339	1.6383	1.3884	1.0237	1.5642	1.7184
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.3319	0.8905	1.2013	1.3358	1.4137	1.2317	1.5050	1.5436
Th-229+D	4.4153	2.6842	3.8825	4.4764	3.8645	2.9014	4.3615	4.7925
Th-232+D	4.1916	2.8693	3.8073	4.2341	4.5938	4.0134	4.9298	5.0171
Th-234+D	0.4835	0.3003	0.4273	0.4899	0.4356	0.3356	0.4875	0.5296
Ti-44+D	3.1378	2.2362	2.8710	3.1691	3.5541	3.1902	3.7921	3.8111
U-235+D	3.8369	2.4798	3.4268	3.8912	3.6405	2.9278	4.0337	4.2997
U-238+D	1.4142	0.9840	1.2865	1.4288	1.5477	1.3615	1.6573	1.6831
W-178+D	2.9082	1.6958	2.5340	2.9678	2.5218	1.8448	2.8633	3.1918

Table 32: Drywall Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.4703	0.3633	0.5736	0.6411	0.3334	0.3131	0.5544	0.6400
Ac-225+D	0.9312	0.7684	1.0921	1.1795	0.7044	0.6837	1.0743	1.1921
Ag-108m+D	4.6447	4.5174	4.8663	4.6241	4.3099	4.5584	5.1126	4.9273
Ag-110m+D	4.1325	4.0882	4.2837	4.0065	4.0234	4.3334	4.6251	4.3441
Am-242m+D	1.5146	1.2255	1.7742	1.9363	1.0705	1.0112	1.7026	1.9236
Am-243+D	4.6296	4.1302	5.1570	5.3182	3.8574	3.9055	5.1835	5.5051
Ar-42+D	0.2390	0.2372	0.2461	0.2289	0.2342	0.2515	0.2687	0.2501
At-211+D	1.0076	0.8528	1.1625	1.2414	0.8042	0.8031	1.1573	1.2655
Bi-210m+D	1.4691	1.4089	1.5855	1.5432	1.3654	1.4337	1.6577	1.6416
Bi-212+D	0.3485	0.2798	0.4164	0.4547	0.2655	0.2590	0.4123	0.4602
Bi-213+D	0.4521	0.4345	0.4841	0.4670	0.4225	0.4456	0.5093	0.4996
Bi-214+D	1.7427	1.7194	1.8085	1.6962	1.6928	1.8165	1.9575	1.8399
Bi-215+D	1.1323	1.0670	1.2287	1.2122	1.0303	1.0788	1.2781	1.2821
Ce-144+D	0.3652	0.3508	0.3870	0.3775	0.3391	0.3592	0.4059	0.4001
Cm-247+D	1.7869	1.6935	1.9283	1.8861	1.6222	1.6964	1.9960	1.9845
Cm-250+D	19.9402	19.6583	20.8028	19.5905	19.2255	20.5583	22.3424	21.1909
Cs-137+D	2.7326	2.7255	2.8527	2.6778	2.6450	2.8361	3.0703	2.8957
Es-254+D	3.9257	3.3061	4.5143	4.8142	3.0079	2.9604	4.4451	4.8298
Fe-60+D	3.1452	2.9071	3.4314	3.4316	2.8585	2.9889	3.6186	3.6141
Fr-220+D	0.4121	0.3312	0.4898	0.5371	0.3054	0.2946	0.4791	0.5403
Fr-221+D	0.2726	0.2557	0.2981	0.2961	0.2448	0.2535	0.3094	0.3124
Ge-68+D	1.0644	0.6266	1.4864	1.8317	0.5996	0.4761	1.3765	1.7700
Hf-172+D	3.8497	3.1500	4.5569	4.9915	3.0259	2.9891	4.5321	5.0188
Hf-182+D	5.2085	4.8747	5.6735	5.6560	4.7595	4.9732	5.9270	5.9605
Hg-193+D	3.8181	3.3455	4.3377	4.5342	3.2345	3.2911	4.4131	4.6703
Hg-194+D	3.9646	3.4665	4.5156	4.7217	3.3546	3.4099	4.5910	4.8679
In-114m+D	0.9405	0.8864	1.0033	0.9805	0.8161	0.8456	1.0188	1.0143
Kr-76+D	3.3332	2.8754	3.8189	3.9961	2.6959	2.7004	3.8376	4.1097
Np-235+D	0.9092	0.6768	1.1147	1.2659	0.5807	0.5203	1.0506	1.2367
Np-237+D	4.4918	3.8176	5.1445	5.4527	3.4666	3.4123	5.0629	5.5364
Os-194+D	0.8109	0.6221	1.0017	1.1239	0.5949	0.5669	0.9779	1.1251
Pb-202+D	3.4168	2.9194	3.9546	4.1940	2.8154	2.8273	3.9797	4.2987
Pt-202+D	0.3097	0.3049	0.3243	0.3056	0.2991	0.3197	0.3478	0.3306
Pu-239+D	0.1462	0.1053	0.1831	0.2112	0.0916	0.0807	0.1720	0.2057
Pu-244+D	2.2999	1.9284	2.6468	2.8260	1.7351	1.6927	2.6001	2.8452
Ra-219+D	1.1099	1.0395	1.2079	1.1977	0.9985	1.0428	1.2496	1.2657
Ra-221+D	0.9808	0.8051	1.1540	1.2505	0.7418	0.7209	1.1374	1.2612
Ra-223+D	2.2113	1.9738	2.4848	2.5588	1.8803	1.9174	2.5208	2.6549
Ra-224+D	1.6250	1.6488	1.6919	1.5851	1.5742	1.6908	1.8143	1.7384

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	4.7245	4.5670	5.0064	4.7812	4.4620	4.7397	5.3216	5.1219
Ra-228+D	3.9220	3.7125	4.2479	4.1629	3.5217	3.6832	4.4003	4.3912
Re-186m+D	2.1087	1.4701	2.7321	3.2046	1.4094	1.2683	2.6099	3.1536
Rn-219+D	0.2916	0.2816	0.3134	0.3021	0.2727	0.2870	0.3282	0.3216
Rn-222+D	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0011	0.0011
Ru-106+D	0.4357	0.4308	0.4536	0.4253	0.4229	0.4521	0.4889	0.4667
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3209	0.2827	0.3575	0.3680	0.2586	0.2622	0.3515	0.3712
Sn-126+D	5.5636	5.4172	5.8547	5.5744	5.2701	5.6107	6.1909	5.9678
Sr-82+D	1.3792	1.0963	1.6166	1.7578	0.9361	0.8769	1.5601	1.7588
Sr-90+D	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.5409	1.4360	1.6416	1.6118	1.3039	1.3517	1.6345	1.6440
Th-229+D	3.9438	3.2342	4.6106	4.9955	2.9477	2.8658	4.5088	5.0383
Th-232+D	5.1782	4.9851	5.5281	5.3576	4.7522	5.0047	5.8511	5.6840
Th-234+D	0.4491	0.3771	0.5168	0.5533	0.3441	0.3371	0.5082	0.5606
Ti-44+D	4.0435	3.9222	4.2458	4.1212	3.8540	4.1146	4.5037	4.3798
U-235+D	3.8328	3.3629	4.3312	4.5241	3.1001	3.0993	4.3021	4.5679
U-238+D	1.7362	1.6553	1.8177	1.7870	1.5945	1.6750	1.9365	1.8309
W-178+D	2.6244	2.1560	3.1001	3.3945	2.0916	2.0760	3.0990	3.4248

Table 33: Drywall Surface Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2406	0.3095	0.5579	0.6729
Ac-225+D	0.5410	0.6772	1.0856	1.2660
Ag-108m+D	3.8842	4.6089	5.2723	5.4843
Ag-110m+D	3.8248	4.5516	4.8480	4.9636
Am-242m+D	0.7223	0.9429	1.6918	1.9936
Am-243+D	3.2532	3.9017	5.2833	5.9812
Ar-42+D	0.2248	0.2663	0.2839	0.2867
At-211+D	0.6800	0.8192	1.1954	1.3895
Bi-210m+D	1.2596	1.4657	1.7181	1.8390
Bi-212+D	0.2088	0.2665	0.4193	0.4914
Bi-213+D	0.3921	0.4572	0.5301	0.5595
Bi-214+D	1.6119	1.9050	2.0570	2.0984
Bi-215+D	0.9430	1.1059	1.3288	1.4380
Ce-144+D	0.3162	0.3722	0.4235	0.4570
Cm-247+D	1.4675	1.7178	2.0709	2.2101
Cm-250+D	18.1787	21.3714	23.4006	24.0536
Cs-137+D	2.4982	2.9379	3.2343	3.3625
Es-254+D	2.2755	2.8755	4.4859	5.1273
Fe-60+D	2.6184	3.1485	3.7849	4.0420
Fr-220+D	0.2352	0.2949	0.4874	0.5760
Fr-221+D	0.2205	0.2593	0.3181	0.3486
Ge-68+D	0.3319	0.4896	1.3714	1.8277
Hf-172+D	2.4597	3.0213	4.5446	5.3083
Hf-182+D	4.3694	5.1423	6.1358	6.5751
Hg-193+D	2.8308	3.4025	4.5464	5.0906
Hg-194+D	2.9175	3.5078	4.7190	5.2857
In-114m+D	0.6757	0.8087	1.0266	1.1138
Kr-76+D	2.2088	2.7136	3.9023	4.4063
Np-235+D	0.3428	0.4799	1.0396	1.2640
Np-237+D	2.6615	3.3055	5.1018	5.8711
Os-194+D	0.4541	0.5767	0.9891	1.1923
Pb-202+D	2.4113	2.9018	4.0856	4.6583
Pt-202+D	0.2830	0.3320	0.3642	0.3745
Pu-239+D	0.0534	0.0753	0.1703	0.2105
Pu-244+D	1.2870	1.6363	2.6123	2.9915
Ra-219+D	0.9031	1.0586	1.2949	1.4103
Ra-221+D	0.5798	0.7221	1.1627	1.3388
Ra-223+D	1.6474	1.9532	2.6070	2.9238
Ra-224+D	1.4886	1.7292	1.8831	2.0514

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.1757	4.9197	5.7233	5.8090
Ra-228+D	3.1473	3.7759	4.6384	4.8605
Re-186m+D	0.9885	1.3024	2.6175	3.2878
Rn-219+D	0.2523	0.2932	0.3410	0.3614
Rn-222+D	0.0009	0.0011	0.0012	0.0012
Ru-106+D	0.4001	0.4674	0.5077	0.5253
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1985	0.2423	0.3495	0.4012
Sn-126+D	4.8980	5.7574	6.4297	6.7313
Sr-82+D	0.6042	0.8348	1.5550	1.8060
Sr-90+D	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.0293	1.2350	1.6241	1.8022
Th-229+D	2.2249	2.8176	4.5496	5.3290
Th-232+D	4.3236	5.1646	6.2219	6.4232
Th-234+D	0.2646	0.3304	0.5115	0.5895
Ti-44+D	3.7169	4.3032	4.7540	5.0067
U-235+D	2.4953	3.0554	4.3256	5.0272
U-238+D	1.4512	1.7138	2.1806	4.2337
W-178+D	1.7302	2.1149	3.1104	3.5929

Table 34: Drywall 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.3065	0.2483	0.2957	0.3228	0.2633	0.2273	0.2872	0.3111
Ac-225+D	0.6374	0.5339	0.6204	0.6654	0.5872	0.5319	0.6311	0.6635
Ag-108m+D	3.7988	3.1543	3.7239	3.9327	4.1838	4.1104	4.4554	4.4024
Ag-110m+D	3.8875	3.1013	3.7901	4.0403	4.4388	4.3500	4.7621	4.6606
Am-242m+D	0.8031	0.6854	0.7796	0.8371	0.6668	0.5847	0.7122	0.7840
Am-243+D	3.3360	2.8907	3.2769	3.4518	3.2757	3.1264	3.4754	3.5221
Ar-42+D	0.2113	0.1639	0.2046	0.2196	0.2448	0.2382	0.2660	0.2626
At-211+D	0.7201	0.6136	0.7042	0.7492	0.6786	0.6317	0.7279	0.7418
Bi-210m+D	1.3428	1.1302	1.3197	1.3920	1.4453	1.4105	1.5315	1.5493
Bi-212+D	0.2524	0.1970	0.2428	0.2662	0.2374	0.2119	0.2594	0.2726
Bi-213+D	0.4012	0.3326	0.3934	0.4163	0.4375	0.4266	0.4688	0.4624
Bi-214+D	1.5934	1.2632	1.5503	1.6557	1.8198	1.7753	1.9642	1.9347
Bi-215+D	0.9896	0.8293	0.9708	1.0264	1.0543	1.0245	1.1220	1.1297
Ce-144+D	0.2831	0.2483	0.2791	0.2912	0.2961	0.2895	0.3130	0.3102
Cm-247+D	1.4829	1.2527	1.4569	1.5358	1.5784	1.5413	1.6877	1.6646
Cm-250+D	17.9467	14.6080	17.5331	18.6045	20.1791	19.7490	21.6510	21.3114
Cs-137+D	2.4382	1.9724	2.3820	2.5365	2.7550	2.7029	2.9416	2.8788
Es-254+D	2.4408	1.9862	2.3614	2.5517	2.2839	2.0788	2.4641	2.6036
Fe-60+D	2.6870	2.0723	2.5949	2.8113	2.9342	2.8142	3.2018	3.1984
Fr-220+D	0.2716	0.2271	0.2639	0.2841	0.2415	0.2151	0.2604	0.2756
Fr-221+D	0.2394	0.2039	0.2353	0.2479	0.2513	0.2442	0.2678	0.2663
Ge-68+D	0.6611	0.4580	0.6158	0.7227	0.4289	0.2816	0.5099	0.6143
Hf-172+D	2.5554	2.1314	2.4801	2.6770	2.2576	2.0330	2.4416	2.5682
Hf-182+D	4.4491	3.7021	4.3547	4.6195	4.7038	4.5566	5.0242	5.0252
Hg-193+D	3.0036	2.4784	2.9272	3.1330	2.9959	2.8249	3.2246	3.2665
Hg-194+D	3.1526	2.5769	3.0675	3.2930	3.1546	2.9657	3.3994	3.4906
In-114m+D	0.5588	0.4945	0.5507	0.5742	0.5661	0.5492	0.5933	0.6020
Kr-76+D	2.4863	2.0649	2.4243	2.5926	2.4445	2.2692	2.6151	2.7382
Np-235+D	0.4525	0.3720	0.4344	0.4768	0.3335	0.2606	0.3631	0.4267
Np-237+D	2.9041	2.4761	2.8359	3.0176	2.7087	2.4915	2.8813	3.0420
Os-194+D	0.5823	0.4553	0.5591	0.6169	0.5137	0.4476	0.5649	0.6119
Pb-202+D	2.6404	2.1671	2.5698	2.7620	2.5727	2.3955	2.7819	2.8395
Pt-202+D	0.2836	0.2291	0.2770	0.2946	0.3197	0.3133	0.3438	0.3377
Pu-239+D	0.0751	0.0599	0.0716	0.0797	0.0537	0.0408	0.0594	0.0702
Pu-244+D	1.4324	1.1893	1.3912	1.4936	1.3290	1.2048	1.4240	1.5142
Ra-219+D	0.9610	0.8118	0.9437	0.9963	1.0136	0.9848	1.0769	1.0935
Ra-221+D	0.6718	0.5633	0.6540	0.7017	0.6155	0.5553	0.6616	0.6936
Ra-223+D	1.7583	1.4910	1.7235	1.8262	1.7660	1.6831	1.8845	1.9041
Ra-224+D	1.3924	1.1348	1.3653	1.4418	1.5633	1.5503	1.6704	1.6275

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.1845	3.3821	4.0839	4.3500	4.6545	4.5346	4.9918	4.9339
Ra-228+D	3.1644	2.5627	3.0850	3.2933	3.4214	3.2969	3.6632	3.6547
Re-186m+D	1.3797	1.0573	1.3135	1.4759	1.0637	0.8504	1.1957	1.3376
Rn-219+D	0.2653	0.2228	0.2607	0.2749	0.2878	0.2814	0.3061	0.3058
Rn-222+D	0.0009	0.0008	0.0009	0.0010	0.0010	0.0010	0.0011	0.0011
Ru-106+D	0.4103	0.3331	0.4014	0.4260	0.4634	0.4524	0.4956	0.4911
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1415	0.1268	0.1384	0.1458	0.1221	0.1102	0.1268	0.1385
Sn-126+D	4.8505	4.0149	4.7545	5.0268	5.3549	5.2471	5.7151	5.6140
Sr-82+D	0.7303	0.6210	0.7093	0.7593	0.6297	0.5306	0.6671	0.7488
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.6420	0.5996	0.6344	0.6528	0.5999	0.5680	0.6113	0.6509
Th-229+D	2.4488	2.0843	2.3846	2.5511	2.1720	1.9469	2.3216	2.4662
Th-232+D	4.3319	3.4879	4.2187	4.5110	4.7660	4.6202	5.0893	5.0491
Th-234+D	0.2858	0.2443	0.2790	0.2970	0.2618	0.2392	0.2787	0.2927
Ti-44+D	3.4282	2.9201	3.3723	3.5382	3.7031	3.6627	3.9446	3.8400
U-235+D	2.6143	2.2368	2.5631	2.7202	2.5331	2.3805	2.7050	2.7751
U-238+D	1.2396	1.0357	1.2140	1.2850	1.3327	1.3024	1.4170	1.3807
W-178+D	1.8114	1.5104	1.7594	1.8963	1.6233	1.4728	1.7517	1.8296

Table 35: Drywall 1cm Contamination Thickness for 100x100x100 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.2631	0.2386	0.3032	0.3300	0.2172	0.2179	0.2481	0.2893
Ac-225+D	0.5950	0.5636	0.6631	0.6937	0.5185	0.5209	0.5863	0.6226
Ag-108m+D	4.5150	4.6327	4.7183	4.5316	4.3529	4.4986	5.0832	4.6766
Ag-110m+D	4.8850	5.0944	5.1271	4.7422	4.7862	4.9544	5.8274	5.0500
Am-242m+D	0.6470	0.5747	0.7445	0.8218	0.5083	0.4901	0.5966	0.7083
Am-243+D	3.3597	3.2972	3.6129	3.6610	3.0966	3.1330	3.3986	3.4108
Ar-42+D	0.2734	0.2891	0.2903	0.2632	0.2689	0.2817	0.3231	0.2706
At-211+D	0.6883	0.6608	0.7517	0.7819	0.6210	0.6328	0.6709	0.7050
Bi-210m+D	1.5385	1.5698	1.6296	1.5754	1.4813	1.5293	1.6831	1.5933
Bi-212+D	0.2483	0.2379	0.2788	0.2855	0.2188	0.2234	0.2648	0.2731
Bi-213+D	0.4701	0.4807	0.4932	0.4865	0.4534	0.4748	0.4992	0.4867
Bi-214+D	2.0103	2.0963	2.1154	1.9620	1.9693	2.0527	2.3659	2.0521
Bi-215+D	1.1207	1.1395	1.1896	1.1550	1.0736	1.1094	1.2256	1.1451
Ce-144+D	0.3099	0.3132	0.3255	0.3181	0.2990	0.3043	0.3291	0.3026
Cm-247+D	1.6766	1.7010	1.7688	1.7453	1.6012	1.6611	1.7434	1.7185
Cm-250+D	22.0261	22.8482	23.1898	21.8546	21.5242	22.3936	25.1809	22.3630
Cs-137+D	3.0197	3.1250	3.1692	2.9497	2.9488	3.0610	3.3846	3.0521
Es-254+D	2.3607	2.2646	2.6348	2.6962	2.0593	2.0603	2.5029	2.5465
Fe-60+D	3.2297	3.3190	3.4695	3.2641	3.1023	3.2216	3.7825	3.3302
Fr-220+D	0.2413	0.2239	0.2716	0.2904	0.2064	0.2078	0.2294	0.2556
Fr-221+D	0.2646	0.2673	0.2814	0.2754	0.2523	0.2581	0.2798	0.2620
Ge-68+D	0.4063	0.2840	0.5553	0.6935	0.2463	0.2434	0.3031	0.5440
Hf-172+D	2.2675	2.0979	2.5356	2.7218	1.9840	2.0007	2.0951	2.4009
Hf-182+D	5.0084	5.0794	5.3288	5.1658	4.8067	4.9391	5.4480	5.1054
Hg-193+D	3.1384	3.1007	3.4013	3.4080	2.9193	2.9898	3.2649	3.2274
Hg-194+D	3.3200	3.2842	3.6095	3.6083	3.0832	3.1728	3.4879	3.4188
In-114m+D	0.5850	0.5824	0.6182	0.6179	0.5448	0.5431	0.6147	0.5754
Kr-76+D	2.5415	2.4900	2.7747	2.8146	2.3083	2.3661	2.6346	2.6842
Np-235+D	0.3110	0.2496	0.3834	0.4510	0.2083	0.1935	0.2590	0.3665
Np-237+D	2.7441	2.6207	3.0283	3.1451	2.4055	2.4139	2.7504	2.8692
Os-194+D	0.5261	0.4853	0.6047	0.6464	0.4479	0.4578	0.5196	0.5824
Pb-202+D	2.6779	2.6072	2.9162	3.0147	2.4518	2.5313	2.6621	2.8229
Pt-202+D	0.3497	0.3629	0.3669	0.3496	0.3414	0.3567	0.3948	0.3607
Pu-239+D	0.0500	0.0390	0.0630	0.0753	0.0326	0.0305	0.0405	0.0605
Pu-244+D	1.3584	1.2906	1.5069	1.5722	1.1720	1.1772	1.3953	1.4665
Ra-219+D	1.0718	1.0856	1.1401	1.1131	1.0217	1.0565	1.1630	1.0707
Ra-221+D	0.6215	0.5869	0.6931	0.7283	0.5416	0.5457	0.6122	0.6418
Ra-223+D	1.8350	1.8177	1.9733	1.9830	1.7116	1.7553	1.8944	1.8774
Ra-224+D	1.7105	1.7809	1.7865	1.6824	1.6695	1.7422	1.8157	1.7032

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.0766	5.2330	5.3453	5.0524	4.9284	5.1508	5.6894	5.1615
Ra-228+D	3.7003	3.7802	3.9519	3.7821	3.5322	3.6618	4.0994	3.7980
Re-186m+D	1.0424	0.8720	1.2689	1.4597	0.8013	0.8007	0.8883	1.2131
Rn-219+D	0.3074	0.3144	0.3245	0.3148	0.2964	0.3072	0.3309	0.3199
Rn-222+D	0.0011	0.0012	0.0012	0.0012	0.0011	0.0012	0.0012	0.0012
Ru-106+D	0.5058	0.5228	0.5260	0.5087	0.4941	0.5177	0.5733	0.5271
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1189	0.1083	0.1312	0.1437	0.1005	0.0952	0.1109	0.1267
Sn-126+D	5.7834	5.9415	6.0506	5.7855	5.6131	5.8031	6.4961	5.9550
Sr-82+D	0.6164	0.5623	0.7062	0.7556	0.4826	0.4680	0.6034	0.6843
Sr-90+D	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000
Te-118+D	0.5942	0.5693	0.6287	0.6588	0.5300	0.5032	0.5899	0.6048
Th-229+D	2.1620	2.0054	2.4233	2.5882	1.8403	1.8278	2.0632	2.2951
Th-232+D	5.1892	5.3358	5.5075	5.2304	4.9943	5.2106	5.7544	5.2949
Th-234+D	0.2632	0.2490	0.2911	0.3049	0.2295	0.2284	0.2561	0.2757
Ti-44+D	3.9421	4.0405	4.1237	3.9561	3.8562	3.9710	4.2698	3.8756
U-235+D	2.5974	2.5251	2.8044	2.9095	2.3483	2.3636	2.5546	2.6840
U-238+D	1.4259	1.4490	1.4557	1.4724	1.3693	1.4256	1.5168	1.4480
W-178+D	1.6388	1.5300	1.8228	1.9387	1.4530	1.4690	1.5217	1.7248

Table 36: Drywall 1cm Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.1823	0.1949	0.3098	0.3435
Ac-225+D	0.4539	0.4826	0.6677	0.7174
Ag-108m+D	4.1045	4.3058	4.9908	5.1899
Ag-110m+D	4.5904	4.8628	5.4851	5.9315
Am-242m+D	0.3887	0.4094	0.7118	0.8326
Am-243+D	2.8393	3.0248	3.5294	3.8404
Ar-42+D	0.2597	0.2834	0.3110	0.3262
At-211+D	0.5662	0.5952	0.7378	0.8269
Bi-210m+D	1.4070	1.4941	1.6455	1.6607
Bi-212+D	0.1950	0.2056	0.2968	0.3308
Bi-213+D	0.4314	0.4565	0.5206	0.5130
Bi-214+D	1.8912	2.0463	2.2783	2.4202
Bi-215+D	1.0165	1.0805	1.2005	1.2497
Ce-144+D	0.2836	0.2885	0.3322	0.3276
Cm-247+D	1.5107	1.5728	1.8170	1.7926
Cm-250+D	20.6333	22.0258	24.6114	25.0581
Cs-137+D	2.8213	2.9905	3.2156	3.5112
Es-254+D	1.7763	1.8673	2.6751	3.0846
Fe-60+D	2.9457	3.3250	3.6726	4.2530
Fr-220+D	0.1791	0.1891	0.2708	0.3051
Fr-221+D	0.2379	0.2519	0.2879	0.2799
Ge-68+D	0.1515	0.1639	0.6367	0.7075
Hf-172+D	1.7852	1.8113	2.5442	2.8304
Hf-182+D	4.5736	4.8961	5.4273	5.8143
Hg-193+D	2.7257	2.8335	3.4649	3.7318
Hg-194+D	2.8743	3.0072	3.6644	3.9362
In-114m+D	0.4939	0.5053	0.6070	0.6545
Kr-76+D	2.0973	2.2229	2.8178	3.0240
Np-235+D	0.1286	0.1329	0.3707	0.4622
Np-237+D	2.0983	2.2405	2.9426	3.2902
Os-194+D	0.3912	0.4126	0.6348	0.6836
Pb-202+D	2.2647	2.3603	3.0164	3.1669
Pt-202+D	0.3271	0.3528	0.3893	0.4079
Pu-239+D	0.0197	0.0203	0.0630	0.0760
Pu-244+D	1.0011	1.0642	1.5324	1.7142
Ra-219+D	0.9639	1.0209	1.1283	1.1668
Ra-221+D	0.4751	0.4980	0.7082	0.7341
Ra-223+D	1.5923	1.6900	1.9859	2.0574
Ra-224+D	1.5979	1.6980	1.7239	1.9277

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.7105	5.0572	5.5665	5.7815
Ra-228+D	3.3247	3.5368	3.9977	4.3967
Re-186m+D	0.6501	0.6646	1.3552	1.4950
Rn-219+D	0.2818	0.2973	0.3329	0.3274
Rn-222+D	0.0011	0.0012	0.0013	0.0013
Ru-106+D	0.4726	0.5142	0.5735	0.5898
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.0827	0.0802	0.1188	0.1571
Sn-126+D	5.3507	5.6137	6.3778	6.6746
Sr-82+D	0.3698	0.3916	0.6724	0.9162
Sr-90+D	0.0000	0.0000	0.0000	0.0001
Te-118+D	0.4515	0.4433	0.5432	0.7569
Th-229+D	1.5741	1.6742	2.3795	2.7343
Th-232+D	4.7354	5.0711	5.6365	6.1080
Th-234+D	0.2006	0.2121	0.2804	0.3301
Ti-44+D	3.7273	3.9349	4.0814	4.5907
U-235+D	2.1064	2.2085	2.7259	3.0411
U-238+D	1.2988	1.3784	1.5554	1.6468
W-178+D	1.3281	1.3539	1.8151	2.0500

Table 37: Drywall 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.2943	0.2464	0.2943	0.2679	0.2690	0.1945	0.2411	0.2947
Ac-225+D	0.6055	0.5318	0.6071	0.5632	0.5872	0.4408	0.4990	0.6069
Ag-108m+D	4.6957	4.2467	4.2352	4.2521	4.9260	4.4230	4.7992	6.8216
Ag-110m+D	4.7503	4.2273	4.1798	4.3611	5.1390	4.8406	5.2108	8.3397
Am-242m+D	0.7659	0.6730	0.7900	0.7336	0.7230	0.4980	0.6339	0.6245
Am-243+D	3.0221	2.7720	2.9419	2.7735	3.0875	2.2591	2.6523	3.2154
Ar-42+D	0.2512	0.2150	0.2269	0.2289	0.2800	0.2530	0.2725	0.4753
At-211+D	0.5791	0.5135	0.5352	0.4993	0.5633	0.3874	0.4948	0.6564
Bi-210m+D	1.5690	1.3439	1.4638	1.3271	1.5897	1.3402	1.3341	1.7293
Bi-212+D	0.2714	0.2269	0.2576	0.2474	0.2614	0.2222	0.2627	0.3884
Bi-213+D	0.4982	0.4460	0.4422	0.4330	0.5069	0.4377	0.4677	0.6361
Bi-214+D	1.9292	1.6894	1.7082	1.7517	2.0865	1.9212	2.0475	3.3723
Bi-215+D	1.0998	0.9511	0.9982	0.9384	1.1207	0.9322	0.9688	1.3362
Ce-144+D	0.2597	0.2512	0.2497	0.2436	0.2769	0.2163	0.2756	0.2941
Cm-247+D	1.7185	1.5545	1.5546	1.5049	1.7522	1.4606	1.5550	2.0434
Cm-250+D	21.3112	18.8336	19.0769	19.2257	22.7173	20.3323	21.4712	32.9673
Cs-137+D	2.6278	2.3906	2.5006	2.5412	2.8074	2.7067	2.8936	3.5682
Es-254+D	2.6206	2.2532	2.4660	2.4546	2.5866	2.1570	2.5155	3.2775
Fe-60+D	3.0776	2.6196	2.6905	2.7658	3.2832	2.9466	3.1469	5.3997
Fr-220+D	0.2331	0.2009	0.2267	0.2085	0.2169	0.1509	0.1932	0.2382
Fr-221+D	0.2428	0.2222	0.2401	0.2266	0.2552	0.2084	0.2051	0.2686
Ge-68+D	0.6175	0.4271	0.6555	0.5497	0.4532	0.2813	0.4810	0.6132
Hf-172+D	2.0978	1.7977	2.0998	1.8939	1.8688	1.3429	1.7895	1.9889
Hf-182+D	4.5957	4.0118	4.2186	4.0284	4.7215	3.9833	4.1778	5.9397
Hg-193+D	2.8932	2.5073	2.6581	2.5275	2.8602	2.3483	2.6193	3.7005
Hg-194+D	3.2533	2.7391	2.9635	2.7679	3.1678	2.6016	2.8432	4.0242
In-114m+D	0.6021	0.5621	0.5891	0.5791	0.6104	0.5108	0.5775	0.6470
Kr-76+D	2.7345	2.3340	2.5867	2.3934	2.6265	2.1530	2.3251	2.9743
Np-235+D	0.4279	0.3530	0.4474	0.4031	0.3692	0.2480	0.3300	0.3158
Np-237+D	2.9048	2.5462	2.8309	2.6446	2.8273	2.1036	2.4524	2.8734
Os-194+D	0.6135	0.4896	0.5923	0.5333	0.5525	0.4249	0.5052	0.6641
Pb-202+D	2.7112	2.3457	2.4825	2.3276	2.5970	2.0824	2.4046	3.1726
Pt-202+D	0.3570	0.3166	0.3111	0.3164	0.3744	0.3386	0.3572	0.5375
Pu-239+D	0.0709	0.0567	0.0746	0.0661	0.0595	0.0390	0.0544	0.0539
Pu-244+D	1.5568	1.3566	1.5046	1.4392	1.5270	1.2250	1.4164	1.7633
Ra-219+D	1.0653	0.9131	0.9552	0.8941	1.0701	0.8572	0.8826	1.2010
Ra-221+D	0.6107	0.5316	0.5931	0.5542	0.5829	0.4189	0.5051	0.6053
Ra-223+D	1.7162	1.5145	1.6087	1.5000	1.7224	1.3163	1.4740	1.9138
Ra-224+D	1.4324	1.3203	1.4285	1.4505	1.5182	1.5113	1.5498	1.5230

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.6590	4.0963	4.3042	4.2705	4.9100	4.4834	4.6882	6.4207
Ra-228+D	3.3821	3.0053	3.1932	3.2281	3.5428	3.2619	3.4701	4.3633
Re-186m+D	1.1990	0.9257	1.2349	1.0638	0.9729	0.6477	0.9626	1.1347
Rn-219+D	0.3203	0.2804	0.2970	0.2749	0.3259	0.2782	0.2806	0.3631
Rn-222+D	0.0012	0.0011	0.0011	0.0011	0.0013	0.0011	0.0012	0.0017
Ru-106+D	0.5345	0.4764	0.4744	0.4763	0.5596	0.5045	0.5486	0.7951
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1425	0.1290	0.1456	0.1378	0.1271	0.0999	0.1550	0.1265
Sn-126+D	5.7378	5.1915	5.1607	5.1769	6.0343	5.3919	5.8979	8.5801
Sr-82+D	0.7001	0.6153	0.6868	0.6629	0.6379	0.5312	0.6249	0.7925
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000
Te-118+D	0.6894	0.6523	0.6864	0.6726	0.6453	0.5430	0.7927	0.6625
Th-229+D	2.1765	1.9208	2.1854	2.0379	2.0893	1.4579	1.8053	2.0880
Th-232+D	4.4730	3.9818	4.2822	4.3518	4.7335	4.4612	4.6967	5.5725
Th-234+D	0.2539	0.2253	0.2481	0.2330	0.2455	0.1803	0.2164	0.2613
Ti-44+D	3.0561	2.7658	2.5711	2.5831	3.2566	2.6922	2.9406	4.4933
U-235+D	2.4103	2.2044	2.4378	2.3603	2.3458	2.0672	2.2953	2.2570
U-238+D	1.2665	1.1649	1.2681	1.2651	1.3312	1.2615	1.3108	1.3300
W-178+D	1.4486	1.2231	1.4207	1.2756	1.2888	0.9404	1.1845	1.4325

Table 38: Drywall 5cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.2416	0.2050	0.2677	0.2446	0.2010	0.1752	0.3640	0.2673
Ac-225+D	0.5321	0.4908	0.5791	0.5316	0.4651	0.4161	0.7645	0.5154
Ag-108m+D	5.0342	3.7100	5.8266	6.9285	4.9196	3.1171	15.5046	9.5113
Ag-110m+D	5.3216	4.1116	6.4661	7.3874	5.2955	3.4411	17.8990	10.4642
Am-242m+D	0.6208	0.5446	0.6041	0.5374	0.4774	0.4641	0.5973	0.5579
Am-243+D	2.8532	2.6138	3.2262	2.7597	2.6030	2.3749	3.8024	2.2595
Ar-42+D	0.2911	0.2273	0.2879	0.3474	0.2900	0.1965	0.8672	0.4388
At-211+D	0.5280	0.4221	0.6287	0.5115	0.4600	0.3662	0.7447	0.4422
Bi-210m+D	1.5330	1.4242	1.9960	1.7032	1.5183	1.4151	2.8308	1.6108
Bi-212+D	0.2551	0.1982	0.2958	0.3249	0.2312	0.1628	0.6999	0.4468
Bi-213+D	0.5191	0.3674	0.5994	0.7005	0.5088	0.3105	1.5680	0.9419
Bi-214+D	2.1714	1.6656	2.4463	2.8784	2.1636	1.4011	6.9006	3.8764
Bi-215+D	1.0855	0.9348	1.4245	1.2424	1.0660	0.9289	2.2005	1.2345
Ce-144+D	0.2676	0.2369	0.2776	0.2859	0.2585	0.2222	0.4363	0.2455
Cm-247+D	1.7565	1.3117	2.1051	2.2299	1.6949	1.1339	4.7881	2.7817
Cm-250+D	23.1717	18.6589	26.6701	29.5549	23.0289	16.3246	66.0470	37.2343
Cs-137+D	2.8994	2.5681	3.2076	3.4981	2.8715	2.3466	6.2409	4.3270
Es-254+D	2.4818	1.9835	2.7444	2.7871	2.1813	1.6497	5.8602	3.8839
Fe-60+D	3.4472	2.6608	3.8930	4.6472	3.3782	2.2292	10.6372	6.1596
Fr-220+D	0.1973	0.1668	0.2204	0.1860	0.1653	0.1413	0.2592	0.1785
Fr-221+D	0.2411	0.2337	0.2716	0.2694	0.2320	0.2036	0.4084	0.2335
Ge-68+D	0.3854	0.2772	0.3928	0.4113	0.2403	0.2010	0.5206	0.5920
Hf-172+D	1.7899	1.5165	1.8546	1.8649	1.5345	1.2521	2.1192	2.0670
Hf-182+D	4.7299	4.1844	5.6049	5.4961	4.6163	3.6978	10.3744	6.2335
Hg-193+D	2.8376	2.3127	3.3991	3.2855	2.6620	1.9637	6.3286	3.9337
Hg-194+D	3.0992	2.4927	3.9952	3.5222	2.9587	2.3959	6.3940	3.8667
In-114m+D	0.5908	0.5046	0.5672	0.7069	0.5558	0.4435	0.9547	0.6934
Kr-76+D	2.5085	2.1282	3.1322	2.8588	2.3695	2.0586	4.8860	3.0152
Np-235+D	0.3045	0.2534	0.2975	0.2470	0.2051	0.1984	0.2761	0.3340
Np-237+D	2.5460	2.2478	3.0335	2.4664	2.2618	2.1721	3.3833	2.2252
Os-194+D	0.5111	0.4078	0.6485	0.5811	0.4539	0.3982	0.9079	0.6301
Pb-202+D	2.5896	1.8776	3.0136	3.1867	2.3994	1.5570	6.3933	4.1336
Pt-202+D	0.3906	0.2861	0.4537	0.5376	0.3877	0.2403	1.2566	0.7410
Pu-239+D	0.0490	0.0397	0.0478	0.0414	0.0321	0.0308	0.0447	0.0566
Pu-244+D	1.4327	1.1353	1.5280	1.6327	1.2592	0.9455	3.1542	2.1805
Ra-219+D	1.0013	0.8501	1.4538	1.0891	0.9935	0.9548	1.6197	0.8424
Ra-221+D	0.5300	0.4803	0.5648	0.4964	0.4617	0.4024	0.7404	0.4832
Ra-223+D	1.6323	1.4391	1.9559	1.7102	1.5318	1.3213	2.7963	1.5842
Ra-224+D	1.5656	1.5968	1.5777	1.5675	1.5401	1.5542	1.6413	1.5863

