DIVISION 50

Table 1
EXEMPT CONCENTRATIONS

(See notes at the end of this table.)

Element (atomic number)	Isotope	Liquid and Solid Concentration (uCi/ml for liquids) (µCi/gm for solids)
Aluminum (13)	Al-26	$4x10^{-4}$
Americium (95)	Am-241	$8x10^{-7}$
Antimony (51)	Sb-122	$3x10^{-4}$
	Sb-124	$2x10^{-4}$
	Sb-125	$1x10^{-3}$
	Sb-126	$6x10^{-4}$
Arsenic (33)	As-73	$5x10^{-3}$
	As-74	$5x10^{-4}$
	As-76	$2x10^{-4}$
	As-77	$8x10^{-4}$
Barium (56)	Ba-131	$2x10^{-3}$
	Ba-133	$2x10^{-3}$
	Ba-140	$3x10^{-4}$
Beryllium (4)	Be-7	$2x10^{-2}$
Bismuth (83)	Bi-206	$4x10^{-4}$
Bromine (35)	Br-82	$3x10^{-3}$
Cadmium (48)	Cd-109	$2x10^{-3}$
	Cd-115m	$3x10^{-4}$
	Cd-115	$3x10^{-4}$
Calcium (20)	Ca-41	$3x10^{-3}$
	Ca-45	$9x10^{-5}$
	Ca-47	$5x10^{-4}$
Carbon (6)	C-14	$8x10^{-3}$
Cerium (58)	Ce-141	$9x10^{-4}$
	Ce-143	$4x10^{-4}$
	Ce-144	$1x10^{-4}$
Cesium (55)	Cs-131	$2x10^{-2}$
	Cs-134m	$6x10^{-2}$
	Cs-134	$9x10^{-5}$
	Cs-137	$1x10^{-4}$
Chlorine (17)	Cl-36	$2x10^{-3}$
	Cl-38	$4x10^{-3}$
Chromium (24)	Cr-51	$2x10^{-2}$
Cobalt (27)	Co-57	$5x10^{-3}$
	Co-58	$1x10^{-3}$

Element (atomic number)	Isotope	Liquid and Solid Concentration (uCi/ml for liquids) (µCi/gm for solids)
	Co-60	$5x10^{-4}$
Copper (29)	Cu-64	$3x10^{-3}$
Curium (96)	Cm-242	$3x10^{-5}$
	Cm-243	$1x10^{-6}$
	Cm-244	$1x10^{-6}$
Dysprosium (66)	Dy-165	$4x10^{-3}$
	Dy-166	$4x10^{-4}$
Erbium (68)	Er-169	$9x10^{-4}$
	Er-171	$1x10^{-3}$
Europium (63)	Eu-152 (9.2 h)	$6x10^{-4}$
	Eu-152 (12 yr)	$8x10^{-4}$
	Eu-154	$5x10^{-4}$
	Eu-155	$2x10^{-3}$
Fluorine (9)	F-18	$8x10^{-3}$
Gadolinium (64)	Gd-153	$2x10^{-3}$
	Gd-159	$8x10^{-4}$
Gallium (31)	Ga-67	$7x10^{-3}$
	Ga-72	$4x10^{-4}$
Germanium (32)	Ge-71	$2x10^{-2}$
Gold (79)	Au-195	$5x10^{-3}$
	Au-196	$2x10^{-3}$
	Au-198	$5x10^{-4}$
	Au-199	$2x10^{-3}$
Hafnium (72)	Hf-181	$7x10^{-4}$
Hydrogen (1)	H-3	$3x10^{-2}$
Indium (49)	In-111	$8x10^{-2}$
	In-113m	$1x10^{-2}$
	In-114m	$2x10^{-4}$
Iodine (53)	I-125	$2x10^{-5}$
	I-126	$2x10^{-5}$
	I-129	$5x10^{-6}$
	I-131	$2x10^{-5}$
	I-132	$6x10^{-4}$
	I-133	$7x10^{-5}$
	I-134	$1x10^{-3}$
Iridium (77)	Ir-190	$2x10^{-3}$
	Ir-192	$4x10^{-4}$
	Ir-194	$3x10^{-4}$
Iron (26)	Fe-55	$8x10^{-3}$
	Fe-59	$6x10^{-4}$

Element (atomic number)	Isotope	Liquid and Solid Concentration (uCi/ml for liquids) (µCi/gm for solids)
Lanthanum (57)	La-140	$2x10^{-4}$
Lead (82)	Pb-203	$4x10^{-3}$
Lutetium (71)	Lu-177	$1x10^{-3}$
Manganese (25)	Mn-52	$3x10^{-4}$
	Mn-54	$1x10^{-3}$
	Mn-56	$1x10^{-3}$
Mercury (80)	Hg-197m	$2x10^{-3}$
	Hg-197	$3x10^{-3}$
	Hg-203	$2x10^{-4}$
Molybdenum (42)	Mo-99	$2x10^{-3}$
Neodymium (60)	Nd-147	$6x10^{-4}$
	Nd-149	$3x10^{-3}$
Nickel (28)	Ni-59	$2x10^{-2}$
	Ni-63	$9x10^{-3}$
	Ni-65	$1x10^{-3}$
Niobium (41) (Columbium)	Nb-94	$9x10^{-4}$
	Nb-95	$1x10^{-3}$
	Nb-97	$9x10^{-3}$
Osmium (76)	Os-185	$7x10^{-4}$
	Os-191m	$3x10^{-2}$
	Os-191	$2x10^{-3}$
	Os-193	$6x10^{-4}$
Palladium (46)	Pd-103	$3x10^{-3}$
	Pd-109	$9x10^{-4}$
Phosphorus (15)	P-32	$2x10^{-4}$
	P-33	$6x10^{-3}$
Platinum (78)	Pt-191	$1x10^{-3}$
	Pt-193m	$1x10^{-2}$
	Pt-197m	$1x10^{-2}$
	Pt-197	$1x10^{-3}$
Plutonium (94)	Pu-238	$9x10^{-7}$
	Pu-239	$8x10^{-7}$
	Pu-240	$8x10^{-7}$
	Pu-241	$4x10^{-5}$
	Pu-242	$8x10^{-7}$
Potassium (19)	K-42	$3x10^{-3}$
Praseodymium (59)	Pr-142	$3x10^{-4}$
	Pr-143	$5x10^{-4}$
Promethium (61)	Pm-147	$2x10^{-3}$
	Pm-149	$4x10^{-4}$

Element (atomic number)	Isotope	Liquid and Solid Concentration (uCi/ml for liquids) (µCi/gm for solids)
Rhenium (75)	Re-183	$6x10^{-3}$
	Re-186	$9x10^{-4}$
	Re-188	$6x10^{-4}$
Rhodium (45)	Rh-103m	$1x10^{-1}$
	Rh-105	$1x10^{-3}$
Rubidium (37)	Rb-86	$7x10^{-4}$
Ruthenium (44)	Ru-97	$4x10^{-3}$
	Ru-103	$8x10^{-4}$
	Ru-105	$1x10^{-3}$
	Ru-106	$1x10^{-4}$
Samarium (62)	Sm-153	$8x10^{-4}$
Scandium (21)	Sc-46	$4x10^{-4}$
	Sc-47	$9x10^{-4}$
	Sc-48	$3x10^{-4}$
Selenium (34)	Se-75	$3x10^{-3}$
Silicon (14)	Si-31	$9x10^{-3}$
Silver (47)	Ag-105	$1x10^{-3}$
	Ag-108m	$6x10^{-4}$
	Ag-110m	$3x10^{-4}$
	Ag-111	$4x10^{-4}$
Sodium (11)	Na-22	$4x10^{-4}$
	Na-24	$2x10^{-3}$
Strontium (38)	Sr-85	$1x10^{-3}$
	Sr-89	$1x10^{-4}$
	Sr-90	$3x10^{-5}$
	Sr-91	$7x10^{-4}$
	Sr-92	$7x10^{-4}$
Sulfur (16)	S-35	$6x20^{-4}$
Tantalum (73)	Ta-182	$4x10^{-4}$
Technetium (43)	Tc-96m	$1x10^{-1}$
	Tc-96	$1x10^{-3}$
	Tc-99m	$8x10^{-2}$
	Tc-99	$4x10^{-3}$
Tellurium (52)	Te-125m	$2x10^{-3}$
	Te-127m	$6x10^{-4}$
	Te-127	$3x10^{-3}$
	Te-129m	$3x10^{-4}$
	Te-131m	$6x10^{-4}$
	Te-132	$3x10^{-4}$
Terbium (65)	Tb-160	$4x10^{-4}$
Thallium (81)	Tl-200	$4x10^{-3}$

