

Ra – 226 Determination in Triathler™ by Emanation

Dr. E. Frenzel June 24, 2002

On april 17, 2002, in Bad Brambach (Elstergebirge in Germany) a sample was taken at Wettingquelle. The sample was extracted; the extraction volume was 3,5 ml, the cocktail MaxiLight Volume was 3,5 ml. The activity at april 21 was 996 Bq /l. The sample had been closed all the time – ML was kept on water all the time

Fig 1 shows the decay curve of the counts/sec (background corrected), fig. 2 the calculated activity concentration in the sample.

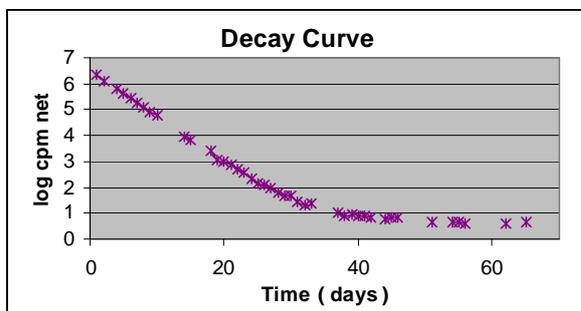


Fig.1: background corrected decay curve

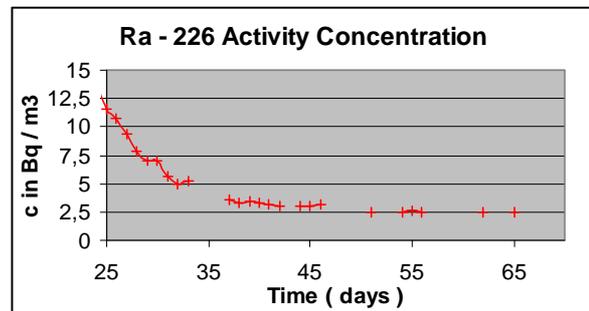


Fig. 2: activity concentration

After 65 days the Rn – 222 activity – concentration should be < 0,1 Bq/l; however, as seen from fig. 2 the measured activity concentration on June 24 is 2,5 Bq /l. The difference can only be explained by Ra-226, which is now in equilibrium with its daughters (see fig. 3 and fig. 4).

Hence, the activity concentration is

$$CRn - 226 = 3,2 \text{ Bq /l} \pm 0,2 \text{ Bq /l}$$