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.0029	4.2870	5.8194	5.9848	4.9485	3.9969	11.2523	6.8930
Ra-228+D	3.5606	3.1839	4.0403	4.0267	3.4424	2.9412	7.1992	4.9068
Re-186m+D	0.8746	0.7020	0.9254	0.8846	0.6618	0.5547	1.0481	1.0880
Rn-219+D	0.3221	0.2790	0.3971	0.3852	0.3168	0.2578	0.7485	0.4307
Rn-222+D	0.0013	0.0009	0.0014	0.0018	0.0013	0.0008	0.0041	0.0026
Ru-106+D	0.5782	0.4121	0.6334	0.8072	0.5761	0.3442	1.8453	1.1450
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1234	0.0943	0.0919	0.1388	0.1052	0.0899	0.1014	0.1396
Sn-126+D	6.1682	4.6457	7.3569	8.3912	6.0766	3.9306	18.8276	11.3204
Sr-82+D	0.5919	0.4929	0.6699	0.6274	0.4846	0.3883	1.2805	0.8910
Sr-90+D	0.0001	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0001
Te-118+D	0.6481	0.4969	0.4864	0.7632	0.5841	0.4811	0.6596	0.7598
Th-229+D	1.8508	1.6349	1.9317	1.7233	1.5494	1.3810	2.2446	1.6350
Th-232+D	4.8105	4.4749	5.3087	5.2876	4.6836	4.2051	8.5527	6.1186
Th-234+D	0.2256	0.1985	0.2530	0.2112	0.1945	0.1683	0.3218	0.2311
Ti-44+D	3.3730	2.6281	4.1757	3.9609	3.2930	2.2638	7.9940	4.6044
U-235+D	2.2426	2.1180	2.2513	2.1195	2.0181	1.9719	2.2457	2.2505
U-238+D	1.3409	1.3267	1.3240	1.3214	1.3027	1.2910	1.4524	1.2905
W-178+D	1.2587	1.0668	1.3814	1.3062	1.0980	0.8535	1.6867	1.5803

Table 39: Drywall 5cm Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.1703	0.1383	0.2947	0.2663
Ac-225+D	0.4114	0.3356	0.5538	0.4443
Ag-108m+D	4.7220	2.5188	7.8812	6.8281
Ag-110m+D	5.1533	2.7848	9.1064	8.2422
Am-242m+D	0.3649	0.3443	0.6474	0.6547
Am-243+D	2.3966	1.8485	2.8242	2.3891
Ar-42+D	0.2866	0.1661	0.5648	0.3256
At-211+D	0.4195	0.3245	0.4529	0.5026
Bi-210m+D	1.4500	1.0533	2.2429	1.2830
Bi-212+D	0.2108	0.1337	0.4083	0.3794
Bi-213+D	0.4945	0.2526	0.8201	0.6089
Bi-214+D	2.1161	1.1507	3.8169	3.0760
Bi-215+D	1.0176	0.6627	1.6756	1.0734
Ce-144+D	0.2496	0.1428	0.3172	0.1794
Cm-247+D	1.6372	0.9084	2.4279	1.8302
Cm-250+D	22.4576	12.6870	38.3469	28.5550
Cs-137+D	2.7780	2.1497	3.7938	3.8876
Es-254+D	1.9172	1.3019	3.6908	3.6633
Fe-60+D	3.2564	1.8275	6.5764	5.8135
Fr-220+D	0.1431	0.1155	0.2008	0.1929
Fr-221+D	0.2226	0.1695	0.2347	0.1447
Ge-68+D	0.1508	0.1853	0.5606	0.7560
Hf-172+D	1.3475	0.9792	1.4721	1.7645
Hf-182+D	4.4206	2.9717	6.5797	5.2828
Hg-193+D	2.5007	1.6302	3.5730	3.1574
Hg-194+D	2.7676	1.6820	4.7720	3.3447
In-114m+D	0.5064	0.3581	0.6589	0.5245
Kr-76+D	2.1877	1.4204	3.8977	2.4477
Np-235+D	0.1283	0.1512	0.3397	0.3678
Np-237+D	1.9848	1.4883	3.3564	2.4554
Os-194+D	0.4014	0.2650	0.8440	0.6215
Pb-202+D	2.2461	1.3234	3.4513	2.9938
Pt-202+D	0.3780	0.1944	0.6788	0.5498
Pu-239+D	0.0197	0.0240	0.0564	0.0647
Pu-244+D	1.1011	0.7410	2.0661	1.8002
Ra-219+D	0.9413	0.5497	1.7289	0.8715
Ra-221+D	0.4098	0.2912	0.6296	0.4399
Ra-223+D	1.4440	1.0306	1.9852	1.4295
Ra-224+D	1.4860	1.5048	1.5634	1.7305

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.7910	3.3410	7.4339	5.9342
Ra-228+D	3.2751	2.5157	4.8360	4.3914
Re-186m+D	0.5195	0.4518	0.9699	1.1552
Rn-219+D	0.3056	0.2061	0.4544	0.2930
Rn-222+D	0.0013	0.0006	0.0024	0.0017
Ru-106+D	0.5595	0.2823	1.0181	0.8060
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.0855	0.0824	0.1129	0.1593
Sn-126+D	5.8852	3.2288	9.2887	8.3087
Sr-82+D	0.3846	0.2991	0.8146	0.7631
Sr-90+D	0.0000	0.0000	0.0001	0.0000
Te-118+D	0.4910	0.4364	0.6341	0.8230
Th-229+D	1.3250	1.1252	1.8677	1.7319
Th-232+D	4.4800	3.7520	6.1250	5.7900
Th-234+D	0.1682	0.1364	0.2249	0.2361
Ti-44+D	3.1983	1.9467	4.2056	4.1316
U-235+D	1.8089	1.8195	2.2005	2.5213
U-238+D	1.2437	1.2374	1.3863	1.5831
W-178+D	0.9773	0.7145	0.9950	1.3092

APPENDIX D

These are appendices to augment Finklea 2014 Room Radiation Dose Coefficients for External Exposure as utilized in <http://epa-bprg.ornl.gov/> and <http://epa-bdcc.ornl.gov/> .”

Table 40: Glass Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.5834	0.3364	0.5063	0.5927	0.4789	0.3346	0.5507	0.6232
Ac-225+D	1.0542	0.6475	0.9284	1.0692	0.9284	0.6990	1.0456	1.1503
Ag-108m+D	3.5973	2.5702	3.3019	3.6266	4.1311	3.7260	4.3934	4.3977
Ag-110m+D	2.9629	2.1355	2.7327	2.9848	3.5596	3.2525	3.7685	3.7145
Am-242m+D	1.7599	1.0583	1.5418	1.7802	1.5259	1.1367	1.7214	1.8945
Am-243+D	4.6087	3.0538	4.1318	4.6662	4.4964	3.6999	4.9356	5.2354
Ar-42+D	0.1680	0.1192	0.1545	0.1689	0.2037	0.1860	0.2154	0.2111
At-211+D	1.1055	0.6965	0.9782	1.1216	1.0046	0.7786	1.1225	1.2233
Bi-210m+D	1.2272	0.8740	1.1236	1.2456	1.3410	1.1806	1.4431	1.4848
Bi-212+D	0.4001	0.2302	0.3476	0.4063	0.3411	0.2440	0.3897	0.4354
Bi-213+D	0.3666	0.2601	0.3356	0.3712	0.4072	0.3608	0.4371	0.4448
Bi-214+D	1.2595	0.9005	1.1583	1.2686	1.5031	1.3677	1.5921	1.5734
Bi-215+D	0.9829	0.6835	0.8939	0.9959	1.0448	0.9036	1.1298	1.1693
Ce-144+D	0.3065	0.2186	0.2805	0.3097	0.3381	0.3016	0.3627	0.3676
Cm-247+D	1.5247	1.0704	1.3900	1.5435	1.6445	1.4400	1.7723	1.8189
Cm-250+D	14.8229	10.7560	13.6705	14.9581	17.4843	15.9326	18.5397	18.4206
Cs-137+D	1.9958	1.4412	1.8438	2.0076	2.3725	2.1686	2.5255	2.4717
Es-254+D	4.1971	2.5375	3.6871	4.2454	3.8060	2.9162	4.2594	4.6212
Fe-60+D	2.7020	1.7250	2.4108	2.7323	2.8110	2.3434	3.0672	3.1898
Fr-220+D	0.4872	0.2931	0.4266	0.4943	0.4171	0.3057	0.4732	0.5265
Fr-221+D	0.2436	0.1704	0.2218	0.2474	0.2551	0.2198	0.2764	0.2874
Ge-68+D	1.7289	0.8279	1.4428	1.7685	1.1582	0.5977	1.4273	1.7576
Hf-172+D	4.4274	2.6005	3.8571	4.5086	3.8432	2.8214	4.3547	4.8647
Hf-182+D	4.5850	3.1118	4.1442	4.6513	4.8155	4.1153	5.2240	5.4392
Hg-193+D	3.8677	2.4418	3.4311	3.9275	3.6657	2.9084	4.0720	4.3905
Hg-194+D	4.0111	2.5124	3.5524	4.0731	3.7873	2.9887	4.2145	4.5585
In-114m+D	0.8118	0.5585	0.7368	0.8174	0.8715	0.7632	0.9315	0.9547
Kr-76+D	3.4628	2.1903	3.0735	3.5107	3.2140	2.5142	3.5762	3.8748
Np-235+D	1.1797	0.6715	1.0208	1.1950	0.9430	0.6450	1.0871	1.2329
Np-237+D	4.8278	3.0431	4.2781	4.8836	4.4224	3.4554	4.9224	5.3266
Os-194+D	1.0052	0.5581	0.8654	1.0240	0.8134	0.5519	0.9439	1.0816
Pb-202+D	3.6194	2.2306	3.1913	3.6789	3.3146	2.5571	3.7159	4.0600
Pt-202+D	0.2292	0.1652	0.2111	0.2314	0.2700	0.2454	0.2866	0.2854

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Pu-239+D	0.1971	0.1087	0.1694	0.2001	0.1528	0.1003	0.1782	0.2050
Pu-244+D	2.4932	1.5313	2.1975	2.5210	2.2510	1.7280	2.5174	2.7319
Ra-219+D	0.9828	0.6826	0.8930	0.9954	1.0325	0.8887	1.1184	1.1635
Ra-221+D	1.1221	0.6878	0.9877	1.1383	0.9830	0.7361	1.1098	1.2228
Ra-223+D	2.1902	1.4448	1.9623	2.2221	2.1307	1.7408	2.3472	2.5010
Ra-224+D	1.1949	0.8708	1.1071	1.2004	1.4167	1.2989	1.5060	1.4832
Ra-226+D	3.7109	2.6049	3.3902	3.7412	4.1896	3.7264	4.4775	4.5097
Ra-228+D	3.3391	2.2575	3.0218	3.3667	3.5520	3.0517	3.8466	3.9264
Re-186m+D	2.9577	1.5508	2.5136	3.0195	2.2101	1.3625	2.6252	3.1011
Rn-219+D	0.2380	0.1713	0.2187	0.2415	0.2644	0.2351	0.2836	0.2896
Rn-222+D	0.0007	0.0005	0.0007	0.0008	0.0009	0.0008	0.0009	0.0009
Ru-106+D	0.3169	0.2315	0.2930	0.3198	0.3783	0.3465	0.4004	0.3970
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3177	0.1983	0.2813	0.3202	0.3067	0.2489	0.3353	0.3570
Sn-126+D	4.3141	3.0915	3.9623	4.3555	4.9533	4.4639	5.2731	5.2948
Sr-82+D	1.6332	1.0067	1.4402	1.6463	1.3975	1.0285	1.5711	1.7265
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.3518	0.9063	1.2190	1.3555	1.4345	1.2487	1.5277	1.5671
Th-229+D	4.5051	2.7523	3.9602	4.5623	3.9545	2.9751	4.4486	4.8912
Th-232+D	4.2394	2.9059	3.8553	4.2738	4.6343	4.0454	4.9856	5.0291
Th-234+D	0.4948	0.3092	0.4373	0.5007	0.4470	0.3452	0.4990	0.5429
Ti-44+D	3.2927	2.3766	3.0210	3.3304	3.7185	3.3443	3.9603	4.0050
U-235+D	3.9227	2.5450	3.4988	3.9633	3.7237	2.9975	4.1022	4.3717
U-238+D	1.4625	1.0233	1.3327	1.4770	1.5895	1.3944	1.7153	1.7205
W-178+D	3.0039	1.7721	2.6192	3.0603	2.6192	1.9296	2.9640	3.3102

Table 41: Glass Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.4786	0.3700	0.5819	0.6497	0.3404	0.3185	0.5615	0.6522
Ac-225+D	0.9506	0.7855	1.1124	1.1994	0.7217	0.6981	1.0899	1.2223
Ag-108m+D	4.6883	4.5594	4.9085	4.6755	4.3508	4.5880	5.1566	4.9793
Ag-110m+D	4.1555	4.1082	4.3060	4.0347	4.0462	4.3476	4.6546	4.3792
Am-242m+D	1.5348	1.2413	1.7943	1.9599	1.0868	1.0248	1.7222	1.9494
Am-243+D	4.7848	4.2814	5.3261	5.4770	4.0014	4.0336	5.3368	5.7465
Ar-42+D	0.2398	0.2378	0.2469	0.2301	0.2349	0.2528	0.2704	0.2501
At-211+D	1.0465	0.8900	1.2044	1.2766	0.8395	0.8272	1.1887	1.3503
Bi-210m+D	1.5023	1.4407	1.6194	1.5776	1.3977	1.4622	1.6828	1.6952
Bi-212+D	0.3516	0.2819	0.4192	0.4583	0.2680	0.2607	0.4152	0.4641
Bi-213+D	0.4598	0.4421	0.4914	0.4747	0.4299	0.4514	0.5158	0.5080
Bi-214+D	1.7530	1.7293	1.8192	1.7070	1.7028	1.8254	1.9706	1.8541
Bi-215+D	1.1596	1.0924	1.2565	1.2397	1.0561	1.0985	1.2987	1.3314
Ce-144+D	0.3781	0.3633	0.4015	0.3902	0.3514	0.3712	0.4178	0.4160
Cm-247+D	1.8268	1.7310	1.9665	1.9271	1.6598	1.7270	2.0344	2.0557
Cm-250+D	20.1916	19.9009	21.0615	19.8593	19.4708	20.7910	22.5622	21.4644
Cs-137+D	2.7532	2.7222	2.8947	2.6718	2.6671	2.8451	3.0695	2.8938
Es-254+D	3.9553	3.3262	4.5405	4.8460	3.0295	2.9712	4.4691	4.8788
Fe-60+D	3.1602	2.9193	3.4483	3.4427	2.8718	2.9997	3.6388	3.6303
Fr-220+D	0.4232	0.3411	0.5016	0.5477	0.3153	0.3019	0.4882	0.5611
Fr-221+D	0.2801	0.2629	0.3065	0.3038	0.2521	0.2596	0.3146	0.3253
Ge-68+D	1.0735	0.6292	1.4942	1.8421	0.6046	0.4779	1.3835	1.7802
Hf-172+D	3.9830	3.2903	4.6976	5.1312	3.1459	3.1070	4.6490	5.1620
Hf-182+D	5.3544	5.0364	5.8343	5.7982	4.8980	5.1076	6.0648	6.1578
Hg-193+D	3.9283	3.4674	4.4574	4.6368	3.3351	3.3764	4.5133	4.8525
Hg-194+D	4.0608	3.5733	4.6162	4.8166	3.4422	3.4873	4.6824	5.0067
In-114m+D	0.9553	0.9011	1.0188	0.9968	0.8293	0.8562	1.0295	1.0322
Kr-76+D	3.3858	2.9189	3.8667	4.0548	2.7433	2.7425	3.8770	4.1665
Np-235+D	0.9163	0.6806	1.1204	1.2738	0.5852	0.5228	1.0558	1.2460
Np-237+D	4.5793	3.8928	5.2315	5.5496	3.5443	3.4797	5.1462	5.6565
Os-194+D	0.8221	0.6303	1.0119	1.1371	0.6042	0.5743	0.9867	1.1387
Pb-202+D	3.5070	3.0149	4.0488	4.2780	2.8968	2.8930	4.0612	4.4368
Pt-202+D	0.3125	0.3076	0.3268	0.3083	0.3018	0.3219	0.3504	0.3319
Pu-239+D	0.1473	0.1059	0.1841	0.2125	0.0923	0.0811	0.1728	0.2071
Pu-244+D	2.3212	1.9443	2.6667	2.8498	1.7517	1.7050	2.6174	2.8660
Ra-219+D	1.1381	1.0656	1.2357	1.2287	1.0252	1.0635	1.2718	1.3117
Ra-221+D	1.0049	0.8267	1.1794	1.2740	0.7634	0.7391	1.1558	1.2983
Ra-223+D	2.2821	2.0397	2.5598	2.6280	1.9461	1.9700	2.5799	2.7843
Ra-224+D	1.6412	1.6310	1.7094	1.5899	1.5913	1.6853	1.8211	1.7045

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	4.7864	4.6208	5.0770	4.8383	4.5201	4.7778	5.3722	5.2130
Ra-228+D	3.9610	3.7169	4.2877	4.1766	3.5597	3.6991	4.4326	4.4069
Re-186m+D	2.1553	1.5145	2.7810	3.2522	1.4485	1.3045	2.6539	3.2057
Rn-219+D	0.2975	0.2870	0.3190	0.3081	0.2784	0.2920	0.3329	0.3314
Rn-222+D	0.0010	0.0010	0.0011	0.0010	0.0010	0.0010	0.0011	0.0011
Ru-106+D	0.4390	0.4344	0.4573	0.4288	0.4263	0.4549	0.4914	0.4616
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3257	0.2871	0.3621	0.3732	0.2626	0.2654	0.3561	0.3768
Sn-126+D	5.6547	5.5076	5.9472	5.6711	5.3567	5.6816	6.2893	6.1146
Sr-82+D	1.3881	1.1014	1.6220	1.7662	0.9419	0.8799	1.5662	1.7678
Sr-90+D	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.5625	1.4572	1.6617	1.6343	1.3216	1.3654	1.6560	1.6672
Th-229+D	4.0365	3.3153	4.7075	5.0912	3.0297	2.9357	4.5938	5.1876
Th-232+D	5.2293	4.9685	5.6177	5.3660	4.8002	5.0280	5.8839	5.6943
Th-234+D	0.4609	0.3895	0.5294	0.5652	0.3547	0.3470	0.5207	0.5771
Ti-44+D	4.2172	4.1196	4.4407	4.2704	4.0166	4.2409	4.6602	4.7280
U-235+D	3.9238	3.4510	4.4134	4.5645	3.1826	3.1631	4.3737	4.6773
U-238+D	1.7790	1.6985	1.8692	1.8281	1.6433	1.7164	1.9818	1.9617
W-178+D	2.7259	2.2709	3.2090	3.4992	2.1838	2.1692	3.1935	3.5360

Table 42: Glass Surface Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2438	0.3128	0.5620	0.6765
Ac-225+D	0.5497	0.6872	1.0996	1.2778
Ag-108m+D	3.9132	4.6371	5.2930	5.5013
Ag-110m+D	3.8468	4.5682	4.8568	4.9877
Am-242m+D	0.7302	0.9498	1.7009	2.0024
Am-243+D	3.3291	3.9715	5.3694	6.0779
Ar-42+D	0.2255	0.2668	0.2854	0.2879
At-211+D	0.6853	0.8241	1.2013	1.3961
Bi-210m+D	1.2825	1.4882	1.7365	1.8722
Bi-212+D	0.2101	0.2677	0.4202	0.4929
Bi-213+D	0.3962	0.4621	0.5350	0.5621
Bi-214+D	1.6201	1.9111	2.0646	2.1044
Bi-215+D	0.9551	1.1179	1.3398	1.4512
Ce-144+D	0.3194	0.3786	0.4252	0.4657
Cm-247+D	1.4871	1.7381	2.0918	2.2391
Cm-250+D	18.3532	21.5854	23.5837	24.2908
Cs-137+D	2.5188	2.9461	3.1431	3.2636
Es-254+D	2.2841	2.8823	4.4950	5.1472
Fe-60+D	2.6292	3.1506	3.8084	4.0452
Fr-220+D	0.2376	0.2981	0.4894	0.5803
Fr-221+D	0.2251	0.2639	0.3280	0.3535
Ge-68+D	0.3321	0.4897	1.3717	1.8281
Hf-172+D	2.5488	3.1052	4.6271	5.4489
Hf-182+D	4.4718	5.2570	6.2305	6.7577
Hg-193+D	2.8839	3.4624	4.6029	5.1854
Hg-194+D	2.9745	3.5685	4.7752	5.3709
In-114m+D	0.6846	0.8209	1.0436	1.1262
Kr-76+D	2.2443	2.7515	3.9360	4.4484
Np-235+D	0.3432	0.4802	1.0401	1.2645
Np-237+D	2.7084	3.3505	5.1532	5.9226
Os-194+D	0.4606	0.5835	0.9956	1.1991
Pb-202+D	2.4496	2.9441	4.1255	4.7107
Pt-202+D	0.2854	0.3344	0.3672	0.3760
Pu-239+D	0.0535	0.0754	0.1703	0.2105
Pu-244+D	1.2951	1.6445	2.6201	2.9950
Ra-219+D	0.9175	1.0738	1.3102	1.4207
Ra-221+D	0.5846	0.7382	1.1611	1.3597
Ra-223+D	1.6708	1.9836	2.6251	2.9645
Ra-224+D	1.5039	1.7487	1.8956	1.8959

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.2131	4.9603	5.6081	5.7811
Ra-228+D	3.1745	3.8027	4.5544	4.8931
Re-186m+D	1.0116	1.3293	2.6374	3.3308
Rn-219+D	0.2562	0.2971	0.3443	0.3677
Rn-222+D	0.0009	0.0011	0.0012	0.0012
Ru-106+D	0.4034	0.4712	0.5113	0.5215
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2013	0.2450	0.3533	0.4055
Sn-126+D	4.9558	5.8112	6.4767	6.7981
Sr-82+D	0.6054	0.8358	1.5551	1.8071
Sr-90+D	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.0423	1.2464	1.6427	1.8209
Th-229+D	2.2648	2.8604	4.5973	5.3820
Th-232+D	4.3610	5.1995	6.0933	6.3875
Th-234+D	0.2717	0.3371	0.5188	0.6000
Ti-44+D	3.7742	4.3589	4.8135	5.1044
U-235+D	2.5627	3.1231	4.4036	4.9148
U-238+D	1.4959	1.7572	2.0862	2.1527
W-178+D	1.8089	2.1905	3.1837	3.7197

Table 43: Glass 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.3700	0.2991	0.3564	0.3909	0.3114	0.2653	0.3529	0.3985
Ac-225+D	0.7504	0.6281	0.7294	0.7850	0.6771	0.6071	0.7492	0.8134
Ag-108m+D	4.0000	3.3477	3.9236	4.1373	4.3740	4.2807	4.6884	4.6537
Ag-110m+D	3.9187	3.1333	3.8217	4.0715	4.4741	4.3945	4.8370	4.7288
Am-242m+D	1.0247	0.8765	0.9944	1.0692	0.8439	0.7223	0.9359	1.0613
Am-243+D	3.8875	3.3679	3.8140	4.0274	3.7732	3.5562	4.0618	4.2372
Ar-42+D	0.2122	0.1648	0.2055	0.2205	0.2467	0.2409	0.2677	0.2596
At-211+D	0.8569	0.7273	0.8363	0.8935	0.7975	0.7338	0.8709	0.9283
Bi-210m+D	1.4164	1.1941	1.3915	1.4693	1.5155	1.4767	1.6298	1.6314
Bi-212+D	0.2872	0.2237	0.2757	0.3038	0.2624	0.2310	0.2966	0.3231
Bi-213+D	0.4193	0.3484	0.4111	0.4352	0.4547	0.4436	0.4896	0.4879
Bi-214+D	1.6103	1.2794	1.5671	1.6730	1.8403	1.8015	1.9913	1.9479
Bi-215+D	1.0600	0.8900	1.0394	1.1003	1.1197	1.0838	1.2071	1.2149
Ce-144+D	0.3196	0.2808	0.3151	0.3288	0.3331	0.3252	0.3523	0.3545
Cm-247+D	1.5976	1.3541	1.5689	1.6549	1.6861	1.6363	1.8099	1.8222
Cm-250+D	18.4442	15.0728	18.0264	19.1149	20.7187	20.3227	22.2898	21.8874
Cs-137+D	2.4780	2.0111	2.4252	2.5658	2.7925	2.7516	3.0021	2.9431
Es-254+D	2.8718	2.3509	2.7778	3.0047	2.6233	2.3397	2.9034	3.1471
Fe-60+D	2.7928	2.1499	2.6947	2.9260	3.0190	2.8644	3.3199	3.3401
Fr-220+D	0.3288	0.2742	0.3189	0.3447	0.2877	0.2539	0.3199	0.3524
Fr-221+D	0.2588	0.2208	0.2544	0.2683	0.2693	0.2604	0.2895	0.2931
Ge-68+D	0.8477	0.5868	0.7889	0.9279	0.5528	0.3582	0.6967	0.9102
Hf-172+D	3.1381	2.5933	3.0404	3.2970	2.7689	2.4620	3.0588	3.3681
Hf-182+D	4.8278	4.0158	4.7219	5.0187	5.0671	4.8794	5.4680	5.5276
Hg-193+D	3.3878	2.7876	3.2966	3.5411	3.3322	3.1115	3.6425	3.8039
Hg-194+D	3.5195	2.8683	3.4191	3.6841	3.4696	3.2306	3.8062	3.9773
In-114m+D	0.6537	0.5840	0.6446	0.6716	0.6543	0.6291	0.6906	0.7086
Kr-76+D	2.7889	2.3170	2.7159	2.9137	2.6846	2.4807	2.9533	3.1050
Np-235+D	0.5955	0.4911	0.5718	0.6280	0.4394	0.3429	0.5070	0.6085
Np-237+D	3.4490	2.9463	3.3645	3.5886	3.1570	2.8689	3.4556	3.7139
Os-194+D	0.6804	0.5285	0.6518	0.7234	0.5866	0.5010	0.6694	0.7525
Pb-202+D	2.9956	2.4485	2.9096	3.1410	2.8716	2.6466	3.1600	3.3473
Pt-202+D	0.2883	0.2334	0.2816	0.2994	0.3248	0.3187	0.3504	0.3439
Pu-239+D	0.0987	0.0790	0.0942	0.1048	0.0709	0.0536	0.0831	0.1016
Pu-244+D	1.6926	1.4127	1.6431	1.7666	1.5321	1.3694	1.6932	1.8370
Ra-219+D	1.0372	0.8777	1.0179	1.0761	1.0841	1.0474	1.1683	1.1807
Ra-221+D	0.7959	0.6663	0.7733	0.8330	0.7149	0.6399	0.7912	0.8609
Ra-223+D	1.9806	1.6782	1.9387	2.0602	1.9626	1.8554	2.1267	2.2044
Ra-224+D	1.4116	1.1535	1.3787	1.4601	1.5820	1.5669	1.6896	1.6616

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.3291	3.5066	4.2234	4.4986	4.7856	4.6553	5.1700	5.1157
Ra-228+D	3.3449	2.7186	3.2593	3.4804	3.5702	3.4211	3.8644	3.8930
Re-186m+D	1.7235	1.3103	1.6374	1.8487	1.3231	1.0414	1.5505	1.8518
Rn-219+D	0.2777	0.2338	0.2729	0.2879	0.2998	0.2930	0.3220	0.3212
Rn-222+D	0.0009	0.0008	0.0009	0.0010	0.0011	0.0010	0.0011	0.0011
Ru-106+D	0.4149	0.3378	0.4060	0.4306	0.4686	0.4613	0.5049	0.4956
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1879	0.1683	0.1838	0.1939	0.1635	0.1474	0.1742	0.1917
Sn-126+D	5.0849	4.2286	4.9851	5.2685	5.5868	5.4754	5.9984	5.9466
Sr-82+D	0.9036	0.7748	0.8776	0.9407	0.7538	0.6452	0.8493	0.9411
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	0.8444	0.7914	0.8348	0.8599	0.7888	0.7465	0.8174	0.8600
Th-229+D	3.0016	2.5498	2.9193	3.1332	2.6278	2.3316	2.8993	3.1858
Th-232+D	4.5238	3.6562	4.4070	4.7105	4.9223	4.7511	5.3124	5.3074
Th-234+D	0.3463	0.2957	0.3376	0.3604	0.3127	0.2825	0.3424	0.3701
Ti-44+D	3.7777	3.2216	3.7158	3.9006	4.0735	4.0013	4.3338	4.3002
U-235+D	3.0168	2.5849	2.9533	3.1438	2.8669	2.6698	3.1212	3.2437
U-238+D	1.3474	1.1296	1.3193	1.3947	1.4347	1.3958	1.5451	1.5287
W-178+D	2.2097	1.8231	2.1422	2.3207	1.9779	1.7725	2.1817	2.3839

Table 44: Glass 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.3079	0.2755	0.3599	0.3956	0.2496	0.2459	0.3466	0.3852
Ac-225+D	0.6808	0.6381	0.7671	0.8115	0.5845	0.5839	0.7450	0.7972
Ag-108m+D	4.6916	4.8231	4.9773	4.7818	4.5174	4.7261	4.9938	4.8033
Ag-110m+D	4.9145	5.1203	5.2165	4.9111	4.8164	5.1061	5.2967	4.9696
Am-242m+D	0.8139	0.7196	0.9415	1.0472	0.6334	0.6132	0.8916	1.0110
Am-243+D	3.8512	3.7580	4.1691	4.2558	3.5200	3.5581	4.0972	4.2112
Ar-42+D	0.2749	0.2869	0.2918	0.2706	0.2705	0.2888	0.2993	0.2772
At-211+D	0.8064	0.7690	0.8897	0.9309	0.7204	0.7242	0.8728	0.9161
Bi-210m+D	1.6076	1.6351	1.7141	1.6633	1.5482	1.5970	1.7142	1.6752
Bi-212+D	0.2709	0.2547	0.3099	0.3259	0.2341	0.2393	0.3053	0.3208
Bi-213+D	0.4864	0.4972	0.5183	0.4996	0.4694	0.4884	0.5203	0.5038
Bi-214+D	2.0274	2.1112	2.1528	2.0213	1.9865	2.1090	2.1936	2.0550
Bi-215+D	1.1852	1.1992	1.2694	1.2396	1.1327	1.1695	1.2687	1.2453
Ce-144+D	0.3469	0.3497	0.3650	0.3593	0.3342	0.3416	0.3633	0.3591
Cm-247+D	1.7801	1.8019	1.8990	1.8552	1.6978	1.7521	1.8941	1.8584
Cm-250+D	22.5452	23.3329	23.8726	22.5960	22.0370	23.1838	24.2070	22.9244
Cs-137+D	3.0543	3.1766	3.2263	3.0420	2.9847	3.1268	3.2915	3.0752
Es-254+D	2.6748	2.5207	3.0145	3.1677	2.2851	2.3121	2.9446	3.1074
Fe-60+D	3.2989	3.3504	3.5788	3.4497	3.1455	3.3266	3.6343	3.4815
Fr-220+D	0.2860	0.2630	0.3254	0.3509	0.2414	0.2395	0.3153	0.3430
Fr-221+D	0.2824	0.2843	0.3016	0.2968	0.2685	0.2753	0.3000	0.2973
Ge-68+D	0.5112	0.3526	0.7013	0.8864	0.3067	0.2745	0.6595	0.8389
Hf-172+D	2.7578	2.5381	3.0998	3.3495	2.4020	2.3808	3.0301	3.2634
Hf-182+D	5.3658	5.4076	5.7393	5.6299	5.1335	5.3041	5.7575	5.6439
Hg-193+D	3.4652	3.3900	3.7889	3.8474	3.1978	3.2707	3.7688	3.8188
Hg-194+D	3.6203	3.5428	3.9777	4.0273	3.3369	3.4167	3.9573	4.0065
In-114m+D	0.6704	0.6640	0.7104	0.7167	0.6213	0.6275	0.6997	0.7059
Kr-76+D	2.7692	2.6841	3.0676	3.1314	2.4900	2.5329	3.0187	3.1087
Np-235+D	0.4092	0.3302	0.5056	0.5949	0.2756	0.2552	0.4693	0.5678
Np-237+D	3.1744	3.0026	3.5422	3.7138	2.7460	2.7450	3.4351	3.6492
Os-194+D	0.5911	0.5350	0.6911	0.7512	0.4945	0.4935	0.6736	0.7345
Pb-202+D	2.9630	2.8608	3.2768	3.3736	2.6893	2.7358	3.2423	3.3393
Pt-202+D	0.3542	0.3667	0.3759	0.3555	0.3461	0.3645	0.3810	0.3603
Pu-239+D	0.0658	0.0515	0.0829	0.0992	0.0432	0.0397	0.0770	0.0944
Pu-244+D	1.5482	1.4558	1.7476	1.8409	1.3112	1.3202	1.6950	1.8070
Ra-219+D	1.1409	1.1496	1.2263	1.2022	1.0853	1.1153	1.2204	1.2067
Ra-221+D	0.7173	0.6703	0.8086	0.8588	0.6161	0.6152	0.7854	0.8440
Ra-223+D	2.0291	1.9969	2.2018	2.2249	1.8793	1.9136	2.1776	2.2134
Ra-224+D	1.7264	1.7885	1.8133	1.7211	1.6866	1.7621	1.8425	1.7330

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.2040	5.3492	5.5194	5.2623	5.0451	5.2882	5.6624	5.3334
Ra-228+D	3.8402	3.9014	4.1183	3.9841	3.6434	3.7866	4.1849	4.0166
Re-186m+D	1.2778	1.0570	1.5660	1.8213	0.9717	0.9326	1.5038	1.7514
Rn-219+D	0.3190	0.3256	0.3392	0.3278	0.3079	0.3184	0.3397	0.3302
Rn-222+D	0.0011	0.0012	0.0012	0.0012	0.0011	0.0012	0.0012	0.0012
Ru-106+D	0.5103	0.5303	0.5413	0.5117	0.4993	0.5259	0.5472	0.5197
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1585	0.1449	0.1743	0.1910	0.1348	0.1297	0.1675	0.1825
Sn-126+D	6.0055	6.1829	6.3687	6.1111	5.8309	6.0955	6.4057	6.1420
Sr-82+D	0.7376	0.6621	0.8611	0.9366	0.5653	0.5582	0.8182	0.9108
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.7777	0.7438	0.8217	0.8653	0.6941	0.6779	0.7963	0.8313
Th-229+D	2.6011	2.3955	2.9415	3.1662	2.1884	2.1625	2.8383	3.0896
Th-232+D	5.3416	5.4636	5.6833	5.4451	5.1183	5.3471	5.8558	5.5322
Th-234+D	0.3126	0.2935	0.3489	0.3691	0.2693	0.2686	0.3388	0.3615
Ti-44+D	4.3236	4.4139	4.5414	4.4005	4.2214	4.3727	4.5820	4.4155
U-235+D	2.9248	2.8455	3.2098	3.2950	2.6084	2.6321	3.1225	3.4187
U-238+D	1.5265	1.5517	1.5798	1.5602	1.4579	1.5182	1.6424	1.6085
W-178+D	1.9815	1.8397	2.2157	2.3736	1.7487	1.7415	2.1751	2.3179

Table 45: Glass 1cm Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2045	0.2306	0.3514	0.4096
Ac-225+D	0.5021	0.5514	0.7465	0.8322
Ag-108m+D	4.2421	4.5247	4.9198	4.8647
Ag-110m+D	4.6263	5.0076	5.2673	5.0502
Am-242m+D	0.4742	0.5368	0.8914	1.0729
Am-243+D	3.1921	3.3897	4.0808	4.2994
Ar-42+D	0.2614	0.2858	0.3020	0.2831
At-211+D	0.6488	0.6977	0.8746	0.9399
Bi-210m+D	1.4678	1.5498	1.7009	1.6876
Bi-212+D	0.2050	0.2305	0.3093	0.3403
Bi-213+D	0.4454	0.4721	0.5157	0.5081
Bi-214+D	1.9107	2.0703	2.1882	2.0904
Bi-215+D	1.0688	1.1364	1.2598	1.2560
Ce-144+D	0.3167	0.3282	0.3588	0.3636
Cm-247+D	1.5927	1.6835	1.8760	1.8760
Cm-250+D	21.1270	22.6784	24.1052	23.2355
Cs-137+D	2.8560	3.0575	3.1176	3.2950
Es-254+D	1.9284	2.1557	2.9602	3.2764
Fe-60+D	2.9799	3.2758	3.6703	3.5989
Fr-220+D	0.2059	0.2270	0.3174	0.3592
Fr-221+D	0.2519	0.2664	0.2976	0.3013
Ge-68+D	0.1824	0.2545	0.7070	0.9584
Hf-172+D	2.1344	2.2855	3.1032	3.4724
Hf-182+D	4.8696	5.1822	5.7819	5.7651
Hg-193+D	2.9608	3.1877	3.8063	3.9448
Hg-194+D	3.0849	3.3296	3.9962	4.1362
In-114m+D	0.5563	0.5821	0.6833	0.7198
Kr-76+D	2.2345	2.4237	3.0103	3.2148
Np-235+D	0.1692	0.2147	0.4756	0.6182
Np-237+D	2.3517	2.5629	3.4193	3.7784
Os-194+D	0.4236	0.4723	0.6870	0.7841
Pb-202+D	2.4576	2.6440	3.2709	3.4586
Pt-202+D	0.3317	0.3556	0.3793	0.3649
Pu-239+D	0.0260	0.0336	0.0789	0.1038
Pu-244+D	1.0939	1.2178	1.6903	1.8922
Ra-219+D	1.0192	1.0819	1.2089	1.2113
Ra-221+D	0.5315	0.5823	0.7872	0.8803
Ra-223+D	1.7341	1.8454	2.1694	2.2537
Ra-224+D	1.6148	1.7149	1.7461	1.9383

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.8180	5.1788	5.5697	5.5890
Ra-228+D	3.4081	3.6823	4.0658	4.3023
Re-186m+D	0.7722	0.8881	1.5717	1.9256
Rn-219+D	0.2920	0.3081	0.3365	0.3327
Rn-222+D	0.0011	0.0011	0.0012	0.0012
Ru-106+D	0.4782	0.5101	0.5410	0.5243
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1104	0.1147	0.1646	0.1930
Sn-126+D	5.5501	5.9071	6.3349	6.2120
Sr-82+D	0.4180	0.5063	0.8105	0.9652
Sr-90+D	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.5865	0.5996	0.7682	0.8591
Th-229+D	1.8403	2.0161	2.8413	3.2352
Th-232+D	4.8312	5.2243	5.7390	6.0488
Th-234+D	0.2314	0.2529	0.3408	0.3766
Ti-44+D	4.0725	4.3040	4.5934	4.4356
U-235+D	2.3073	2.4864	3.0874	3.4652
U-238+D	1.3775	1.4832	1.6709	1.7697
W-178+D	1.5790	1.6905	2.2392	2.4621

APPENDIX E

These are appendices to augment Finklea 2014 Room Radiation Dose Coefficients for External Exposure as utilized in <http://epa-bprg.ornl.gov/> and <http://epa-bdcc.ornl.gov/> ."