Element (atomic number)	Isotope	Liquid and Solid Concentration (uCi/ml for liquids) (µCi/gm for solids)
	Tl-201	$3x10^{-3}$
	Tl-202	$1x10^{-3}$
	Tl-204	$1x10^{-3}$
Thulium (69)	Tm-170	$5x10^{-4}$
	Tm-171	$5x10^{-3}$
Tin (50)	Sn-113	$9x10^{-4}$
	Sn-125	$2x10^{-4}$
Tungsten (74)	W-181	$4x10^{-3}$
	W-187	$7x10^{-4}$
Uranium (92)	U-233	$1x10^{-5}$
	U-234	$1x10^{-5}$
	U-235	$1x10^{-5}$
	U-236	$1x10^{-5}$
	U-238	$1x10^{-5}$
Vanadium (23)	V-48	$3x10^{-4}$
Ytterbium (70)	Yb-175	$1x10^{-3}$
Yttrium (39)	Y-90	$2x10^{-4}$
	Y-91m	$3x10^{-2}$
	Y-91	$3x10^{-4}$
	Y-92	$6x10^{-4}$
	Y-93	$3x10^{-4}$
Zinc (30)	Zn-65	$1x10^{-3}$
	Zn-69m	$7x10^{-4}$
	Zn-69	$2x10^{-2}$
Zirconium (40)	Zr-95	$6x10^{-4}$
	Zr-97	$2x10^{-4}$
Beta- and/or gamma-emitting radioactive material not listed above with half-life of less than 3 years.		$1x10^{-6}$
Beta- and/or gamma-emitting radioactive material other than naturally occurring radioactive material not listed above with half-life of equal to or more than 3 years.		$5x10^{-7}$
Alpha-emitting radioactive material other than naturally occurring radioactive material not listed above with a half-life of less than 3 years.		$3x10^{-7}$
Alpha-emitting radioactive material other than naturally occurring radioactive material not listed above with a half-life of equal to or more than 3 years.		$1x10^{-7}$

Note 1: Many radioisotopes transform into isotopes that are also radioactive. In expressing the concentrations in Table 1, the activity stated is that of the parent isotope and takes into account the daughters.

Note 2: For purposes of OAR 345-050-0025, where a combination of isotopes is involved, the limit for the combination should be derived as follows:

Determine for each isotope in the product the ratio between the radioactivity concentration present in the product and the exempt radioactivity concentration established in Table 1 for the specific isotope when not in combination. The sum of such ratios must not exceed "1".

Example:

$$\frac{\text{Concentration of Isotope A in Product}}{\text{Exempt Concentration of Isotope A}} + \frac{\text{Concentration of Isotope B in Product}}{\text{Exempt Concentration of Isotope B}} \leq 1$$

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Table 2
EXEMPT QUANTITIES

Radioactive Material	Microcuries
Antimony-122 (Sb 122)	100
Antimony-124 (Sb 124)	10
Antimony-125 (Sb 125)	10
Arsenic-73 (As 73)	100
Arsenic-74 (As 74)	10
Arsenic-76 (As 76)	10
Arsenic-77 (As 77)	100
Barium-131 (Ba 131)	10
Barium-133 (Ba 133)	10
Barium-140 (Ba 140)	10
Bismuth-210 (Bi 210)	1
Bromine-82 (Br 82)	10
Cadmium-109 (Cd 109)	10
Cadmium-115m (Cd 115m)	10
Cadmium-115 (Cd 115)	100
Calcium-45 (Ca 45)	10
Calcium-47 (Ca 47)	10
Carbon-14 (C 14)	100
Cerium-141 (Ce 141)	100
Cerium-143 (Ce 143)	100
Cerium-144 (Ce 144)	1
Cesium-129 (Cs 129)	100
Cesium-131 (Cs 131)	1,000
Cesium-134m (Cs 134m)	100
Cesium-134 (Cs 134)	1
Cesium-135 (Cs 135)	10
Cesium-136 (Cs 136)	10
Cesium-137 (Cs 137)	10
Chlorine-36 (Cl 36)	10
Chlorine-38 (Cl 38)	10
Chromium-51 (Cr 51)	1,000
Cobalt-57 (Co 57)	100
Cobalt-58m (Co 58m)	10
Cobalt-58 (Co 58)	10
Cobalt-60 (Co 60)	1
Copper-64 (Cu 64)	100
Dysprosium-165 (Dy 165)	10

Radioactive Material	Microcuries
Dysprosium-166 (Dy 166)	100
Erbium-169 (Er 169)	100
Erbium-171 (Er 171)	100
Europium-152 (Eu 152) 9.2h	100
Europium-152 (Eu 152) 13 yr	1
Europium-154 (Eu 154)	1
Europium-155 (Eu 155)	10
Fluorine-18 (F 18)	1,000
Gadolinium-153 (Gd 153)	10
Gadolinium-159 (Gd 159)	100
Gallium-67 (Ga 67)	100
Gallium-72 (Ga 72)	10
Germanium-68 (Ge 68)	10
Germanium-71 (Ge 71)	100
Gold-195 (Au 195)	10
Gold-198 (Au 198)	100
Gold-199 (Au 199)	100
Hafnium-181 (Hf 181)	10
Holmium-166 (Ho 166)	100
Hydrogen-3 (H 3)	1,000
Indium-111 (In 111)	100
Indium-113m (In 113m)	100
Indium-114m (In 114m)	10
Indium-115m (In 115m)	100
Indium-115 (In 115)	10
Iodine-123 (I-123)	100
Iodine-125 (I-125)	1
Iodine-126 (I-126)	1
Iodine-129 (I-129)	0.1
Iodine-131 (I-131)	1
Iodine-132 (I-132)	10
Iodine-133 (I-133)	1
Iodine-134 (I-134)	10
Iodine-135 (I-135)	10
Iridium-192 (Ir 192)	10
Iridium-194 (Ir 194)	100
Iron-52 (Fe 52)	10
Iron-55 (Fe 55)	100
Iron-59 (Fe 59)	10
Krypton-85 (Kr 85)	100

Radioactive Material	Microcuries
Krypton-87 (Kr 87)	10
Lanthanum-140 (La 140)	10
Lutetium-177 (Lu 177)	100
Manganese-52 (Mn 52)	10
Manganese-54 (Mn 54)	10
Manganese-56 (Mn 56)	10
Mercury-197m (Hg 197m)	100
Mercury-197 (Hg 197)	100
Mercury-203 (Hg 203)	10
Molybdenum-99 (Mo 99)	100
Neodymium-147 (Nd 147)	100
Neodymium-149 (Nd 149)	100
Nickel-59 (Ni 59)	100
Nickel-63 (Ni 63)	10
Nickel-65 (Ni 65)	100
Niobium-93m (Nb 93m)	10
Niobium-95 (Nb 95)	10
Niobium-97 (Nb 97)	10
Osmium-185 (Os 185)	10
Osmium-191m (Os 191m)	100
Osmium-191 (Os 191)	100
Osmium-193 (Os 193)	100
Palladium-103 (Pd 103)	100
Palladium-109 (Pd 109)	100
Phosphorus-32 (P 32)	10
Platinum-191 (Pt 191)	100
Platinum-193m (Pt 193m)	100
Platinum-193 (Pt 193)	100
Platinum-197m (Pt 197m)	100
Platinum-197 (Pt 197)	100
Polonium-210 (Po 210)	0.1
Potassium-42 (K 42)	10
Potassium-43 (K 43)	10
Praseodymium-142 (Pr 142)	100
Praseodymium-143 (Pr 143)	100
Promethium-147 (Pm 147)	10
Promethium-149 (Pm 149)	10
Rhenium-186 (Re 186)	100
Rhenium-188 (Re 188)	100
Rhodium-103m (Rh 103m)	100

