



Halogenesis in Akpetky archipelago (eastern part of the Aral Sea)

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We report hydrochemical data obtained from numerous small brine lakes formed from the former Akpetky archipelago (the southeastern part of the newly dry Aral Sea bottom). The samples were collected in 2005. During the first 2 decades of the Aral Sea desiccation, by 1983, the sea has retreated out of archipelago limits, forming evaporated brines, located in the remaining bottom depressions in the straits and gulfs, where salts were sedimented. Numerous brine lakes are related to these depressions of the bottom. Their existence is also connected with inflows of highly mineralized (70-90 mg/l) sulfate-chloride ground water, which provided for new portions of salts and led to a considerable increase of their deposits. The depth of the ground water table at the Pliocene-Quaternary water bearing horizon is 0.5 - 2.4 m within the newly dry gulfs and straits of the archipelago, and 5-6 m and more on the former islands. The multiple brine lakes of the Akpetky archipelago are related to the lowermost sites in the relief of the former straits and gulfs. Mineralization of brines spanned from 157 to 443 g/l, and the chemical types of the brines are sulfate-chloride, magnesium-potassium, chloride-potassium, sulfate-chloride-potassium-magnesium and chloride- potassium-magnesium. Content of chloride varies from 60 to 97 mg-equiv, that of potassium from 36 to 96 mg-equiv, and that of magnesium from 19 to 61 mg-equiv. The microcomponent composition of the brine lakes is characterized by increased content of bromine (from 19 to 276 mg/l) and lithium (to 32 mg/l).