Table 46: Wood Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.6333	0.3729	0.5485	0.6382	0.5268	0.3725	0.5987	0.6757
Ac-225+D	1.1649	0.7368	1.0281	1.1742	1.0402	0.7940	1.1600	1.2729
Ag-108m+D	3.8225	2.7730	3.5238	3.8473	4.3898	3.9782	4.6739	4.6621
Ag-110m+D	3.0074	2.1844	2.7837	3.0220	3.6442	3.3572	3.8598	3.7769
Am-242m+D	1.9078	1.1655	1.6679	1.9193	1.6623	1.2456	1.8612	2.0481
Am-243+D	5.5333	3.8823	5.0195	5.5913	5.4749	4.6007	5.9702	6.3322
Ar-42+D	0.1682	0.1198	0.1551	0.1688	0.2058	0.1888	0.2175	0.2114
At-211+D	1.3433	0.9104	1.2051	1.3592	1.2545	1.0039	1.3862	1.5080
Bi-210m+D	1.3821	1.0187	1.2773	1.3964	1.5182	1.3491	1.6318	1.6681
Bi-212+D	0.4196	0.2416	0.3621	0.4224	0.3591	0.2570	0.4067	0.4541
Bi-213+D	0.4020	0.2935	0.3709	0.4059	0.4485	0.3998	0.4804	0.4880
Bi-214+D	1.2849	0.9270	1.1861	1.2911	1.5446	1.4144	1.6366	1.6062
Bi-215+D	1.1210	0.8118	1.0296	1.1327	1.1989	1.0480	1.2932	1.3352
Ce-144+D	0.3883	0.2938	0.3603	0.3926	0.4264	0.3859	0.4536	0.4672
Cm-247+D	1.7317	1.2623	1.5935	1.7498	1.8743	1.6543	2.0149	2.0693
Cm-250+D	15.8812	11.7748	14.7472	15.9960	18.7799	17.2248	19.9076	19.7246
Cs-137+D	2.0607	1.5052	1.9123	2.0669	2.4596	2.2532	2.6017	2.5648
Es-254+D	4.4236	2.6833	3.8676	4.4464	4.0090	3.0693	4.4654	4.8424
Fe-60+D	2.7527	1.7540	2.4485	2.7671	2.8735	2.4002	3.1266	3.2372
Fr-220+D	0.5561	0.3508	0.4897	0.5612	0.4872	0.3661	0.5457	0.6053
Fr-221+D	0.2802	0.2042	0.2577	0.2834	0.2957	0.2576	0.3191	0.3310
Ge-68+D	1.7954	0.8431	1.4749	1.8102	1.2030	0.6091	1.4607	1.8002
Hf-172+D	5.4030	3.4280	4.7592	5.4674	4.8492	3.7161	5.4348	6.0068
Hf-182+D	5.4312	3.8799	4.9627	5.4896	5.7416	4.9829	6.2159	6.4436
Hg-193+D	4.5446	3.0379	4.0695	4.5925	4.3839	3.5591	4.8335	5.1791
Hg-194+D	4.5961	3.0167	4.0982	4.6411	4.4073	3.5447	4.8711	5.2264
In-114m+D	0.9242	0.6548	0.8435	0.9300	0.9859	0.8659	1.0535	1.0854
Kr-76+D	3.7594	2.4252	3.3401	3.7884	3.5221	2.7769	3.8929	4.2036
Np-235+D	1.2401	0.7035	1.0641	1.2460	0.9906	0.6726	1.1321	1.2861
Np-237+D	5.3649	3.4824	4.7689	5.4039	4.9644	3.9242	5.4849	5.9319
Os-194+D	1.0782	0.6065	0.9238	1.0875	0.8828	0.6045	1.0123	1.1555
Pb-202+D	4.1670	2.7026	3.7012	4.2105	3.8905	3.0688	4.3211	4.6915
Pt-202+D	0.2382	0.1741	0.2205	0.2398	0.2824	0.2581	0.2997	0.2967

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Pu-239+D	0.2069	0.1134	0.1761	0.2081	0.1603	0.1044	0.1851	0.2133
Pu-244+D	2.6381	1.6289	2.3166	2.6516	2.3840	1.8295	2.6518	2.8762
Ra-219+D	1.1267	0.8155	1.0343	1.1389	1.1921	1.0371	1.2878	1.3354
Ra-221+D	1.2588	0.8009	1.1122	1.2696	1.1222	0.8566	1.2515	1.3756
Ra-223+D	2.5795	1.7969	2.3371	2.6085	2.5485	2.1238	2.7859	2.9646
Ra-224+D	1.2351	0.9119	1.1454	1.2377	1.4682	1.3447	1.5649	1.5292
Ra-226+D	3.9561	2.8349	3.6332	3.9823	4.4788	3.9984	4.7951	4.7988
Ra-228+D	3.4967	2.3891	3.1674	3.5128	3.7329	3.2114	4.0376	4.1220
Re-186m+D	3.2837	1.7863	2.7855	3.3152	2.5230	1.6131	2.9418	3.4425
Rn-219+D	0.2633	0.1953	0.2440	0.2660	0.2938	0.2633	0.3147	0.3198
Rn-222+D	0.0008	0.0006	0.0007	0.0008	0.0009	0.0008	0.0010	0.0010
Ru-106+D	0.3257	0.2405	0.3028	0.3275	0.3918	0.3611	0.4150	0.4082
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3687	0.2395	0.3278	0.3708	0.3563	0.2916	0.3876	0.4170
Sn-126+D	4.7913	3.5372	4.4360	4.8314	5.4983	4.9912	5.8562	5.8814
Sr-82+D	1.6983	1.0413	1.4880	1.7030	1.4504	1.0584	1.6200	1.7850
Sr-90+D	0.0002	0.0001	0.0001	0.0002	0.0001	0.0001	0.0002	0.0002
Te-118+D	1.5882	1.1041	1.4404	1.5948	1.6665	1.4534	1.7761	1.8494
Th-229+D	5.1230	3.2616	4.5237	5.1644	4.5763	3.5125	5.0897	5.6030
Th-232+D	4.4225	3.0632	4.0226	4.4431	4.8487	4.2377	5.2118	5.2695
Th-234+D	0.5716	0.3743	0.5086	0.5762	0.5256	0.4147	0.5820	0.6309
Ti-44+D	4.3731	3.4016	4.0877	4.4332	4.8979	4.4576	5.2334	5.3312
U-235+D	4.3804	2.9364	3.9286	4.4097	4.2066	3.4292	4.6170	4.9246
U-238+D	1.7318	1.2656	1.5906	1.7365	1.8721	1.6583	1.9958	2.0369
W-178+D	3.7452	2.4085	3.3094	3.7921	3.3897	2.6188	3.7970	4.1826

Table 47: Wood Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.5274	0.4107	0.7043	0.6329	0.3824	0.3574	0.6119	0.7011
Ac-225+D	1.0653	0.8863	1.3273	1.2360	0.8245	0.7957	1.2120	1.3379
Ag-108m+D	4.9606	4.8240	4.9591	5.2054	4.5969	4.8590	5.4643	5.2285
Ag-110m+D	4.2519	4.2129	4.1125	4.4073	4.1467	4.4798	4.7766	4.4217
Am-242m+D	1.6720	1.3555	2.1181	1.9408	1.1956	1.1244	1.8585	2.0909
Am-243+D	5.7989	5.2359	6.6132	6.4537	4.9522	4.9645	6.4649	6.8103
Ar-42+D	0.2425	0.2406	0.2313	0.2503	0.2379	0.2554	0.2737	0.2511
At-211+D	1.3053	1.1320	1.5674	1.4875	1.0834	1.0692	1.4800	1.6239
Bi-210m+D	1.6880	1.6174	1.7696	1.8222	1.5782	1.6383	1.8936	1.8694
Bi-212+D	0.3699	0.2957	0.4778	0.4369	0.2826	0.2743	0.4325	0.4808
Bi-213+D	0.5033	0.4846	0.5204	0.5386	0.4722	0.4941	0.5670	0.5520
Bi-214+D	1.7998	1.7775	1.7478	1.8693	1.7510	1.8787	2.0272	1.8834
Bi-215+D	1.3208	1.2462	1.4118	1.4336	1.2113	1.2527	1.4830	1.4901
Ce-144+D	0.4706	0.4528	0.4926	0.5047	0.4383	0.4553	0.5193	0.5202
Cm-247+D	2.0669	1.9637	2.1856	2.2303	1.8893	1.9558	2.3129	2.2968
Cm-250+D	21.5764	21.2654	21.2639	22.6040	20.8271	22.1521	24.1462	22.7815
Cs-137+D	2.8483	2.8131	2.9026	2.8592	2.7696	2.9658	3.1835	2.9929
Es-254+D	4.1586	3.4855	5.0739	4.7484	3.1784	3.0976	4.6554	5.0796
Fe-60+D	3.2281	2.9720	3.4993	3.5165	2.9338	3.0542	3.7075	3.6748
Fr-220+D	0.4953	0.4060	0.6287	0.5792	0.3809	0.3653	0.5662	0.6366
Fr-221+D	0.3226	0.3027	0.3497	0.3539	0.2929	0.3001	0.3627	0.3666
Ge-68+D	1.1151	0.6405	1.8871	1.5257	0.6272	0.4875	1.4103	1.8147
Hf-172+D	5.0204	4.2393	6.3088	5.8323	4.1026	4.0332	5.7312	6.3187
Hf-182+D	6.3204	5.9393	6.8534	6.9008	5.8254	6.0032	7.1184	7.1718
Hg-193+D	4.6733	4.1491	5.4634	5.2705	4.0401	4.0595	5.3270	5.6473
Hg-194+D	4.7038	4.1551	5.5231	5.3158	4.0475	4.0658	5.3783	5.6875
In-114m+D	1.0733	1.0100	1.1296	1.1535	0.9299	0.9559	1.1501	1.1665
Kr-76+D	3.7035	3.2008	4.3956	4.2032	3.0276	3.0099	4.2073	4.4817
Np-235+D	0.9622	0.7102	1.3286	1.1635	0.6140	0.5441	1.0933	1.2924
Np-237+D	5.1355	4.3950	6.1723	5.8383	4.0353	3.9475	5.7435	6.2314
Os-194+D	0.8928	0.6872	1.2130	1.0839	0.6640	0.6276	1.0557	1.2084
Pb-202+D	4.1030	3.5580	4.9390	4.6926	3.4566	3.4346	4.7159	5.0736
Pt-202+D	0.3259	0.3212	0.3210	0.3413	0.3154	0.3357	0.3667	0.3441
Pu-239+D	0.1546	0.1102	0.2210	0.1907	0.0968	0.0842	0.1785	0.2143
Pu-244+D	2.4549	2.0518	3.0017	2.8029	1.8539	1.7984	2.7457	2.9982
Ra-219+D	1.3051	1.2249	1.4078	1.4217	1.1851	1.2223	1.4625	1.4782
Ra-221+D	1.1482	0.9543	1.4334	1.3348	0.8937	0.8630	1.3071	1.4484
Ra-223+D	2.7163	2.4489	3.1058	3.0380	2.3585	2.3761	3.0688	3.2296
Ra-224+D	1.7001	1.6711	1.7921	1.6728	1.6576	1.7552	1.8932	1.7800

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.0939	4.9058	5.3065	5.2850	4.8294	5.0865	5.7426	5.4904
Ra-228+D	4.1462	3.9876	4.5252	4.3545	3.7376	3.8700	4.6461	4.5917
Re-186m+D	2.4737	1.7768	3.6095	3.1144	1.7284	1.5584	2.9706	3.5477
Rn-219+D	0.3285	0.3170	0.3397	0.3526	0.3088	0.3217	0.3690	0.3597
Rn-222+D	0.0011	0.0010	0.0010	0.0011	0.0010	0.0011	0.0012	0.0011
Ru-106+D	0.4540	0.4501	0.4432	0.4732	0.4416	0.4720	0.5093	0.4751
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3765	0.3339	0.4311	0.4185	0.3043	0.3051	0.4075	0.4393
Sn-126+D	6.2284	6.0709	6.2848	6.5786	5.9052	6.2580	6.9502	6.6785
Sr-82+D	1.4389	1.1329	1.8277	1.6671	0.9732	0.9045	1.6064	1.8176
Sr-90+D	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0002	0.0002
Te-118+D	1.8005	1.6803	1.9079	1.9310	1.5162	1.5544	1.8977	1.9657
Th-229+D	4.6763	3.8972	5.8128	5.3978	3.6010	3.4785	5.2703	5.8640
Th-232+D	5.4502	5.2782	5.9079	5.6015	5.0199	5.2406	6.1414	5.9390
Th-234+D	0.5418	0.4627	0.6570	0.6179	0.4285	0.4173	0.6073	0.6635
Ti-44+D	5.4477	5.2945	5.6456	5.8045	5.2091	5.4225	6.0486	6.0624
U-235+D	4.4169	3.8742	5.2714	4.8343	3.6345	3.5985	4.8901	5.1872
U-238+D	2.0780	1.9789	2.2589	2.0886	1.9343	2.0034	2.3043	2.2367
W-178+D	3.5217	2.9994	4.4017	4.0791	2.9258	2.8855	4.0280	4.4228

Table 48: Wood Surface Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2802	0.3484	0.6096	0.7323
Ac-225+D	0.6413	0.7737	1.2099	1.4088
Ag-108m+D	4.1247	4.8125	5.5649	5.8060
Ag-110m+D	3.9456	4.6002	4.9732	5.0776
Am-242m+D	0.8151	1.0361	1.8439	2.1461
Am-243+D	4.1947	4.8425	6.4438	7.2824
Ar-42+D	0.2285	0.2700	0.2886	0.2897
At-211+D	0.9090	1.0585	1.4694	1.7249
Bi-210m+D	1.4525	1.6488	1.9161	2.0974
Bi-212+D	0.2219	0.2751	0.4376	0.5154
Bi-213+D	0.4359	0.5009	0.5761	0.6154
Bi-214+D	1.6669	1.9491	2.1190	2.1549
Bi-215+D	1.1000	1.2617	1.4994	1.6524
Ce-144+D	0.3971	0.4452	0.5259	0.5757
Cm-247+D	1.6982	1.9480	2.3289	2.5242
Cm-250+D	19.6226	22.6548	24.9856	25.8388
Cs-137+D	2.6143	3.0424	3.2909	3.3890
Es-254+D	2.3886	2.9839	4.7092	5.3620
Fe-60+D	2.6839	3.2020	3.8714	4.1192
Fr-220+D	0.2965	0.3570	0.5633	0.6689
Fr-221+D	0.2634	0.2989	0.3647	0.4015
Ge-68+D	0.3439	0.4967	1.4024	1.8703
Hf-172+D	3.3971	3.9021	5.6586	6.7638
Hf-182+D	5.3270	6.0510	7.2190	7.9962
Hg-193+D	3.5281	4.0784	5.3548	6.1777
Hg-194+D	3.5261	4.1026	5.4148	6.2484
In-114m+D	0.7639	0.8987	1.1518	1.2622
Kr-76+D	2.4955	2.9732	4.2281	4.8370
Np-235+D	0.3604	0.4968	1.0832	1.3127
Np-237+D	3.1356	3.7854	5.7260	6.5561
Os-194+D	0.5109	0.6261	1.0589	1.2927
Pb-202+D	2.9591	3.4485	4.7211	5.4976
Pt-202+D	0.2983	0.3457	0.3797	0.3918
Pu-239+D	0.0561	0.0777	0.1769	0.2181
Pu-244+D	1.3728	1.7157	2.7540	3.1401
Ra-219+D	1.0667	1.2251	1.4718	1.6350
Ra-221+D	0.7018	0.8413	1.3103	1.5283
Ra-223+D	2.0519	2.3622	3.0756	3.4887
Ra-224+D	1.5681	1.8226	1.9412	2.0774

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.5032	5.2471	5.9675	6.2437
Ra-228+D	3.3354	3.9611	4.8129	5.0945
Re-186m+D	1.2538	1.5449	2.9519	3.7393
Rn-219+D	0.2848	0.3239	0.3738	0.4027
Rn-222+D	0.0010	0.0011	0.0012	0.0013
Ru-106+D	0.4183	0.4841	0.5269	0.5395
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2321	0.2786	0.4045	0.4668
Sn-126+D	5.4557	6.2706	7.0714	7.4814
Sr-82+D	0.6244	0.8489	1.6008	1.8607
Sr-90+D	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.1825	1.4124	1.8830	2.0968
Th-229+D	2.7637	3.3312	5.2619	6.1925
Th-232+D	4.5630	5.4051	6.4532	6.7723
Th-234+D	0.3375	0.4028	0.6042	0.7015
Ti-44+D	4.8793	5.4836	6.1007	6.7703
U-235+D	2.9666	3.4953	4.9135	5.6487
U-238+D	1.7653	2.0373	2.4415	2.6015
W-178+D	2.4740	2.8151	3.9783	4.7725

Table 49: Wood 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	3.7775	2.8416	3.5728	4.0696	2.5285	1.6023	3.3463	4.2820
Ac-225+D	6.2034	4.8268	5.9074	6.6200	4.3760	2.8821	5.3089	7.0070
Ag-108m+D	9.3223	7.6058	8.8650	9.4155	9.8556	8.2499	9.1350	12.0012
Ag-110m+D	4.3251	3.3240	3.9509	4.1433	5.3020	4.7692	5.0767	6.0346
Am-242m+D	11.6523	9.1838	11.1811	12.4150	8.5100	5.8250	9.7544	13.5826
Am-243+D	22.4188	17.8310	21.3648	23.6525	17.6280	12.7676	19.8370	25.2767
Ar-42+D	0.2215	0.1651	0.2031	0.2021	0.2803	0.2494	0.2739	0.3088
At-211+D	6.0032	4.6523	5.6515	6.3874	4.3456	2.8988	5.3722	6.4951
Bi-210m+D	3.3379	2.5986	3.1319	3.4214	3.0447	2.4350	3.4460	3.8511
Bi-212+D	2.3309	1.7046	2.1879	2.5165	1.5486	0.9748	2.1564	2.6550
Bi-213+D	0.9358	0.7352	0.8702	0.9565	0.8758	0.6842	0.9330	1.1010
Bi-214+D	1.9599	1.4964	1.7960	1.8815	2.3008	2.0102	2.2608	2.6414
Bi-215+D	3.1920	2.5042	3.0057	3.3066	2.7342	2.0719	3.0841	3.6123
Ce-144+D	0.9152	0.7260	0.8715	0.9508	0.8515	0.7256	0.9456	1.0763
Cm-247+D	4.9477	3.9693	4.6808	5.1120	4.4105	3.4110	4.6375	5.7623
Cm-250+D	26.1946	20.7983	24.5058	25.6969	29.6521	26.0219	28.9046	33.7318
Cs-137+D	3.1055	2.3955	2.9178	3.1314	3.5847	3.3020	3.6817	3.9873
Es-254+D	24.6283	18.9869	23.4715	26.2536	18.0827	12.5174	21.6011	29.3397
Fe-60+D	9.0572	6.3749	8.3938	9.5912	6.9999	5.0683	9.5496	11.0531
Fr-220+D	2.9788	2.2929	2.8211	3.1869	2.0604	1.3251	2.5871	3.2979
Fr-221+D	0.8442	0.6701	0.8028	0.8855	0.7077	0.5396	0.8115	0.9488
Ge-68+D	13.3151	9.1363	12.3707	14.6853	7.8674	4.5663	13.1277	15.2302
Hf-172+D	25.3764	18.2209	23.6452	27.5288	17.6295	11.9072	25.4488	28.4954
Hf-182+D	15.3297	11.3682	14.1898	16.0945	12.7397	9.7299	16.1880	17.3267
Hg-193+D	18.0694	13.3458	16.7751	19.2804	13.2051	9.0384	17.6848	20.0410
Hg-194+D	18.6828	13.6582	17.3566	19.9494	13.5289	9.1694	18.3340	20.9330
In-114m+D	3.1017	2.4924	2.9994	3.2531	2.9335	2.2993	2.9674	4.2853
Kr-76+D	17.4214	13.5309	16.5765	18.4941	12.5660	8.2494	15.0348	19.3175
Np-235+D	8.5948	6.6929	8.2141	9.1993	5.8832	3.7733	7.0884	9.8860
Np-237+D	27.5966	21.9215	26.4577	29.2499	20.4449	14.0071	22.9765	31.7233
Os-194+D	6.2181	4.4118	5.8111	6.7743	3.9998	2.4922	6.0264	7.0801
Pb-202+D	18.1108	13.2781	16.8201	19.4266	12.8143	8.5102	17.5415	20.1922
Pt-202+D	0.3803	0.2936	0.3491	0.3729	0.4301	0.3695	0.4291	0.4978
Pu-239+D	1.4554	1.1049	1.3830	1.5677	0.9716	0.6163	1.2532	1.6761
Pu-244+D	14.9115	11.7648	14.2713	15.8209	10.9530	7.4681	12.4401	17.4265
Ra-219+D	3.4088	2.6939	3.2363	3.5421	2.8792	2.1434	3.1834	3.8437
Ra-221+D	6.5995	5.1133	6.2728	7.0448	4.6253	3.0269	5.6958	7.4165
Ra-223+D	9.8718	7.6701	9.3236	10.4412	7.5350	5.3115	9.0726	10.9633
Ra-224+D	1.6803	1.3079	1.6110	1.7357	1.9295	1.8352	2.0900	2.0358

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	8.7487	6.7347	8.2144	8.9609	8.3036	6.7421	9.1491	10.4093
Ra-228+D	11.4450	9.0091	10.9228	11.9833	9.5077	7.1936	10.4716	13.5816
Re-186m+D	20.4667	14.3106	19.0268	22.4221	12.7351	7.7660	20.1299	23.1367
Rn-219+D	0.5961	0.4741	0.5608	0.6060	0.5652	0.4576	0.6043	0.6985
Rn-222+D	0.0013	0.0010	0.0011	0.0012	0.0014	0.0012	0.0014	0.0016
Ru-106+D	0.4657	0.3651	0.4220	0.4476	0.5758	0.5065	0.5359	0.6359
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	1.6184	1.2256	1.5432	1.7360	1.3050	0.9518	1.5414	2.1350
Sn-126+D	9.7013	7.6104	9.0204	9.8077	10.1243	8.4549	10.3028	12.3960
Sr-82+D	10.9009	9.1121	10.5627	11.4461	7.6949	4.7053	7.5735	11.8676
Sr-90+D	0.0011	0.0009	0.0010	0.0011	0.0008	0.0006	0.0007	0.0013
Te-118+D	5.6996	4.5555	5.5166	6.0057	5.3435	4.1484	5.3064	8.2841
Th-229+D	27.4474	21.4582	26.1807	29.2825	19.5098	12.9666	23.3565	30.9951
Th-232+D	12.7544	10.0034	12.1701	13.3296	11.0697	8.6860	12.1440	15.2020
Th-234+D	2.9061	2.2949	2.7668	3.0816	2.1283	1.4388	2.4489	3.2691
Ti-44+D	8.6593	6.8528	7.8222	8.7419	8.6187	7.0748	9.5516	9.0108
U-235+D	19.8426	15.7222	19.0435	21.0975	14.9362	10.5488	17.1684	23.1223
U-238+D	4.3240	3.4401	4.1270	4.5364	3.7424	2.9931	4.1605	4.9883
W-178+D	16.9730	12.1347	15.7313	18.3917	11.7411	7.8965	17.1397	18.5964

Table 50: Wood 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	2.4723	1.8548	3.2453	4.6418	1.6057	1.3513	3.2706	3.6038
Ac-225+D	4.2935	3.3396	5.6970	7.6887	2.9585	2.5177	5.8400	5.8723
Ag-108m+D	10.2835	8.3134	13.3945	12.0069	9.1044	7.3215	19.2799	10.6218
Ag-110m+D	5.9954	5.2630	6.7554	5.9080	5.9085	4.6084	14.4851	7.7008
Am-242m+D	8.3261	6.4462	11.6707	14.1815	5.7305	4.8157	11.1214	10.0063
Am-243+D	17.6775	14.0616	22.8059	26.9795	13.3694	11.5580	25.6154	20.8754
Ar-42+D	0.3181	0.2848	0.3469	0.2975	0.3155	0.2593	0.7626	0.3447
At-211+D	4.3000	3.2777	5.5124	7.4775	3.0532	2.8517	5.9507	5.5317
Bi-210m+D	3.1697	2.6862	3.5879	4.0662	2.7043	2.3434	5.5405	4.1618
Bi-212+D	1.5300	1.1247	1.9794	2.9135	0.9977	0.8179	2.1603	2.4372
Bi-213+D	0.9150	0.7516	1.0384	1.1980	0.7914	0.6773	1.6826	1.2045
Bi-214+D	2.5673	2.2466	2.8484	2.5878	2.4875	2.0030	5.9818	3.1651
Bi-215+D	2.8146	2.3103	3.3423	3.9664	2.3009	2.0361	4.5888	3.5824
Ce-144+D	0.9161	0.7529	0.9695	1.1050	0.7956	0.6268	1.5271	1.3737
Cm-247+D	4.5361	3.7149	5.4804	6.1205	3.7569	3.2310	7.5764	5.4296
Cm-250+D	32.4694	28.5162	36.1675	33.5789	30.9601	24.9812	68.3640	39.2183
Cs-137+D	4.0223	3.7899	4.3348	4.0442	3.8775	3.5699	6.5581	4.7491
Es-254+D	17.9014	13.8950	24.2789	29.7134	12.4492	10.3623	25.5511	22.1942
Fe-60+D	7.3245	5.8411	8.7758	11.1914	5.6112	4.5905	14.2506	10.8779
Fr-220+D	2.0169	1.5271	2.6682	3.7291	1.3654	1.1996	2.7080	2.8113
Fr-221+D	0.7216	0.6064	0.8787	1.0271	0.5843	0.5017	1.1086	0.9191
Ge-68+D	7.6620	5.2396	9.5894	15.9245	4.2129	3.3968	9.4507	13.2066
Hf-172+D	17.5277	13.0714	22.3970	29.8939	11.9393	9.9039	24.9819	24.7896
Hf-182+D	13.1924	10.6692	15.4640	18.2553	10.6932	9.3279	22.7100	17.2659
Hg-193+D	13.2690	10.0798	16.2960	22.0937	9.5818	8.7092	19.7105	18.1083
Hg-194+D	13.5955	10.2711	16.5790	22.7751	9.7018	8.6669	19.7797	19.0113
In-114m+D	2.9513	2.2561	3.4128	3.6564	2.4335	1.7053	5.1953	2.8669
Kr-76+D	12.3762	9.5543	16.5283	22.5374	8.8265	7.3546	17.6397	18.4701
Np-235+D	5.6986	4.3627	7.9346	10.6058	3.7144	3.1525	7.3920	7.5951
Np-237+D	20.1785	15.8762	26.8938	33.9028	14.4086	12.0593	27.9130	25.3161
Os-194+D	3.9465	2.8407	4.9466	7.5327	2.4637	2.0003	5.1603	6.5639
Pb-202+D	12.7801	9.5129	15.6813	22.1935	8.8994	7.9776	18.5052	18.2443
Pt-202+D	0.4716	0.4091	0.5163	0.5016	0.4496	0.3683	1.0698	0.6179
Pu-239+D	0.9428	0.7083	1.2903	1.7779	0.5977	0.5036	1.2092	1.3128
Pu-244+D	10.7672	8.4371	14.8276	18.3406	7.5380	6.3368	15.0482	13.5371
Ra-219+D	2.9490	2.3986	3.5282	4.2016	2.3756	2.0710	4.3126	3.7081
Ra-221+D	4.5365	3.4855	5.9992	8.2827	3.1203	2.6561	6.1199	6.3553
Ra-223+D	7.5674	5.9542	9.3724	12.1724	5.6683	4.9813	11.1351	9.9365
Ra-224+D	2.1604	2.2138	2.3068	2.1873	2.0894	2.2072	2.4848	2.2540

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	8.8714	7.7167	10.1973	11.1300	7.7853	7.0299	14.8232	10.9229
Ra-228+D	9.8054	8.4705	12.3191	14.3321	7.8360	6.9743	14.4900	12.0919
Re-186m+D	12.4926	8.7996	15.6579	24.5087	7.4624	6.1997	16.0296	20.4995
Rn-219+D	0.5905	0.5055	0.6664	0.7465	0.5154	0.4391	1.0963	0.7780
Rn-222+D	0.0015	0.0013	0.0016	0.0016	0.0015	0.0012	0.0033	0.0021
Ru-106+D	0.6345	0.5452	0.6717	0.5987	0.6242	0.4907	1.4261	0.8422
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	1.3108	0.9519	1.4130	1.8838	0.9836	0.6656	2.2048	1.5749
Sn-126+D	10.8425	8.8892	11.8276	12.0731	9.8656	7.7987	21.9206	12.9357
Sr-82+D	7.3350	5.7379	10.9629	14.8564	5.0749	4.4295	9.9884	9.7682
Sr-90+D	0.0008	0.0007	0.0011	0.0012	0.0006	0.0005	0.0011	0.0008
Te-118+D	5.3926	3.9821	5.4875	6.5594	4.4171	2.8224	10.2493	5.0324
Th-229+D	19.2217	14.8677	25.3201	33.6294	13.3589	11.2177	25.7934	27.3385
Th-232+D	11.5886	10.3115	14.1541	16.0390	9.5871	8.8691	16.4942	13.9124
Th-234+D	2.0955	1.6357	2.8061	3.5625	1.4896	1.3004	2.9038	2.6025
Ti-44+D	9.1220	7.5271	10.2048	10.2054	8.1717	8.4244	16.4596	8.3345
U-235+D	14.8103	12.0651	19.3958	24.5443	10.7941	9.6244	19.2612	18.4170
U-238+D	3.8838	3.4670	4.6809	5.3286	3.2346	3.1260	4.8322	4.4067
W-178+D	11.6900	8.7427	14.9655	19.9208	8.0098	6.9172	16.4496	16.5721

Table 51: Wood 1cm Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.9912	1.2726	4.5740	2.9846
Ac-225+D	1.9379	2.3213	7.3825	5.1978
Ag-108m+D	7.8389	6.6320	12.9901	12.7818
Ag-110m+D	5.7235	3.9488	6.9282	9.8568
Am-242m+D	3.6640	4.4294	13.4782	9.6735
Am-243+D	9.8678	10.3823	25.6608	21.6421
Ar-42+D	0.3094	0.2312	0.3889	0.4472
At-211+D	2.1597	2.6060	7.0116	5.0058
Bi-210m+D	2.3281	1.9710	5.3328	4.1652
Bi-212+D	0.6392	0.7723	2.9711	1.9436
Bi-213+D	0.6836	0.6229	1.1199	1.1000
Bi-214+D	2.3850	1.7286	2.9360	4.0879
Bi-215+D	1.9051	1.7586	4.2198	3.4640
Ce-144+D	0.6931	0.5231	0.9698	1.0128
Cm-247+D	3.0621	3.0063	5.5352	5.1931
Cm-250+D	28.9933	21.5049	37.4207	45.9100
Cs-137+D	3.6629	3.2798	4.5108	5.4415
Es-254+D	8.2996	9.5793	29.5386	21.8436
Fe-60+D	4.5401	4.1922	12.1870	11.0306
Fr-220+D	0.8880	1.1142	3.5319	2.4093
Fr-221+D	0.4733	0.4399	1.1263	0.8505
Ge-68+D	2.1843	3.4129	17.6620	9.3006
Hf-172+D	8.3379	9.4981	32.9157	24.2461
Hf-182+D	8.9325	8.1558	22.0658	20.7789
Hg-193+D	7.1432	7.8867	23.6098	19.0948
Hg-194+D	7.1749	7.8041	24.3056	19.6614
In-114m+D	1.9123	1.8611	4.8251	3.2154
Kr-76+D	6.0814	6.7110	21.2382	15.3005
Np-235+D	2.1931	2.9404	9.9483	6.8250
Np-237+D	9.7055	10.9358	31.2181	24.0066
Os-194+D	1.5320	1.8995	8.0188	4.8596
Pb-202+D	6.3562	7.4190	22.9644	17.0520
Pt-202+D	0.4233	0.3294	0.4966	0.6912
Pu-239+D	0.3473	0.4740	1.7371	1.1272
Pu-244+D	4.9538	5.7842	17.4073	13.0140
Ra-219+D	1.9321	1.7725	4.0027	3.4879
Ra-221+D	2.0494	2.4689	8.0619	5.3884
Ra-223+D	4.2374	4.5088	12.2287	8.8210
Ra-224+D	1.9755	2.1715	2.4203	2.6044

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	6.8860	6.4177	12.0025	11.6690
Ra-228+D	6.1840	6.4860	14.0076	12.2716
Re-186m+D	4.4097	6.0147	26.8376	16.2846
Rn-219+D	0.4455	0.3889	0.8982	0.7191
Rn-222+D	0.0014	0.0010	0.0018	0.0020
Ru-106+D	0.6015	0.4083	0.7194	0.9249
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.7092	0.7158	2.2602	1.4534
Sn-126+D	8.8512	7.2044	13.4683	14.8314
Sr-82+D	3.0453	4.0757	11.6898	9.2492
Sr-90+D	0.0004	0.0004	0.0010	0.0010
Te-118+D	3.3848	3.2713	8.6361	5.8303
Th-229+D	8.7630	10.2640	31.0531	22.9895
Th-232+D	7.8673	8.3831	16.1154	14.3517
Th-234+D	1.0055	1.1787	3.3249	2.7978
Ti-44+D	7.5361	7.2008	10.6776	14.9450
U-235+D	7.5419	9.1805	23.3572	17.5947
U-238+D	2.6684	2.9739	5.4861	4.9587
W-178+D	5.6679	6.4037	21.9459	17.7530

