

NATURAL AND ANTHROPOGENIC CONTAMINATION ANALYSIS OF THE SEDIMENTS COLLECTED AROUND NOVAYA ZEMLYA

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The Dispersal profile of the radioisotopes (²²⁶Ra, ²³²Th, ²³⁵U, ⁴⁰K, ¹³⁷Cs) along with potentially toxic elements (Cd, Co, Cr, Cu, Ni, Pb, V, Zn, Hg) in the sediments around the Novaya Zemlya were determined. The task was fulfilled with the aid of HPGe gamma detector, inductively coupled plasma optical emission spectroscopy, DMA-80 Direct Mercury Analysis System, X-ray diffraction and statistical tools. At most of the locations, the radionuclide activity is higher than the world average activity concentration for the respective nuclei, ⁴⁰K being the most abundant. From all the potentially toxic elements detected, Cr and Ni were usually observed on very higher levels compared to their background values, indicating the probability of the detrimental biological effects. Thus, the present situation at the studied area might be a threat to the neighboring marine life.

Keywords: Sediments; Radionuclides; Potentially toxic elements; ¹³⁷Cs; Pollution source