

Investigation of Natural Occurring Radioactive Material Activity Level in Iraq - Falluja / Anbar Governorate

Radiation may be defined as the energy in the form of electromagnetic waves or particles that pass through space and even heavy dense materials. The radioactivity is a continuously decreasing quantity which is a function of the half-life of the responsible radionuclides. The natural sources of radiation came from terrestrial radionuclides which are widely distributed in the earth's crust. Field radiological surveys were conducted by the GR-460 mobile detection system, the only mobile system in Iraq and the region. This system is dedicated to the radiological scanning process for large areas and in less time. The system is attached to a GPS satellite positioning device so that the measurement points are coupled with the spatial coordinates of the radiometric area. In this study, the concentration of naturally occurring radioactive materials had been determined experimentally of AL-Falluja / Anbar Governorate- Iraq for (66) km² using GR-460 portable gamma spectrometer system. The results showed that the high level of uranium concentration (²³⁸U) was 8.1 ppm in the industrial area, the low level was 0.1 ppm in most districts. The high level of Thorium (²³²Th) concentration was 17.5 ppm and less than 0.1 ppm in most neighborhoods are within Iraq's natural background.