Table 52: Wood 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	3.8748	3.0532	3.6993	4.1246	2.7748	1.8113	4.1590	3.6695
Ac-225+D	6.6241	5.4380	6.3727	6.9702	4.9600	3.5203	7.6614	6.5401
Ag-108m+D	16.4925	15.0406	16.0237	16.4782	17.2220	14.2712	17.2429	25.4672
Ag-110m+D	6.6487	5.6173	6.2807	6.4723	8.0705	7.4516	7.4620	13.1134
Am-242m+D	14.2995	12.2630	13.8625	14.9435	10.9316	8.0985	16.3764	14.6080
Am-243+D	27.8888	23.9273	27.0647	28.7297	22.9904	17.5696	31.1251	28.4826
Ar-42+D	0.3173	0.2571	0.2936	0.2983	0.3831	0.3641	0.3767	0.4743
At-211+D	6.3372	5.1643	6.1504	6.6158	4.9599	3.4153	6.7226	6.0125
Bi-210m+D	4.2814	3.5367	4.0685	4.2647	4.1304	3.3968	4.5755	5.1477
Bi-212+D	2.3059	1.7434	2.1782	2.4664	1.6961	1.0679	2.3291	2.3111
Bi-213+D	1.2473	1.0517	1.1828	1.2452	1.2357	1.0215	1.3315	1.6948
Bi-214+D	2.8325	2.3579	2.6693	2.7635	3.3181	3.0301	3.2066	4.8318
Bi-215+D	3.8410	3.1975	3.7102	3.8869	3.5200	2.7984	4.1527	4.4379
Ce-144+D	1.5190	1.3286	1.4867	1.5189	1.4956	1.3030	1.6081	1.6936
Cm-247+D	6.8060	5.9124	6.5628	6.8640	6.2829	5.1283	7.4882	8.2107
Cm-250+D	40.6416	35.0891	38.7832	39.7209	45.1832	40.9760	46.0714	61.9613
Cs-137+D	4.4794	3.8179	4.3513	4.5345	5.1069	4.8321	5.0991	6.5630
Es-254+D	30.3283	25.5167	29.2417	31.7077	23.5780	17.3202	33.6443	32.8439
Fe-60+D	9.6443	7.1254	9.0393	10.1520	8.2243	5.9841	9.2434	10.8378
Fr-220+D	3.0676	2.4732	2.9512	3.2343	2.2865	1.5461	3.3760	2.9168
Fr-221+D	0.9950	0.8401	0.9657	1.0248	0.8835	0.6986	1.1548	1.1270
Ge-68+D	12.2592	8.4529	11.4321	13.4719	7.7850	3.6394	10.2364	10.3487
Hf-172+D	28.9139	22.2541	27.2633	30.5433	23.1902	14.6898	25.7160	28.1727
Hf-182+D	18.6680	14.7746	17.4529	18.9600	16.8908	12.7677	18.0908	19.7837
Hg-193+D	19.4770	15.0737	18.3066	20.2268	15.6774	10.6350	18.9304	19.1899
Hg-194+D	20.0053	15.2791	18.7313	20.8125	15.9764	10.7421	19.1574	19.6062
In-114m+D	6.1454	5.6411	6.0555	6.2631	6.4108	4.5465	5.8080	10.5209
Kr-76+D	18.0170	14.5743	17.2160	18.8615	14.5067	10.3856	20.4618	18.8116
Np-235+D	9.4794	7.8755	9.1282	10.0040	6.8130	4.8093	11.0979	9.2354
Np-237+D	32.7865	27.9829	31.7892	34.1488	25.6920	19.4268	38.3637	33.8111
Os-194+D	6.1630	4.5115	5.8008	6.6416	4.4163	2.5828	5.6682	5.7193
Pb-202+D	19.1565	14.6852	18.0113	20.0640	14.9892	9.8161	18.2463	18.8208
Pt-202+D	0.5706	0.4795	0.5335	0.5568	0.6454	0.5796	0.6195	0.9368
Pu-239+D	4.5191	3.9281	4.4528	4.6880	4.3699	3.9946	5.1194	4.8706
Pu-244+D	17.8031	15.1621	17.1983	18.5773	13.7243	10.3210	20.9440	18.7680
Ra-219+D	4.1049	3.4477	3.9950	4.1728	3.6850	2.9149	4.4777	4.5891
Ra-221+D	6.9062	5.6199	6.6384	7.2521	5.1635	3.6018	7.8017	6.7464
Ra-223+D	11.0355	9.0759	10.6677	11.4219	9.0581	6.6371	11.8200	11.2249
Ra-224+D	2.1793	1.8442	2.1463	2.2433	2.4504	2.4029	2.6562	2.5502

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	10.7252	8.8189	10.2687	10.8487	10.7162	9.1034	11.8917	13.6996
Ra-228+D	13.5832	11.4542	13.1096	14.0164	11.6975	9.6489	16.3255	15.6384
Re-186m+D	19.8996	14.2430	18.5764	21.5175	13.6406	7.3387	17.3582	17.2235
Rn-219+D	0.7961	0.6730	0.7563	0.7888	0.7884	0.6673	0.8823	1.0235
Rn-222+D	0.0020	0.0017	0.0019	0.0020	0.0022	0.0020	0.0022	0.0034
Ru-106+D	0.7725	0.6658	0.7262	0.7533	0.9195	0.8326	0.8449	1.4403
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	2.8374	2.4862	2.7725	2.9410	2.7600	1.9201	2.5794	4.2846
Sn-126+D	16.0469	14.0128	15.4442	16.0157	17.4236	14.2013	15.9428	25.9760
Sr-82+D	10.7391	9.3616	10.4185	11.1917	8.0721	6.1286	14.9814	11.1788
Sr-90+D	0.0015	0.0014	0.0015	0.0015	0.0011	0.0010	0.0021	0.0016
Te-118+D	12.7833	11.7929	12.6252	13.0467	13.5810	9.6361	11.6287	22.4070
Th-229+D	30.9390	25.7792	29.9062	32.4908	23.7259	17.1749	35.7657	30.4219
Th-232+D	15.0795	12.6845	14.5763	15.5698	13.4458	11.3793	18.1721	17.4227
Th-234+D	3.3407	2.8131	3.2068	3.4698	2.5775	1.9019	3.8757	3.2793
Ti-44+D	12.2380	10.4089	11.7377	11.8551	12.3657	9.9793	11.7859	13.0436
U-235+D	26.3545	22.7717	25.6799	27.4786	21.8179	17.3058	30.1148	28.2949
U-238+D	5.4371	4.6319	5.2589	5.6072	4.8989	4.2106	6.3253	5.6594
W-178+D	18.6607	14.0908	17.4062	19.6769	14.6845	9.3242	16.6322	16.3869

Table 53: Wood 5cm Contamination Thickness fot 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	2.6787	1.7846	2.6535	4.7263	1.8031	1.4396	3.3118	3.7857
Ac-225+D	4.8295	3.3928	4.7115	8.2008	3.4599	2.7838	6.0384	6.4587
Ag-108m+D	17.2058	14.0562	21.3041	23.8784	15.1938	11.4734	29.7926	17.7295
Ag-110m+D	8.7784	7.4067	9.4494	9.0775	8.6598	6.2725	22.1680	12.5473
Am-242m+D	10.6725	7.7904	12.4489	19.3736	7.7119	6.0551	13.3246	12.3399
Am-243+D	22.9286	17.2323	24.2320	34.9744	18.1007	14.5893	29.4939	24.8766
Ar-42+D	0.4151	0.3721	0.4415	0.4164	0.4127	0.3248	1.0953	0.4996
At-211+D	4.8582	3.4140	4.5127	7.3805	3.6144	2.9480	5.7838	5.9689
Bi-210m+D	4.1924	3.3845	4.0388	5.2000	3.6921	2.9765	6.8272	4.7272
Bi-212+D	1.6363	1.0673	1.6376	2.7818	1.1174	0.8582	2.4432	2.4756
Bi-213+D	1.2677	0.9983	1.2311	1.5160	1.1277	0.8961	1.8534	1.6011
Bi-214+D	3.5867	3.0475	3.7323	3.7469	3.5032	2.6320	8.6988	4.8848
Bi-215+D	3.5578	2.7749	3.3855	4.5931	3.0309	2.4019	5.3748	4.2112
Ce-144+D	1.5330	1.1505	1.6130	1.7186	1.4144	1.0852	2.5584	1.4798
Cm-247+D	6.3678	4.9739	6.5987	8.6711	5.4220	4.2347	8.7212	7.2729
Cm-250+D	47.6911	40.0000	50.3300	52.1994	45.6288	35.2384	96.8899	57.9294
Cs-137+D	5.4946	4.9086	5.7920	5.6184	5.3406	4.5339	9.6061	6.4149
Es-254+D	23.1627	16.9450	27.0746	40.6471	16.9591	13.3371	32.3022	28.1385
Fe-60+D	8.4656	6.3303	9.0798	12.1646	6.7997	5.2761	18.8899	13.5767
Fr-220+D	2.2079	1.5081	2.1072	3.6730	1.5576	1.2526	2.6581	2.9839
Fr-221+D	0.8893	0.6936	0.8456	1.2583	0.7438	0.5957	1.3708	1.0192
Ge-68+D	7.3433	4.0786	7.6619	14.5076	3.9679	3.1220	9.7610	12.2132
Hf-172+D	22.1076	15.1442	25.8038	32.1515	16.1908	13.1018	32.2446	26.8062
Hf-182+D	17.1453	13.1442	18.1572	21.4880	14.4387	12.1640	29.0948	20.8363
Hg-193+D	15.5382	10.9923	15.7164	22.3791	11.7628	10.1174	22.4756	19.9685
Hg-194+D	15.7770	11.0977	16.0071	22.8115	11.8132	10.1268	22.6440	20.6040
In-114m+D	5.8105	4.6074	6.7486	7.2452	4.8249	4.0312	8.6017	5.0122
Kr-76+D	13.8819	9.8226	13.2986	21.5605	10.4397	8.0743	19.0200	19.0718
Np-235+D	6.5840	4.5673	7.0350	12.2507	4.4796	3.5769	7.8220	8.7265
Np-237+D	25.1767	18.3413	26.2427	41.4032	18.8813	14.9727	31.2906	30.2508
Os-194+D	4.2270	2.6560	4.3410	7.2443	2.7766	2.1157	5.9181	6.2935
Pb-202+D	14.7306	10.1106	14.6916	22.0863	10.7879	9.1269	19.5031	19.6454
Pt-202+D	0.6870	0.5753	0.7113	0.7368	0.6575	0.5141	1.3871	0.9469
Pu-239+D	4.4863	4.2336	4.7145	5.3874	4.0740	4.0493	4.8275	4.8468
Pu-244+D	13.4833	9.8348	14.9613	23.6215	9.9161	7.7876	17.6421	16.7342
Ra-219+D	3.7015	2.8534	3.4916	4.7970	3.1100	2.4325	4.9621	4.3309
Ra-221+D	5.0089	3.4694	4.8344	8.4593	3.5750	2.8590	6.0726	7.0818
Ra-223+D	8.9903	6.5799	8.5154	13.1793	7.0434	5.6097	11.6321	11.1121
Ra-224+D	2.6279	2.6840	2.7348	2.6837	2.5640	2.6284	2.9093	2.6624

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	11.1443	9.3508	11.1500	13.1549	10.0466	8.4033	18.5577	13.6610
Ra-228+D	11.9334	9.5987	12.4202	17.3923	9.8327	8.2764	16.9728	14.9735
Re-186m+D	13.0151	7.8618	13.7524	23.0339	8.0441	6.5612	17.5972	19.5511
Rn-219+D	0.8033	0.6531	0.7669	0.9975	0.7181	0.5682	1.2812	0.9394
Rn-222+D	0.0024	0.0020	0.0024	0.0025	0.0023	0.0019	0.0039	0.0030
Ru-106+D	0.9857	0.8222	1.0036	0.9934	0.9685	0.7450	1.9315	1.2986
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	2.5076	1.8468	2.7862	3.0439	2.0196	1.6778	3.6693	2.2639
Sn-126+D	17.5604	14.0044	18.4005	19.1013	16.0308	12.4153	31.5723	19.9177
Sr-82+D	7.5745	5.3872	6.6034	13.4055	5.3712	4.3853	8.5598	10.9405
Sr-90+D	0.0011	0.0009	0.0012	0.0020	0.0009	0.0007	0.0012	0.0013
Te-118+D	12.1243	9.3664	13.5842	13.3339	10.1402	8.6536	17.8083	9.6567
Th-229+D	23.1611	16.2296	23.0055	37.7501	17.1323	13.2434	29.0243	29.1945
Th-232+D	13.8539	11.6110	14.3884	19.2458	11.7324	10.2801	19.1068	16.8947
Th-234+D	2.5373	1.8370	2.6293	4.1306	1.8824	1.5671	3.1116	3.0737
Ti-44+D	12.9777	10.4756	13.1039	12.9523	11.8209	10.5446	20.4686	12.5229
U-235+D	21.3343	17.1885	22.1392	32.1657	16.8378	14.9962	24.2955	25.4436
U-238+D	5.0185	4.3747	5.1071	6.5755	4.3241	4.0820	5.8167	5.7351
W-178+D	14.2107	9.6388	16.4769	20.2887	10.4162	8.6186	20.7300	17.6218

Table 54: Wood 5cm Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	1.1650	1.3175	3.2576	3.6934
Ac-225+D	2.3650	2.5302	6.0740	6.5613
Ag-108m+D	13.1342	10.7342	23.9611	18.9299
Ag-110m+D	8.3102	5.3366	17.1424	11.4163
Am-242m+D	5.1476	5.5855	11.7874	14.0025
Am-243+D	13.9262	13.6174	29.8103	25.7566
Ar-42+D	0.4121	0.3551	0.8234	0.3798
At-211+D	2.6832	2.9741	5.8910	5.7412
Bi-210m+D	3.3438	3.0078	5.2024	4.4841
Bi-212+D	0.7633	0.7792	2.0511	2.2873
Bi-213+D	1.0275	0.8725	1.7256	1.2311
Bi-214+D	3.3393	2.2920	7.4120	4.3734
Bi-215+D	2.6241	2.4433	4.6097	3.9722
Ce-144+D	1.2271	0.9790	1.5573	1.5736
Cm-247+D	4.6598	4.4017	8.4389	6.0795
Cm-250+D	43.0953	31.8142	76.9191	53.1144
Cs-137+D	4.9718	4.1740	8.8797	6.6161
Es-254+D	11.8178	12.1840	24.7701	31.3658
Fe-60+D	5.7916	4.6344	16.1010	12.3225
Fr-220+D	1.0631	1.1828	2.6026	2.9049
Fr-221+D	0.6308	0.5675	1.4229	1.0043
Ge-68+D	2.0887	2.8581	8.7314	10.5133
Hf-172+D	12.6215	11.1632	24.5883	23.3572
Hf-182+D	12.8474	10.9974	23.9178	17.9781
Hg-193+D	9.4450	9.5135	19.0528	17.5744
Hg-194+D	9.4336	9.6491	19.1021	17.9274
In-114m+D	3.9734	3.6172	6.2462	7.2467
Kr-76+D	7.7864	7.5592	16.0894	17.9164
Np-235+D	2.7268	3.2235	7.0279	9.5025
Np-237+D	13.3301	13.9293	30.2822	33.2404
Os-194+D	1.8781	2.0274	4.9371	5.5010
Pb-202+D	8.3864	8.6846	17.5926	16.6879
Pt-202+D	0.6354	0.4652	1.1260	0.7674
Pu-239+D	3.6503	3.8367	4.8259	5.3844
Pu-244+D	6.7559	7.0006	15.4604	18.4299
Ra-219+D	2.6379	2.5576	4.8525	3.9965
Ra-221+D	2.4574	2.6115	5.8968	6.7245
Ra-223+D	5.5694	5.5537	11.6921	10.2755
Ra-224+D	2.4513	2.5395	2.7017	2.9428

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	9.1207	8.0824	16.4041	12.5023
Ra-228+D	7.9359	7.6395	14.4509	15.5636
Re-186m+D	5.1697	5.8479	14.9289	16.6815
Rn-219+D	0.6585	0.5866	1.0375	0.8038
Rn-222+D	0.0022	0.0013	0.0034	0.0028
Ru-106+D	0.9142	0.5596	1.7608	1.1981
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	1.6017	1.5295	2.4451	3.3923
Sn-126+D	14.5427	11.5014	28.3826	19.3130
Sr-82+D	3.2497	3.7601	8.1621	12.2187
Sr-90+D	0.0005	0.0006	0.0012	0.0017
Te-118+D	8.3004	7.7317	11.6318	16.4642
Th-229+D	11.8339	12.3592	27.0539	30.0942
Th-232+D	9.7759	9.6107	16.6195	17.7170
Th-234+D	1.3339	1.4115	3.0587	3.2177
Ti-44+D	11.0565	10.4336	16.9484	11.1468
U-235+D	12.8129	13.8198	22.3317	27.9166
U-238+D	3.6815	3.8764	5.7782	6.5042
W-178+D	8.2601	7.3836	16.4122	14.2459

APPENDIX F

These are appendices to augment Finklea 2014 Room Radiation Dose Coefficients for External Exposure as utilized in <http://epa-bprg.ornl.gov/> and <http://epa-bdcc.ornl.gov/> .”

Table 55: Composite 1 Surface Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.5151	0.3189	0.4675	0.5416	0.4241	0.3148	0.5001	0.5682
Ac-225+D	0.9512	0.6193	0.8695	0.9919	0.8423	0.6645	0.9684	1.0648
Ag-108m+D	3.5305	2.5463	3.2604	3.5737	4.0605	3.7036	4.3405	4.3131
Ag-110m+D	2.9479	2.1265	2.7165	2.9720	3.5458	3.2631	3.7637	3.6964
Am-242m+D	1.5866	1.0161	1.4471	1.6530	1.3745	1.0741	1.5867	1.7452
Am-243+D	4.2585	2.9374	3.9192	4.3931	4.1944	3.5604	4.6583	4.9144
Ar-42+D	0.1675	0.1189	0.1536	0.1683	0.2033	0.1861	0.2150	0.2107
At-211+D	0.9969	0.6622	0.9134	1.0379	0.9160	0.7422	1.0400	1.1310
Bi-210m+D	1.1786	0.8537	1.0902	1.2035	1.3015	1.1661	1.4058	1.4362
Bi-212+D	0.3566	0.2196	0.3228	0.3737	0.3074	0.2337	0.3584	0.4012
Bi-213+D	0.3544	0.2551	0.3274	0.3610	0.3971	0.3570	0.4285	0.4337
Bi-214+D	1.2492	0.8954	1.1497	1.2599	1.4941	1.3679	1.5861	1.5632
Bi-215+D	0.9346	0.6652	0.8626	0.9567	1.0048	0.8883	1.0931	1.1247
Ce-144+D	0.2926	0.2125	0.2704	0.2980	0.3263	0.2946	0.3501	0.3533
Cm-247+D	1.4586	1.0452	1.3477	1.4893	1.5870	1.4131	1.7220	1.7568
Cm-250+D	14.6269	10.6446	13.5028	14.7737	17.3026	15.8656	18.3904	18.1985
Cs-137+D	1.9792	1.4315	1.8270	1.9957	2.3592	2.1640	2.4928	2.4590
Es-254+D	3.8253	2.4514	3.4821	3.9715	3.4913	2.7933	3.9767	4.3078
Fe-60+D	2.5501	1.6883	2.3204	2.6157	2.6983	2.3159	2.9618	3.0710
Fr-220+D	0.4344	0.2784	0.3963	0.4546	0.3740	0.2889	0.4338	0.4830
Fr-221+D	0.2306	0.1654	0.2133	0.2366	0.2441	0.2146	0.2663	0.2752
Ge-68+D	1.4351	0.7604	1.2755	1.5463	0.9433	0.5355	1.2138	1.5335
Hf-172+D	3.9131	2.4551	3.5468	4.1005	3.4532	2.6882	3.9744	4.4300
Hf-182+D	4.3151	3.0153	3.9655	4.4257	4.6061	4.0346	5.0192	5.1870
Hg-193+D	3.5263	2.3382	3.2216	3.6586	3.4008	2.8118	3.8168	4.0971
Hg-194+D	3.6583	2.4092	3.3382	3.7974	3.5159	2.8968	3.9535	4.2595
In-114m+D	0.7771	0.5480	0.7154	0.7911	0.8380	0.7467	0.9059	0.9158
Kr-76+D	3.1775	2.1103	2.9094	3.2952	2.9775	2.4318	3.3714	3.6376
Np-235+D	1.0426	0.6395	0.9465	1.0953	0.8266	0.5998	0.9843	1.1213
Np-237+D	4.4134	2.9288	4.0437	4.5764	4.0610	3.3026	4.6073	4.9721
Os-194+D	0.8788	0.5269	0.7926	0.9279	0.7186	0.5234	0.8525	0.9825
Pb-202+D	3.2699	2.1294	2.9816	3.4066	3.0459	2.4625	3.4583	3.7689
Pt-202+D	0.2263	0.1637	0.2087	0.2288	0.2676	0.2449	0.2851	0.2825

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Pu-239+D	0.1722	0.1029	0.1557	0.1817	0.1324	0.0929	0.1595	0.1850
Pu-244+D	2.2768	1.4787	2.0796	2.3632	2.0623	1.6526	2.3530	2.5490
Ra-219+D	0.9315	0.6632	0.8602	0.9547	0.9892	0.8724	1.0795	1.1167
Ra-221+D	1.0091	0.6562	0.9222	1.0531	0.8890	0.6991	1.0238	1.1292
Ra-223+D	2.0203	1.3881	1.8578	2.0884	1.9911	1.6828	2.2166	2.3530
Ra-224+D	1.1853	0.8655	1.0940	1.1938	1.4084	1.2945	1.4853	1.4658
Ra-226+D	3.6081	2.5663	3.3210	3.6632	4.1033	3.6919	4.4022	4.4232
Ra-228+D	3.1963	2.2177	2.9385	3.2596	3.4289	3.0168	3.7297	3.8107
Re-186m+D	2.5184	1.4419	2.2587	2.6832	1.8841	1.2607	2.3030	2.7542
Rn-219+D	0.2303	0.1679	0.2132	0.2346	0.2579	0.2324	0.2778	0.2818
Rn-222+D	0.0007	0.0005	0.0007	0.0007	0.0009	0.0008	0.0009	0.0009
Ru-106+D	0.3149	0.2299	0.2910	0.3180	0.3765	0.3467	0.3996	0.3945
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2928	0.1920	0.2666	0.3018	0.2858	0.2398	0.3179	0.3345
Sn-126+D	4.2101	3.0454	3.8882	4.2690	4.8639	4.4333	5.2002	5.1866
Sr-82+D	1.4873	0.9702	1.3646	1.5457	1.2591	0.9722	1.4668	1.6059
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.2876	0.8890	1.1803	1.3097	1.3722	1.2152	1.4850	1.4977
Th-229+D	4.0556	2.6284	3.7043	4.2269	3.5759	2.8176	4.1131	4.5160
Th-232+D	4.0923	2.8633	3.7635	4.1620	4.5073	4.0090	4.8667	4.9301
Th-234+D	0.4488	0.2960	0.4110	0.4662	0.4076	0.3283	0.4641	0.5031
Ti-44+D	3.1495	2.3030	2.9141	3.2028	3.6014	3.2802	3.8423	3.8484
U-235+D	3.6203	2.4623	3.3269	3.7398	3.4616	2.8809	3.8576	4.1388
U-238+D	1.3946	0.9952	1.2858	1.4206	1.5353	1.3798	1.6426	1.6880
W-178+D	2.6528	1.6700	2.4054	2.7796	2.3549	1.8389	2.7058	3.0122

Table 56: Composite 1 Surface Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.4253	0.3439	0.5161	0.5777	0.3092	0.3012	0.5094	0.5812
Ac-225+D	0.8657	0.7414	1.0119	1.0892	0.6702	0.6683	1.0099	1.1065
Ag-108m+D	4.6044	4.5172	4.8113	4.5843	4.2860	4.5346	5.0650	4.8607
Ag-110m+D	4.1372	4.1170	4.2810	4.0204	4.0279	4.3163	4.6323	4.3233
Am-242m+D	1.3806	1.1604	1.6257	1.7643	0.9930	0.9672	1.5821	1.7631
Am-243+D	4.4814	4.1113	4.9745	5.0789	3.8004	3.9164	5.0641	5.2353
Ar-42+D	0.2393	0.2376	0.2462	0.2292	0.2344	0.2524	0.2698	0.2482
At-211+D	0.9602	0.8458	1.0993	1.1628	0.7852	0.8013	1.1124	1.2015
Bi-210m+D	1.4628	1.4150	1.5623	1.5182	1.3685	1.4431	1.6447	1.6009
Bi-212+D	0.3191	0.2673	0.3778	0.4141	0.2495	0.2502	0.3822	0.4216
Bi-213+D	0.4496	0.4365	0.4755	0.4606	0.4227	0.4474	0.5036	0.4906
Bi-214+D	1.7429	1.7282	1.8050	1.6945	1.6942	1.8152	1.9604	1.8289
Bi-215+D	1.1196	1.0704	1.2052	1.1853	1.0285	1.0814	1.2631	1.2499
Ce-144+D	0.3663	0.3573	0.3857	0.3720	0.3424	0.3631	0.4070	0.3887
Cm-247+D	1.7677	1.6975	1.8875	1.8443	1.6189	1.7002	1.9729	1.9479
Cm-250+D	19.9947	19.8118	20.7773	19.5856	19.3015	20.6196	22.3729	20.9908
Cs-137+D	2.7389	2.7138	2.8479	2.6623	2.6533	2.8239	3.0833	2.8572
Es-254+D	3.6360	3.1762	4.1816	4.4255	2.8384	2.8520	4.1898	4.4893
Fe-60+D	3.0522	2.8769	3.3025	3.2864	2.8100	2.9693	3.5217	3.4696
Fr-220+D	0.3810	0.3199	0.4510	0.4928	0.2899	0.2881	0.4487	0.5001
Fr-221+D	0.2695	0.2566	0.2920	0.2886	0.2446	0.2557	0.3047	0.3041
Ge-68+D	0.8719	0.5413	1.2160	1.5398	0.4949	0.4256	1.1713	1.5108
Hf-172+D	3.6087	3.0995	4.1983	4.5450	2.9184	2.9837	4.2703	4.6209
Hf-182+D	5.1518	4.9143	5.5529	5.4854	4.7601	5.0380	5.8616	5.7610
Hg-193+D	3.6736	3.3286	4.1213	4.2685	3.1772	3.3058	4.2662	4.4375
Hg-194+D	3.7996	3.4305	4.2721	4.4343	3.2827	3.4096	4.4226	4.6053
In-114m+D	0.9183	0.8823	0.9766	0.9499	0.8026	0.8368	1.0008	0.9843
Kr-76+D	3.1516	2.7996	3.5875	3.7596	2.6010	2.6517	3.6453	3.8570
Np-235+D	0.7997	0.6215	0.9898	1.1252	0.5171	0.4817	0.9475	1.1134
Np-237+D	4.2134	3.6998	4.8248	5.0863	3.3166	3.3321	4.8130	5.1678
Os-194+D	0.7318	0.5893	0.8910	1.0046	0.5531	0.5458	0.8935	1.0149
Pb-202+D	3.2489	2.8804	3.7004	3.9061	2.7409	2.8235	3.7976	4.0425
Pt-202+D	0.3099	0.3067	0.3222	0.3049	0.2998	0.3204	0.3468	0.3272
Pu-239+D	0.1272	0.0959	0.1603	0.1856	0.0807	0.0744	0.1535	0.1833
Pu-244+D	2.1288	1.8454	2.4548	2.6087	1.6353	1.6312	2.4404	2.6433
Ra-219+D	1.0946	1.0410	1.1834	1.1702	0.9954	1.0424	1.2330	1.2313
Ra-221+D	0.9128	0.7792	1.0692	1.1559	0.7074	0.7055	1.0684	1.1699
Ra-223+D	2.1455	1.9674	2.3875	2.4448	1.8574	1.9201	2.4536	2.5373
Ra-224+D	1.6332	1.6220	1.7103	1.5837	1.5837	1.6854	1.8276	1.7039

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	4.6983	4.5822	4.9534	4.7063	4.4599	4.7290	5.3135	5.0335
Ra-228+D	3.8330	3.6657	4.1280	4.0308	3.4776	3.6470	4.3203	4.2508
Re-186m+D	1.8476	1.3696	2.3624	2.7912	1.2748	1.2195	2.3330	2.7802
Rn-219+D	0.2909	0.2828	0.3089	0.2982	0.2734	0.2886	0.3257	0.3156
Rn-222+D	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0011	0.0011
Ru-106+D	0.4367	0.4339	0.4523	0.4271	0.4239	0.4530	0.4868	0.4591
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3041	0.2779	0.3353	0.3420	0.2486	0.2555	0.3376	0.3475
Sn-126+D	5.5594	5.4652	5.8089	5.5370	5.2818	5.6169	6.1787	5.9078
Sr-82+D	1.2459	1.0252	1.4881	1.6273	0.8569	0.8258	1.4388	1.6283
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.4927	1.4272	1.5827	1.5400	1.2714	1.3253	1.6058	1.5787
Th-229+D	3.6603	3.1257	4.2741	4.6044	2.7998	2.7917	4.2495	4.6623
Th-232+D	5.0962	4.9228	5.4178	5.2202	4.7133	4.9661	5.7595	5.5484
Th-234+D	0.4215	0.3674	0.4852	0.5147	0.3300	0.3329	0.4845	0.5230
Ti-44+D	4.1023	4.0391	4.2920	4.0946	3.9252	4.2177	4.5803	4.3993
U-235+D	3.6582	3.2916	4.1253	4.2625	3.0128	3.0558	4.1338	4.3843
U-238+D	1.7241	1.6651	1.8039	1.7456	1.5998	1.6993	1.9365	1.8548
W-178+D	2.4737	2.1347	2.8702	3.0981	2.0298	2.0920	2.9356	3.1631

Table 57: Composite 1 Surface Contamination Thickness for 400x400x40 ft

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2263	0.2929	0.5187	0.5806
Ac-225+D	0.5198	0.6523	1.0334	1.1055
Ag-108m+D	3.8644	4.5444	5.2715	5.3871
Ag-110m+D	3.8295	4.5169	4.8995	5.0216
Am-242m+D	0.6762	0.8822	1.5874	1.7401
Am-243+D	3.1987	3.8391	5.2203	5.2947
Ar-42+D	0.2250	0.2670	0.2868	0.2849
At-211+D	0.6512	0.7955	1.1458	1.1994
Bi-210m+D	1.2627	1.4639	1.7265	1.7180
Bi-212+D	0.2000	0.2531	0.3935	0.4412
Bi-213+D	0.3907	0.4568	0.5293	0.5360
Bi-214+D	1.6124	1.9055	2.0753	2.1092
Bi-215+D	0.9364	1.0978	1.3218	1.3376
Ce-144+D	0.3124	0.3628	0.4244	0.4070
Cm-247+D	1.4573	1.7059	2.0565	2.0762
Cm-250+D	18.2084	21.3542	23.6230	23.5423
Cs-137+D	2.5051	2.9212	3.1896	3.2730
Es-254+D	2.1755	2.7506	4.2509	4.6406
Fe-60+D	2.5920	3.1197	3.7219	3.8790
Fr-220+D	0.2226	0.2818	0.4587	0.4974
Fr-221+D	0.2201	0.2576	0.3179	0.3112
Ge-68+D	0.2750	0.4189	1.1796	1.4927
Hf-172+D	2.4112	2.9506	4.3854	4.6718
Hf-182+D	4.3771	5.1470	6.1575	6.1413
Hg-193+D	2.7845	3.3468	4.4377	4.6126
Hg-194+D	2.8765	3.4548	4.6002	4.8521
In-114m+D	0.6667	0.7877	1.0122	1.0034
Kr-76+D	2.1617	2.6418	3.7633	4.0153
Np-235+D	0.3060	0.4357	0.9469	1.0897
Np-237+D	2.5734	3.2034	4.9083	5.2273
Os-194+D	0.4325	0.5458	0.9153	1.0435
Pb-202+D	2.3536	2.8437	3.9396	4.1842
Pt-202+D	0.2834	0.3325	0.3669	0.3705
Pu-239+D	0.0472	0.0677	0.1535	0.1795
Pu-244+D	1.2288	1.5634	2.4813	2.7041
Ra-219+D	0.8973	1.0505	1.2858	1.3172
Ra-221+D	0.5515	0.6907	1.0943	1.1710
Ra-223+D	1.6136	1.9223	2.5459	2.6030
Ra-224+D	1.4954	1.7318	1.8629	1.9249

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.1707	4.9101	5.6277	5.7620
Ra-228+D	3.1242	3.7362	4.5072	4.7093
Re-186m+D	0.9159	1.2060	2.3765	2.7684
Rn-219+D	0.2526	0.2928	0.3420	0.3397
Rn-222+D	0.0009	0.0011	0.0012	0.0012
Ru-106+D	0.4011	0.4704	0.5153	0.5248
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1928	0.2342	0.3368	0.3479
Sn-126+D	4.8963	5.7294	6.4758	6.5696
Sr-82+D	0.5587	0.7786	1.4554	1.6246
Sr-90+D	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.0094	1.2059	1.5986	1.5915
Th-229+D	2.1300	2.6967	4.3291	4.6394
Th-232+D	4.3058	5.1334	6.0456	6.2246
Th-234+D	0.2569	0.3219	0.4954	0.5245
Ti-44+D	3.6983	4.3180	4.8272	4.6723
U-235+D	2.4574	2.9950	4.2173	4.5046
U-238+D	1.4629	1.7576	2.0670	2.0908
W-178+D	1.7147	2.0941	3.0323	3.2101

Table 58: Composite 1- 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.3277	0.2781	0.3211	0.3460	0.2849	0.2583	0.3154	0.3473
Ac-225+D	0.6809	0.5908	0.6710	0.7126	0.6310	0.5927	0.6856	0.7284
Ag-108m+D	3.9060	3.2882	3.8719	4.0525	4.3095	4.2475	4.6128	4.5446
Ag-110m+D	3.9024	3.1289	3.8402	4.0738	4.4686	4.3933	4.8316	4.7212
Am-242m+D	0.8938	0.8060	0.8841	0.9325	0.7593	0.6970	0.8221	0.9033
Am-243+D	3.5813	3.1852	3.5533	3.7133	3.5494	3.4562	3.7732	3.8600
Ar-42+D	0.2116	0.1656	0.2068	0.2204	0.2466	0.2413	0.2678	0.2596
At-211+D	0.7749	0.6813	0.7664	0.8082	0.7394	0.7090	0.7935	0.8285
Bi-210m+D	1.3785	1.1668	1.3634	1.4306	1.4852	1.4618	1.5907	1.5807
Bi-212+D	0.2623	0.2125	0.2561	0.2776	0.2477	0.2280	0.2752	0.2936
Bi-213+D	0.4096	0.3422	0.4056	0.4254	0.4476	0.4397	0.4808	0.4763
Bi-214+D	1.6012	1.2766	1.5721	1.6683	1.8358	1.8005	1.9875	1.9405
Bi-215+D	1.0216	0.8647	1.0099	1.0615	1.0907	1.0701	1.1694	1.1664
Ce-144+D	0.3013	0.2690	0.2993	0.3106	0.3184	0.3170	0.3341	0.3323
Cm-247+D	1.5369	1.3153	1.5260	1.5938	1.6412	1.6134	1.7548	1.7474
Cm-250+D	18.2118	14.9208	17.9399	18.9242	20.5380	20.2132	22.1217	21.6315
Cs-137+D	2.4618	1.9979	2.4153	2.5615	2.7869	2.7440	2.9883	2.9348
Es-254+D	2.6066	2.2162	2.5661	2.7316	2.4590	2.2985	2.6829	2.8334
Fe-60+D	2.7113	2.1190	2.6426	2.8438	2.9750	2.8639	3.2551	3.2489
Fr-220+D	0.2930	0.2551	0.2886	0.3071	0.2638	0.2458	0.2870	0.3090
Fr-221+D	0.2485	0.2142	0.2459	0.2582	0.2612	0.2565	0.2792	0.2798
Ge-68+D	0.6961	0.5255	0.6646	0.7626	0.4671	0.3451	0.5715	0.7279
Hf-172+D	2.7682	2.4062	2.7279	2.9064	2.5179	2.3663	2.7221	2.9135
Hf-182+D	4.6100	3.8895	4.5484	4.7971	4.9051	4.8062	5.2586	5.2546
Hg-193+D	3.1473	2.6607	3.1011	3.2923	3.1663	3.0463	3.4214	3.5096
Hg-194+D	3.2842	2.7444	3.2312	3.4379	3.3114	3.1740	3.5922	3.6870
In-114m+D	0.6080	0.5548	0.6063	0.6257	0.6212	0.6137	0.6501	0.6518
Kr-76+D	2.6039	2.2134	2.5673	2.7192	2.5626	2.4436	2.7790	2.8794
Np-235+D	0.5050	0.4453	0.4959	0.5326	0.3836	0.3300	0.4283	0.4998
Np-237+D	3.1332	2.7664	3.1000	3.2609	2.9445	2.7970	3.1680	3.3279
Os-194+D	0.6090	0.4955	0.5940	0.6467	0.5436	0.4913	0.6078	0.6655
Pb-202+D	2.7651	2.3302	2.7249	2.8977	2.7179	2.5895	2.9524	3.0670
Pt-202+D	0.2860	0.2320	0.2819	0.2976	0.3233	0.3179	0.3488	0.3418
Pu-239+D	0.0830	0.0714	0.0811	0.0882	0.0614	0.0516	0.0697	0.0828
Pu-244+D	1.5369	1.3304	1.5167	1.6052	1.4336	1.3425	1.5581	1.6502
Ra-219+D	0.9960	0.8492	0.9855	1.0342	1.0530	1.0328	1.1276	1.1273
Ra-221+D	0.7188	0.6248	0.7081	0.7522	0.6637	0.6230	0.7202	0.7668
Ra-223+D	1.8509	1.6020	1.8305	1.9258	1.8690	1.8144	2.0033	2.0436
Ra-224+D	1.4036	1.1462	1.3763	1.4488	1.5788	1.5602	1.6907	1.6591