Radioactive Material	Microcuries
Rhodium-105 (Rh 105)	100
Rubidium-81 (Rb 81)	10
Rubidium-86 (Rb 86)	10
Rubidium-87 (Rb 87)	10
Ruthenium-97 (Ru 97)	100
Ruthenium-103 (Ru 103)	10
Ruthenium-105 (Ru 105)	10
Ruthenium-106 (Ru 106)	1
Samarium-151 (Sm 151)	10
Samarium-153 (Sm 153)	100
Scandium-46 (Sc 46)	10
Scandium-47 (Sc 47)	100
Scandium-48 (Sc 48)	10
Selenium-75 (Se 75)	10
Silicon-31 (Si 31)	100
Silver-105 (Ag 105)	10
Silver-110m (Ag 110m)	1
Silver-111 (Ag 111)	100
Sodium-22 (Na 22)	10
Sodium-24 (Na 24)	10
Strontium-85 (Sr 85)	10
Strontium-89 (Sr 89)	1
Strontium-90 (Sr 90)	0.1
Strontium-91 (Sr 91)	10
Strontium-92 (Sr 92)	10
Sulphur-35 (S 35)	100
Tantalum-182 (Ta 182)	10
Technetium-96 (Tc 96)	10
Technetium-97m (Tc 97m)	100
Technetium-97 (Tc 97)	100
Technetium-99m (Tc 99m)	100
Technetium-99 (Tc 99)	10
Tellurium-125m (Te 125m)	10
Tellurium-127m (Te 127m)	10
Tellurium-127 (Te 127)	100
Tellurium-129m (Te 129m)	10
Tellurium-129 (Te 129)	100
Tellurium-131m (Te 131m)	10
Tellurium-132 (Te 132)	10
Terbium-160 (Tb 160)	10

Radioactive Material	Microcuries
Thallium-200 (Tl 200)	100
Thallium-201 (Tl 201)	100
Thallium-202 (Tl 202)	100
Thallium-204 (Tl 204)	10
Thulium-170 (Tm 170)	10
Thulium-171 (Tm 171)	10
Tin-113 (Sn 113)	10
Tin-125 (Sn 125)	10
Tungsten-181 (W 181)	10
Tungsten-185 (W 185)	10
Tungsten-187 (W 187)	100
Vanadium-48 (V 48)	10
Xenon-131m (Xe 131m)	1,000
Xenon-133 (Xe 133)	100
Xenon-135 (Xe 135)	100
Ytterbium-175 (Yb 175)	100
Yttrium-87 (Y 87)	10
Yttrium-88 (Y 88)	10
Yttrium-90 (Y 90)	10
Yttrium-91 (Y 91)	10
Yttrium-92 (Y 92)	100
Yttrium-93 (Y 93)	100
Zinc-65 (Zn 65)	10
Zinc-69m (Zn 69m)	100
Zinc-69 (Zn 69)	1,000
Zirconium-93 (Zr 93)	10
Zirconium-95 (Zr 95)	10
Zirconium-97 (Zr 97)	10
Any radioactive material not listed above other than alpha-emitting radioactive material.	0.1
Any alpha-emitting radioactive material other than naturally occurring radioactive material not listed above	0.05

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Table 3
CONCENTRATIONS IN AIR AND WATER ABOVE NATURAL BACKGROUND

(See Note at the end of this table.)

Element (Atomic Number)	Isotope†		Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
Actinium (89)	Ac-227	S	$8x10^{-14}$	$2x10^{-6}$
		I	$9x10^{-13}$	$3x10^{-4}$
	Ac-228	S	$3x10^{-9}$	$9x10^{-5}$
		I	$6x10^{-10}$	$9x10^{-5}$
Americium (95)	Am-241	S	$2x10^{-13}$	$4x10^{-6}$
		I	$4x10^{-12}$	$3x10^{-5}$
	Am-242m	S	$2x10^{-13}$	$4x10^{-6}$
		I	$9x10^{-12}$	$9x10^{-5}$
	Am-242	S	$1x10^{-9}$	$1x10^{-4}$
		I	$2x10^{-9}$	$1x10^{-4}$
	Am-243	S	$2x10^{-13}$	$4x10^{-6}$
		I	$4x10^{-12}$	$3x10^{-5}$
	Am-244	S	$1x10^{-7}$	$5x10^{-3}$
		I	$8x10^{-7}$	$5x10^{-3}$
Antimony (51)	Sb-122	S	6x10-9	$3x10^{-5}$
		I	5x10-9	$3x10^{-5}$
	Sb-124	S	5x10-9	$2x10^{-5}$
		I	7x10-10	$2x10^{-5}$
	Sb-125	S	2x10-8	$1x10^{-4}$
		I	9x10-10	$1x10^{-4}$
Argon (18)	Ar-37	Sub	$1x10^{-4}$	—
	Ar-41	Sub	$4x10^{-8}$	—
Arsenic (33)	As-73	S	$7x10^{-8}$	$5x10^{-4}$
		I	$1x10^{-8}$	$5x10^{-4}$
	As-74	S	$1x10^{-8}$	$5x10^{-5}$
		I	$4x10^{-9}$	$5x10^{-5}$
	As-76	S	$4x10^{-9}$	$2x10^{-5}$
		I	$3x10^{-9}$	$2x10^{-5}$
	As-77	S	$2x10^{-8}$	$8x10^{-5}$
		I	$1x10^{-8}$	$8x10^{-5}$
Astatine (85)	At-211	S	$2x10^{-10}$	$2x10^{-6}$
		I	$1x10^{-9}$	$7x10^{-5}$
Barium (56)	Ba-131	S	$4x10^{-8}$	$2x10^{-4}$
		I	$1x10^{-8}$	$2x10^{-4}$
	Ba-140	S	$4x10^{-9}$	$3x10^{-5}$
		I	$1x10^{-9}$	$2x10^{-5}$
Berkelium (97)	Bk-249	S	$3x10^{-11}$	$6x10^{-4}$
		I	$4x10^{-9}$	$6x10^{-4}$
	Bk-250	S	$5x10^{-9}$	$2x10^{-4}$
		I	$4x10^{-8}$	$2x10^{-4}$

