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222Rn in some underground water-samples and examination of correlation to 238U concentration

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Abstract

The concentration of 238U and 222Rn has been assessed in underground water samples collected from the Makkah Al-Mukarramah area west of Saudi Arabia. Observed radon activities lie in the range 0.6-3.9 Bq/L. This range is within the natural limits of concentration of radon. Radon concentrations observed in this study are compared to those observed in a study of radon concentrations in the central region of Saudi Arabia. In the experimental setup, CR-39 detectors are exposed to radon emanating from water samples for 30 d. Uranium concentrations lie within the range 1.02-31.97 µg/L. No direct correlation is found between concentrations of the two isotopes; however radon content in water is much higher than that of uranium.

Author Keywords

Environmental radioactivity; Nuclear track detectors; Radon; Underground water; Uranium

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