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.2531	3.4583	4.1717	4.4239	4.7331	4.6336	5.1054	5.0199
Ra-228+D	3.2444	2.6625	3.1814	3.3785	3.5059	3.4022	3.7765	3.7711
Re-186m+D	1.4709	1.1975	1.4274	1.5765	1.1689	1.0029	1.3322	1.5455
Rn-219+D	0.2715	0.2293	0.2688	0.2816	0.2948	0.2904	0.3158	0.3130
Rn-222+D	0.0009	0.0008	0.0009	0.0010	0.0011	0.0010	0.0011	0.0011
Ru-106+D	0.4131	0.3366	0.4077	0.4295	0.4674	0.4602	0.5037	0.4941
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1628	0.1542	0.1623	0.1678	0.1464	0.1407	0.1522	0.1611
Sn-126+D	4.9662	4.1550	4.9170	5.1615	5.5006	5.4273	5.8938	5.8040
Sr-82+D	0.8037	0.7178	0.7936	0.8378	0.6900	0.6306	0.7534	0.8247
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	0.7471	0.7305	0.7507	0.7602	0.7193	0.7151	0.7313	0.7410
Th-229+D	2.6705	2.3699	2.6383	2.7880	2.4053	2.2562	2.5956	2.7829
Th-232+D	4.4222	3.5945	4.3242	4.6014	4.8574	4.7329	5.2263	5.1839
Th-234+D	0.3108	0.2760	0.3076	0.3238	0.2884	0.2737	0.3098	0.3270
Ti-44+D	3.5981	3.1057	3.5675	3.7242	3.9237	3.9110	4.1535	4.0781
U-235+D	2.7878	2.4524	2.7599	2.8997	2.7121	2.5998	2.8834	2.9952
U-238+D	1.2924	1.0933	1.2676	1.3362	1.3885	1.3735	1.4780	1.4565
W-178+D	1.9564	1.6950	1.9285	2.0537	1.8038	1.7044	1.9484	2.0705

Table 59: Composite 1- 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.2838	0.2796	0.2959	0.3111	0.2345	0.2386	0.2671	0.3111
Ac-225+D	0.6390	0.6371	0.6686	0.6859	0.5562	0.5641	0.6302	0.6695
Ag-108m+D	4.6299	4.7037	4.9241	4.7418	4.4652	4.5941	5.2098	4.7215
Ag-110m+D	4.9064	5.0116	5.2491	5.0809	4.8120	5.0012	5.5800	5.0156
Am-242m+D	0.7390	0.7173	0.7758	0.8029	0.5820	0.5899	0.6544	0.7995
Am-243+D	3.6456	3.6978	3.8273	3.7324	3.3588	3.4227	3.6294	3.7772
Ar-42+D	0.2751	0.2833	0.3017	0.2762	0.2707	0.2881	0.3161	0.2751
At-211+D	0.7524	0.7533	0.7690	0.7898	0.6810	0.6932	0.7241	0.8080
Bi-210m+D	1.5822	1.6024	1.7090	1.6193	1.5241	1.5533	1.7898	1.6625
Bi-212+D	0.2574	0.2571	0.2687	0.2764	0.2265	0.2355	0.2624	0.2754
Bi-213+D	0.4798	0.4892	0.5142	0.4938	0.4633	0.4785	0.5365	0.4853
Bi-214+D	2.0231	2.0738	2.1779	2.0711	1.9829	2.0569	2.3411	2.0890
Bi-215+D	1.1605	1.1750	1.2557	1.1955	1.1115	1.1341	1.2872	1.2187
Ce-144+D	0.3330	0.3475	0.3433	0.3303	0.3218	0.3327	0.3445	0.3277
Cm-247+D	1.7401	1.7712	1.8454	1.7700	1.6628	1.7165	1.8934	1.7563
Cm-250+D	22.3856	22.9503	24.0943	22.8949	21.8707	22.6324	25.3939	22.7185
Cs-137+D	3.0396	3.1322	3.2070	3.0596	2.9758	3.0937	3.4111	3.0809
Es-254+D	2.5293	2.4977	2.6956	2.7878	2.1911	2.2579	2.4773	2.7170
Fe-60+D	3.2677	3.3155	3.5105	3.4319	3.1308	3.2479	3.6935	3.4742
Fr-220+D	0.2643	0.2618	0.2715	0.2837	0.2266	0.2302	0.2488	0.2856
Fr-221+D	0.2747	0.2807	0.2895	0.2850	0.2623	0.2663	0.2967	0.2728
Ge-68+D	0.4311	0.4071	0.4160	0.5331	0.2668	0.2777	0.3003	0.5620
Hf-172+D	2.5239	2.5488	2.5318	2.5730	2.2332	2.3050	2.3024	2.5848
Hf-182+D	5.2200	5.3136	5.5063	5.3455	5.0133	5.1465	5.6253	5.3808
Hg-193+D	3.3114	3.3525	3.4433	3.4296	3.0866	3.1811	3.3994	3.4251
Hg-194+D	3.4792	3.5183	3.7217	3.5878	3.2359	3.3247	3.6867	3.6545
In-114m+D	0.6406	0.6468	0.6674	0.6526	0.5974	0.6026	0.6580	0.6290
Kr-76+D	2.6634	2.6687	2.8686	2.7930	2.4146	2.4603	2.8656	2.7968
Np-235+D	0.3601	0.3368	0.3746	0.4188	0.2452	0.2477	0.2942	0.4103
Np-237+D	2.9886	2.9724	3.2126	3.1528	2.6119	2.6473	2.9778	3.1681
Os-194+D	0.5524	0.5488	0.5868	0.5972	0.4716	0.4832	0.5510	0.6113
Pb-202+D	2.8191	2.8439	2.9333	2.9438	2.5889	2.6680	2.8823	2.9490
Pt-202+D	0.3530	0.3604	0.3810	0.3660	0.3447	0.3572	0.4022	0.3598
Pu-239+D	0.0573	0.0536	0.0589	0.0673	0.0382	0.0388	0.0452	0.0669
Pu-244+D	1.4606	1.4406	1.5549	1.5778	1.2531	1.2807	1.4711	1.5580
Ra-219+D	1.1161	1.1300	1.2425	1.1437	1.0635	1.0765	1.2443	1.1736
Ra-221+D	0.6712	0.6684	0.6955	0.7175	0.5841	0.5920	0.6502	0.7075
Ra-223+D	1.9436	1.9643	2.0427	2.0104	1.8133	1.8473	2.0159	2.0414
Ra-224+D	1.7205	1.7726	1.8132	1.6971	1.6829	1.7662	1.8702	1.7746

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.1530	5.2807	5.5143	5.1897	5.0098	5.2085	5.7992	5.2842
Ra-228+D	3.7811	3.8714	4.0428	3.8644	3.6037	3.7558	4.0768	3.8535
Re-186m+D	1.1336	1.1190	1.1224	1.2522	0.8861	0.9166	0.9441	1.2856
Rn-219+D	0.3147	0.3196	0.3361	0.3214	0.3037	0.3117	0.3551	0.3247
Rn-222+D	0.0011	0.0012	0.0012	0.0012	0.0011	0.0011	0.0013	0.0012
Ru-106+D	0.5082	0.5192	0.5521	0.5313	0.4973	0.5101	0.5888	0.5257
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1431	0.1417	0.1407	0.1459	0.1234	0.1254	0.1249	0.1463
Sn-126+D	5.9198	6.0445	6.2603	6.0391	5.7609	5.9344	6.6145	6.0388
Sr-82+D	0.6832	0.6523	0.7212	0.7645	0.5301	0.5363	0.6679	0.7228
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000	0.0001
Te-118+D	0.7160	0.7117	0.7153	0.7125	0.6452	0.6506	0.6626	0.7147
Th-229+D	2.3991	2.3881	2.4893	2.5537	2.0464	2.0881	2.2386	2.5305
Th-232+D	5.2736	5.4272	5.6082	5.3172	5.0773	5.3230	5.7372	5.3512
Th-234+D	0.2907	0.2898	0.3042	0.3053	0.2535	0.2587	0.2755	0.3049
Ti-44+D	4.1848	4.2702	4.3602	4.2545	4.0993	4.2174	4.4053	4.3132
U-235+D	2.7788	2.8187	2.8713	2.9092	2.5062	2.5871	2.6950	2.8921
U-238+D	1.4836	1.5286	1.5229	1.4750	1.4292	1.5001	1.5555	1.5057
W-178+D	1.8190	1.8372	1.8286	1.8435	1.6300	1.6858	1.6710	1.8474

Table 60: Composite 1- 1cm Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.1945	0.2178	0.2930	0.3589
Ac-225+D	0.4827	0.5277	0.6514	0.7735
Ag-108m+D	4.1863	4.4554	4.9097	5.5768
Ag-110m+D	4.6097	4.8688	5.3253	5.9721
Am-242m+D	0.4393	0.5257	0.6635	0.9554
Am-243+D	3.0632	3.2965	3.6568	4.1395
Ar-42+D	0.2613	0.2808	0.2917	0.3194
At-211+D	0.6170	0.6585	0.7680	0.8657
Bi-210m+D	1.4480	1.5087	1.7059	1.7210
Bi-212+D	0.1999	0.2180	0.2737	0.3286
Bi-213+D	0.4398	0.4707	0.5286	0.5483
Bi-214+D	1.9032	2.0201	2.2194	2.4447
Bi-215+D	1.0503	1.1058	1.2653	1.2977
Ce-144+D	0.3052	0.3126	0.3485	0.3674
Cm-247+D	1.5616	1.6744	1.8394	2.0084
Cm-250+D	20.9579	22.2662	24.4782	25.7298
Cs-137+D	2.8426	2.9927	3.1857	3.5779
Es-254+D	1.8662	2.1039	2.5447	3.1837
Fe-60+D	2.9689	3.2350	3.6429	3.8868
Fr-220+D	0.1950	0.2128	0.2693	0.3205
Fr-221+D	0.2472	0.2601	0.2903	0.3026
Ge-68+D	0.1613	0.2083	0.4800	0.6185
Hf-172+D	2.0014	2.1558	2.5703	2.6779
Hf-182+D	4.7684	5.0465	5.5364	5.6789
Hg-193+D	2.8700	3.0528	3.4570	3.7243
Hg-194+D	3.0014	3.1978	3.7549	3.9523
In-114m+D	0.5363	0.5857	0.6365	0.6872
Kr-76+D	2.1793	2.3346	2.9106	3.1615
Np-235+D	0.1503	0.1972	0.3223	0.5206
Np-237+D	2.2531	2.4951	3.0254	3.6373
Os-194+D	0.4082	0.4457	0.6163	0.6843
Pb-202+D	2.3780	2.5523	2.9979	3.2302
Pt-202+D	0.3300	0.3544	0.3928	0.4089
Pu-239+D	0.0230	0.0304	0.0527	0.0826
Pu-244+D	1.0537	1.1814	1.4579	1.8747
Ra-219+D	0.9989	1.0565	1.2562	1.2564
Ra-221+D	0.5085	0.5518	0.6915	0.7953
Ra-223+D	1.6815	1.7842	2.0397	2.1854
Ra-224+D	1.6103	1.7045	1.7484	1.9547

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.7796	5.0983	5.5864	5.9272
Ra-228+D	3.3760	3.6446	3.9411	4.4883
Re-186m+D	0.7152	0.7969	1.1929	1.3915
Rn-219+D	0.2886	0.3031	0.3363	0.3487
Rn-222+D	0.0011	0.0011	0.0013	0.0013
Ru-106+D	0.4756	0.5029	0.5771	0.6025
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1013	0.1147	0.1275	0.1560
Sn-126+D	5.4728	5.7683	6.3287	7.0912
Sr-82+D	0.3959	0.4616	0.6639	0.9798
Sr-90+D	0.0000	0.0000	0.0000	0.0001
Te-118+D	0.5453	0.6152	0.6290	0.7339
Th-229+D	1.7359	1.9243	2.3740	3.0183
Th-232+D	4.7981	5.1835	5.6408	6.2371
Th-234+D	0.2194	0.2430	0.2814	0.3493
Ti-44+D	3.9535	4.1596	4.3723	4.4937
U-235+D	2.2281	2.4579	2.7213	3.2475
U-238+D	1.3517	1.4652	1.5710	1.6474
W-178+D	1.4835	1.5958	1.8385	1.9120

Table 61: Composite 1- 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.2750	0.2721	0.3035	0.3547	0.2817	0.2243	0.2559	0.3086
Ac-225+D	0.5815	0.5837	0.6167	0.7163	0.6157	0.5001	0.5345	0.6332
Ag-108m+D	4.8822	4.3468	4.4649	4.6207	4.9563	4.5471	5.0395	7.0842
Ag-110m+D	4.7849	4.2629	4.4185	4.2249	5.0352	4.8078	5.2599	8.5128
Am-242m+D	0.7854	0.7798	0.8800	1.1474	0.7968	0.5880	0.6619	0.6593
Am-243+D	3.1493	3.1882	3.1356	3.6034	3.2311	2.7189	2.9327	3.3300
Ar-42+D	0.2530	0.2161	0.2300	0.2280	0.2799	0.2543	0.2486	0.4886
At-211+D	0.5695	0.6081	0.5772	0.6648	0.5825	0.5255	0.6287	0.6366
Bi-210m+D	1.5758	1.4167	1.4049	1.4475	1.6128	1.4198	1.4485	1.8271
Bi-212+D	0.2567	0.2372	0.2677	0.2823	0.2652	0.2337	0.2656	0.4000
Bi-213+D	0.4980	0.4517	0.4521	0.4603	0.5056	0.4570	0.4945	0.6663
Bi-214+D	1.9451	1.7065	1.7740	1.7334	2.0661	1.9339	2.0788	3.4670
Bi-215+D	1.1002	1.0109	0.9977	1.0393	1.1347	1.0063	1.0656	1.3825
Ce-144+D	0.2812	0.2804	0.2689	0.2850	0.2990	0.2496	0.2635	0.3156
Cm-247+D	1.7485	1.6210	1.6090	1.6901	1.7770	1.5590	1.6333	2.1465
Cm-250+D	21.5858	19.1899	19.7107	19.4610	22.7530	20.7362	21.7056	34.0788
Cs-137+D	2.6735	2.4344	2.5653	2.5875	2.8116	2.7350	2.9801	3.6663
Es-254+D	2.6492	2.4296	2.7461	3.1310	2.7174	2.3158	2.5697	3.3360
Fe-60+D	3.0527	2.6656	2.8724	2.7715	3.2669	3.0049	3.1238	5.5524
Fr-220+D	0.2195	0.2317	0.2398	0.2824	0.2296	0.1913	0.2204	0.2396
Fr-221+D	0.2478	0.2316	0.2308	0.2403	0.2598	0.2237	0.2230	0.2840
Ge-68+D	0.5370	0.4600	0.6755	0.7365	0.4625	0.3405	0.4714	0.6702
Hf-172+D	2.1813	2.0436	2.2267	2.3756	2.0956	1.8529	2.0486	2.0921
Hf-182+D	4.7208	4.3214	4.3481	4.3562	4.8391	4.4287	4.5453	6.1757
Hg-193+D	2.9225	2.7421	2.7950	2.8998	2.9500	2.7391	2.9701	3.7722
Hg-194+D	3.2543	2.9555	3.0571	3.2058	3.2841	2.9565	3.1789	4.1562
In-114m+D	0.6655	0.6017	0.6172	0.7038	0.6827	0.5923	0.5880	0.6715
Kr-76+D	2.6048	2.4529	2.5615	2.7782	2.7541	2.3149	2.4393	3.1205
Np-235+D	0.3898	0.4054	0.4821	0.6509	0.4125	0.2942	0.3490	0.3268
Np-237+D	2.8699	2.8557	2.9740	3.5851	3.0113	2.3862	2.6255	3.0002
Os-194+D	0.5832	0.5191	0.5982	0.6439	0.5760	0.4701	0.5350	0.7082
Pb-202+D	2.6899	2.5193	2.5899	2.7385	2.6568	2.4166	2.7237	3.2799
Pt-202+D	0.3576	0.3169	0.3247	0.3168	0.3714	0.3433	0.3647	0.5566
Pu-239+D	0.0649	0.0646	0.0801	0.1047	0.0656	0.0466	0.0570	0.0569
Pu-244+D	1.5384	1.4666	1.6002	1.9143	1.5988	1.3224	1.5007	1.8326
Ra-219+D	1.0645	0.9760	0.9584	1.0292	1.0973	0.9325	0.9867	1.2511
Ra-221+D	0.5820	0.5986	0.6297	0.7246	0.6140	0.4956	0.5220	0.6312
Ra-223+D	1.7144	1.6812	1.6537	1.7964	1.7587	1.5208	1.6344	1.9777
Ra-224+D	1.4555	1.3520	1.4496	1.4794	1.5392	1.5367	1.5656	1.5448

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.6820	4.2012	4.3839	4.4478	4.9470	4.6246	4.8818	6.5986
Ra-228+D	3.3702	3.1062	3.3231	3.4700	3.5924	3.3393	3.5167	4.4557
Re-186m+D	1.1325	1.0412	1.2930	1.4073	1.0415	0.8476	1.0243	1.2252
Rn-219+D	0.3209	0.2903	0.2888	0.2947	0.3287	0.2899	0.2939	0.3847
Rn-222+D	0.0012	0.0011	0.0011	0.0011	0.0013	0.0012	0.0013	0.0018
Ru-106+D	0.5364	0.4758	0.4840	0.4861	0.5489	0.5123	0.5884	0.8287
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1605	0.1495	0.1581	0.1981	0.1619	0.1349	0.1609	0.1300
Sn-126+D	5.8822	5.3609	5.3761	5.4238	6.0351	5.6087	6.2198	8.8744
Sr-82+D	0.5592	0.6748	0.7131	0.9231	0.7131	0.5825	0.6334	0.7597
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000
Te-118+D	0.8010	0.7483	0.7506	0.9514	0.8279	0.7218	0.7982	0.6602
Th-229+D	2.1224	2.2272	2.3138	2.8330	2.2635	1.7806	2.0302	2.1659
Th-232+D	4.4758	4.0993	4.4299	4.6143	4.7994	4.5541	4.7697	5.6677
Th-234+D	0.2538	0.2632	0.2698	0.3257	0.2643	0.2230	0.2473	0.2658
Ti-44+D	3.2599	3.1411	2.8633	2.8870	3.3276	3.3202	3.6472	4.4265
U-235+D	2.4154	2.4214	2.5846	2.9648	2.5375	2.3060	2.4218	2.3389
U-238+D	1.3043	1.2471	1.3280	1.4043	1.3925	1.3590	1.3813	1.4029
W-178+D	1.5115	1.4136	1.5129	1.5876	1.4405	1.3267	1.4844	1.4943

Table 62: Composite 1- 5cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.2671	0.2226	0.3176	0.2880	0.2192	0.1846	0.4644	0.3544
Ac-225+D	0.5895	0.4709	0.7439	0.6124	0.5105	0.4185	1.0671	0.7032
Ag-108m+D	5.2338	4.1227	5.8211	6.5836	4.9467	3.6586	13.2270	9.1713
Ag-110m+D	5.3447	4.2581	5.9535	7.4388	5.2074	3.7497	15.4691	11.2735
Am-242m+D	0.7330	0.6342	0.7654	0.6857	0.5521	0.5055	0.9599	0.7923
Am-243+D	3.2258	2.5169	4.2294	3.8560	2.8939	2.3538	6.1399	3.6271
Ar-42+D	0.2926	0.2373	0.2949	0.3697	0.2882	0.2047	0.7141	0.4831
At-211+D	0.5871	0.4302	0.7129	0.7478	0.5333	0.5108	0.7851	0.6068
Bi-210m+D	1.6361	1.3891	1.9831	2.0143	1.5690	1.2556	3.2590	1.9322
Bi-212+D	0.2634	0.2199	0.2815	0.3347	0.2339	0.1837	0.6225	0.4968
Bi-213+D	0.5374	0.3997	0.6490	0.6869	0.5181	0.3485	1.4229	1.0605
Bi-214+D	2.1937	1.7579	2.4008	2.7940	2.1355	1.5388	6.1924	3.9614
Bi-215+D	1.1559	0.9832	1.4157	1.5259	1.1068	0.8607	2.4834	1.6348
Ce-144+D	0.2998	0.2308	0.3224	0.3047	0.2810	0.1878	0.7299	0.3771
Cm-247+D	1.8741	1.3401	2.3349	2.4503	1.7858	1.2086	5.0456	3.6727
Cm-250+D	23.8258	18.9772	27.5722	30.3253	23.1709	16.2118	66.0860	43.4497
Cs-137+D	2.9510	2.7154	3.1262	3.3399	2.8658	2.5530	5.3492	3.7903
Es-254+D	2.6853	2.2254	2.6375	2.9493	2.3292	1.8568	5.5651	5.0945
Fe-60+D	3.4743	2.6332	3.7045	4.6433	3.3705	2.2350	9.9366	7.8984
Fr-220+D	0.2212	0.1747	0.2578	0.2487	0.1871	0.1697	0.3374	0.2436
Fr-221+D	0.2599	0.1924	0.3620	0.2802	0.2504	0.1889	0.5401	0.3215
Ge-68+D	0.4111	0.3599	0.3836	0.3544	0.2587	0.2603	0.5028	0.7180
Hf-172+D	2.0565	1.7507	2.2697	1.9180	1.7933	1.5963	2.6672	2.3038
Hf-182+D	5.0164	3.9651	6.0365	6.0345	4.8296	3.6917	11.3317	7.6904
Hg-193+D	3.0121	2.4166	3.6381	3.6296	2.8477	2.3371	6.2507	4.7008
Hg-194+D	3.3088	2.9716	4.0452	4.1422	3.1059	2.4673	7.0274	4.9198
In-114m+D	0.6857	0.5259	0.7350	0.6700	0.6217	0.4910	1.2035	0.8355
Kr-76+D	2.7140	2.3838	3.2180	3.2846	2.4668	1.8463	5.8217	3.8964
Np-235+D	0.3557	0.3361	0.3204	0.2750	0.2408	0.2553	0.2983	0.3803
Np-237+D	2.8897	2.5525	3.5575	3.4348	2.4761	1.9720	5.4085	3.5677
Os-194+D	0.5538	0.5129	0.6333	0.6599	0.4758	0.3701	1.0856	0.8511
Pb-202+D	2.7418	2.1273	3.2820	3.2799	2.5459	2.0017	5.7185	4.5576
Pt-202+D	0.3973	0.2998	0.4590	0.5254	0.3882	0.2547	1.1415	0.8753
Pu-239+D	0.0566	0.0531	0.0505	0.0434	0.0376	0.0401	0.0463	0.0647
Pu-244+D	1.5527	1.3402	1.6117	1.6211	1.3183	1.1054	2.7864	2.1225
Ra-219+D	1.0930	1.0423	1.4646	1.5534	1.0358	0.7637	2.4374	1.5091
Ra-221+D	0.5914	0.4652	0.6900	0.6154	0.4995	0.3980	1.2056	0.6884
Ra-223+D	1.7839	1.3684	2.2343	2.2265	1.6489	1.3208	3.6304	2.2241
Ra-224+D	1.5929	1.5909	1.6219	1.6183	1.5631	1.5572	1.6919	1.5532

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.1570	4.5154	5.8133	6.2382	5.0028	4.0681	11.0919	7.6441
Ra-228+D	3.6786	3.2968	4.0565	4.3645	3.5083	2.9403	7.2642	5.8827
Re-186m+D	0.9695	0.8484	1.0430	0.8574	0.7412	0.6883	1.3069	1.2694
Rn-219+D	0.3408	0.2602	0.4108	0.4220	0.3279	0.2434	0.7943	0.5235
Rn-222+D	0.0013	0.0011	0.0015	0.0015	0.0013	0.0009	0.0030	0.0022
Ru-106+D	0.5839	0.4790	0.6568	0.6921	0.5607	0.4061	1.4084	0.9409
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1584	0.1268	0.1095	0.1327	0.1345	0.1195	0.1244	0.1474
Sn-126+D	6.4122	4.9530	7.4811	8.4030	6.1532	4.5088	16.9495	11.5052
Sr-82+D	0.6455	0.5889	0.6533	0.7342	0.5141	0.4585	1.2225	1.0100
Sr-90+D	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0001
Te-118+D	0.8331	0.6443	0.5805	0.7350	0.7301	0.6417	0.7849	0.8170
Th-229+D	2.1307	1.7501	2.4798	2.2599	1.7734	1.5131	3.3405	2.3382
Th-232+D	4.9485	4.5958	5.3529	5.6506	4.7630	4.2193	8.6433	7.1208
Th-234+D	0.2557	0.2171	0.3198	0.2858	0.2188	0.1931	0.4262	0.3043
Ti-44+D	3.5675	2.6883	4.2484	4.6861	3.5853	2.9991	7.1802	5.7317
U-235+D	2.4615	2.3607	2.4046	2.3312	2.2023	2.2177	2.4042	2.4499
U-238+D	1.4199	1.4115	1.4709	1.4627	1.3717	1.3694	1.5962	1.4496
W-178+D	1.4256	1.2607	1.7018	1.3968	1.2812	1.1739	1.7707	1.5935

Table 63: Composite 1- 5cm Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.1835	0.1658	0.3175	0.3229
Ac-225+D	0.4431	0.3798	0.6801	0.5947
Ag-108m+D	4.8338	3.5655	6.8147	6.3639
Ag-110m+D	5.1807	3.7651	7.2404	8.5737
Am-242m+D	0.4187	0.4756	0.6486	0.8010
Am-243+D	2.6443	2.4289	3.1748	2.9770
Ar-42+D	0.2853	0.2382	0.3143	0.3716
At-211+D	0.4844	0.4667	0.5468	0.5402
Bi-210m+D	1.4730	1.0819	2.1266	1.5324
Bi-212+D	0.2146	0.1751	0.3457	0.4348
Bi-213+D	0.5009	0.2718	0.8673	0.6704
Bi-214+D	2.1255	1.5952	3.0152	2.7899
Bi-215+D	1.0474	0.7407	1.6134	1.1889
Ce-144+D	0.2696	0.2411	0.3010	0.2823
Cm-247+D	1.6907	1.0036	2.3724	2.5178
Cm-250+D	22.6210	15.0160	35.4315	31.2690
Cs-137+D	2.8344	2.7038	3.0596	3.1608
Es-254+D	2.0172	1.5051	3.4896	4.7555
Fe-60+D	3.2679	2.0305	5.4697	4.7985
Fr-220+D	0.1612	0.1578	0.2218	0.2284
Fr-221+D	0.2338	0.1640	0.3427	0.2282
Ge-68+D	0.1584	0.2095	0.5503	0.9144
Hf-172+D	1.5670	1.3786	2.1442	2.1677
Hf-182+D	4.5893	3.2480	6.6548	5.4987
Hg-193+D	2.6526	1.9738	3.8793	3.7569
Hg-194+D	2.8869	2.0818	4.6903	3.6964
In-114m+D	0.5598	0.4177	0.8157	0.6632
Kr-76+D	2.2470	1.5717	3.8617	2.9786
Np-235+D	0.1510	0.2067	0.3278	0.4410
Np-237+D	2.1466	1.8646	3.3332	2.9075
Os-194+D	0.4160	0.3142	0.8106	0.7331
Pb-202+D	2.3660	1.5953	3.8779	3.3028
Pt-202+D	0.3788	0.2060	0.6619	0.5682
Pu-239+D	0.0230	0.0321	0.0550	0.0777
Pu-244+D	1.1580	1.0243	1.9055	1.7090
Ra-219+D	0.9755	0.6446	1.6996	0.9590
Ra-221+D	0.4411	0.3845	0.6495	0.5573
Ra-223+D	1.5362	1.2325	2.0293	1.7396
Ra-224+D	1.5089	1.5268	1.6336	1.6417

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.8598	3.8906	6.6246	5.8877
Ra-228+D	3.3264	2.7028	4.6305	5.1082
Re-186m+D	0.5810	0.6176	1.1171	1.4463
Rn-219+D	0.3092	0.2041	0.4324	0.3938
Rn-222+D	0.0013	0.0007	0.0028	0.0011
Ru-106+D	0.5628	0.3858	1.0085	0.5526
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1080	0.1108	0.1190	0.1921
Sn-126+D	6.0611	4.5612	7.7811	8.1892
Sr-82+D	0.4065	0.3858	0.7559	0.9279
Sr-90+D	0.0000	0.0000	0.0000	0.0000
Te-118+D	0.6071	0.5707	0.6381	0.9334
Th-229+D	1.5060	1.5397	2.0790	2.2434
Th-232+D	4.5446	3.9521	5.9621	6.4448
Th-234+D	0.1888	0.1828	0.2527	0.2767
Ti-44+D	3.4773	2.5453	4.5054	3.8317
U-235+D	1.9628	2.0689	2.2825	2.7229
U-238+D	1.3071	1.3376	1.4170	1.5034
W-178+D	1.1352	0.9599	1.5650	1.4443

Table 64: Composite 1- 15cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.2798	0.2404	0.3119	0.3131	0.2630	0.2201	0.2270	0.3025
Ac-225+D	0.5570	0.4935	0.5950	0.5992	0.5552	0.4565	0.4647	0.6258
Ag-108m+D	4.6041	4.4403	4.6725	3.8232	5.2922	4.3308	4.2564	5.4127
Ag-110m+D	4.4756	4.2433	4.1198	3.4881	5.2427	3.9584	4.1814	6.6446
Am-242m+D	0.6915	0.6487	0.9304	0.9186	0.7449	0.6044	0.5792	0.7251
Am-243+D	2.8852	2.6617	2.8793	3.1032	3.0095	2.4916	2.6014	2.7770
Ar-42+D	0.2371	0.2301	0.2005	0.1918	0.2650	0.2190	0.2259	0.3905
At-211+D	0.6198	0.5326	0.5664	0.6672	0.5781	0.4770	0.5131	0.5427
Bi-210m+D	1.4412	1.3436	1.3070	1.2196	1.5649	1.3438	1.3139	1.4237
Bi-212+D	0.2672	0.2329	0.2740	0.2560	0.2703	0.2119	0.2300	0.3505
Bi-213+D	0.5028	0.4817	0.4708	0.4006	0.5246	0.4821	0.4632	0.4875
Bi-214+D	1.8561	1.7596	1.7059	1.4515	2.1209	1.6804	1.7747	2.7617
Bi-215+D	1.0419	0.9689	0.9396	0.8973	1.1190	0.9419	0.9420	1.0592
Ce-144+D	0.2703	0.2494	0.2342	0.2635	0.2900	0.2323	0.2374	0.2998
Cm-247+D	1.6108	1.5534	1.5071	1.3934	1.6852	1.5541	1.4464	1.5538
Cm-250+D	20.5120	19.4278	18.5098	16.4946	22.9569	18.8375	19.5427	27.5771
Cs-137+D	3.1890	3.1202	3.1100	2.8271	3.5712	3.2618	3.1693	3.6851
Es-254+D	2.4549	2.2745	2.6942	2.6588	2.7098	2.0922	2.1668	3.1791
Fe-60+D	2.9296	2.7237	2.5604	2.4678	3.2320	2.5164	2.6777	4.6641
Fr-220+D	0.2342	0.2003	0.2459	0.2618	0.2181	0.1803	0.1917	0.2452
Fr-221+D	0.2216	0.2009	0.1909	0.1972	0.2348	0.1903	0.1871	0.2367
Ge-68+D	0.6403	0.4534	0.7288	0.8013	0.4712	0.3686	0.4297	0.7505
Hf-172+D	2.3204	1.8992	2.2354	2.5107	2.2469	1.7885	2.3617	2.2197
Hf-182+D	4.4386	4.0507	3.9459	3.9804	4.7632	3.9113	4.4007	5.4559
Hg-193+D	2.9320	2.6023	2.6935	2.8104	2.9704	2.4542	2.9054	3.2938
Hg-194+D	3.2134	2.8951	3.0436	2.9928	3.2939	2.7920	3.2500	3.4181
In-114m+D	0.6390	0.6101	0.6342	0.6796	0.7179	0.5963	0.5582	0.6300
Kr-76+D	2.6134	2.3723	2.6454	2.3399	2.6862	2.3073	2.3319	2.6610
Np-235+D	0.3812	0.3366	0.5482	0.5260	0.3747	0.3089	0.3108	0.4314
Np-237+D	2.6383	2.4638	2.9779	2.9203	2.7847	2.3545	2.3218	2.6444
Os-194+D	0.6060	0.5090	0.6153	0.6014	0.5712	0.4759	0.5141	0.6326
Pb-202+D	2.8404	2.5467	2.7316	2.6615	2.7635	2.4642	2.6929	2.6797
Pt-202+D	0.3518	0.3378	0.3187	0.2733	0.3845	0.3299	0.3302	0.4282
Pu-239+D	0.0651	0.0551	0.0900	0.0890	0.0609	0.0497	0.0510	0.0734
Pu-244+D	1.4714	1.3763	1.7433	1.5521	1.6041	1.3140	1.3134	1.7143
Ra-219+D	0.9858	0.9258	0.9113	0.8526	1.0585	0.9046	0.9148	0.8882
Ra-221+D	0.5780	0.5084	0.6264	0.6315	0.5616	0.4641	0.4732	0.7715
Ra-223+D	1.6546	1.4992	1.5399	1.6032	1.6708	1.4221	1.4050	1.7090
Ra-224+D	1.8567	1.8604	1.7357	1.7409	1.9812	2.0139	1.8937	1.8587

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.6968	4.4936	4.3438	4.0336	5.1520	4.5449	4.5590	5.5544
Ra-228+D	3.2772	3.1563	3.1415	3.0228	3.5919	3.1722	3.1792	3.9134
Re-186m+D	1.2742	0.9727	1.3609	1.4970	1.0589	0.8545	1.1028	1.3843
Rn-219+D	0.2938	0.2785	0.2666	0.2437	0.3140	0.2809	0.2608	0.2928
Rn-222+D	0.0014	0.0013	0.0014	0.0011	0.0015	0.0013	0.0013	0.0014
Ru-106+D	0.5644	0.5363	0.5557	0.4249	0.6245	0.5267	0.5336	0.6352
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1776	0.1637	0.1860	0.2323	0.1884	0.1647	0.1511	0.1261
Sn-126+D	5.5396	5.2639	5.3023	4.5883	6.2354	5.1054	5.1351	6.6557
Sr-82+D	0.6389	0.5926	0.8736	0.6967	0.6654	0.5402	0.5732	0.8250
Sr-90+D	0.0000	0.0000	0.0001	0.0001	0.0001	0.0000	0.0000	0.0001
Te-118+D	0.8629	0.8441	0.8952	1.1201	0.9788	0.8628	0.7580	0.5902
Th-229+D	2.1420	1.8566	2.3231	2.4445	2.0643	1.7165	1.8156	2.2354
Th-232+D	4.4728	4.3303	4.2517	4.1511	4.8909	4.4999	4.4396	5.1235
Th-234+D	0.2413	0.2194	0.2740	0.2807	0.2475	0.2065	0.2427	0.2546
Ti-44+D	3.2549	2.9706	2.5650	2.9896	3.4496	2.7892	3.4071	3.5498
U-235+D	2.3836	2.3163	2.6319	2.6102	2.4804	2.3483	2.2565	2.4171
U-238+D	1.2841	1.2658	1.2538	1.2554	1.3775	1.3671	1.2911	1.3519
W-178+D	1.6061	1.2995	1.5333	1.7060	1.5447	1.2483	1.8196	1.5816