Element (Atomic Number)	Isotope†		Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
Beryllium (4)	Be-7	S	$2x10^{-7}$	$2x10^{-3}$
		I	$4x10^{-8}$	$2x10^{-3}$
Bismuth (83)	Bi-206	S	$6x10^{-9}$	$4x10^{-5}$
		I	$5x10^{-9}$	$4x10^{-5}$
	Bi-207	S	$6x10^{-9}$	$6x10^{-5}$
		I	$5x10^{-10}$	$6x10^{-5}$
	Bi-210	S	$2x10^{-10}$	$4x10^{-5}$
		I	$2x10^{-10}$	$4x10^{-5}$
	Bi-212	S	$3x10^{-9}$	$4x10^{-4}$
		I	$7x10^{-9}$	$4x10^{-4}$
Bromine (35)	Br-82	S	$4x10^{-8}$	$3x10^{-4}$
		I	$6x10^{-9}$	$4x10^{-5}$
Cadmium (48)	Cd-109	S	$2x10^{-9}$	$2x10^{-4}$
		I	$3x10^{-9}$	$2x10^{-4}$
	Cd-115m	S	$1x10^{-9}$	$3x10^{-5}$
		I	$1x10^{-9}$	$3x10^{-5}$
	Cd-115	S	$8x10^{-9}$	$3x10^{-5}$
		I	$6x10^{-9}$	$4x10^{-5}$
Calcium (20)	Ca-45	S	$1x10^{-9}$	$9x10^{-6}$
		I	$4x10^{-9}$	$2x10^{-4}$
	Ca-47	S	$6x10^{-9}$	$5x10^{-5}$
		I	$6x10^{-9}$	$3x10^{-5}$
Californium (98)	Cf-249	S	$5x10^{-14}$	$4x10^{-6}$
		I	$3x10^{-12}$	$2x10^{-5}$
	Cf-250	S	$2x10^{-13}$	$1x10^{-5}$
		I	$3x10^{-12}$	$3x10^{-5}$
	Cf-251	S	$6x10^{-14}$	$4x10^{-6}$
		I	$3x10^{-12}$	$3x10^{-5}$
	Cf-252	S	$2x10^{-13}$	$7x10^{-6}$
		I	$1x10^{-12}$	$7x10^{-6}$
	Cf-253	S	$3x10^{-11}$	$1x10^{-4}$
		I	$3x10^{-11}$	$1x10^{-4}$
	Cf-254	S	$2x10^{-13}$	$1x10^{-7}$
		I	$2x10^{-13}$	$1x10^{-7}$
Carbon (6)	C-14	S	$1x10^{-7}$	$8x10^{-4}$
	(CO2)	Sub	$1x10^{-6}$	—
Cerium (58)	Ce-141	S	$2x10^{-8}$	$9x10^{-5}$
		I	$5x10^{-9}$	$9x10^{-5}$
	Ce-143	S	$9x10^{-9}$	$4x10^{-5}$
		I	$7x10^{-9}$	$4x10^{-5}$
	Ce-144	S	$3x10^{-10}$	$1x10^{-5}$
		I	$2x10^{-10}$	$1x10^{-5}$
Cesium (55)	Cs-131	S	$4x10^{-7}$	$2x10^{-3}$
		I	$1x10^{-7}$	$9x10^{-4}$
	Cs-134m	S	$1x10^{-6}$	$6x10^{-3}$
		I	$2x10^{-7}$	$1x10^{-3}$
	Cs-134	S	$1x10^{-9}$	$9x10^{-6}$
		I	$4x10^{-10}$	$4x10^{-5}$

Element (Atomic Number)	Isotope†		Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
	Cs-135	S	$2x10^{-8}$	$1x10^{-4}$
		I	$3x10^{-9}$	$2x10^{-4}$
	Cs-136	S	$1x10^{-8}$	$9x10^{-5}$
		I	$6x10^{-9}$	$6x10^{-5}$
	Cs-137	S	$2x10^{-9}$	$2x10^{-5}$
		I	$5x10^{-10}$	$4x10^{-5}$
Chlorine (17)	Cl-36	S	$1x10^{-8}$	$8x10^{-5}$
		I	$8x10^{-10}$	$6x10^{-5}$
	Cl-38	S	$9x10^{-8}$	$4x10^{-4}$
		I	$7x10^{-8}$	$4x10^{-4}$
Chromium (24)	Cr-51	S	$4x10^{-7}$	$2x10^{-3}$
		I	$8x10^{-8}$	$2x10^{-3}$
Cobalt (27)	Co-57	S	$1x10^{-7}$	$5x10^{-4}$
		I	$6x10^{-9}$	$4x10^{-4}$
	Co-58m	S	$6x10^{-7}$	$3x10^{-3}$
		I	$3x10^{-7}$	$2x10^{-3}$
	Co-58	S	$3x10^{-8}$	$1x10^{-4}$
		I	$2x10^{-9}$	$9x10^{-5}$
	Co-60	S	$1x10^{-8}$	$5x10^{-5}$
		I	$3x10^{-10}$	$3x10^{-5}$
Copper (29)	Cu-64	S	$7x10^{-8}$	$3x10^{-4}$
		I	$4x10^{-8}$	$2x10^{-4}$
Curium (96)	Cm-242	S	$4x10^{-12}$	$2x10^{-5}$
		I	$6x10^{-12}$	$2x10^{-5}$
	Cm-243	S	$2x10^{-13}$	$5x10^{-6}$
		I	$3x10^{-12}$	$2x10^{-5}$
	Cm-244	S	$3x10^{-13}$	$7x10^{-6}$
		I	$3x10^{-12}$	$3x10^{-5}$
	Cm-245	S	$2x10^{-13}$	$4x10^{-6}$
		I	$4x10^{-12}$	$3x10^{-5}$
	Cm-246	S	$2x10^{-13}$	$4x10^{-6}$
		I	$4x10^{-12}$	$3x10^{-5}$
	Cm-247	S	$2x10^{-13}$	$4x10^{-6}$
		I	$4x10^{-12}$	$2x10^{-5}$
	Cm-248	S	$2x10^{-14}$	$4x10^{-7}$
		I	$4x10^{-13}$	$1x10^{-6}$
	Cm-249	S	$4x10^{-7}$	$2x10^{-3}$
		I	$4x10^{-7}$	$2x10^{-3}$
Dysprosium (66)	Dy-165	S	$9x10^{-8}$	$4x10^{-4}$
		I	$7x10^{-8}$	$4x10^{-4}$
	Dy-166	S	$8x10^{-9}$	$4x10^{-5}$
		I	$7x10^{-9}$	$4x10^{-5}$
Einsteinium (99)	Es-253	S	$3x10^{-11}$	$2x10^{-5}$
		I	$2x10^{-11}$	$2x10^{-5}$
	Es-254m	S	$2x10^{-10}$	$2x10^{-5}$
		I	$2x10^{-10}$	$2x10^{-5}$
	Es-254	S	$6x10^{-13}$	$1x10^{-5}$
		I	$4x10^{-12}$	$1x10^{-5}$

Element (Atomic Number)	Isotope†		Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
	Es-255	S	$2x10^{-11}$	$3x10^{-5}$
		I	$1x10^{-11}$	$3x10^{-5}$
Erbium (68)	Er-169	S	$2x10^{-8}$	$9x10^{-5}$
		I	$1x10^{-8}$	$9x10^{-5}$
	Er-171	S	$2x10^{-8}$	$1x10^{-4}$
		I	$2x10^{-8}$	$1x10^{-4}$
Europium (63)	Eu-152	S	$1x10^{-8}$	$6x10^{-5}$
	(Tr=9.2 hrs)		$1x10^{-8}$	$6x10^{-5}$
	Eu-152	S	$4x10^{-10}$	$8x10^{-5}$
	(Tr=13 yrs)		$6x10^{-10}$	$8x10^{-5}$
	Eu-154	S	$1x10^{-10}$	$2x10^{-5}$
		I	$2x10^{-10}$	$2x10^{-5}$
	Eu-155	S	$3x10^{-9}$	$2x10^{-4}$
		I	$3x10^{-9}$	$2x10^{-4}$
Fermium (100)	Fm-254	S	$2x10^{-9}$	$1x10^{-4}$
		I	$2x10^{-9}$	$1x10^{-4}$
	Fm-255	S	$6x10^{-10}$	$3x10^{-5}$
		I	$4x10^{-10}$	$3x10^{-5}$
	Fm-256	S	$1x10^{-10}$	$9x10^{-7}$
		I	$6x10^{-11}$	$9x10^{-7}$
Fluorine (9)	F-18	S	$2x10^{-7}$	$8x10^{-4}$
		I	$9x10^{-8}$	$5x10^{-4}$
Gadolinium (64)	Gd-153	S	$8x10^{-9}$	$2x10^{-4}$
		I	$3x10^{-9}$	$2x10^{-4}$
	Gd-159	S	$2x10^{-8}$	$8x10^{-5}$
		I	$1x10^{-8}$	$8x10^{-5}$
Gallium (31)	Ga-72	S	$8x10^{-9}$	$4x10^{-5}$
		I	$6x10^{-9}$	$4x10^{-5}$
Germanium (32)	Ge-71	S	$4x10^{-7}$	$2x10^{-3}$
		I	$2x10^{-7}$	$2x10^{-3}$
Gold (79)	Au-196	S	$4x10^{-8}$	$2x10^{-4}$
		I	$2x10^{-8}$	$1x10^{-4}$
	Au-198	S	$1x10^{-8}$	$5x10^{-5}$
		I	$8x10^{-9}$	$5x10^{-5}$
	Au-199	S	$4x10^{-8}$	$2x10^{-4}$
		I	$3x10^{-8}$	$2x10^{-4}$
Hafnium (72)	Hf-181	S	$1x10^{-9}$	$7x10^{-5}$
		I	$3x10^{-9}$	$7x10^{-5}$
Holmium (67)	Ho-166	S	$7x10^{-9}$	$3x10^{-5}$
		I	$6x10^{-9}$	$3x10^{-5}$
Hydrogen (1)	H-3	S	$2x10^{-7}$	$3x10^{-3}$
		I	$2x10^{-7}$	$3x10^{-3}$
		Sub	$4x10^{-5}$	—
Indium (49)	In-113m	S	$3x10^{-7}$	$1x10^{-3}$
		I	$2x10^{-7}$	$1x10^{-3}$
	In-114m	S	$4x10^{-9}$	$2x10^{-5}$
		I	$7x10^{-10}$	$2x10^{-5}$
	In-115m	S	$8x10^{-8}$	$4x10^{-4}$

