

Measurement of Uranium Levels in Mineral Water Springs of Ardabil Province

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ABSTRACT

Background and Objectives: Uranium is one of the most important and numerous natural radioelements in earth's crust and most of water resources especially groundwater and mineral water contain the dissolved compounds of this radionuclide. The importance of health presence environmental natural uranium and thereby receiving radiation by human water consumption increased the probability of development of various cancers and nephric diseases. Maximum Containment Level (MCL) determined by United States Environmental Protection Agency (USEPA) for uranium in drinking water is 20 ppb. Mineral water according to geology characteristics contain different quantities of uranium. This research was accomplished in order to measure uranium concentration in mineral water of Ardabil province and provide foundation for the next researches.

Materials and Methods: This research was conducted on the basis of information collecting regarding radioactivity quality of mineral water, sampling from mineral water of Ardabil province (20 springs) with standard methods uranium was measured using Laser Fluorimetry (LF).

Results: Uranium concentration in Sarien mineral water (9 hot springs) were in the range of 0.3 – 0.47 ppb, in Meshkinshahr mineral water (5 hot springs) were in the range of 0.42-0.92 ppb and in Sardabeh, Givi, Ghaynarjeh and Borjlo of Nir mineral springs ordering 0.28, 0.43, 0.8 & 0.92 ppb, respectively.

Conclusion: Uranium concentration in all mineral and water of Ardabil province was found less than MCL of uranium in water resources.

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