

CONTENT OF HEAVY METALS IN SOIL, PLANTS AND GROUNDWATER AT LANDFILL SITE OF MUNICIPAL SOLID WASTES

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The paper presents the results of assessment of the ecological state of soil, plants and groundwater on the territory of solid municipal waste landfill located in the Volosovo District of the Leningrad Region and functioning for 17 years. In the filtration waters leaking from the body of the landfill the concentration of the elements was higher than the maximum permissible concentration (MPC for household and drinking purposes): ammonium nitrogen – 360 times; phosphorus – 21 time; Mg – 22 times; Hg – 1.2 times; Cd – 15 times; Fe – 37 times; the dry residue – 7 times. In groundwater samples, the Li content exceeded the MPC 6–7 times. A significant excess of background concentrations of Cd, Zn, Cu, Co and As was revealed in the soil. It was found that on average for all sampling points the value of the total soil contamination index (Zc), calculated from the gross content of Cd, Hg, Pb, Zn, Cu, Co, Mn, As, Cr and Ni, varied within 5 ± 6 , which corresponds to the permissible pollution category. In the plants of all studied species, the content of Cd, Hg, Pb, As, Zn, Cu, Co, Ni did not exceed normal levels of concentration. Exceeding by 20–40% of the maximum permissible level of Cr for the coarse and succulent fodders is revealed in 60% of plant samples. The content of Mn in plants *Typha atolia* L. exceeded the limit of normal content 3–4 times.

Key words: polygon of solid municipal waste, heavy metals, critical of threshold of concentration, filtration water.