Element (Atomic Number)	Isotope†		Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
		I	$6x10^{-8}$	$4x10^{-4}$
	In-115	S	$9x10^{-9}$	$9x10^{-5}$
		I	$1x10^{-9}$	$9x10^{-5}$
Iodine (53)	I-125	S	$8x10^{-11}$	$2x10^{-7}$
		I	$6x10^{-9}$	$2x10^{-4}$
	I-126	S	$9x10^{-11}$	$3x10^{-7}$
		I	$1x10^{-8}$	$9x10^{-5}$
	I-129	S	$2x10^{-11}$	$6x10^{-8}$
		I	$2x10^{-9}$	$2x10^{-4}$
	I-131	S	$1x10^{-10}$	$3x10^{-7}$
		I	$1x10^{-8}$	$6x10^{-5}$
	I-132	S	$3x10^{-9}$	$8x10^{-6}$
		I	$3x10^{-8}$	$2x10^{-4}$
	I-133	S	$4x10^{-10}$	$1x10^{-6}$
		I	$7x10^{-9}$	$4x10^{-5}$
	I-134	S	$6x10^{-9}$	$2x10^{-5}$
		I	$1x10^{-7}$	$6x10^{-4}$
	I-135	S	$1x10^{-9}$	$4x10^{-6}$
		I	$1x10^{-8}$	$7x10^{-5}$
Iridium (77)	Ir-190	S	$4x10^{-8}$	$2x10^{-4}$
		I	$1x10^{-8}$	$2x10^{-4}$
	Ir-192	S	$4x10^{-9}$	$4x10^{-5}$
		I	$9x10^{-10}$	$4x10^{-5}$
	Ir-194	S	$8x10^{-9}$	$3x10^{-5}$
		I	$5x10^{-9}$	$3x10^{-5}$
Iron (26)	Fe-55	S	$3x10^{-8}$	$8x10^{-4}$
		I	$3x10^{-8}$	$2x10^{-3}$
	Fe-59	S	$5x10^{-9}$	$6x10^{-5}$
		I	$2x10^{-9}$	$5x10^{-5}$
Krypton (36)	Kr-85m	Sub	$1x10^{-7}$	—
	Kr-85	Sub	$3x10^{-7}$	—
	Kr-87	Sub	$2x10^{-8}$	—
	Kr-88	Sub	$2x10^{-8}$	—
Lanthanum (57)	La-140	S	$5x10^{-9}$	$2x10^{-5}$
		I	$4x10^{-9}$	$2x10^{-5}$
Lead (82)	Pb-203	S	$9x10^{-8}$	$4x10^{-4}$
		I	$6x10^{-8}$	$4x10^{-4}$
	Pb-210	S	$4x10^{-12}$	$1x10^{-7}$
		I	$8x10^{-12}$	$2x10^{-4}$
	Pb-212	S	$6x10^{-10}$	$2x10^{-5}$
		I	$7x10^{-10}$	$2x10^{-5}$
Lutetium (71)	Lu-177	S	$2x10^{-8}$	$1x10^{-4}$
		I	$2x10^{-8}$	$1x10^{-4}$
Manganese (25)	Mn-52	S	$7x10^{-9}$	$3x10^{-5}$
		I	$5x10^{-9}$	$3x10^{-5}$
	Mn-54	S	$1x10^{-8}$	$1x10^{-4}$
		I	$1x10^{-9}$	$1x10^{-4}$
	Mn-56	S	$3x10^{-8}$	$1x10^{-4}$

Element (Atomic Number)	Isotope†		Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
		I	$2x10^{-8}$	$1x10^{-4}$
Mercury (80)	Hg-197m	S	$3x10^{-8}$	$2x10^{-4}$
		I	$3x10^{-8}$	$2x10^{-4}$
	Hg-197	S	$4x10^{-8}$	$3x10^{-4}$
		I	$9x10^{-8}$	$5x10^{-4}$
	Hg-203	S	$2x10^{-9}$	$2x10^{-5}$
		I	$4x10^{-9}$	$1x10^{-4}$
Molybdenum (42)	Mo-99	S	$3x10^{-8}$	$2x10^{-4}$
		I	$7x10^{-9}$	$4x10^{-5}$
Neodymium (60)	Nd-144	S	$3x10^{-12}$	$7x10^{-5}$
		I	$1x10^{-11}$	$8x10^{-5}$
	Nd-147	S	$1x10^{-8}$	$6x10^{-5}$
		I	$8x10^{-9}$	$6x10^{-5}$
	Nd-149	S	$6x10^{-8}$	$3x10^{-4}$
		I	$5x10^{-8}$	$3x10^{-4}$
Neptunium (93)	Np-237	S	$1x10^{-13}$	$3x10^{-6}$
		I	$4x10^{-12}$	$3x10^{-5}$
	Np-239	S	$3x10^{-8}$	$1x10^{-4}$
		I	$2x10^{-8}$	$1x10^{-4}$
Nickel (28)	Ni-59	S	$2x10^{-8}$	$2x10^{-4}$
		I	$3x10^{-8}$	$2x10^{-3}$
	Ni-63	S	$2x10^{-9}$	$3x10^{-5}$
		I	$1x10^{-8}$	$7x10^{-4}$
	Ni-65	S	$3x10^{-8}$	$1x10^{-4}$
		I	$2x10^{-8}$	$1x10^{-4}$
Niobium (41)	Nb-93m	S	$4x10^{-9}$	$4x10^{-4}$
		I	$5x10^{-9}$	$4x10^{-4}$
	Nb-95	S	$2x10^{-8}$	$1x10^{-4}$
		I	$3x10^{-9}$	$1x10^{-4}$
	Nb-97	S	$2x10^{-7}$	$9x10^{-4}$
		I	$2x10^{-7}$	$9x10^{-4}$
Osmium (76)	Os-185	S	$2x10^{-8}$	$7x10^{-5}$
		I	$2x10^{-9}$	$7x10^{-5}$
	Os-191m	S	$6x10^{-7}$	$3x10^{-3}$
		I	$3x10^{-7}$	$2x10^{-3}$
	Os-191	S	$4x10^{-8}$	$2x10^{-4}$
		I	$1x10^{-8}$	$2x10^{-4}$
	Os-193	S	$1x10^{-8}$	$6x10^{-5}$
		I	$9x10^{-9}$	$5x10^{-5}$
Palladium (46)	Pd-103	S	$5x10^{-8}$	$3x10^{-4}$
		I	$3x10^{-8}$	$3x10^{-4}$
	Pd-109	S	$2x10^{-8}$	$9x10^{-5}$
		I	$1x10^{-8}$	$7x10^{-5}$
Phosphorus (15)	P-32	S	$2x10^{-9}$	$2x10^{-5}$
		I	$3x10^{-9}$	$2x10^{-5}$
Platinum (78)	Pt-191	S	$3x10^{-8}$	$1x10^{-4}$
		I	$2x10^{-8}$	$1x10^{-4}$
	Pt-193m	S	$2x10^{-7}$	$1x10^{-3}$

