

## البحث السابع (7)

**Title:** “Radioecological Impact and the Associated Hazards Due to Norm From Oil and Gas Production Facility in the Western Desert of Egypt”

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### الملخص باللغة الإنجليزية

An oil and gas production facility in the western desert of Egypt was investigated for possible radiation risks due to the routine operation. Radium-226, Radium-228 and Potassium-40 were assessed in the soil samples collected from the adjacent soakaway pond. The average  $^{226}\text{Ra}$ ,  $^{228}\text{Ra}$  and  $^{40}\text{K}$  activity concentrations were  $881.0 \pm 42.0$ ,  $966.0 \pm 43.0$  and  $143.0 \pm 8.0 \text{ Bq kg}^{-1}$ , respectively. Both  $^{226}\text{Ra}$  and  $^{228}\text{Ra}$  were above the world ranges, while  $^{40}\text{K}$  was within the world range. Water samples from the facilities effluent's produced water showed elevated levels of both radium isotopes. The effective doses at three different points on the separator outer surfaces over the period between 1995 and 2014 were assessed. The maximum reading was  $5.4 \mu\text{Sv h}^{-1}$  on 2014. The time has significantly contributed to the enhancement of the effective dose readings. However, they are still within the expected range encountered in similar studies reported by International Atomic Energy Agency (IAEA).