Table 65: Composite 1- 15cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.2560	0.2382	0.2581	0.2311	0.2122	0.1961	0.3034	0.2400
Ac-225+D	0.5377	0.4953	0.5315	0.4497	0.4690	0.4312	0.6425	0.4251
Ag-108m+D	4.9646	4.9841	6.5985	4.8918	4.8689	4.2545	9.5137	4.5354
Ag-110m+D	4.8646	4.5414	7.3999	5.4672	4.8100	4.1448	9.5208	4.9853
Am-242m+D	0.6707	0.6341	0.5909	0.4883	0.5199	0.5322	0.6789	0.6332
Am-243+D	2.9571	2.7544	2.5311	2.4236	2.7481	2.3847	3.2979	2.0430
Ar-42+D	0.2644	0.2276	0.3731	0.3070	0.2590	0.2169	0.5159	0.2569
At-211+D	0.5799	0.5012	0.4747	0.5039	0.5454	0.4296	0.5308	0.4728
Bi-210m+D	1.5445	1.5551	1.5857	1.3330	1.5001	1.3610	2.0583	0.9599
Bi-212+D	0.2549	0.2360	0.3278	0.2741	0.2259	0.1964	0.4307	0.2867
Bi-213+D	0.5373	0.5447	0.7085	0.5155	0.5399	0.4636	1.0013	0.3610
Bi-214+D	2.0273	1.8080	2.8676	2.2948	1.9957	1.7160	4.0193	1.9928
Bi-215+D	1.1003	1.0732	1.2131	1.0214	1.0745	0.9408	1.5107	0.7602
Ce-144+D	0.2872	0.2466	0.2794	0.2763	0.2778	0.2235	0.4300	0.1686
Cm-247+D	1.7414	1.7668	2.0570	1.5082	1.7154	1.5254	2.5898	1.0133
Cm-250+D	22.4074	20.3652	29.9806	24.0085	22.1231	19.0723	41.3419	18.4597
Cs-137+D	3.4707	3.4762	3.9391	3.4532	3.4341	3.3501	4.8291	3.3907
Es-254+D	2.5116	2.1066	3.6632	2.5309	2.1812	2.1914	3.0028	2.2013
Fe-60+D	3.1899	2.6399	4.7310	3.6487	2.9913	2.5762	5.9338	3.4515
Fr-220+D	0.2139	0.1908	0.1918	0.1858	0.1861	0.1601	0.2164	0.1876
Fr-221+D	0.2316	0.2124	0.2419	0.1929	0.2230	0.1968	0.3140	0.1336
Ge-68+D	0.4638	0.3760	0.5270	0.5597	0.2786	0.2787	0.5077	0.7155
Hf-172+D	2.1829	1.8822	1.7042	1.9991	1.8580	1.6834	2.2933	1.8810
Hf-182+D	4.7503	4.2911	5.4366	4.5297	4.5431	4.0599	6.8242	3.5507
Hg-193+D	2.9711	2.6503	3.2755	2.9097	2.7961	2.4566	4.1145	2.3991
Hg-194+D	3.2926	3.0724	3.5439	3.2966	3.0845	2.7696	4.5447	2.5789
In-114m+D	0.6793	0.6083	0.7422	0.5555	0.6184	0.5846	0.8739	0.5432
Kr-76+D	2.6265	2.6225	2.8563	2.3865	2.4304	2.2114	3.5958	1.8737
Np-235+D	0.3353	0.3139	0.3060	0.2547	0.2280	0.2542	0.3124	0.3915
Np-237+D	2.6703	2.5933	2.4985	2.2133	2.3507	2.1954	2.9226	2.0355
Os-194+D	0.5591	0.5285	0.6109	0.5691	0.4779	0.4340	0.7018	0.5130
Pb-202+D	2.8319	2.7122	3.2019	2.7131	2.6864	2.3241	4.3854	2.1962
Pt-202+D	0.3850	0.3653	0.5630	0.4033	0.3833	0.3328	0.7367	0.3042
Pu-239+D	0.0551	0.0505	0.0515	0.0457	0.0364	0.0401	0.0526	0.0682
Pu-244+D	1.4789	1.4260	1.7560	1.3545	1.3016	1.2140	2.3555	1.4505
Ra-219+D	1.0409	1.0542	1.0794	0.9735	1.0165	0.8952	1.2877	0.6396
Ra-221+D	0.5465	0.4978	0.5800	0.4773	0.4806	0.4304	0.6863	0.4303
Ra-223+D	1.6717	1.5842	1.6503	1.4436	1.5977	1.3671	2.0312	1.1307
Ra-224+D	2.0191	2.0365	1.9763	2.0915	2.0003	2.0078	2.0417	1.7947

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.0973	4.8920	6.0217	5.1409	5.0109	4.5809	7.5377	4.4303
Ra-228+D	3.5277	3.3483	4.3649	3.5004	3.4025	3.2329	4.6584	3.1126
Re-186m+D	1.0548	0.8986	0.9763	1.1075	0.7860	0.7307	1.1874	1.1964
Rn-219+D	0.3179	0.3235	0.3539	0.2698	0.3116	0.2824	0.4578	0.1854
Rn-222+D	0.0015	0.0015	0.0021	0.0016	0.0015	0.0012	0.0035	0.0012
Ru-106+D	0.5994	0.5945	0.8714	0.6503	0.6067	0.5066	1.3422	0.5435
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1826	0.1479	0.1510	0.1462	0.1504	0.1463	0.1403	0.1712
Sn-126+D	5.9655	5.8922	7.7448	5.9596	5.8881	5.0889	10.7649	5.3675
Sr-82+D	0.5957	0.5954	0.6532	0.4883	0.4830	0.4789	0.8192	0.6565
Sr-90+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Te-118+D	0.9429	0.7790	0.8299	0.7234	0.8032	0.7995	0.7870	0.8669
Th-229+D	2.0001	1.7941	1.7341	1.6484	1.7191	1.4844	1.9831	1.6783
Th-232+D	4.8607	4.6954	5.6551	4.8092	4.7306	4.5674	6.0296	4.3751
Th-234+D	0.2405	0.2217	0.2141	0.2009	0.2096	0.1963	0.2552	0.1995
Ti-44+D	3.5043	2.9108	3.9043	3.4836	3.5148	2.9163	4.5595	2.6909
U-235+D	2.4385	2.3523	2.3601	2.1273	2.2059	2.2472	2.2760	2.4717
U-238+D	1.3936	1.3856	1.2849	1.3717	1.3558	1.3632	1.3578	1.2694
W-178+D	1.5293	1.3208	1.1530	1.4150	1.3251	1.2023	1.5870	1.2934

Table 66: Composite 1- 15cm Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.1754	0.1591	0.2566	0.1926
Ac-225+D	0.4004	0.3160	0.5462	0.4519
Ag-108m+D	4.7310	3.9063	5.3075	3.6826
Ag-110m+D	4.7996	3.5977	5.2046	3.4924
Am-242m+D	0.3939	0.4041	0.5284	0.4842
Am-243+D	2.4935	2.0737	2.9778	2.1060
Ar-42+D	0.2591	0.1990	0.2389	0.2910
At-211+D	0.4791	0.4368	0.8038	0.4315
Bi-210m+D	1.4511	1.2984	1.6878	1.5323
Bi-212+D	0.2072	0.1721	0.2411	0.1993
Bi-213+D	0.5235	0.4279	0.7775	0.4592
Bi-214+D	1.9787	1.4776	2.3651	1.6101
Bi-215+D	1.0292	0.8911	1.3169	0.8787
Ce-144+D	0.2647	0.1914	0.2884	0.2135
Cm-247+D	1.6461	1.3813	3.0597	1.6429
Cm-250+D	21.6691	16.1485	28.2596	18.0777
Cs-137+D	3.3677	3.1260	3.2189	3.1133
Es-254+D	1.8960	1.5867	3.1361	1.8017
Fe-60+D	2.9313	2.1553	3.9569	2.3246
Fr-220+D	0.1555	0.1413	0.2435	0.1688
Fr-221+D	0.2074	0.1388	0.2623	0.2040
Ge-68+D	0.1717	0.2149	0.3210	0.2069
Hf-172+D	1.6103	1.5663	1.6441	1.5614
Hf-182+D	4.3549	3.4628	5.3515	4.0611
Hg-193+D	2.5972	2.1073	3.7304	2.4145
Hg-194+D	2.8797	2.5066	4.0043	2.4056
In-114m+D	0.5452	0.4022	0.6346	0.4688
Kr-76+D	2.2396	2.0219	2.9428	2.2976
Np-235+D	0.1434	0.1872	0.2700	0.3037
Np-237+D	2.0429	1.8611	2.8203	1.8841
Os-194+D	0.4186	0.4003	0.5773	0.3588
Pb-202+D	2.4901	2.1684	3.7677	2.3077
Pt-202+D	0.3767	0.2894	0.5354	0.3074
Pu-239+D	0.0225	0.0299	0.0423	0.0445
Pu-244+D	1.1409	1.0357	1.2390	1.1512
Ra-219+D	0.9609	0.8544	1.2777	0.5638
Ra-221+D	0.4048	0.3060	0.5580	0.4065
Ra-223+D	1.4777	1.2403	2.0645	1.3724
Ra-224+D	1.9399	1.8800	1.9140	2.0161

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.8843	4.2528	5.9034	4.4292
Ra-228+D	3.2570	2.8285	3.9737	3.0703
Re-186m+D	0.6111	0.6180	0.7560	0.6484
Rn-219+D	0.3030	0.2627	0.4447	0.3470
Rn-222+D	0.0015	0.0012	0.0011	0.0010
Ru-106+D	0.5951	0.4769	0.4690	0.3922
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1237	0.1182	0.1925	0.1518
Sn-126+D	5.7731	4.6770	7.0564	4.5106
Sr-82+D	0.3843	0.3729	0.5981	0.7282
Sr-90+D	0.0000	0.0000	0.0000	0.0001
Te-118+D	0.6808	0.6256	0.9930	0.7830
Th-229+D	1.4257	1.2652	1.9597	1.6405
Th-232+D	4.5558	4.1310	5.2680	4.4195
Th-234+D	0.1799	0.1613	0.2380	0.1877
Ti-44+D	3.3770	2.7382	5.1309	2.5902
U-235+D	1.9772	2.0306	2.2570	2.2816
U-238+D	1.2970	1.3159	1.3264	1.3447
W-178+D	1.1643	1.1326	1.2543	1.1607

Table 67: Composite 1—Infinite Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.1664	0.1465	0.2884	0.1938	0.2027	0.1795	0.2143	0.2572
Ac-225+D	0.3454	0.3229	0.5197	0.4210	0.4563	0.4179	0.4491	0.5268
Ag-108m+D	2.5370	2.5388	3.1233	4.0344	4.0258	3.7081	5.0153	5.8651
Ag-110m+D	2.6580	2.7904	2.8779	4.5202	4.5665	4.0104	5.5982	6.1858
Am-242m+D	0.4686	0.4153	0.6718	0.4617	0.5412	0.5001	0.4879	0.5987
Am-243+D	1.8030	1.7199	2.3536	2.1505	2.5706	2.1951	2.6086	2.6938
Ar-42+D	0.1768	0.1801	0.1750	0.2525	0.2743	0.2538	0.3903	0.3598
At-211+D	0.4150	0.3443	0.5182	0.4378	0.5111	0.4090	0.5542	0.5497
Bi-210m+D	0.7541	0.7961	1.1718	1.2523	1.3192	1.2475	1.5981	1.4256
Bi-212+D	0.1583	0.1461	0.2359	0.2190	0.2209	0.1913	0.2533	0.2933
Bi-213+D	0.2272	0.2541	0.3989	0.4143	0.3813	0.3699	0.5227	0.6161
Bi-214+D	1.1692	1.1882	1.2770	1.8373	1.8816	1.6873	2.4899	2.6010
Bi-215+D	0.5636	0.5750	0.7971	0.8895	0.9406	0.8446	1.1722	1.0785
Ce-144+D	0.1294	0.1428	0.1734	0.1741	0.2228	0.1837	0.2308	0.2862
Cm-247+D	0.8168	0.8867	1.2890	1.3789	1.3336	1.2717	1.7205	2.0011
Cm-250+D	11.5711	12.4016	14.6514	19.2046	19.5404	17.7224	24.3355	25.6639
Cs-137+D	0.7683	0.7340	0.7851	1.1884	1.2263	1.0606	1.5234	1.8150
Es-254+D	1.4419	1.4802	2.1006	1.9767	2.1213	1.9412	2.4216	2.6821
Fe-60+D	1.6348	1.7446	2.0907	2.7906	2.8066	2.4267	3.5907	3.8489
Fr-220+D	0.1528	0.1301	0.2178	0.1637	0.1829	0.1527	0.1868	0.2177
Fr-221+D	0.1195	0.1258	0.1782	0.1814	0.1952	0.1884	0.1990	0.2041
Ge-68+D	0.2942	0.1999	0.8957	0.2850	0.2431	0.1877	0.2698	0.4044
Hf-172+D	1.1739	1.0763	2.1255	1.3184	1.7016	1.1773	1.5148	1.7736
Hf-182+D	2.3686	2.5354	3.4033	3.7565	4.0647	3.5334	4.5601	4.6425
Hg-193+D	1.6656	1.6264	2.3812	2.3007	2.4859	2.1008	2.8183	2.8529
Hg-194+D	1.7754	1.7341	2.6322	2.5225	2.7140	2.2827	3.4247	3.1546
In-114m+D	0.3903	0.3194	0.3887	0.3801	0.5076	0.4756	0.4743	0.4956
Kr-76+D	1.4025	1.3994	2.2063	2.0975	2.1617	1.9587	2.6066	2.7749
Np-235+D	0.2720	0.2263	0.4320	0.2532	0.2733	0.2542	0.2445	0.3352
Np-237+D	1.6719	1.5633	2.3019	2.0043	2.2907	2.0135	2.4832	2.5969
Os-194+D	0.2961	0.2690	0.5944	0.4053	0.4150	0.3485	0.5164	0.5422
Pb-202+D	1.4236	1.3900	2.4866	2.0582	2.0452	1.8070	2.5488	2.8783
Pt-202+D	0.1679	0.1932	0.2576	0.3169	0.3000	0.2806	0.4009	0.4561
Pu-239+D	0.0423	0.0342	0.0779	0.0393	0.0412	0.0376	0.0375	0.0522
Pu-244+D	0.9016	0.8525	1.2762	1.1583	1.2077	1.1215	1.3632	1.6204
Ra-219+D	0.5171	0.5204	0.7253	0.8045	0.8711	0.7426	1.1596	0.9767
Ra-221+D	0.3534	0.3278	0.5185	0.4233	0.4495	0.3937	0.4418	0.5995
Ra-223+D	1.6059	1.5459	1.9077	1.8351	2.2941	2.1331	2.4136	2.5854
Ra-224+D	0.0382	0.0412	0.0613	0.0623	0.0653	0.0666	0.0681	0.0677

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	1.9418	1.9807	2.4477	3.0627	3.1522	2.8337	4.0913	4.1362
Ra-228+D	1.2687	1.3381	1.7357	1.9393	2.0085	1.8226	2.3628	2.5485
Re-186m+D	0.6146	0.4977	1.4783	0.6391	0.6833	0.5005	0.6643	0.8784
Rn-219+D	0.7900	0.7830	0.7763	0.7892	1.1354	1.1311	1.1344	1.2477
Rn-222+D	0.0006	0.0006	0.0011	0.0011	0.0010	0.0009	0.0014	0.0016
Ru-106+D	0.2665	0.2841	0.4118	0.4667	0.4419	0.4161	0.6110	0.7155
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1173	0.0783	0.1208	0.0638	0.1290	0.1090	0.1041	0.1045
Sn-126+D	3.1705	3.1387	3.7826	4.9599	5.0737	4.5158	6.2250	7.1794
Sr-82+D	0.5485	0.4806	0.5327	0.6159	0.6370	0.5778	0.6040	0.8162
Sr-90+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Te-118+D	0.6191	0.4070	0.4672	0.3314	0.6894	0.6034	0.5700	0.5185
Th-229+D	1.4983	1.5057	1.5263	1.5007	2.2137	2.2447	2.2676	2.2148
Th-232+D	1.3267	1.3866	1.8265	1.9938	2.0668	1.8759	2.4152	2.6212
Th-234+D	0.1645	0.1522	0.2130	0.1819	0.2148	0.1790	0.2088	0.2272
Ti-44+D	1.9216	1.9170	2.0677	2.6952	3.0921	2.4570	3.6281	3.3376
U-235+D	3.5949	3.5947	3.9465	3.9353	5.2667	5.1363	5.5124	5.6130
U-238+D	0.2258	0.2055	0.3033	0.2420	0.2801	0.2400	0.2680	0.3066
W-178+D	0.8274	0.7875	1.4782	0.9849	1.2474	0.8333	1.1212	1.2378

Table 68: Composite 1—Infinite Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.0362	0.0297	0.0316	0.0455	0.1896	0.1679	0.2310	0.2075
Ac-225+D	0.0818	0.0670	0.0648	0.0934	0.4412	0.3859	0.5481	0.4508
Ag-108m+D	0.7311	0.6065	0.4736	0.6940	4.5740	3.5882	3.7718	4.1262
Ag-110m+D	0.7949	0.6616	0.5926	0.8858	5.0042	3.5674	3.7833	4.9049
Am-242m+D	0.0926	0.0854	0.0852	0.1068	0.4624	0.4434	0.4104	0.5267
Am-243+D	0.4538	0.3676	0.3411	0.4740	2.5539	2.2551	3.4078	2.2774
Ar-42+D	0.0498	0.0418	0.0461	0.0744	0.3078	0.2026	0.2847	0.3953
At-211+D	0.0944	0.0755	0.0732	0.1140	0.5015	0.4936	1.2168	0.4580
Bi-210m+D	0.2348	0.1899	0.1531	0.1894	1.4341	0.9980	1.7905	1.2019
Bi-212+D	0.0383	0.0321	0.0340	0.0480	0.2218	0.1694	0.1789	0.2320
Bi-213+D	0.0757	0.0586	0.0450	0.0722	0.4686	0.3836	0.5286	0.4783
Bi-214+D	0.3341	0.2778	0.2709	0.3987	2.0872	1.4825	1.8316	2.2458
Bi-215+D	0.1673	0.1357	0.1137	0.1575	1.0096	0.7496	1.4092	0.9639
Ce-144+D	0.0378	0.0307	0.0300	0.0383	0.2258	0.1813	0.2223	0.1593
Cm-247+D	0.2564	0.1986	0.1577	0.2498	1.5766	1.2691	1.8372	1.4090
Cm-250+D	3.5079	2.8636	2.6129	3.7607	21.8158	15.8298	21.1685	22.4602
Cs-137+D	0.2124	0.1771	0.1409	0.2135	1.3475	1.0194	0.8957	1.0848
Es-254+D	0.3688	0.3327	0.3232	0.4337	2.0832	1.5797	1.9555	2.4380
Fe-60+D	0.4817	0.4052	0.4507	0.6582	2.9472	1.9951	3.0804	3.7113
Fr-220+D	0.0328	0.0268	0.0277	0.0431	0.1696	0.1594	0.3095	0.1794
Fr-221+D	0.0358	0.0282	0.0236	0.0310	0.2119	0.1724	0.2690	0.1710
Ge-68+D	0.0414	0.0328	0.0664	0.0819	0.1726	0.1410	0.0784	0.1520
Hf-172+D	0.2707	0.2239	0.2543	0.2325	1.5115	1.2904	1.1870	0.9426
Hf-182+D	0.7102	0.5783	0.5483	0.7198	4.2965	3.1324	4.7243	3.9597
Hg-193+D	0.4457	0.3640	0.3576	0.4789	2.6099	2.0985	3.3672	2.3865
Hg-194+D	0.4768	0.3933	0.3813	0.5008	2.8393	2.1435	3.4206	2.8628
In-114m+D	0.0873	0.0802	0.0633	0.0674	0.5226	0.4496	0.5857	0.4413
Kr-76+D	0.3797	0.3116	0.2719	0.3817	2.2175	1.6690	2.4009	2.3921
Np-235+D	0.0469	0.0446	0.0491	0.0640	0.2060	0.2096	0.2060	0.2998
Np-237+D	0.3957	0.3364	0.3068	0.4285	2.1836	1.8722	2.5880	2.4268
Os-194+D	0.0706	0.0582	0.0621	0.0798	0.4019	0.2986	0.4080	0.4073
Pb-202+D	0.3917	0.3092	0.2804	0.4022	2.2904	1.9760	3.0800	2.1599
Pt-202+D	0.0562	0.0452	0.0392	0.0599	0.3516	0.2642	0.3475	0.3895
Pu-239+D	0.0070	0.0066	0.0079	0.0100	0.0306	0.0307	0.0278	0.0410
Pu-244+D	0.2161	0.1889	0.1713	0.2377	1.2039	1.0229	1.0883	1.3497
Ra-219+D	0.1507	0.1222	0.0969	0.1401	0.9138	0.6813	1.3228	0.9668
Ra-221+D	0.0808	0.0643	0.0653	0.1149	0.4314	0.3669	0.5735	0.4690
Ra-223+D	1.4392	1.3833	1.3437	1.5004	2.4682	2.2760	3.2551	2.3791
Ra-224+D	0.0120	0.0096	0.0080	0.0095	0.0721	0.0521	0.0845	0.0518

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	0.5628	0.4608	0.4207	0.6115	3.4666	2.5271	3.7032	3.5517
Ra-228+D	0.3544	0.2999	0.2793	0.4015	2.0806	1.5659	1.9470	2.3234
Re-186m+D	0.1142	0.0921	0.1351	0.1557	0.5715	0.4868	0.3902	0.4134
Rn-219+D	1.2289	1.2180	1.1917	1.2609	1.2751	1.2655	1.2767	1.2828
Rn-222+D	0.0002	0.0002	0.0001	0.0002	0.0012	0.0010	0.0013	0.0015
Ru-106+D	0.0850	0.0686	0.0521	0.0819	0.5295	0.4287	0.4811	0.5766
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.0203	0.0215	0.0193	0.0121	0.1157	0.1151	0.1613	0.0821
Sn-126+D	0.9114	0.7418	0.6006	0.8967	5.7116	4.4562	5.0728	4.8880
Sr-82+D	0.1089	0.0989	0.0937	0.1521	0.5385	0.4873	0.5653	0.8956
Sr-90+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Te-118+D	0.1090	0.1165	0.0948	0.0581	0.6419	0.6157	0.9214	0.4977
Th-229+D	2.4234	2.3932	2.2197	2.3586	2.5210	2.4752	2.4029	2.2392
Th-232+D	0.3644	0.3093	0.2898	0.4157	2.1239	1.6102	1.9920	2.3902
Th-234+D	0.0374	0.0319	0.0313	0.0426	0.2008	0.1832	0.2275	0.2129
Ti-44+D	0.5541	0.4560	0.4290	0.5910	3.2834	2.7262	5.9302	3.0333
U-235+D	4.4956	4.2881	4.4918	4.3735	5.7742	5.3470	5.4463	5.2819
U-238+D	0.0486	0.0425	0.0425	0.0574	0.2516	0.2339	0.2790	0.2867
W-178+D	0.2005	0.1648	0.1866	0.1733	1.1325	0.9711	0.8846	0.7574

Table 69: Composite 1—Infinite Contamination Thickness for 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.1628	0.1525	0.1177	0.2955
Ac-225+D	0.3926	0.3596	0.2380	0.5194
Ag-108m+D	4.3749	3.1460	4.1202	3.7094
Ag-110m+D	4.9474	3.3003	3.7062	3.9832
Am-242m+D	0.3548	0.4071	0.2767	0.8280
Am-243+D	2.3864	2.0191	1.6517	2.1737
Ar-42+D	0.3071	0.1714	0.2087	0.3449
At-211+D	0.4564	0.4382	0.3828	0.6013
Bi-210m+D	1.4235	0.8774	0.8085	0.6034
Bi-212+D	0.2056	0.1513	0.1438	0.2922
Bi-213+D	0.4483	0.2873	0.5035	0.2129
Bi-214+D	2.0648	1.3585	1.7754	2.0014
Bi-215+D	0.9915	0.6537	0.6535	0.5662
Ce-144+D	0.2207	0.1942	0.1697	0.1558
Cm-247+D	1.4941	1.0000	1.1024	0.8275
Cm-250+D	21.5659	13.9587	18.1722	14.6561
Cs-137+D	1.3179	1.0286	1.0808	1.4613
Es-254+D	1.9025	1.6249	1.8174	2.2477
Fe-60+D	2.9304	1.6986	2.1376	2.5009
Fr-220+D	0.1473	0.1494	0.1102	0.2452
Fr-221+D	0.2065	0.1578	0.1131	0.1298
Ge-68+D	0.1169	0.1678	0.1306	0.9750
Hf-172+D	1.3847	1.3264	1.5500	2.0936
Hf-182+D	4.2644	2.8742	3.1872	2.4931
Hg-193+D	2.5031	1.8811	2.1251	2.3637
Hg-194+D	2.7421	1.9015	2.2149	2.6244
In-114m+D	0.4765	0.4259	0.3864	0.4422
Kr-76+D	2.0815	1.4786	1.3822	1.6661
Np-235+D	0.1294	0.1968	0.1040	0.5618
Np-237+D	1.9462	1.6564	1.1805	2.2651
Os-194+D	0.3727	0.2823	0.2536	0.5631
Pb-202+D	2.1409	1.5944	2.4226	1.9567
Pt-202+D	0.3442	0.2102	0.3461	0.1725
Pu-239+D	0.0190	0.0296	0.0169	0.0974
Pu-244+D	1.0552	0.9200	1.0987	1.5331
Ra-219+D	0.8968	0.5951	0.5240	0.5336
Ra-221+D	0.3810	0.3849	0.2649	0.5552
Ra-223+D	2.4001	2.1151	2.1498	2.2466
Ra-224+D	0.0711	0.0459	0.0383	0.0274

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	3.4013	2.2580	2.6263	2.8077
Ra-228+D	1.9604	1.4235	1.4865	1.7202
Re-186m+D	0.4818	0.5243	0.5215	1.5375
Rn-219+D	1.2694	1.1912	1.3846	1.2442
Rn-222+D	0.0012	0.0007	0.0020	0.0005
Ru-106+D	0.5168	0.3594	0.7383	0.3555
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.0973	0.1047	0.0913	0.1397
Sn-126+D	5.5303	3.9737	4.4865	4.5462
Sr-82+D	0.4110	0.4164	0.1843	0.7509
Sr-90+D	0.0000	0.0000	0.0000	0.0001
Te-118+D	0.5478	0.5474	0.5039	0.5756
Th-229+D	2.5285	2.4060	2.3921	2.0771
Th-232+D	1.9873	1.4651	1.5069	1.8379
Th-234+D	0.1774	0.1636	0.1462	0.2325
Ti-44+D	3.2536	2.4239	3.0743	2.1268
U-235+D	5.7002	5.3665	4.9859	4.8102
U-238+D	0.2109	0.2106	0.1717	0.3514
W-178+D	1.0622	0.9506	1.2294	1.4325

APPENDIX G

These are appendices to augment Finklea 2014 Room Radiation Dose Coefficients for External Exposure as utilized in <http://epa-bprg.ornl.gov/> and <http://epa-bdcc.ornl.gov/>."

Table 70: Composite 2 Surface Contamination for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.5393	0.3279	0.4853	0.5642	0.4415	0.3223	0.5208	0.5938
Ac-225+D	0.9920	0.6372	0.9010	1.0312	0.8716	0.6778	1.0040	1.1102
Ag-108m+D	3.5763	2.5759	3.2995	3.6214	4.0934	3.7066	4.3759	4.3730
Ag-110m+D	2.9637	2.1399	2.7316	2.9892	3.5552	3.2538	3.7702	3.7263
Am-242m+D	1.6491	1.0386	1.4924	1.7112	1.4234	1.0958	1.6430	1.8125
Am-243+D	4.4513	3.0534	4.0873	4.5967	4.3214	3.6200	4.8290	5.1412
Ar-42+D	0.1679	0.1194	0.1541	0.1689	0.2036	0.1860	0.2155	0.2113
At-211+D	1.0511	0.6926	0.9593	1.0937	0.9513	0.7581	1.0873	1.1943
Bi-210m+D	1.2110	0.8765	1.1203	1.2390	1.3212	1.1729	1.4342	1.4726
Bi-212+D	0.3706	0.2240	0.3327	0.3866	0.3175	0.2373	0.3699	0.4159
Bi-213+D	0.3622	0.2604	0.3344	0.3694	0.4019	0.3582	0.4342	0.4428
Bi-214+D	1.2574	0.9018	1.1571	1.2687	1.4992	1.3665	1.5918	1.5758
Bi-215+D	0.9639	0.6846	0.8891	0.9882	1.0232	0.8947	1.1187	1.1583
Ce-144+D	0.3044	0.2213	0.2819	0.3116	0.3331	0.2978	0.3605	0.3681
Cm-247+D	1.5006	1.0733	1.3853	1.5346	1.6137	1.4235	1.7554	1.8049
Cm-250+D	14.8216	10.8054	13.6944	14.9983	17.4185	15.8881	18.5433	18.4573
Cs-137+D	1.9878	1.4375	1.8343	2.0035	2.3647	2.1625	2.4989	2.4752
Es-254+D	3.9500	2.4905	3.5698	4.0854	3.5886	2.8357	4.0867	4.4422
Fe-60+D	2.5998	1.7055	2.3566	2.6629	2.7326	2.3227	3.0014	3.1251
Fr-220+D	0.4561	0.2883	0.4133	0.4759	0.3890	0.2956	0.4528	0.5073
Fr-221+D	0.2387	0.1708	0.2206	0.2451	0.2491	0.2170	0.2733	0.2850
Ge-68+D	1.5218	0.7823	1.3344	1.6240	1.0044	0.5592	1.2840	1.6175
Hf-172+D	4.1395	2.5672	3.7334	4.3329	3.5977	2.7502	4.1649	4.6827
Hf-182+D	4.4767	3.1203	4.1127	4.6027	4.7027	4.0752	5.1573	5.3803
Hg-193+D	3.6880	2.4259	3.3580	3.8258	3.5038	2.8547	3.9537	4.2837
Hg-194+D	3.8144	2.4888	3.4669	3.9562	3.6170	2.9353	4.0856	4.4309
In-114m+D	0.7968	0.5592	0.7322	0.8119	0.8521	0.7529	0.9234	0.9398
Kr-76+D	3.2892	2.1589	2.9955	3.4034	3.0580	2.4634	3.4682	3.7576
Np-235+D	1.0864	0.6518	0.9762	1.1343	0.8615	0.6151	1.0231	1.1670
Np-237+D	4.5848	3.0068	4.1774	4.7439	4.1873	3.3577	4.7598	5.1606
Os-194+D	0.9207	0.5409	0.8230	0.9670	0.7478	0.5341	0.8872	1.0242
Pb-202+D	3.4215	2.2049	3.1050	3.5597	3.1442	2.5022	3.5834	3.9375
Pt-202+D	0.2286	0.1655	0.2109	0.2313	0.2689	0.2449	0.2865	0.2855

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Pu-239+D	0.1800	0.1050	0.1610	0.1887	0.1384	0.0954	0.1663	0.1930
Pu-244+D	2.3520	1.5041	2.1326	2.4318	2.1218	1.6773	2.4198	2.6305
Ra-219+D	0.9623	0.6834	0.8879	0.9876	1.0089	0.8786	1.1067	1.1501
Ra-221+D	1.0554	0.6775	0.9586	1.0986	0.9217	0.7138	1.0642	1.1810
Ra-223+D	2.1098	1.4413	1.9353	2.1822	2.0488	1.7083	2.2942	2.4563
Ra-224+D	1.1866	0.8666	1.0956	1.1958	1.4099	1.2916	1.4851	1.4650
Ra-226+D	3.6622	2.6007	3.3686	3.7208	4.1388	3.6998	4.4461	4.4828
Ra-228+D	3.2515	2.2415	2.9792	3.3157	3.4705	3.0330	3.7764	3.8751
Re-186m+D	2.6689	1.4954	2.3701	2.8260	1.9861	1.3021	2.4273	2.9093
Rn-219+D	0.2357	0.1719	0.2183	0.2406	0.2612	0.2336	0.2822	0.2879
Rn-222+D	0.0007	0.0005	0.0007	0.0008	0.0009	0.0008	0.0009	0.0009
Ru-106+D	0.3172	0.2319	0.2933	0.3205	0.3778	0.3462	0.4009	0.3981
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3034	0.1965	0.2749	0.3123	0.2933	0.2430	0.3269	0.3462
Sn-126+D	4.2929	3.1060	3.9652	4.3605	4.9134	4.4425	5.2621	5.2932
Sr-82+D	1.5358	0.9845	1.3970	1.5880	1.3016	0.9912	1.5118	1.6618
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.3221	0.9065	1.2090	1.3461	1.3976	1.2267	1.5151	1.5393
Th-229+D	4.2404	2.7120	3.8491	4.4085	3.7080	2.8771	4.2758	4.7221
Th-232+D	4.1475	2.8867	3.8042	4.2180	4.5489	4.0251	4.9155	4.9945
Th-234+D	0.4692	0.3061	0.4273	0.4866	0.4220	0.3350	0.4821	0.5264
Ti-44+D	3.2950	2.4196	3.0586	3.3715	3.6812	3.3157	3.9697	4.0383
U-235+D	3.7158	2.4944	3.3942	3.8283	3.5356	2.9138	3.9429	4.2508
U-238+D	1.4168	1.0057	1.3028	1.4386	1.5514	1.3851	1.6618	1.7051
W-178+D	2.8138	1.7533	2.5405	2.9470	2.4558	1.8825	2.8413	3.1942

Table 71: Composite 2 Surface Contamination for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.4414	0.3508	0.5400	0.6029	0.3191	0.3070	0.5322	0.6081
Ac-225+D	0.8924	0.7531	1.0521	1.1326	0.6872	0.6786	1.0480	1.1532
Ag-108m+D	4.6371	4.5339	4.8748	4.6351	4.3132	4.5446	5.1484	4.9327
Ag-110m+D	4.1459	4.1135	4.2968	4.0137	4.0375	4.3115	4.6712	4.3448
Am-242m+D	1.4276	1.1810	1.6913	1.8308	1.0225	0.9884	1.6415	1.8356
Am-243+D	4.5905	4.1582	5.1601	5.2990	3.8781	3.9609	5.2523	5.4804
Ar-42+D	0.2395	0.2377	0.2462	0.2282	0.2346	0.2515	0.2712	0.2496
At-211+D	0.9904	0.8587	1.1509	1.2231	0.8055	0.8124	1.1660	1.2594
Bi-210m+D	1.4792	1.4212	1.5907	1.5585	1.3823	1.4495	1.6843	1.6519
Bi-212+D	0.3286	0.2711	0.3916	0.4275	0.2551	0.2528	0.3958	0.4365
Bi-213+D	0.4537	0.4386	0.4851	0.4697	0.4259	0.4482	0.5162	0.5050
Bi-214+D	1.7474	1.7285	1.8136	1.6954	1.6985	1.8138	1.9754	1.8414
Bi-215+D	1.1353	1.0766	1.2324	1.2195	1.0406	1.0869	1.2980	1.2893
Ce-144+D	0.3717	0.3594	0.3973	0.3869	0.3467	0.3647	0.4177	0.4090
Cm-247+D	1.7910	1.7095	1.9334	1.8967	1.6365	1.7082	2.0296	2.0036
Cm-250+D	20.0900	19.8326	20.9661	19.7610	19.3885	20.6261	22.6414	21.3604
Cs-137+D	2.7437	2.7170	2.8606	2.6690	2.6579	2.8259	3.0839	2.8878
Es-254+D	3.7313	3.2083	4.3048	4.5468	2.8969	2.8933	4.3043	4.6353
Fe-60+D	3.0839	2.8850	3.3451	3.3140	2.8287	2.9749	3.5845	3.5320
Fr-220+D	0.3945	0.3259	0.4721	0.5161	0.2984	0.2929	0.4692	0.5243
Fr-221+D	0.2735	0.2583	0.2993	0.2980	0.2477	0.2573	0.3122	0.3136
Ge-68+D	0.9282	0.5633	1.2991	1.6246	0.5258	0.4418	1.2466	1.5981
Hf-172+D	3.7322	3.1486	4.4126	4.8006	2.9988	3.0236	4.4716	4.8958
Hf-182+D	5.2296	4.9398	5.6949	5.6614	4.8189	5.0609	6.0220	5.9946
Hg-193+D	3.7609	3.3620	4.2720	4.4440	3.2361	3.3311	4.4208	4.6303
Hg-194+D	3.8876	3.4655	4.4194	4.6065	3.3414	3.4340	4.5789	4.7946
In-114m+D	0.9317	0.8902	0.9966	0.9792	0.8127	0.8426	1.0199	1.0124
Kr-76+D	3.2261	2.8325	3.6991	3.8828	2.6496	2.6755	3.7655	4.0021
Np-235+D	0.8338	0.6366	1.0358	1.1698	0.5373	0.4962	0.9886	1.1604
Np-237+D	4.3313	3.7533	4.9988	5.2754	3.3941	3.3816	4.9862	5.3748
Os-194+D	0.7586	0.6001	0.9315	1.0483	0.5690	0.5536	0.9336	1.0608
Pb-202+D	3.3345	2.9165	3.8511	4.0721	2.7967	2.8482	3.9554	4.2296
Pt-202+D	0.3111	0.3069	0.3250	0.3064	0.3008	0.3203	0.3519	0.3332
Pu-239+D	0.1330	0.0984	0.1683	0.1935	0.0841	0.0767	0.1607	0.1915
Pu-244+D	2.1868	1.8709	2.5364	2.6849	1.6716	1.6563	2.5172	2.7336
Ra-219+D	1.1119	1.0487	1.2130	1.2084	1.0086	1.0482	1.2708	1.2708
Ra-221+D	0.9421	0.7921	1.1151	1.2050	0.7262	0.7158	1.1107	1.2280
Ra-223+D	2.1944	1.9884	2.4725	2.5459	1.8921	1.9376	2.5448	2.6489
Ra-224+D	1.6334	1.6182	1.7081	1.5959	1.5840	1.6913	1.8271	1.7219