Element (Atomic Number)	Isotope†		Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
		I	$2x10^{-7}$	$1x10^{-3}$
	Pt-193	S	$4x10^{-8}$	$9x10^{-4}$
		I	$1x10^{-8}$	$2x10^{-3}$
	Pt-197m	S	$2x10^{-7}$	$1x10^{-3}$
		I	$2x10^{-7}$	$9x10^{-4}$
	Pt-197	S	$3x10^{-8}$	$1x10^{-4}$
		I	$2x10^{-8}$	$1x10^{-4}$
Plutonium (94)	Pu-238	S	$7x10^{-14}$	$5x10^{-6}$
		I	$1x10^{-12}$	$3x10^{-5}$
	Pu-239	S	$6x10^{-14}$	$5x10^{-6}$
		I	$1x10^{-12}$	$3x10^{-5}$
	Pu-240	S	$6x10^{-14}$	$5x10^{-6}$
		I	$1x10^{-12}$	$3x10^{-5}$
	Pu-241	S	$3x10^{-12}$	$2x10^{-4}$
		I	$1x10^{-9}$	$1x10^{-3}$
	Pu-242	S	$6x10^{-14}$	$5x10^{-6}$
		I	$1x10^{-12}$	$3x10^{-5}$
	Pu-243	S	$6x10^{-8}$	$3x10^{-4}$
		I	$8x10^{-8}$	$3x10^{-4}$
	Pu-244	S	$6x10^{-14}$	$4x10^{-6}$
		I	$1x10^{-12}$	$1x10^{-5}$
Polonium (84)	Po-210	S	$2x10^{-11}$	$7x10^{-7}$
		I	$7x10^{-12}$	$3x10^{-5}$
Potassium (19)	K-42	S	$7x10^{-8}$	$3x10^{-4}$
		I	$4x10^{-9}$	$2x10^{-5}$
Praseodymium (59)	Pr-142	S	$7x10^{-9}$	$3x10^{-5}$
		I	$5x10^{-9}$	$3x10^{-5}$
	Pr-143	S	$1x10^{-8}$	$5x10^{-5}$
		I	$6x10^{-9}$	$5x10^{-5}$
Promethium (61)	Pm-147	S	$2x10^{-9}$	$2x10^{-4}$
		I	$3x10^{-9}$	$2x10^{-4}$
	Pm-149	S	$1x10^{-8}$	$4x10^{-5}$
		I	$8x10^{-9}$	$4x10^{-5}$
Protactinium (91)	Pa-230	S	$6x10^{-11}$	$2x10^{-4}$
		I	$3x10^{-11}$	$2x10^{-4}$
	Pa-231	S	$4x10^{-14}$	$9x10^{-7}$
		I	$4x10^{-12}$	$2x10^{-5}$
	Pa-233	S	$2x10^{-8}$	$1x10^{-4}$
		I	$6x10^{-9}$	$1x10^{-4}$
Radium (88)	Ra-223	S	$6x10^{-11}$	$7x10^{-7}$
		I	$8x10^{-12}$	$4x10^{-6}$
	Ra-224	S	$2x10^{-10}$	$2x10^{-6}$
		I	$2x10^{-11}$	$5x10^{-6}$
	Ra-226	S	$3x10^{-12}$	$3x10^{-8}$
		I	$2x10^{-12}$	$3x10^{-5}$
	Ra-228	S	$2x10^{-12}$	$3x10^{-8}$
		I	$1x10^{-12}$	$3x10^{-5}$

Element (Atomic Number)	Isotope[†]		Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
Radon (86)	Rn-220	S	$1x10^{-8}$	—
	Rn-222[††]	S	$3x10^{-9}$	—
Rhenium (75)	Re-183	S	$9x10^{-8}$	$6x10^{-4}$
		I	$5x10^{-9}$	$3x10^{-4}$
	Re-186	S	$2x10^{-8}$	$9x10^{-5}$
		I	$8x10^{-9}$	$5x10^{-5}$
	Re-187	S	$3x10^{-7}$	$3x10^{-3}$
		I	$2x10^{-8}$	$2x10^{-3}$
	Re-188	S	$1x10^{-8}$	$6x10^{-5}$
		I	$6x10^{-9}$	$3x10^{-5}$
Rhodium (45)	Rh-103m	S	$3x10^{-6}$	$1x10^{-2}$
		I	$2x10^{-6}$	$1x10^{-2}$
	Rh-105	S	$3x10^{-8}$	$1x10^{-4}$
		I	$2x10^{-8}$	$1x10^{-4}$
Rubidium (37)	Rb-86	S	$1x10^{-8}$	$7x10^{-5}$
		I	$2x10^{-9}$	$2x10^{-5}$
	Rb-87	S	$2x10^{-8}$	$1x10^{-4}$
		I	$2x10^{-9}$	$2x10^{-4}$
Ruthenium (44)	Ru-97	S	$8x10^{-8}$	$4x10^{-4}$
		I	$6x10^{-8}$	$3x10^{-4}$
	Ru-103	S	$2x10^{-8}$	$8x10^{-5}$
		I	$3x10^{-9}$	$8x10^{-5}$
	Ru-105	S	$2x10^{-8}$	$1x10^{-4}$
		I	$2x10^{-8}$	$1x10^{-4}$
	Ru-106	S	$3x10^{-9}$	$1x10^{-5}$
		I	$2x10^{-10}$	$1x10^{-5}$
Samarium (62)	Sm-147	S	$2x10^{-12}$	$6x10^{-5}$
		I	$9x10^{-12}$	$7x10^{-5}$
	Sm-151	S	$2x10^{-9}$	$4x10^{-4}$
		I	$5x10^{-9}$	$4x10^{-4}$
	Sm-153	S	$2x10^{-8}$	$8x10^{-5}$
		I	$1x10^{-8}$	$8x10^{-5}$
Scandium (21)	Sc-46	S	$8x10^{-9}$	$4x10^{-5}$
		I	$8x10^{-10}$	$4x10^{-5}$
	Sc-47	S	$2x10^{-8}$	$9x10^{-5}$
		I	$2x10^{-8}$	$9x10^{-5}$
	Sc-48	S	$6x10^{-9}$	$3x10^{-5}$
		I	$5x10^{-9}$	$3x10^{-5}$
Selenium (34)	Se-75	S	$4x10^{-8}$	$3x10^{-4}$
		I	$4x10^{-9}$	$3x10^{-4}$
Silicon (14)	Si-31	S	$2x10^{-7}$	$9x10^{-4}$
		I	$3x10^{-8}$	$2x10^{-4}$
Silver (47)	Ag-105	S	$2x10^{-8}$	$1x10^{-4}$
		I	$3x10^{-9}$	$1x10^{-4}$
	Ag-110m	S	$7x10^{-9}$	$3x10^{-5}$
		I	$3x10^{-10}$	$3x10^{-5}$
	Ag-111	S	$1x10^{-8}$	$4x10^{-5}$
		I	$8x10^{-9}$	$4x10^{-5}$

