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## Radioactivity in Surface Soils Around the Proposed Sites for Titanium Mining Project in Kenya

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### Author(s)

M. K Osoro, I. V. S. Rathore, M. J Mangala, A. O Mustapha

### ABSTRACT

Radioactivity measurements were carried out around Maumba and Nguluku villages, two of the proposed sites for titanium mining in the coastal area of Kenya. Samples of surface soils were analyzed using a HPGe gamma spectrometer. The average activity concentrations for  $^{226}\text{Ra}$ ,  $^{232}\text{Th}$  and  $^{40}\text{K}$  are  $20.9 \pm 7.6$ ,  $27.6 \pm 9.1$  and  $69.5 \pm 16.5 \text{ Bqkg}^{-1}$ , respectively. The absorbed dose rates in air, calculated on the basis of the measured activity concentrations, range from 9.8 to  $50.0 \text{ nGyh}^{-1}$ , with an average of  $29.2 \text{ nGyh}^{-1}$ . These values are below the global population-weighted mean, and they should be considered when planning appropriate monitoring and surveillance programmes during the mining operation, as well as the reclamation and restoration programmes after mining.

### KEYWORDS

Radioactivity Measurements, Titanium Mining, Absorbed Dose Rates, Natural Background Radiation

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