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	4.7287	4.5907	5.0059	4.7689	4.4837	4.7456	5.3519	5.1188
Ra-228+D	3.8719	3.6794	4.1811	4.0817	3.5046	3.6645	4.3726	4.3454
Re-186m+D	1.9389	1.4056	2.5059	2.9468	1.3282	1.2460	2.4646	2.9479
Rn-219+D	0.2936	0.2840	0.3141	0.3051	0.2758	0.2896	0.3333	0.3245
Rn-222+D	0.0010	0.0010	0.0011	0.0010	0.0010	0.0010	0.0011	0.0011
Ru-106+D	0.4379	0.4343	0.4569	0.4281	0.4253	0.4528	0.4937	0.4696
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.3113	0.2817	0.3456	0.3563	0.2534	0.2584	0.3476	0.3609
Sn-126+D	5.6015	5.4870	5.9015	5.6324	5.3177	5.6260	6.3014	6.0136
Sr-82+D	1.2881	1.0456	1.5405	1.6747	0.8827	0.8423	1.4890	1.6834
Sr-90+D	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.5179	1.4433	1.6170	1.5962	1.2899	1.3372	1.6410	1.6291
Th-229+D	3.7803	3.1783	4.4580	4.8041	2.8768	2.8382	4.4247	4.8757
Th-232+D	5.1331	4.9331	5.4671	5.2800	4.7404	4.9845	5.8086	5.6420
Th-234+D	0.4343	0.3730	0.5051	0.5367	0.3386	0.3381	0.5038	0.5476
Ti-44+D	4.1613	4.0574	4.4192	4.2611	3.9742	4.2374	4.7327	4.5781
U-235+D	3.7281	3.3250	4.2270	4.3402	3.0567	3.0869	4.2266	4.4884
U-238+D	1.7356	1.6758	1.8178	1.7539	1.6073	1.7008	1.9441	1.8861
W-178+D	2.5585	2.1672	3.0207	3.2775	2.0858	2.1180	3.0789	3.3572

Table 72: Composite 2 Surface Contamination 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2319	0.2973	0.5432	0.6043
Ac-225+D	0.5301	0.6584	1.0749	1.1511
Ag-108m+D	3.8854	4.5452	5.4111	5.1056
Ag-110m+D	3.8382	4.4960	5.0304	4.6100
Am-242m+D	0.6934	0.8988	1.6549	1.8092
Am-243+D	3.2516	3.8672	5.4254	5.5419
Ar-42+D	0.2253	0.2654	0.2930	0.2668
At-211+D	0.6648	0.8009	1.2010	1.2732
Bi-210m+D	1.2721	1.4756	1.7654	1.7192
Bi-212+D	0.2032	0.2550	0.4103	0.4410
Bi-213+D	0.3933	0.4565	0.5436	0.5200
Bi-214+D	1.6163	1.8946	2.1262	1.9531
Bi-215+D	0.9448	1.1052	1.3605	1.3363
Ce-144+D	0.3157	0.3636	0.4377	0.4226
Cm-247+D	1.4706	1.7133	2.1197	2.0637
Cm-250+D	18.2815	21.3037	24.1584	22.4339
Cs-137+D	2.5087	2.9181	3.2234	3.1525
Es-254+D	2.2091	2.7755	4.4178	4.6511
Fe-60+D	2.6040	3.1023	3.8168	3.7019
Fr-220+D	0.2279	0.2848	0.4804	0.5237
Fr-221+D	0.2223	0.2581	0.3259	0.3210
Ge-68+D	0.2911	0.4362	1.2571	1.5750
Hf-172+D	2.4630	2.9821	4.5972	4.9351
Hf-182+D	4.4192	5.1540	6.3371	6.2038
Hg-193+D	2.8240	3.3599	4.6133	4.7274
Hg-194+D	2.9147	3.4824	4.7797	4.9061
In-114m+D	0.6737	0.7931	1.0365	1.0202
Kr-76+D	2.1910	2.6683	3.8912	4.0451
Np-235+D	0.3171	0.4461	0.9931	1.1349
Np-237+D	2.6209	3.2464	5.1024	5.3787
Os-194+D	0.4415	0.5561	0.9581	1.0673
Pb-202+D	2.3904	2.8583	4.1052	4.2836
Pt-202+D	0.2844	0.3310	0.3751	0.3483
Pu-239+D	0.0490	0.0695	0.1614	0.1876
Pu-244+D	1.2500	1.5783	2.5778	2.7256
Ra-219+D	0.9065	1.0636	1.3278	1.3137
Ra-221+D	0.5631	0.6973	1.1399	1.2260
Ra-223+D	1.6372	1.9357	2.6403	2.7004
Ra-224+D	1.4963	1.7375	1.8537	1.9718

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.1868	4.9013	5.7070	5.5205
Ra-228+D	3.1401	3.7441	4.5994	4.6623
Re-186m+D	0.9465	1.2313	2.5124	2.9307
Rn-219+D	0.2543	0.2944	0.3496	0.3373
Rn-222+D	0.0009	0.0011	0.0012	0.0011
Ru-106+D	0.4024	0.4669	0.5279	0.4864
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1958	0.2373	0.3478	0.3612
Sn-126+D	4.9254	5.7263	6.6715	6.2807
Sr-82+D	0.5729	0.7846	1.5143	1.6475
Sr-90+D	0.0001	0.0001	0.0001	0.0002
Te-118+D	1.0217	1.2186	1.6403	1.6342
Th-229+D	2.1773	2.7268	4.5198	4.8628
Th-232+D	4.3216	5.1383	6.1573	6.1978
Th-234+D	0.2622	0.3249	0.5172	0.5466
Ti-44+D	3.7388	4.3083	5.0041	4.7850
U-235+D	2.4820	3.0113	4.2933	4.6480
U-238+D	1.4695	1.7706	2.1096	2.1491
W-178+D	1.7513	2.1127	3.1807	3.3926

Table 73: Composite 2 – 1cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.4027	0.3324	0.3970	0.4423	0.3087	0.2631	0.3688	0.4210
Ac-225+D	0.8093	0.6881	0.8043	0.8765	0.6739	0.6023	0.7737	0.8514
Ag-108m+D	4.1168	3.4936	4.0864	4.3378	4.3992	4.2695	4.7327	4.7980
Ag-110m+D	3.9377	3.1717	3.8361	4.1307	4.4968	4.3688	4.8656	4.7559
Am-242m+D	1.1529	1.0120	1.1537	1.2606	0.8461	0.7192	0.9984	1.1535
Am-243+D	4.1597	3.6467	4.1792	4.4389	3.7652	3.5259	4.1609	4.4356
Ar-42+D	0.2160	0.1660	0.2061	0.2222	0.2551	0.2409	0.2780	0.2684
At-211+D	0.9203	0.7907	0.9231	0.9923	0.7910	0.7207	0.8912	0.9749
Bi-210m+D	1.4481	1.2251	1.4388	1.5196	1.5175	1.4764	1.6609	1.6907
Bi-212+D	0.3050	0.2421	0.2970	0.3332	0.2612	0.2293	0.3073	0.3355
Bi-213+D	0.4266	0.3566	0.4250	0.4510	0.4552	0.4422	0.4903	0.5039
Bi-214+D	1.6250	1.2948	1.5764	1.6942	1.8572	1.7936	2.0120	1.9702
Bi-215+D	1.0924	0.9218	1.0856	1.1503	1.1209	1.0779	1.2323	1.2659
Ce-144+D	0.3359	0.2974	0.3392	0.3531	0.3327	0.3219	0.3581	0.3694
Cm-247+D	1.6516	1.4105	1.6533	1.7515	1.6890	1.6295	1.8140	1.8982
Cm-250+D	18.6966	15.3431	18.3780	19.5569	20.8259	20.2310	22.5613	22.3465
Cs-137+D	2.4863	2.0597	2.2755	2.4643	2.7986	2.7391	3.0017	2.9635
Es-254+D	3.1164	2.6209	3.0768	3.3999	2.6251	2.3263	3.0526	3.3188
Fe-60+D	2.8785	2.2042	2.7591	3.0215	3.0575	2.8625	3.3482	3.3810
Fr-220+D	0.3572	0.3029	0.3559	0.3892	0.2852	0.2502	0.3311	0.3727
Fr-221+D	0.2679	0.2297	0.2669	0.2826	0.2690	0.2595	0.2920	0.2977
Ge-68+D	0.9357	0.6756	0.8894	1.0756	0.5341	0.3557	0.7544	0.9561
Hf-172+D	3.4079	2.8614	3.3838	3.7222	2.7387	2.4385	3.2141	3.5430
Hf-182+D	5.0019	4.1735	4.9460	5.2888	5.0687	4.8569	5.5426	5.6575
Hg-193+D	3.5621	2.9601	3.5265	3.8307	3.3173	3.0785	3.7300	3.9350
Hg-194+D	3.6905	3.0346	3.6380	3.9603	3.4632	3.2027	3.9409	4.1691
In-114m+D	0.7102	0.6443	0.7184	0.7510	0.6617	0.6289	0.7194	0.7462
Kr-76+D	2.9434	2.4707	2.9188	3.1619	2.6798	2.4710	3.0463	3.2868
Np-235+D	0.6774	0.5771	0.6718	0.7530	0.4378	0.3396	0.5495	0.6646
Np-237+D	3.7460	3.2542	3.7446	4.0326	3.1589	2.8493	3.6098	3.9707
Os-194+D	0.7279	0.5758	0.7094	0.8005	0.5808	0.4978	0.7049	0.7953
Pb-202+D	3.1537	2.6087	3.1280	3.4136	2.8529	2.6223	3.2292	3.4878
Pt-202+D	0.2908	0.2358	0.2857	0.3051	0.3266	0.3180	0.3506	0.3503
Pu-239+D	0.1118	0.0928	0.1101	0.1251	0.0703	0.0532	0.0903	0.1103
Pu-244+D	1.8433	1.5750	1.8301	1.9967	1.5363	1.3621	1.7742	1.9506
Ra-219+D	1.0732	0.9127	1.0691	1.1289	1.0858	1.0392	1.2078	1.2550
Ra-221+D	0.8586	0.7291	0.8551	0.9305	0.7103	0.6314	0.8143	0.9075
Ra-223+D	2.0828	1.7799	2.0815	2.2200	1.9554	1.8386	2.1622	2.2967
Ra-224+D	1.4078	1.1774	1.2260	1.3308	1.5809	1.5622	1.6930	1.6651

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.3910	3.5957	4.1458	4.4794	4.8011	4.6388	5.2291	5.2148
Ra-228+D	3.4317	2.8455	3.2184	3.5071	3.5731	3.4081	3.9293	3.9704
Re-186m+D	1.8826	1.4693	1.8299	2.1115	1.2945	1.0301	1.6453	1.9444
Rn-219+D	0.2830	0.2391	0.2817	0.2976	0.3003	0.2932	0.3239	0.3313
Rn-222+D	0.0010	0.0008	0.0009	0.0010	0.0011	0.0010	0.0012	0.0011
Ru-106+D	0.4159	0.3416	0.4097	0.4355	0.4699	0.4599	0.5085	0.5022
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2140	0.1961	0.2174	0.2307	0.1654	0.1477	0.1890	0.2084
Sn-126+D	5.1929	4.3636	5.1432	5.4678	5.6010	5.4462	6.0202	6.0646
Sr-82+D	1.0072	0.8814	1.0076	1.1026	0.7540	0.6371	0.8864	1.0252
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	0.9656	0.9216	0.9916	1.0237	0.8061	0.7502	0.8839	0.9394
Th-229+D	3.2895	2.8447	3.2902	3.5724	2.6137	2.3020	3.0194	3.3697
Th-232+D	4.6057	3.8029	4.2168	4.6067	4.9275	4.7373	5.3797	5.3836
Th-234+D	0.3776	0.3281	0.3778	0.4090	0.3116	0.2794	0.3562	0.3913
Ti-44+D	3.9280	3.3596	3.9275	4.1309	4.0735	3.9449	4.3736	4.4106
U-235+D	3.1690	2.7763	3.0069	3.2414	2.8341	2.6246	3.1426	3.3516
U-238+D	1.3595	1.1706	1.2360	1.3435	1.4109	1.3778	1.5214	1.5262
W-178+D	2.3887	1.9980	2.3695	2.6078	1.9548	1.7523	2.2859	2.4958

Table 74: Composite 2 – 1cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.2998	0.2745	0.3655	0.4100	0.2442	0.2507	0.3675	0.3900
Ac-225+D	0.6675	0.6328	0.7812	0.8439	0.5748	0.5890	0.7823	0.8145
Ag-108m+D	4.6896	4.8083	5.0523	4.8673	4.5112	4.7113	5.0479	4.9498
Ag-110m+D	4.9199	5.1282	5.2240	4.9376	4.8201	5.0905	5.2803	5.0890
Am-242m+D	0.7945	0.7091	0.9795	1.1248	0.6188	0.6241	0.9658	1.0431
Am-243+D	3.7869	3.6975	4.2552	4.4463	3.4637	3.5442	4.2683	4.3577
Ar-42+D	0.2755	0.2879	0.2930	0.2724	0.2707	0.2904	0.3012	0.2830
At-211+D	0.7873	0.7557	0.9057	0.9694	0.7049	0.7199	0.9105	0.9451
Bi-210m+D	1.5997	1.6286	1.7244	1.6811	1.5414	1.6000	1.7400	1.7163
Bi-212+D	0.2665	0.2558	0.3120	0.3331	0.2314	0.2427	0.3152	0.3240
Bi-213+D	0.4847	0.4967	0.5221	0.5037	0.4678	0.4898	0.5280	0.5164
Bi-214+D	2.0287	2.1142	2.1614	2.0266	1.9868	2.1065	2.1963	2.1042
Bi-215+D	1.1772	1.1929	1.2779	1.2592	1.1258	1.1697	1.2895	1.2774
Ce-144+D	0.3430	0.3444	0.3716	0.3738	0.3302	0.3388	0.3722	0.3767
Cm-247+D	1.7693	1.7904	1.9213	1.8923	1.6882	1.7532	1.9385	1.9102
Cm-250+D	22.5200	23.3217	23.9850	22.8157	22.0030	23.1727	24.3600	23.5185
Cs-137+D	3.0497	3.1638	3.2369	3.0419	2.9818	3.1292	3.3408	3.1068
Es-254+D	2.6379	2.5167	3.0772	3.3143	2.2607	2.3431	3.0930	3.1928
Fe-60+D	3.2897	3.3699	3.5680	3.4756	3.1422	3.3382	3.6627	3.5557
Fr-220+D	0.2786	0.2597	0.3318	0.3661	0.2359	0.2409	0.3327	0.3511
Fr-221+D	0.2800	0.2821	0.3046	0.3035	0.2664	0.2746	0.3068	0.3053
Ge-68+D	0.4808	0.3654	0.6977	0.8981	0.2900	0.3006	0.7198	0.8146
Hf-172+D	2.6759	2.5009	3.1572	3.4984	2.3374	2.3802	3.1942	3.3589
Hf-182+D	5.3150	5.3753	5.7803	5.7438	5.0897	5.2934	5.8712	5.7987
Hg-193+D	3.4108	3.3663	3.8271	3.9503	3.1550	3.2719	3.8800	3.9103
Hg-194+D	3.5699	3.5282	4.0094	4.1108	3.2985	3.4339	4.0684	4.0858
In-114m+D	0.6668	0.6591	0.7364	0.7597	0.6168	0.6265	0.7300	0.7372
Kr-76+D	2.7358	2.6771	3.1047	3.2089	2.4667	2.5580	3.1174	3.1758
Np-235+D	0.3952	0.3279	0.5250	0.6372	0.2665	0.2676	0.5171	0.5787
Np-237+D	3.1213	2.9704	3.6230	3.8918	2.7051	2.7691	3.6153	3.7517
Os-194+D	0.5772	0.5376	0.6945	0.7648	0.4860	0.5048	0.7045	0.7369
Pb-202+D	2.9123	2.8467	3.3118	3.4489	2.6512	2.7493	3.3544	3.4088
Pt-202+D	0.3542	0.3677	0.3767	0.3572	0.3461	0.3653	0.3832	0.3695
Pu-239+D	0.0632	0.0515	0.0855	0.1053	0.0416	0.0419	0.0849	0.0954
Pu-244+D	1.5261	1.4480	1.7931	1.9252	1.2954	1.3370	1.7812	1.8552
Ra-219+D	1.1325	1.1423	1.2343	1.2223	1.0780	1.1174	1.2428	1.2343
Ra-221+D	0.7018	0.6634	0.8243	0.8923	0.6046	0.6186	0.8240	0.8603
Ra-223+D	1.9997	1.9754	2.2299	2.2864	1.8551	1.9102	2.2456	2.2710
Ra-224+D	1.7223	1.7756	1.8177	1.7013	1.6838	1.7612	1.8583	1.7405

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.1842	5.3457	5.5363	5.2860	5.0350	5.3013	5.6779	5.4074
Ra-228+D	3.8242	3.8944	4.1669	4.0241	3.6321	3.8124	4.2185	4.0706
Re-186m+D	1.2241	1.0601	1.5779	1.8719	0.9369	0.9609	1.6093	1.7492
Rn-219+D	0.3178	0.3245	0.3416	0.3310	0.3069	0.3192	0.3451	0.3385
Rn-222+D	0.0011	0.0012	0.0012	0.0012	0.0011	0.0012	0.0012	0.0012
Ru-106+D	0.5104	0.5314	0.5450	0.5102	0.4991	0.5262	0.5488	0.5328
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1557	0.1436	0.1834	0.2086	0.1323	0.1311	0.1820	0.1932
Sn-126+D	5.9899	6.1595	6.4304	6.1865	5.8140	6.0688	6.4620	6.3127
Sr-82+D	0.7230	0.6576	0.8916	1.0026	0.5557	0.5712	0.8719	0.9418
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.7715	0.7365	0.8729	0.9569	0.6864	0.6797	0.8601	0.8946
Th-229+D	2.5382	2.3621	3.0174	3.3371	2.1405	2.1829	3.0117	3.1741
Th-232+D	5.3195	5.4490	5.7422	5.4708	5.1059	5.3746	5.8980	5.5761
Th-234+D	0.3058	0.2892	0.3578	0.3892	0.2638	0.2698	0.3582	0.3726
Ti-44+D	4.2732	4.3548	4.5901	4.5327	4.1720	4.3237	4.6624	4.5957
U-235+D	2.8583	2.8099	3.1886	3.3611	2.5556	2.6340	3.1620	3.2356
U-238+D	1.4998	1.5295	1.5755	1.5569	1.4391	1.5030	1.6250	1.5663
W-178+D	1.9218	1.8107	2.2517	2.4739	1.7012	1.7395	2.2872	2.3808

Table 75: Composite 2 – 1cm Contamination Thickness 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.2008	0.2337	0.3824	0.3579
Ac-225+D	0.4951	0.5550	0.8075	0.7659
Ag-108m+D	4.2367	4.5689	5.0060	5.1559
Ag-110m+D	4.6309	5.0295	5.2123	5.4954
Am-242m+D	0.4644	0.5597	1.0166	0.9527
Am-243+D	3.1426	3.3873	4.3634	4.1847
Ar-42+D	0.2616	0.2857	0.2986	0.3099
At-211+D	0.6356	0.6943	0.9264	0.8929
Bi-210m+D	1.4612	1.5496	1.7569	1.7098
Bi-212+D	0.2035	0.2333	0.3222	0.3177
Bi-213+D	0.4439	0.4739	0.5259	0.5228
Bi-214+D	1.9112	2.0786	2.1737	2.2735
Bi-215+D	1.0625	1.1366	1.2956	1.2740
Ce-144+D	0.3127	0.3280	0.3765	0.3643
Cm-247+D	1.5837	1.6880	1.9463	1.8726
Cm-250+D	21.0937	22.7329	24.2834	24.7234
Cs-137+D	2.8544	3.0608	3.1646	3.3913
Es-254+D	1.9144	2.2198	3.1810	3.1304
Fe-60+D	2.9792	3.3000	3.6899	3.7693
Fr-220+D	0.2016	0.2280	0.3434	0.3257
Fr-221+D	0.2501	0.2649	0.3103	0.2995
Ge-68+D	0.1734	0.2667	0.7816	0.6784
Hf-172+D	2.0805	2.2862	3.4032	3.1279
Hf-182+D	4.8292	5.1701	6.0086	5.8606
Hg-193+D	2.9247	3.1783	3.9925	3.8476
Hg-194+D	3.0535	3.3275	4.1838	4.0091
In-114m+D	0.5521	0.5936	0.7342	0.7242
Kr-76+D	2.2174	2.4418	3.1770	3.0645
Np-235+D	0.1639	0.2297	0.5544	0.5103
Np-237+D	2.3206	2.5953	3.7121	3.5422
Os-194+D	0.4182	0.4787	0.7311	0.6812
Pb-202+D	2.4267	2.6456	3.4399	3.2928
Pt-202+D	0.3316	0.3577	0.3810	0.3888
Pu-239+D	0.0251	0.0360	0.0914	0.0829
Pu-244+D	1.0841	1.2497	1.8317	1.8017
Ra-219+D	1.0125	1.0814	1.2484	1.2076
Ra-221+D	0.5227	0.5858	0.8526	0.8048
Ra-223+D	1.7131	1.8415	2.2755	2.1925
Ra-224+D	1.6111	1.7084	1.7628	1.9531

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.8064	5.1959	5.6007	5.7046
Ra-228+D	3.3981	3.7072	4.1196	4.3262
Re-186m+D	0.7483	0.8980	1.7306	1.5432
Rn-219+D	0.2910	0.3085	0.3470	0.3366
Rn-222+D	0.0011	0.0011	0.0012	0.0013
Ru-106+D	0.4780	0.5135	0.5387	0.5731
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1084	0.1198	0.1842	0.1793
Sn-126+D	5.5337	5.9244	6.4037	6.5381
Sr-82+D	0.4128	0.5214	0.9017	0.8988
Sr-90+D	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.5790	0.6270	0.8560	0.8595
Th-229+D	1.8033	2.0419	3.1100	2.9561
Th-232+D	4.8200	5.2505	5.7808	6.0042
Th-234+D	0.2270	0.2543	0.3733	0.3550
Ti-44+D	4.0230	4.2718	4.7312	4.6896
U-235+D	2.2626	2.5276	3.1643	3.2947
U-238+D	1.3598	1.4735	1.6593	1.6430
W-178+D	1.5385	1.6800	2.4512	2.2515

Table 76: Composite 2 - 5cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.3194	0.3171	0.4140	0.5209	0.3095	0.2321	0.3044	0.3767
Ac-225+D	0.6792	0.6780	0.8053	1.0258	0.6681	0.5164	0.6141	0.7471
Ag-108m+D	5.1508	4.6760	4.7471	4.8585	5.0949	4.6598	5.3355	7.4991
Ag-110m+D	4.8965	4.3638	4.4568	4.2747	5.0904	4.8625	5.2308	8.7674
Am-242m+D	0.9799	0.9738	1.2337	1.6211	0.9022	0.6266	0.8162	0.8886
Am-243+D	3.7078	3.7879	4.0275	4.7887	3.5124	2.8315	3.3577	3.8458
Ar-42+D	0.2583	0.2178	0.2319	0.2287	0.2825	0.2557	0.2507	0.4979
At-211+D	0.7153	0.7632	0.8251	0.9906	0.6415	0.5459	0.7985	0.7930
Bi-210m+D	1.6298	1.5151	1.5154	1.6040	1.6493	1.4326	1.5138	1.9301
Bi-212+D	0.2782	0.2577	0.3259	0.3691	0.2799	0.2387	0.2933	0.4482
Bi-213+D	0.5216	0.4791	0.4871	0.5009	0.5172	0.4632	0.5239	0.6931
Bi-214+D	1.9887	1.7459	1.8004	1.7676	2.0901	1.9570	2.0904	3.5604
Bi-215+D	1.1737	1.1061	1.1166	1.1965	1.1674	1.0196	1.1454	1.4788
Ce-144+D	0.3414	0.3166	0.3061	0.3308	0.3142	0.2563	0.3004	0.3571
Cm-247+D	1.8898	1.7780	1.8170	1.9337	1.8391	1.5906	1.7801	2.2620
Cm-250+D	22.3814	19.9323	20.3543	20.5388	23.1585	20.9779	22.0126	35.1388
Cs-137+D	2.7319	2.5052	2.4704	2.5006	2.8349	2.7942	2.9588	3.6811
Es-254+D	3.0218	2.7768	3.4210	4.1255	2.9309	2.3953	2.7703	3.8756
Fe-60+D	3.1118	2.7123	3.0622	3.0809	3.3288	3.0325	3.1740	5.7687
Fr-220+D	0.2722	0.2832	0.3370	0.4204	0.2542	0.1988	0.2733	0.3011
Fr-221+D	0.2644	0.2533	0.2627	0.3160	0.2711	0.2282	0.2406	0.3054
Ge-68+D	0.5453	0.5103	1.0343	1.2713	0.5391	0.3554	0.6409	0.9189
Hf-172+D	2.5484	2.4621	3.0345	3.6296	2.3819	1.9706	2.6019	2.8411
Hf-182+D	4.9688	4.6878	4.8969	5.1943	5.0655	4.5414	4.7973	6.6601
Hg-193+D	3.1824	3.0903	3.4351	3.8531	3.1465	2.8369	3.3535	4.2864
Hg-194+D	3.4568	3.2669	3.6590	4.0669	3.4633	3.0532	3.5360	4.6588
In-114m+D	0.8108	0.7068	0.7402	0.9142	0.7272	0.6223	0.6946	0.7917
Kr-76+D	2.8739	2.7087	2.9681	3.4333	2.8771	2.3574	2.6483	3.4624
Np-235+D	0.5104	0.5103	0.7190	0.9989	0.4734	0.3119	0.4452	0.4789
Np-237+D	3.4402	3.3647	3.8403	4.7805	3.2600	2.4768	2.9928	3.5021
Os-194+D	0.6228	0.5711	0.7632	0.8893	0.6154	0.4833	0.6225	0.8356
Pb-202+D	2.9250	2.8329	3.2197	3.6007	2.8313	2.4960	3.1337	3.7443
Pt-202+D	0.3662	0.3255	0.3325	0.3275	0.3764	0.3467	0.3676	0.5701
Pu-239+D	0.0812	0.0801	0.1204	0.1635	0.0757	0.0495	0.0744	0.0834
Pu-244+D	1.7839	1.6946	2.0213	2.5031	1.7228	1.3699	1.6831	2.1385
Ra-219+D	1.1423	1.0795	1.0875	1.1940	1.1301	0.9500	1.0735	1.3417
Ra-221+D	0.6910	0.7046	0.8387	1.0219	0.6714	0.5126	0.6209	0.7591
Ra-223+D	1.9360	1.9321	2.0460	2.3074	1.8645	1.5558	1.8629	2.2097
Ra-224+D	1.4523	1.3775	1.3281	1.3749	1.5403	1.5695	1.4849	1.4612

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.8238	4.3958	4.4713	4.6380	5.0184	4.7077	4.9460	6.7717
Ra-228+D	3.5509	3.2860	3.4613	3.7858	3.6752	3.3984	3.4881	4.5907
Re-186m+D	1.2306	1.2008	1.8806	2.2829	1.1942	0.8975	1.3271	1.6655
Rn-219+D	0.3331	0.3082	0.3090	0.3221	0.3353	0.2920	0.3069	0.3999
Rn-222+D	0.0013	0.0011	0.0011	0.0012	0.0013	0.0012	0.0014	0.0018
Ru-106+D	0.5464	0.4895	0.4923	0.4924	0.5572	0.5191	0.5961	0.8566
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2376	0.1887	0.2154	0.2770	0.1791	0.1454	0.2125	0.1802
Sn-126+D	6.2631	5.7297	5.7598	5.8369	6.1863	5.7311	6.5523	9.2904
Sr-82+D	0.7857	0.8273	0.9392	1.3118	0.7767	0.5996	0.7030	0.9205
Sr-90+D	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.2047	0.9498	0.9820	1.2715	0.9024	0.7744	1.0341	0.8809
Th-229+D	2.7140	2.7126	3.1892	4.0916	2.4993	1.8670	2.4215	2.6849
Th-232+D	4.6552	4.2982	4.4536	4.8337	4.8806	4.6420	4.6743	5.7351
Th-234+D	0.3093	0.3186	0.3661	0.4613	0.2942	0.2357	0.2841	0.3236
Ti-44+D	3.6766	3.6548	3.4652	3.6414	3.5214	3.4415	4.1344	4.9363
U-235+D	2.7384	2.7035	3.0022	3.6315	2.6654	2.3738	2.6115	2.6073
U-238+D	1.3672	1.3232	1.3374	1.4528	1.4196	1.3923	1.3509	1.3810
W-178+D	1.7250	1.6976	2.0669	2.4468	1.6481	1.4234	1.8394	1.9926

Table 77: Composite 2 - 5cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.2807	0.2361	0.3660	0.3451	0.2279	0.1859	0.4989	0.4159
Ac-225+D	0.6169	0.4994	0.8367	0.7036	0.5319	0.4222	1.1265	0.8025
Ag-108m+D	5.2861	4.1380	5.9097	6.9870	4.9855	3.6356	13.6804	9.4086
Ag-110m+D	5.3883	4.2949	6.0414	7.5348	5.2217	3.7456	15.6552	11.3059
Am-242m+D	0.7671	0.6193	0.8976	1.0027	0.5828	0.5088	1.0596	1.0504
Am-243+D	3.3249	2.7223	4.7112	4.3270	2.9850	2.3711	6.0156	3.9852
Ar-42+D	0.2939	0.2378	0.2966	0.3698	0.2909	0.2039	0.7189	0.4843
At-211+D	0.6245	0.5739	0.8269	0.7219	0.5589	0.5172	0.8905	0.6010
Bi-210m+D	1.6576	1.4282	1.9590	1.9926	1.5846	1.2732	3.3668	2.0116
Bi-212+D	0.2715	0.2242	0.3067	0.3707	0.2385	0.1843	0.6583	0.5359
Bi-213+D	0.5424	0.4182	0.6667	0.6971	0.5208	0.3485	1.4456	1.0610
Bi-214+D	2.2138	1.7799	2.4365	2.8145	2.1440	1.5360	6.2649	3.9684
Bi-215+D	1.1743	1.0473	1.4250	1.4882	1.1180	0.8686	2.5616	1.6558
Ce-144+D	0.3047	0.2383	0.3467	0.3391	0.2873	0.1929	0.7457	0.4044
Cm-247+D	1.8922	1.4192	2.4367	2.5495	1.7981	1.2168	5.1082	3.7068
Cm-250+D	24.0013	19.1705	27.9890	30.8338	23.3145	16.2650	66.7846	43.9482
Cs-137+D	2.9768	2.7379	3.1680	3.3761	2.8714	2.5435	5.4408	3.8205
Es-254+D	2.7683	2.2190	2.8607	3.5575	2.3986	1.8767	6.0193	5.6299
Fe-60+D	3.5066	2.6605	3.8031	4.7805	3.3895	2.2535	10.0850	8.0321
Fr-220+D	0.2347	0.2050	0.3035	0.2748	0.1961	0.1724	0.3766	0.2732
Fr-221+D	0.2676	0.2048	0.3794	0.2826	0.2590	0.1898	0.5550	0.3352
Ge-68+D	0.4494	0.3759	0.5059	0.5584	0.2793	0.2627	0.6820	0.9680
Hf-172+D	2.1924	1.8108	2.6841	2.5082	1.9079	1.6115	3.3808	2.9603
Hf-182+D	5.1211	4.0685	6.3040	6.3457	4.9257	3.7479	11.6905	8.0182
Hg-193+D	3.1202	2.6214	3.9101	3.8015	2.9362	2.3591	6.7287	4.9061
Hg-194+D	3.3939	3.0932	4.1855	4.3040	3.1662	2.4790	7.4810	5.1967
In-114m+D	0.6985	0.5276	0.7684	0.8056	0.6458	0.4780	1.4581	0.9998
Kr-76+D	2.7723	2.4045	3.3392	3.5044	2.5013	1.8642	6.1017	4.2138
Np-235+D	0.3848	0.3365	0.4087	0.4419	0.2601	0.2585	0.4177	0.5433
Np-237+D	2.9779	2.6186	3.9138	4.0073	2.5368	1.9787	5.5069	4.0928
Os-194+D	0.5726	0.5210	0.6746	0.7429	0.4860	0.3727	1.1906	0.9704
Pb-202+D	2.8345	2.3315	3.5459	3.4667	2.6107	2.0113	6.1238	4.7462
Pt-202+D	0.3992	0.3040	0.4653	0.5344	0.3891	0.2554	1.1523	0.8770
Pu-239+D	0.0614	0.0533	0.0647	0.0712	0.0407	0.0406	0.0671	0.0927
Pu-244+D	1.6102	1.3396	1.7699	1.9538	1.3586	1.1072	3.0094	2.4213
Ra-219+D	1.1035	1.0943	1.4508	1.5040	1.0390	0.7645	2.4793	1.5312
Ra-221+D	0.6177	0.5023	0.7922	0.7050	0.5182	0.4088	1.2976	0.7678
Ra-223+D	1.8348	1.5369	2.4118	2.2694	1.6850	1.3403	3.7195	2.2864
Ra-224+D	1.5957	1.5998	1.6347	1.5826	1.5659	1.5589	1.6986	1.5617

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.2019	4.6207	5.8819	6.2085	5.0267	4.0723	11.2785	7.7139
Ra-228+D	3.7154	3.3171	4.1714	4.5425	3.5330	2.9509	7.3965	6.0712
Re-186m+D	1.0425	0.8753	1.2776	1.2193	0.7917	0.6989	1.6334	1.6774
Rn-219+D	0.3441	0.2683	0.4134	0.4257	0.3302	0.2469	0.8108	0.5351
Rn-222+D	0.0013	0.0011	0.0015	0.0016	0.0013	0.0009	0.0030	0.0022
Ru-106+D	0.5916	0.4851	0.6651	0.6989	0.5640	0.4018	1.4267	0.9454
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1639	0.1311	0.1296	0.2039	0.1415	0.1148	0.2240	0.2252
Sn-126+D	6.4905	5.1198	7.7387	8.6902	6.1910	4.4839	17.3335	11.6688
Sr-82+D	0.6834	0.5971	0.7842	0.8919	0.5349	0.4633	1.3520	1.1551
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0000	0.0001	0.0001	0.0001
Te-118+D	0.8513	0.6627	0.6525	1.0634	0.7623	0.6095	1.3264	1.1973
Th-229+D	2.2444	1.8914	2.9381	2.7560	1.8579	1.5341	3.5362	2.7847
Th-232+D	4.9868	4.6152	5.4687	5.8327	4.7879	4.2247	8.7563	7.3066
Th-234+D	0.2679	0.2268	0.3704	0.3511	0.2283	0.1944	0.4386	0.3554
Ti-44+D	3.6961	3.2037	4.5196	4.4396	3.6926	3.0366	7.7137	5.5203
U-235+D	2.5258	2.4027	2.6127	2.6790	2.2474	2.2175	2.6895	2.7650
U-238+D	1.4324	1.4224	1.5209	1.5346	1.3810	1.3793	1.5583	1.4170
W-178+D	1.5286	1.3013	2.0084	1.8030	1.3657	1.1883	2.2176	2.0019