Element (Atomic Number)	Isotope†		Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
Sodium (11)	Na-22	S	$6x10^{-9}$	$4x10^{-5}$
		I	$3x10^{-10}$	$3x10^{-5}$
	Na-24	S	$4x10^{-8}$	$2x10^{-4}$
		I	$5x10^{-9}$	$3x10^{-5}$
Strontium (38)	Sr-85m	S	$1x10^{-6}$	$7x10^{-3}$
		I	$1x10^{-6}$	$7x10^{-3}$
	Sr-85	S	$8x10^{-9}$	$1x10^{-4}$
		I	$4x10^{-9}$	$2x10^{-4}$
	Sr-89	S	$3x10^{-10}$	$3x10^{-6}$
		I	$1x10^{-9}$	$3x10^{-5}$
	Sr-90	S	$3x10^{-11}$	$3x10^{-7}$
		I	$2x10^{-10}$	$4x10^{-5}$
	Sr-91	S	$2x10^{-8}$	$7x10^{-5}$
		I	$9x10^{-9}$	$5x10^{-5}$
	Sr-92	S	$2x10^{-8}$	$7x10^{-5}$
		I	$1x10^{-8}$	$6x10^{-5}$
Sulfur (16)	S-35	S	$9x10^{-9}$	$6x10^{-5}$
		I	$9x10^{-9}$	$3x10^{-4}$
Tantalum (73)	Ta-182	S	$1x10^{-9}$	$4x10^{-5}$
		I	$7x10^{-10}$	$4x10^{-5}$
Technetium (43)	Tc-96m	S	$3x10^{-6}$	$1x10^{-2}$
		I	$1x10^{-6}$	$1x10^{-2}$
	Tc-96	S	$2x10^{-8}$	$1x10^{-4}$
		I	$8x10^{-9}$	$5x10^{-5}$
	Tc-97m	S	$8x10^{-8}$	$4x10^{-4}$
		I	$5x10^{-9}$	$2x10^{-4}$
	Tc-97	S	$4x10^{-7}$	$2x10^{-3}$
		I	$1x10^{-8}$	$8x10^{-4}$
	Tc-99m	S	$1x10^{-6}$	$6x10^{-3}$
		I	$5x10^{-7}$	$3x10^{-3}$
	Tc-99	S	$7x10^{-8}$	$3x10^{-4}$
		I	$2x10^{-9}$	$2x10^{-4}$
Tellurium (52)	Te-125m	S	$1x10^{-8}$	$2x10^{-4}$
		I	$4x10^{-9}$	$1x10^{-4}$
	Te-127m	S	$5x10^{-9}$	$6x10^{-5}$
		I	$1x10^{-9}$	$5x10^{-5}$
	Te-127	S	$6x10^{-8}$	$3x10^{-4}$
		I	$3x10^{-8}$	$2x10^{-4}$
	Te-129m	S	$3x10^{-9}$	$3x10^{-5}$
		I	$1x10^{-9}$	$2x10^{-5}$
	Te-129	S	$2x10^{-7}$	$8x10^{-4}$
		I	$1x10^{-7}$	$8x10^{-4}$
	Te-131m	S	$1x10^{-8}$	$6x10^{-5}$
		I	$6x10^{-9}$	$4x10^{-5}$
	Te-132	S	$7x10^{-9}$	$3x10^{-5}$
		I	$4x10^{-9}$	$2x10^{-5}$
Terbium (65)	Tb-160	S	$3x10^{-9}$	$4x10^{-5}$
		I	$1x10^{-9}$	$4x10^{-5}$

Element (Atomic Number)	Isotope†		Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
Thallium (81)	Tl-200	S	$9x10^{-8}$	$4x10^{-4}$
		I	$4x10^{-8}$	$2x10^{-4}$
	Tl-201	S	$7x10^{-8}$	$3x10^{-4}$
		I	$3x10^{-8}$	$2x10^{-4}$
	Tl-202	S	$3x10^{-8}$	$1x10^{-4}$
		I	$8x10^{-9}$	$7x10^{-5}$
	Tl-204	S	$2x10^{-8}$	$1x10^{-4}$
		I	$9x10^{-10}$	$6x10^{-5}$
Thorium (90)	Th-227	S	$1x10^{-11}$	$2x10^{-5}$
		I	$6x10^{-12}$	$2x10^{-5}$
	Th-228	S	$3x10^{-13}$	$7x10^{-6}$
		I	$2x10^{-13}$	$1x10^{-5}$
	Th-230	S	$8x10^{-14}$	$2x10^{-6}$
		I	$3x10^{-13}$	$3x10^{-5}$
	Th-231	S	$5x10^{-8}$	$2x10^{-4}$
		I	$4x10^{-8}$	$2x10^{-4}$
	Th-232	S	$1x10^{-12}$	$2x10^{-6}$
		I	$1x10^{-12}$	$4x10^{-5}$
	Th-natural	S	$2x10^{-12}$	$2x10^{-6}$
		I	$2x10^{-12}$	$2x10^{-5}$
	Th-234	S	$2x10^{-9}$	$2x10^{-5}$
		I	$1x10^{-9}$	$2x10^{-5}$
Thulium (69)	Tm-170	S	$1x10^{-9}$	$5x10^{-5}$
		I	$1x10^{-9}$	$5x10^{-5}$
	Tm-171	S	$4x10^{-9}$	$5x10^{-4}$
		I	$8x10^{-9}$	$5x10^{-4}$
Tin (50)	Sn-113	S	$1x10^{-8}$	$9x10^{-5}$
		I	$2x10^{-9}$	$8x10^{-5}$
	Sn-125	S	$4x10^{-9}$	$2x10^{-5}$
		I	$3x10^{-9}$	$2x10^{-5}$
Tungsten (74)	W-181	S	$8x10^{-8}$	$4x10^{-4}$
		I	$4x10^{-9}$	$3x10^{-4}$
	W-185	S	$3x10^{-8}$	$1x10^{-4}$
		I	$4x10^{-9}$	$1x10^{-4}$
	W-187	S	$2x10^{-8}$	$7x10^{-5}$
		I	$1x10^{-8}$	$6x10^{-5}$
Uranium (92)	U-230	S	$1x10^{-11}$	$5x10^{-6}$
		I	$4x10^{-12}$	$5x10^{-6}$
	U-232	S	$3x10^{-12}$	$3x10^{-5}$
		I	$9x10^{-13}$	$3x10^{-5}$
	U-233	S	$2x10^{-11}$	$3x10^{-5}$
		I	$4x10^{-12}$	$3x10^{-5}$
	U-234	S‡	$2x10^{-11}$	$3x10^{-5}$
		I	$4x10^{-12}$	$3x10^{-5}$
	U-235	S‡	$2x10^{-11}$	$3x10^{-5}$
		I	$4x10^{-12}$	$3x10^{-5}$
	U-236	S	$2x10^{-11}$	$3x10^{-5}$
		I	$4x10^{-12}$	$3x10^{-5}$

