



## **RADIOACTIVITY LEVELS IN SURFACE WATER OF LAKES AROUND IZMIR / TURKEY**

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Radioactivity presents in surface continental waters is mainly due to the presence of radioactive elements in the earth's crust other artificial radionuclides have appeared due to such human activities as nuclear power plants, nuclear weapons testing and manufacture and use of radioactive sources. It is well known that natural radionuclides can be effective as tracers for the different processes controlling the distribution of elements among dissolved and particulate phases in aquatic systems. The detection of high radionuclide concentrations was proposed as a public health problem in several areas and consequently studies into the risks of radionuclides were started in the 2000s. Especially, these radioactive substances in groundwater are an unwanted and involuntary risk factor from natural sources not artificial sources. These radioactive substances include uranium radon found in uranium series and other radioactive substances such as radium and gross alpha. Uranium present in rock, soil, and natural materials and is found in small quantities in air, water, and food that people always contact.

In this project, lake water samples were collected from three lakes around Izmir-Turkey. In surface lake water samples, pH, mV, and conductivity values were measured and alkaline content was determined titrimetrically. The uranium concentrations in the lake water samples were measured using uranium analyzer. The radioactivity concentrations related to gross radium isotopes, gross- $\alpha$  and gross- $\beta$  activities in the surface lake water were determined. The correlation among some parameters for water samples and concentrations of uranium, activity concentration of gross radium isotopes, gross alpha, and gross beta radioactivity are also discussed.

***Keywords*** Lakes, water, uranium concentration, gross alpha activity, gross beta activity