Table 78: Composite 2 - 5cm Contamination Thickness 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.1907	0.1672	0.3762	0.4330
Ac-225+D	0.4592	0.3806	0.7762	0.7736
Ag-108m+D	4.8626	3.5955	7.0981	6.4726
Ag-110m+D	5.1884	3.8242	7.5847	8.3795
Am-242m+D	0.4439	0.4806	0.8378	1.1734
Am-243+D	2.7554	2.4370	3.6171	4.1439
Ar-42+D	0.2866	0.2541	0.4336	0.2997
At-211+D	0.5096	0.4705	0.6851	0.7241
Bi-210m+D	1.5048	1.0837	2.1806	1.6134
Bi-212+D	0.2176	0.1787	0.3956	0.4767
Bi-213+D	0.5036	0.2719	0.8924	0.6903
Bi-214+D	2.1300	1.6305	3.2305	2.6791
Bi-215+D	1.0707	0.7440	1.6909	1.2739
Ce-144+D	0.2796	0.2442	0.3300	0.3038
Cm-247+D	1.7073	1.0026	2.5047	2.7011
Cm-250+D	22.7878	15.2050	36.9417	31.2563
Cs-137+D	2.8368	2.7237	3.1405	3.2930
Es-254+D	2.0650	1.5254	3.8962	5.3619
Fe-60+D	3.2727	2.0874	5.7882	4.9044
Fr-220+D	0.1694	0.1592	0.2744	0.3134
Fr-221+D	0.2392	0.1626	0.3574	0.2524
Ge-68+D	0.1699	0.2172	0.7408	1.2687
Hf-172+D	1.6628	1.4097	2.4948	3.0257
Hf-182+D	4.6924	3.2773	6.8804	6.1553
Hg-193+D	2.7297	2.0002	4.2673	4.2127
Hg-194+D	2.9687	2.1185	5.1285	4.1392
In-114m+D	0.5792	0.4189	0.8777	0.7976
Kr-76+D	2.2985	1.5801	4.1169	3.3605
Np-235+D	0.1632	0.2110	0.4559	0.6332
Np-237+D	2.2318	1.8779	3.8028	3.9137
Os-194+D	0.4290	0.3185	0.9098	0.8914
Pb-202+D	2.4216	1.6098	4.2195	3.7823
Pt-202+D	0.3793	0.2077	0.6751	0.5707
Pu-239+D	0.0250	0.0329	0.0767	0.1115
Pu-244+D	1.1861	1.0389	2.1696	2.0354
Ra-219+D	1.0033	0.6461	1.7840	1.0951
Ra-221+D	0.4595	0.3872	0.7535	0.7525
Ra-223+D	1.5844	1.2356	2.2326	2.1377
Ra-224+D	1.5096	1.5144	1.5930	1.7565

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.8965	3.9291	6.9635	5.9642
Ra-228+D	3.3525	2.7291	4.8702	5.3723
Re-186m+D	0.6205	0.6331	1.4109	2.0341
Rn-219+D	0.3131	0.2039	0.4434	0.4070
Rn-222+D	0.0013	0.0007	0.0028	0.0011
Ru-106+D	0.5649	0.3895	1.0248	0.5449
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1155	0.1140	0.1515	0.2534
Sn-126+D	6.1054	4.6005	8.1193	8.4550
Sr-82+D	0.4184	0.3917	0.9051	1.0777
Sr-90+D	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.6434	0.5854	0.7639	1.2023
Th-229+D	1.5853	1.5496	2.5581	3.1698
Th-232+D	4.5728	3.9741	6.2030	6.8016
Th-234+D	0.1982	0.1847	0.3004	0.3886
Ti-44+D	3.5843	2.5796	4.8330	4.1269
U-235+D	1.9978	2.0956	2.5908	3.1465
U-238+D	1.3159	1.3571	1.4841	1.7274
W-178+D	1.2052	0.9845	1.7948	2.0538

Table 79: Composite 2 - 15cm Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.3269	0.3026	0.3579	0.4217	0.2889	0.2291	0.2824	0.3764
Ac-225+D	0.6509	0.6070	0.6781	0.8014	0.5973	0.4760	0.5544	0.7462
Ag-108m+D	5.0323	4.7993	5.0881	4.6364	5.3977	4.3366	4.6366	5.5893
Ag-110m+D	4.6980	4.3966	4.4594	3.8178	5.2407	3.9527	4.3922	6.8277
Am-242m+D	0.8678	0.8611	1.0330	1.3674	0.8485	0.6393	0.7778	0.9217
Am-243+D	3.4128	3.3059	3.3154	4.1270	3.2230	2.5849	3.0747	3.2494
Ar-42+D	0.2480	0.2333	0.2201	0.2145	0.2688	0.2190	0.2301	0.3983
At-211+D	0.7437	0.6851	0.6849	0.9061	0.6062	0.4854	0.6426	0.6808
Bi-210m+D	1.5501	1.4744	1.4045	1.4157	1.5936	1.3532	1.3934	1.5002
Bi-212+D	0.2937	0.2674	0.3056	0.3167	0.2866	0.2163	0.2649	0.4014
Bi-213+D	0.5579	0.5187	0.5434	0.4685	0.5345	0.4812	0.4904	0.5157
Bi-214+D	1.9545	1.8218	1.8612	1.6157	2.1317	1.6808	1.8521	2.8295
Bi-215+D	1.1400	1.0782	1.0399	1.0770	1.1348	0.9490	1.0277	1.1416
Ce-144+D	0.3028	0.3020	0.2950	0.3249	0.3145	0.2365	0.2767	0.3451
Cm-247+D	1.8346	1.7344	1.7774	1.6999	1.7605	1.5515	1.6153	1.6599
Cm-250+D	21.8702	20.5477	20.4857	18.7994	23.2424	18.9101	20.3568	28.6321
Cs-137+D	3.2672	3.1904	3.2112	2.9471	3.5878	3.2563	3.2842	3.7221
Es-254+D	2.8201	2.7094	3.0024	3.6239	2.9106	2.1645	2.5604	3.6807
Fe-60+D	3.0754	2.9087	2.8584	2.8054	3.3207	2.5276	2.8231	4.9516
Fr-220+D	0.2800	0.2582	0.2883	0.3567	0.2370	0.1863	0.2416	0.3057
Fr-221+D	0.2419	0.2271	0.2135	0.2444	0.2398	0.1967	0.2014	0.2563
Ge-68+D	0.7028	0.6298	0.8432	1.0863	0.5648	0.3942	0.5945	1.0247
Hf-172+D	2.7186	2.5163	2.6427	3.3933	2.5388	1.8754	2.7087	2.6472
Hf-182+D	4.9040	4.6160	4.3743	4.7102	4.9897	3.9745	4.5561	5.8830
Hg-193+D	3.3814	3.0852	3.0623	3.5055	3.1484	2.5021	3.0885	3.7735
Hg-194+D	3.6766	3.3697	3.3986	3.7067	3.4800	2.8425	3.4408	3.8934
In-114m+D	0.7139	0.7266	0.7342	0.9279	0.7542	0.6187	0.6384	0.7302
Kr-76+D	2.9235	2.6974	2.9244	2.9124	2.8243	2.3484	2.6290	2.9806
Np-235+D	0.4912	0.4598	0.6204	0.7817	0.4366	0.3283	0.4269	0.5808
Np-237+D	3.1405	3.0302	3.3713	3.9685	3.0165	2.4256	2.8533	3.1916
Os-194+D	0.6678	0.6130	0.6994	0.7707	0.6224	0.4918	0.6086	0.7631
Pb-202+D	3.2875	2.9955	3.1692	3.3407	2.9279	2.4927	2.9314	3.1250
Pt-202+D	0.3795	0.3546	0.3600	0.3072	0.3893	0.3295	0.3413	0.4460
Pu-239+D	0.0813	0.0760	0.1022	0.1309	0.0716	0.0529	0.0706	0.0994
Pu-244+D	1.7204	1.6343	1.9312	2.1078	1.7145	1.3522	1.5516	1.9780
Ra-219+D	1.0962	1.0428	1.0119	1.0535	1.0746	0.9168	1.0125	0.9730
Ra-221+D	0.6728	0.6406	0.7265	0.8447	0.6098	0.4801	0.5722	0.9033
Ra-223+D	1.8689	1.7793	1.7774	2.0300	1.7393	1.4436	1.6338	1.9304
Ra-224+D	1.8607	1.8681	1.7407	1.7498	1.9872	2.0225	1.8847	1.8672

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.9574	4.7210	4.6616	4.4674	5.2039	4.5520	4.7446	5.7454
Ra-228+D	3.4910	3.3544	3.3656	3.4258	3.6563	3.2040	3.3356	4.1438
Re-186m+D	1.4679	1.3247	1.5861	2.0000	1.2428	0.9078	1.3280	1.8148
Rn-219+D	0.3191	0.3025	0.2969	0.2806	0.3218	0.2807	0.2796	0.3054
Rn-222+D	0.0015	0.0014	0.0015	0.0012	0.0015	0.0013	0.0013	0.0014
Ru-106+D	0.6011	0.5590	0.6077	0.4803	0.6192	0.5288	0.5469	0.6541
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2061	0.2144	0.2331	0.3237	0.2143	0.1662	0.2012	0.1895
Sn-126+D	6.0409	5.7102	5.9520	5.3309	6.3490	5.0937	5.5910	6.9425
Sr-82+D	0.8244	0.7135	0.9407	0.9648	0.7218	0.5549	0.7030	1.0065
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.0036	1.0749	1.1195	1.5653	1.0775	0.8693	0.9743	0.8571
Th-229+D	2.5629	2.3944	2.7713	3.3309	2.3117	1.8125	2.3033	2.8158
Th-232+D	4.6860	4.5267	4.4731	4.5570	4.9559	4.5285	4.5962	5.3529
Th-234+D	0.3021	0.2817	0.3104	0.3823	0.2750	0.2157	0.2798	0.3137
Ti-44+D	3.8053	3.5137	3.0281	3.6898	3.5514	2.8087	3.5480	3.9457
U-235+D	2.6390	2.6060	2.8298	3.1884	2.6077	2.3912	2.5186	2.7495
U-238+D	1.3467	1.3294	1.2938	1.3562	1.4068	1.3775	1.3294	1.4139
W-178+D	1.9250	1.7265	1.7805	2.2625	1.7678	1.3055	1.9815	1.8786

Table 80: Composite 2 - 15cm Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.2691	0.2386	0.3050	0.3209	0.2225	0.2015	0.3459	0.2971
Ac-225+D	0.5581	0.4953	0.6054	0.6421	0.4906	0.4405	0.7509	0.5150
Ag-108m+D	5.0124	4.9840	7.1676	5.6923	4.9577	4.6053	8.3415	4.1855
Ag-110m+D	4.8287	4.5402	7.8023	5.6805	4.8836	4.4024	9.1965	4.7142
Am-242m+D	0.7200	0.6366	0.7429	0.6969	0.5562	0.5496	0.7909	0.8471
Am-243+D	3.0736	2.6989	2.8280	3.5839	2.8762	2.4295	3.9130	2.4709
Ar-42+D	0.2642	0.2287	0.3872	0.3015	0.2596	0.2200	0.5239	0.2545
At-211+D	0.6052	0.5046	0.5521	0.7282	0.5751	0.4415	0.7494	0.5969
Bi-210m+D	1.5722	1.5423	1.6590	1.8598	1.5276	1.3785	2.1156	0.9718
Bi-212+D	0.2617	0.2384	0.3683	0.3188	0.2330	0.2061	0.4481	0.3181
Bi-213+D	0.5479	0.5415	0.7457	0.6544	0.5434	0.4861	0.8319	0.3274
Bi-214+D	2.0114	1.8098	3.0151	2.3704	2.0211	1.8252	3.7959	1.8345
Bi-215+D	1.1197	1.0669	1.2728	1.3093	1.0970	0.9604	1.5558	0.7935
Ce-144+D	0.2961	0.2539	0.2911	0.3566	0.2878	0.2307	0.5177	0.2242
Cm-247+D	1.8019	1.7526	2.2813	2.1869	1.7424	1.5412	2.6807	1.0836
Cm-250+D	22.5026	20.3168	31.1608	26.8406	22.3892	19.9546	39.1209	17.6013
Cs-137+D	3.4504	3.4849	4.1284	3.6082	3.4647	3.4585	4.5823	3.2586
Es-254+D	2.6028	2.1263	3.9666	2.9402	2.2551	2.2310	3.2508	2.7344
Fe-60+D	3.1935	2.6491	4.9447	3.8268	3.0559	2.5994	5.9666	3.5907
Fr-220+D	0.2253	0.1923	0.2275	0.2620	0.1967	0.1645	0.2862	0.2402
Fr-221+D	0.2339	0.2122	0.2545	0.2836	0.2294	0.1998	0.3419	0.1423
Ge-68+D	0.5052	0.3878	0.7002	0.7935	0.3024	0.2882	0.6510	0.9577
Hf-172+D	2.3452	1.8584	2.0694	3.4973	1.9805	1.7313	2.7888	2.4658
Hf-182+D	4.8484	4.2119	5.7315	6.2782	4.6796	4.1192	7.2351	3.8215
Hg-193+D	3.0642	2.6139	3.5961	4.2158	2.8924	2.5146	4.5962	2.7510
Hg-194+D	3.3952	3.0184	3.8765	4.6273	3.1704	2.8338	4.8589	2.8943
In-114m+D	0.7079	0.6158	0.8118	0.7558	0.6484	0.6005	0.9148	0.6679
Kr-76+D	2.7144	2.6219	3.1075	3.1539	2.4891	2.2636	3.5995	2.0755
Np-235+D	0.3648	0.3211	0.4072	0.3649	0.2472	0.2623	0.3986	0.5291
Np-237+D	2.7909	2.5657	2.8472	2.9891	2.4545	2.2339	3.3530	2.5378
Os-194+D	0.5853	0.5308	0.7034	0.7597	0.4951	0.4460	0.7578	0.6220
Pb-202+D	2.9371	2.6851	3.5388	3.9317	2.7539	2.4228	4.1473	2.3833
Pt-202+D	0.3881	0.3637	0.5823	0.4626	0.3862	0.3455	0.6420	0.2856
Pu-239+D	0.0601	0.0517	0.0693	0.0662	0.0396	0.0415	0.0670	0.0925
Pu-244+D	1.5270	1.4341	1.9711	1.6080	1.3462	1.3015	2.1313	1.5620
Ra-219+D	1.0646	1.0386	1.1368	1.2421	1.0380	0.9119	1.3425	0.6889
Ra-221+D	0.5720	0.5001	0.6610	0.6226	0.5052	0.4473	0.8396	0.5346
Ra-223+D	1.7241	1.5741	1.8046	1.9876	1.6528	1.3944	2.3417	1.2955
Ra-224+D	2.0194	2.0424	2.0074	2.0305	2.0016	1.9996	1.9948	1.8086

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.1240	4.8757	6.2817	5.7687	5.0641	4.7064	7.4238	4.3371
Ra-228+D	3.5600	3.3502	4.5106	3.8407	3.4409	3.2739	4.7001	3.2377
Re-186m+D	1.1385	0.8982	1.2494	1.7831	0.8421	0.7556	1.4885	1.5904
Rn-219+D	0.3253	0.3218	0.3780	0.3865	0.3158	0.2843	0.4680	0.1872
Rn-222+D	0.0015	0.0015	0.0021	0.0016	0.0015	0.0014	0.0022	0.0009
Ru-106+D	0.5943	0.5922	0.8843	0.6712	0.6099	0.5672	0.9431	0.4216
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1965	0.1534	0.1775	0.2129	0.1623	0.1457	0.1999	0.2639
Sn-126+D	6.0144	5.8626	8.4468	7.1940	6.0107	5.4327	10.2679	5.0772
Sr-82+D	0.6255	0.6072	0.7654	0.5638	0.5075	0.4913	0.9379	0.7863
Sr-90+D	0.0001	0.0000	0.0001	0.0000	0.0000	0.0000	0.0001	0.0001
Te-118+D	1.0091	0.8027	0.9381	1.0328	0.8620	0.7915	1.0482	1.2895
Th-229+D	2.1137	1.8020	2.0614	2.2808	1.8260	1.5250	2.5156	2.1970
Th-232+D	4.8941	4.6921	5.8292	5.1662	4.7664	4.6060	6.0568	4.5193
Th-234+D	0.2531	0.2147	0.2507	0.3137	0.2216	0.2006	0.3059	0.2484
Ti-44+D	3.5744	2.8622	4.1021	4.8923	3.6416	2.9675	5.2745	3.0063
U-235+D	2.5038	2.3750	2.5373	2.4380	2.2561	2.2398	2.5344	2.7509
U-238+D	1.4101	1.3875	1.3513	1.4572	1.3672	1.3562	1.4086	1.3286
W-178+D	1.6392	1.2713	1.4096	2.6232	1.4134	1.2396	1.8962	1.6557

Table 81: Composite 2 - 15cm Contamination Thickness 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.1829	0.1701	0.3136	0.4150
Ac-225+D	0.4184	0.3319	0.6912	0.7710
Ag-108m+D	4.7501	3.8586	4.0425	3.4094
Ag-110m+D	4.8056	3.5642	5.0996	3.5284
Am-242m+D	0.4201	0.4263	0.6951	0.9799
Am-243+D	2.6286	2.1273	3.4797	3.4002
Ar-42+D	0.2576	0.2007	0.2368	0.2887
At-211+D	0.5115	0.4514	1.1417	0.9825
Bi-210m+D	1.4810	1.3121	1.5413	1.7095
Bi-212+D	0.2098	0.1775	0.2828	0.3481
Bi-213+D	0.5239	0.4206	0.4704	0.3812
Bi-214+D	1.9854	1.4917	2.2561	1.6075
Bi-215+D	1.0528	0.8978	1.2702	1.0970
Ce-144+D	0.2749	0.1922	0.3202	0.2804
Cm-247+D	1.6569	1.3596	1.6617	1.3544
Cm-250+D	21.8418	16.2288	24.4650	17.1024
Cs-137+D	3.3717	3.1460	3.1914	3.0054
Es-254+D	1.9473	1.6439	3.5747	3.0013
Fe-60+D	2.9450	2.1970	4.1162	2.8916
Fr-220+D	0.1650	0.1489	0.3428	0.3702
Fr-221+D	0.2143	0.1415	0.2961	0.2464
Ge-68+D	0.1821	0.2742	0.6506	1.3180
Hf-172+D	1.7186	1.6767	2.3996	3.5488
Hf-182+D	4.4700	3.5361	5.7248	5.1323
Hg-193+D	2.6804	2.1583	4.2090	3.8229
Hg-194+D	2.9558	2.5707	3.9585	3.7661
In-114m+D	0.5678	0.4056	0.7227	0.6203
Kr-76+D	2.2832	2.0555	2.4347	2.9214
Np-235+D	0.1543	0.2058	0.4259	0.7056
Np-237+D	2.1319	1.9168	2.8269	3.0623
Os-194+D	0.4294	0.4242	0.5786	0.8034
Pb-202+D	2.5423	2.1992	3.3098	3.3708
Pt-202+D	0.3765	0.2855	0.3880	0.2573
Pu-239+D	0.0242	0.0337	0.0707	0.1237
Pu-244+D	1.1659	1.0603	1.4498	1.7480
Ra-219+D	0.9862	0.8614	1.0741	0.7767
Ra-221+D	0.4222	0.3219	0.7474	0.7754
Ra-223+D	1.5320	1.2643	2.1849	2.0305
Ra-224+D	1.9443	1.9162	1.9573	1.9403

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.9163	4.2703	5.4779	4.6529
Ra-228+D	3.2793	2.8312	3.8566	3.3075
Re-186m+D	0.6496	0.7055	1.2987	2.3107
Rn-219+D	0.3061	0.2621	0.3003	0.3218
Rn-222+D	0.0015	0.0012	0.0011	0.0009
Ru-106+D	0.5959	0.4744	0.4566	0.3816
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1328	0.1226	0.2358	0.2745
Sn-126+D	5.8148	4.6393	5.4323	4.4113
Sr-82+D	0.3955	0.3747	0.7483	0.9850
Sr-90+D	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.7268	0.6348	1.1507	1.1757
Th-229+D	1.5152	1.3326	2.5928	3.1536
Th-232+D	4.5760	4.1332	5.1898	4.6027
Th-234+D	0.1905	0.1681	0.2975	0.3341
Ti-44+D	3.5132	2.7633	6.2512	3.9737
U-235+D	2.0138	2.0542	2.6561	3.0334
U-238+D	1.3095	1.3144	1.4361	1.4220
W-178+D	1.2422	1.2138	1.7791	2.5193

Table 82: Composite 2 - Infinite Contamination Thickness for 10x10x10 ft and 50x50x10 ft rooms

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ac-223+D	0.3269	0.3026	0.3579	0.4217	0.2889	0.2291	0.2824	0.3764
Ac-225+D	0.6509	0.6070	0.6781	0.8014	0.5973	0.4760	0.5544	0.7462
Ag-108m+D	5.0323	4.7993	5.0881	4.6364	5.3977	4.3366	4.6366	5.5893
Ag-110m+D	4.6980	4.3966	4.4594	3.8178	5.2407	3.9527	4.3922	6.8277
Am-242m+D	0.8678	0.8611	1.0330	1.3674	0.8485	0.6393	0.7778	0.9217
Am-243+D	3.4128	3.3059	3.3154	4.1270	3.2230	2.5849	3.0747	3.2494
Ar-42+D	0.2480	0.2333	0.2201	0.2145	0.2688	0.2190	0.2301	0.3983
At-211+D	0.7437	0.6851	0.6849	0.9061	0.6062	0.4854	0.6426	0.6808
Bi-210m+D	1.5501	1.4744	1.4045	1.4157	1.5936	1.3532	1.3934	1.5002
Bi-212+D	0.2937	0.2674	0.3056	0.3167	0.2866	0.2163	0.2649	0.4014
Bi-213+D	0.5579	0.5187	0.5434	0.4685	0.5345	0.4812	0.4904	0.5157
Bi-214+D	1.9545	1.8218	1.8612	1.6157	2.1317	1.6808	1.8521	2.8295
Bi-215+D	1.1400	1.0782	1.0399	1.0770	1.1348	0.9490	1.0277	1.1416
Ce-144+D	0.3028	0.3020	0.2950	0.3249	0.3145	0.2365	0.2767	0.3451
Cm-247+D	1.8346	1.7344	1.7774	1.6999	1.7605	1.5515	1.6153	1.6599
Cm-250+D	21.8702	20.5477	20.4857	18.7994	23.2424	18.9101	20.3568	28.6321
Cs-137+D	3.2672	3.1904	3.2112	2.9471	3.5878	3.2563	3.2842	3.7221
Es-254+D	2.8201	2.7094	3.0024	3.6239	2.9106	2.1645	2.5604	3.6807
Fe-60+D	3.0754	2.9087	2.8584	2.8054	3.3207	2.5276	2.8231	4.9516
Fr-220+D	0.2800	0.2582	0.2883	0.3567	0.2370	0.1863	0.2416	0.3057
Fr-221+D	0.2419	0.2271	0.2135	0.2444	0.2398	0.1967	0.2014	0.2563
Ge-68+D	0.7028	0.6298	0.8432	1.0863	0.5648	0.3942	0.5945	1.0247
Hf-172+D	2.7186	2.5163	2.6427	3.3933	2.5388	1.8754	2.7087	2.6472
Hf-182+D	4.9040	4.6160	4.3743	4.7102	4.9897	3.9745	4.5561	5.8830
Hg-193+D	3.3814	3.0852	3.0623	3.5055	3.1484	2.5021	3.0885	3.7735
Hg-194+D	3.6766	3.3697	3.3986	3.7067	3.4800	2.8425	3.4408	3.8934
In-114m+D	0.7139	0.7266	0.7342	0.9279	0.7542	0.6187	0.6384	0.7302
Kr-76+D	2.9235	2.6974	2.9244	2.9124	2.8243	2.3484	2.6290	2.9806
Np-235+D	0.4912	0.4598	0.6204	0.7817	0.4366	0.3283	0.4269	0.5808
Np-237+D	3.1405	3.0302	3.3713	3.9685	3.0165	2.4256	2.8533	3.1916
Os-194+D	0.6678	0.6130	0.6994	0.7707	0.6224	0.4918	0.6086	0.7631
Pb-202+D	3.2875	2.9955	3.1692	3.3407	2.9279	2.4927	2.9314	3.1250
Pt-202+D	0.3795	0.3546	0.3600	0.3072	0.3893	0.3295	0.3413	0.4460
Pu-239+D	0.0813	0.0760	0.1022	0.1309	0.0716	0.0529	0.0706	0.0994
Pu-244+D	1.7204	1.6343	1.9312	2.1078	1.7145	1.3522	1.5516	1.9780
Ra-219+D	1.0962	1.0428	1.0119	1.0535	1.0746	0.9168	1.0125	0.9730
Ra-221+D	0.6728	0.6406	0.7265	0.8447	0.6098	0.4801	0.5722	0.9033
Ra-223+D	1.8689	1.7793	1.7774	2.0300	1.7393	1.4436	1.6338	1.9304
Ra-224+D	1.8607	1.8681	1.7407	1.7498	1.9872	2.0225	1.8847	1.8672

Element	avg10	ctr10	mid10	cnr10	avg50	ctr50	mid50	cnr50
Ra-226+D	4.9574	4.7210	4.6616	4.4674	5.2039	4.5520	4.7446	5.7454
Ra-228+D	3.4910	3.3544	3.3656	3.4258	3.6563	3.2040	3.3356	4.1438
Re-186m+D	1.4679	1.3247	1.5861	2.0000	1.2428	0.9078	1.3280	1.8148
Rn-219+D	0.3191	0.3025	0.2969	0.2806	0.3218	0.2807	0.2796	0.3054
Rn-222+D	0.0015	0.0014	0.0015	0.0012	0.0015	0.0013	0.0013	0.0014
Ru-106+D	0.6011	0.5590	0.6077	0.4803	0.6192	0.5288	0.5469	0.6541
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.2061	0.2144	0.2331	0.3237	0.2143	0.1662	0.2012	0.1895
Sn-126+D	6.0409	5.7102	5.9520	5.3309	6.3490	5.0937	5.5910	6.9425
Sr-82+D	0.8244	0.7135	0.9407	0.9648	0.7218	0.5549	0.7030	1.0065
Sr-90+D	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Te-118+D	1.0036	1.0749	1.1195	1.5653	1.0775	0.8693	0.9743	0.8571
Th-229+D	2.5629	2.3944	2.7713	3.3309	2.3117	1.8125	2.3033	2.8158
Th-232+D	4.6860	4.5267	4.4731	4.5570	4.9559	4.5285	4.5962	5.3529
Th-234+D	0.3021	0.2817	0.3104	0.3823	0.2750	0.2157	0.2798	0.3137
Ti-44+D	3.8053	3.5137	3.0281	3.6898	3.5514	2.8087	3.5480	3.9457
U-235+D	2.6390	2.6060	2.8298	3.1884	2.6077	2.3912	2.5186	2.7495
U-238+D	1.3467	1.3294	1.2938	1.3562	1.4068	1.3775	1.3294	1.4139
W-178+D	1.9250	1.7265	1.7805	2.2625	1.7678	1.3055	1.9815	1.8786

Table 83: Composite 2 - Infinite Contamination Thickness for 100x100x10 ft and 200x200x20 ft rooms

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ac-223+D	0.2691	0.2386	0.3050	0.3209	0.2225	0.2015	0.3459	0.2971
Ac-225+D	0.5581	0.4953	0.6054	0.6421	0.4906	0.4405	0.7509	0.5150
Ag-108m+D	5.0124	4.9840	7.1676	5.6923	4.9577	4.6053	8.3415	4.1855
Ag-110m+D	4.8287	4.5402	7.8023	5.6805	4.8836	4.4024	9.1965	4.7142
Am-242m+D	0.7200	0.6366	0.7429	0.6969	0.5562	0.5496	0.7909	0.8471
Am-243+D	3.0736	2.6989	2.8280	3.5839	2.8762	2.4295	3.9130	2.4709
Ar-42+D	0.2642	0.2287	0.3872	0.3015	0.2596	0.2200	0.5239	0.2545
At-211+D	0.6052	0.5046	0.5521	0.7282	0.5751	0.4415	0.7494	0.5969
Bi-210m+D	1.5722	1.5423	1.6590	1.8598	1.5276	1.3785	2.1156	0.9718
Bi-212+D	0.2617	0.2384	0.3683	0.3188	0.2330	0.2061	0.4481	0.3181
Bi-213+D	0.5479	0.5415	0.7457	0.6544	0.5434	0.4861	0.8319	0.3274
Bi-214+D	2.0114	1.8098	3.0151	2.3704	2.0211	1.8252	3.7959	1.8345
Bi-215+D	1.1197	1.0669	1.2728	1.3093	1.0970	0.9604	1.5558	0.7935
Ce-144+D	0.2961	0.2539	0.2911	0.3566	0.2878	0.2307	0.5177	0.2242
Cm-247+D	1.8019	1.7526	2.2813	2.1869	1.7424	1.5412	2.6807	1.0836
Cm-250+D	22.5026	20.3168	31.1608	26.8406	22.3892	19.9546	39.1209	17.6013
Cs-137+D	3.4504	3.4849	4.1284	3.6082	3.4647	3.4585	4.5823	3.2586
Es-254+D	2.6028	2.1263	3.9666	2.9402	2.2551	2.2310	3.2508	2.7344
Fe-60+D	3.1935	2.6491	4.9447	3.8268	3.0559	2.5994	5.9666	3.5907
Fr-220+D	0.2253	0.1923	0.2275	0.2620	0.1967	0.1645	0.2862	0.2402
Fr-221+D	0.2339	0.2122	0.2545	0.2836	0.2294	0.1998	0.3419	0.1423
Ge-68+D	0.5052	0.3878	0.7002	0.7935	0.3024	0.2882	0.6510	0.9577
Hf-172+D	2.3452	1.8584	2.0694	3.4973	1.9805	1.7313	2.7888	2.4658
Hf-182+D	4.8484	4.2119	5.7315	6.2782	4.6796	4.1192	7.2351	3.8215
Hg-193+D	3.0642	2.6139	3.5961	4.2158	2.8924	2.5146	4.5962	2.7510
Hg-194+D	3.3952	3.0184	3.8765	4.6273	3.1704	2.8338	4.8589	2.8943
In-114m+D	0.7079	0.6158	0.8118	0.7558	0.6484	0.6005	0.9148	0.6679
Kr-76+D	2.7144	2.6219	3.1075	3.1539	2.4891	2.2636	3.5995	2.0755
Np-235+D	0.3648	0.3211	0.4072	0.3649	0.2472	0.2623	0.3986	0.5291
Np-237+D	2.7909	2.5657	2.8472	2.9891	2.4545	2.2339	3.3530	2.5378
Os-194+D	0.5853	0.5308	0.7034	0.7597	0.4951	0.4460	0.7578	0.6220
Pb-202+D	2.9371	2.6851	3.5388	3.9317	2.7539	2.4228	4.1473	2.3833
Pt-202+D	0.3881	0.3637	0.5823	0.4626	0.3862	0.3455	0.6420	0.2856
Pu-239+D	0.0601	0.0517	0.0693	0.0662	0.0396	0.0415	0.0670	0.0925
Pu-244+D	1.5270	1.4341	1.9711	1.6080	1.3462	1.3015	2.1313	1.5620
Ra-219+D	1.0646	1.0386	1.1368	1.2421	1.0380	0.9119	1.3425	0.6889
Ra-221+D	0.5720	0.5001	0.6610	0.6226	0.5052	0.4473	0.8396	0.5346
Ra-223+D	1.7241	1.5741	1.8046	1.9876	1.6528	1.3944	2.3417	1.2955
Ra-224+D	2.0194	2.0424	2.0074	2.0305	2.0016	1.9996	1.9948	1.8086

Element	avg100	ctr100	mid100	cnr100	avg200	ctr200	mid200	cnr200
Ra-226+D	5.1240	4.8757	6.2817	5.7687	5.0641	4.7064	7.4238	4.3371
Ra-228+D	3.5600	3.3502	4.5106	3.8407	3.4409	3.2739	4.7001	3.2377
Re-186m+D	1.1385	0.8982	1.2494	1.7831	0.8421	0.7556	1.4885	1.5904
Rn-219+D	0.3253	0.3218	0.3780	0.3865	0.3158	0.2843	0.4680	0.1872
Rn-222+D	0.0015	0.0015	0.0021	0.0016	0.0015	0.0014	0.0022	0.0009
Ru-106+D	0.5943	0.5922	0.8843	0.6712	0.6099	0.5672	0.9431	0.4216
Si-32+D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1965	0.1534	0.1775	0.2129	0.1623	0.1457	0.1999	0.2639
Sn-126+D	6.0144	5.8626	8.4468	7.1940	6.0107	5.4327	10.2679	5.0772
Sr-82+D	0.6255	0.6072	0.7654	0.5638	0.5075	0.4913	0.9379	0.7863
Sr-90+D	0.0001	0.0000	0.0001	0.0000	0.0000	0.0000	0.0001	0.0001
Te-118+D	1.0091	0.8027	0.9381	1.0328	0.8620	0.7915	1.0482	1.2895
Th-229+D	2.1137	1.8020	2.0614	2.2808	1.8260	1.5250	2.5156	2.1970
Th-232+D	4.8941	4.6921	5.8292	5.1662	4.7664	4.6060	6.0568	4.5193
Th-234+D	0.2531	0.2147	0.2507	0.3137	0.2216	0.2006	0.3059	0.2484
Ti-44+D	3.5744	2.8622	4.1021	4.8923	3.6416	2.9675	5.2745	3.0063
U-235+D	2.5038	2.3750	2.5373	2.4380	2.2561	2.2398	2.5344	2.7509
U-238+D	1.4101	1.3875	1.3513	1.4572	1.3672	1.3562	1.4086	1.3286
W-178+D	1.6392	1.2713	1.4096	2.6232	1.4134	1.2396	1.8962	1.6557

Table 84: Composite 2 - Infinite Contamination Thickness 400x400x40 ft room

Element	avg400	ctr400	mid400	cnr400
Ac-223+D	0.1829	0.1701	0.3136	0.4150
Ac-225+D	0.4184	0.3319	0.6912	0.7710
Ag-108m+D	4.7501	3.8586	4.0425	3.4094
Ag-110m+D	4.8056	3.5642	5.0996	3.5284
Am-242m+D	0.4201	0.4263	0.6951	0.9799
Am-243+D	2.6286	2.1273	3.4797	3.4002
Ar-42+D	0.2576	0.2007	0.2368	0.2887
At-211+D	0.5115	0.4514	1.1417	0.9825
Bi-210m+D	1.4810	1.3121	1.5413	1.7095
Bi-212+D	0.2098	0.1775	0.2828	0.3481
Bi-213+D	0.5239	0.4206	0.4704	0.3812
Bi-214+D	1.9854	1.4917	2.2561	1.6075
Bi-215+D	1.0528	0.8978	1.2702	1.0970
Ce-144+D	0.2749	0.1922	0.3202	0.2804
Cm-247+D	1.6569	1.3596	1.6617	1.3544
Cm-250+D	21.8418	16.2288	24.4650	17.1024
Cs-137+D	3.3717	3.1460	3.1914	3.0054
Es-254+D	1.9473	1.6439	3.5747	3.0013
Fe-60+D	2.9450	2.1970	4.1162	2.8916
Fr-220+D	0.1650	0.1489	0.3428	0.3702
Fr-221+D	0.2143	0.1415	0.2961	0.2464
Ge-68+D	0.1821	0.2742	0.6506	1.3180
Hf-172+D	1.7186	1.6767	2.3996	3.5488
Hf-182+D	4.4700	3.5361	5.7248	5.1323
Hg-193+D	2.6804	2.1583	4.2090	3.8229
Hg-194+D	2.9558	2.5707	3.9585	3.7661
In-114m+D	0.5678	0.4056	0.7227	0.6203
Kr-76+D	2.2832	2.0555	2.4347	2.9214
Np-235+D	0.1543	0.2058	0.4259	0.7056
Np-237+D	2.1319	1.9168	2.8269	3.0623
Os-194+D	0.4294	0.4242	0.5786	0.8034
Pb-202+D	2.5423	2.1992	3.3098	3.3708
Pt-202+D	0.3765	0.2855	0.3880	0.2573
Pu-239+D	0.0242	0.0337	0.0707	0.1237
Pu-244+D	1.1659	1.0603	1.4498	1.7480
Ra-219+D	0.9862	0.8614	1.0741	0.7767
Ra-221+D	0.4222	0.3219	0.7474	0.7754
Ra-223+D	1.5320	1.2643	2.1849	2.0305
Ra-224+D	1.9443	1.9162	1.9573	1.9403

Element	avg400	ctr400	mid400	cnr400
Ra-226+D	4.9163	4.2703	5.4779	4.6529
Ra-228+D	3.2793	2.8312	3.8566	3.3075
Re-186m+D	0.6496	0.7055	1.2987	2.3107
Rn-219+D	0.3061	0.2621	0.3003	0.3218
Rn-222+D	0.0015	0.0012	0.0011	0.0009
Ru-106+D	0.5959	0.4744	0.4566	0.3816
Si-32+D	0.0000	0.0000	0.0000	0.0000
Sn-121m+D	0.1328	0.1226	0.2358	0.2745
Sn-126+D	5.8148	4.6393	5.4323	4.4113
Sr-82+D	0.3955	0.3747	0.7483	0.9850
Sr-90+D	0.0000	0.0000	0.0001	0.0001
Te-118+D	0.7268	0.6348	1.1507	1.1757
Th-229+D	1.5152	1.3326	2.5928	3.1536
Th-232+D	4.5760	4.1332	5.1898	4.6027
Th-234+D	0.1905	0.1681	0.2975	0.3341
Ti-44+D	3.5132	2.7633	6.2512	3.9737
U-235+D	2.0138	2.0542	2.6561	3.0334
U-238+D	1.3095	1.3144	1.4361	1.4220
W-178+D	1.2422	1.2138	1.7791	2.5193