Element (Atomic Number)	Isotope†		Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
	U-238	S‡	$3x10^{-12}$	$4x10^{-5}$
		I	$5x10^{-12}$	$4x10^{-5}$
	U-240	S	$8x10^{-9}$	$3x10^{-5}$
		I	$6x10^{-9}$	$3x10^{-5}$
	U-natural	S‡	$5x10^{-12}$	$3x10^{-5}$
		I	$5x10^{-12}$	$3x10^{-5}$
Vanadium (23)	V-48	S	$6x10^{-9}$	$3x10^{-5}$
		I	$2x10^{-9}$	$3x10^{-5}$
Xenon (54)	Xe-131m	Sub	$4x10^{-7}$	—
	Xe-133m	Sub	$3x10^{-7}$	—
	Xe-133	Sub	$3x10^{-7}$	—
	Xe-135	Sub	$1x10^{-7}$	—
Ytterbium (70)	Yb-175	S	$2x10^{-8}$	$1x10^{-4}$
		I	$2x10^{-8}$	$1x10^{-4}$
Yttrium (39)	Y-90	S	$4x10^{-9}$	$2x10^{-5}$
		I	$3x10^{-9}$	$2x10^{-5}$
	Y-91m	S	$8x10^{-7}$	$3x10^{-3}$
		I	$6x10^{-7}$	$3x10^{-3}$
	Y-91	S	$1x10^{-9}$	$3x10^{-5}$
		I	$1x10^{-9}$	$3x10^{-5}$
	Y-92	S	$1x10^{-8}$	$6x10^{-5}$
		I	$1x10^{-8}$	$6x10^{-5}$
	Y-93	S	$6x10^{-9}$	$3x10^{-5}$
		I	$5x10^{-9}$	$3x10^{-5}$
Zinc (30)	Zn-65	S	$4x10^{-9}$	$1x10^{-4}$
		I	$2x10^{-9}$	$2x10^{-4}$
	Zn-69m	S	$1x10^{-8}$	$7x10^{-5}$
		I	$1x10^{-8}$	$6x10^{-5}$
	Zn-69	S	$2x10^{-7}$	$2x10^{-3}$
		I	$3x10^{-7}$	$2x10^{-3}$
Zirconium (40)	Zr-93	S	$4x10^{-9}$	$8x10^{-4}$
		I	$1x10^{-8}$	$8x10^{-4}$
	Zr-95	S	$4x10^{-9}$	$6x10^{-5}$
		I	$1x10^{-9}$	$6x10^{-5}$
	Zr-97	S	$4x10^{-9}$	$2x10^{-5}$
		I	$3x10^{-9}$	$2x10^{-5}$
Any single radio-nuclide not listed above with decay mode other than alpha emission or spontaneous fission and with radio-active half-life less than two hours.		Sub	$3x10^{-8}$	—
Any single radio-nuclide not listed above with decay mode other than alpha emission or spontaneous fission and with radioactive half-life greater than two hours.			$1x10^{-10}$	$3x10^{-6}$

Element (Atomic Number)	Isotope[†]	Column 1: Air (µCi/ml)	Column 2: Water (µCi/ml)
Any single radio-nuclide not listed above, which decays by alpha emission or spontaneous fission.		$2x10^{-14}$	$3x10^{-8}$

[†] S: Soluble
I: Insoluble
Sub: values given are for submersion in a semispherical infinite cloud of airborne material.

[††] These radon concentrations are appropriate for protection from radon-222 combined with its short-lived daughters. Alternatively, this value may be replaced by one-thirtieth (1/30) of a working level. (A "working level" is defined as any combination of short-lived radon-222 daughters, polonium-218, lead-214, bismuth-214 and polonium-214, in one liter of air, without regard to the degree of equilibrium, that will result in the ultimate emission of 1.3×10^5 MeV of alpha particle energy.)

[‡] For soluble mixtures of U-238, U-234 and U-235 in air, chemical toxicity may be the limiting factor. If the percent by weight (enrichment) of U-235 is less than 5, the concentration value is 0.007 milligrams uranium per cubic meter of air. The specific activity for natural uranium is 6.77×10^{-7} curies per gram uranium. The specific activity for other mixtures of U-238, U-235 and U-234, if not known, shall be:

$SA = 3.6 \times 10^{-7}$ curies/gram U U-depleted
$SA = (0.4 + 0.38\ E + 0.0034\ E^2)\ 10^{-6}$ $E \geq 0.72$

where E is the percentage by weight of U-235, expressed as percent.

Note: In any case where there is a mixture in air or water of more than one radionuclide, the limiting values for purposes of Table 3 should be determined as follows:

1. If the identity and concentration of each radionuclide in the mixture are known, the limiting values should be derived as follows:

Determine, for each radionuclide in the mixture, the ratio between the quantity present in the mixture and the limit otherwise established in Table 3 for the specific radionuclide when not in a mixture. The sum of such ratios for all the radio-nuclides in the mixture may not exceed "1" (i.e., "unity").

Example: If radionuclides a, b and c are present in concentrations Ca, Cb and Cc and if the applicable maximum permissible concentrations (MPCs) are MPC_a, MPC_b and MPC_c respectively, then the concentrations shall be limited so that the following relationship exists:

$$\frac{C_a}{MPC_a} + \frac{C_b}{MPC_b} + \frac{C_c}{MPC_c} \leq 1$$

2. If either the identity or the concentration of any radionuclide in the mixture is not known, the limiting values for purposes of Table 3 shall be:
   a. For purposes of Table 3, Column 1 ..... 2×10^{-14}
   b. For purposes of Table 3, Column 2..... 3×10^{-8}

3. If any of the conditions specified below are met, the corresponding values specified below may be used in lieu of those specified in paragraph 2 above.
   a. If the identity of each radionuclide in the mixture is known but the concentration of one or more of the radionuclides in the mixture is not known, the concentration limit

for the mixture is the limit specified in Table 3 for the radionuclide in the mixture having the lowest concentration limit; or

b. If the identity of each radionuclide in the mixture is not known, but it is known that certain radionuclides specified in Table 3 are not present in the mixture, the concentration limit for the mixture is the lowest concentration limit specified in Table 3 for any radionuclide which is not known to be absent from the mixture; or

c.

Radionuclide	**Column 1: Air (µCi/ml)**	**Column 2: Water (µCi/ml)**
If it is known that Sr-90, I-125, I-126, I-129, I-131, I-133, Pb-210, Po-210, At-211, Ra-223, Ra-224, Ra-226, Ac-227, Ra-228, Th-230, Pa-231, Th-232, Th-nat, Cm-248, Cf-254, and Fm-256 are not present	—	$3x10^{-6}$
If it is known that Sr-90, I-125, I-126, I-129, I-131, I-133, Pb-210, Po-210, Ra-223, Ra-226, Ra-228, Pa-231, Th-nat, Cm-248, CF-254 and Fm-256 are not present	—	$2x10^{-6}$
If it is known that Sr-90, I-129 I-125, I-126, I-131, Pb-210, Ra-226, Ra-228, Cm-248 and Cf-254 are not present	—	$6x10^{-7}$
If it is known that I-129, Ra-226, and Ra-228 are not present-	—	$1x10^{-7}$
If it is known that alpha-emitters and Sr-90, I-129, Pb-210, Ac-227, Ra-228, Pa-230, Pu-241 and Bk-249 are not present	$1x10^{-10}$	—
If it is known that alpha-emitters and Pb-210, Ac-227, Ra-228 and Pu-241 are not present	$1x10^{-11}$	—
If it known that alpha-emitters and Ac-227 are not present	$1x10^{-12}$	—
If it is known that Ac-227, Th-230, Pa-231, Pu-238, Pu-239, Pu-240, Pu-242, Pu-244, Cm-248, Cf-249 and Cf-251 are not present	$1x10^{-13}$	—

4. If a mixture of radionuclides consists of uranium and its daughters in ore dust prior to chemical separation of the uranium from the ore, the values specified below may be used for uranium and its daughters through radium-226, instead of those from paragraph 1, 2 or 3 above.

For purposes of Table 3, Column 1, 3×10^{-12} µCi/ml gross alpha activity; 2×10^{-12} µCi/ml natural uranium; or 3 micrograms per cubic meter of air natural uranium.

5. For purposes of this note, a radionuclide may be considered as not present in a mixture if (a) the ratio of the concentration of that radionuclide in the mixture (C_a) to the concentration

limit for that radionuclide specified in Table 3 (MPC_a) does not exceed 1/10, (i.e., $C_a/MPC_a \leq 1/10$) and (b) the sum of such ratios for all radionuclides considered as not present in the mixture does not exceed 1/4, (i.e., $C_a/MPC_a + C_b/MPC_b + \ldots \leq 1/4$).

Note: To convert μCi/ml to SI units of megabecquerels per liter multiply the above values by 37.