

radiopurity numbers

$$1 \text{ ppbU} := 4.2 \frac{\text{mBq}}{\text{kg}}$$

in steel, from J.J.s email, jan 12

$$1 \text{ ppbTh} := 12.5 \frac{\text{mBq}}{\text{kg}}$$

however, from <http://radiopurity.in2p3.fr/conversion.html>

$$1 \frac{\text{Bq}}{\text{kg}} \text{U} := 88 \text{ ppb} \quad \rightarrow \quad 1 \text{ ppbU} := \frac{1000}{88} \frac{\text{mBq}}{\text{kg}} \quad \frac{1000}{88} = 11.364 \frac{\text{mBq}}{\text{kg}}$$

$$1 \frac{\text{Bq}}{\text{kg}} \text{Th} := 246 \text{ ppb} \quad \rightarrow \quad 1 \text{ ppbTh} := \frac{1000}{246} \frac{\text{mBq}}{\text{kg}} \quad \frac{1000}{246} = 4.065 \frac{\text{mBq}}{\text{kg}}$$

this seems the reverse of J.J.'s numbers

Al Smith's Ti plates stock measurement summary using Oroville dam detector (best we have):

Ti Plate Stock, 8/5/08 sample, 20 pc, each 6"x4"x3/16"

Detector:	MAEVE(ORO)	U(early):	0.5(1) ppb
Sample:	20 pc "box"	U(late):	<0.015 ppb
Weight:	7978 grams	Th:	<0.06 ppb
Data file:	CO-48S	K:	<0.03 ppm
Count time:	1108690 sec	Sc-46:	23(1) mBq/Kg

$$U = .015 \cdot 11.36 = 0.17 \frac{\text{mBq}}{\text{kg}}$$

OR ?

$$U = .015 \cdot 4.2 = 0.063 \frac{\text{mBq}}{\text{kg}}$$

$$\text{Th} = .06 \cdot 4.065 = 0.244 \frac{\text{mBq}}{\text{kg}}$$

$$\text{Th} = .06 \cdot 12.5 = 0.75 \frac{\text{mBq}}{\text{kg}}$$