



Anthropogenic impacts on ground waters in newly dry areas of former Aral Sea

A. K. Kurbaniyazov

Nukus State Pedagogical Institute, Nukus, Uzbekistan (zav1966@rambler.ru)

The influence of anthropic factors on ground waters in the Aral Sea region is manifested through chemical and organic contamination. In this paper, we present chemical analyses of heavy metals, pesticides, and other contaminants performed on the samples collected from 42 wells and 12 surface springs in the region. The major contaminants are nitrates whose concentrations up to 410 mg/l were documented. The spatial extent and distribution of nitrates point towards intense anthropogenic (mainly agricultural) inputs to the contamination. It was also observed that the technogenic contamination resulted in substantial increase of concentrations of some microelements, such as Co (up to 1.75 mg/l), Pb (up to 0.156 mg/l), Mn (up to 0.19 mg/l), Sr (up to 10.5 mg/l), and some others. This is also hypothetically attributed to pesticide contamination. The total mineralization of the ground water was as high as up to 65 g/l. The hydrological regime of the area of the newly dry former Aral Sea bottom is largely controlled by the discharge of the ground waters, given that the infiltration from polders, irrigation canals, and the present Amu-Darya delta is insignificant.