

THE POSSIBILITY OF INFLUENCE OF SUBSURFACE WATERS OF THE CASPIAN BASIN SEDIMENTARY SERIES ON CHANGES OF THE SEA LEVEL

ZVEREV V. P. and KOSTIKOVA I. A. Institute of Environmental Geoscience RAS, Moscow, Russia

It is shown that the thick (up to 30 km) sedimentary series of the Caspian hollow contain considerable amount of chemically and physically bound and free subsurface waters, the total mass of which reaches $11.9 \cdot 10^{20}$ g. $7.4 \cdot 10^{20}$ g of these waters are related to the last two groups, that is one order larger than the total mass of the Caspian sea water ($0.78 \cdot 10^{20}$ g). An essentially larger part of these waters ($5.3 \cdot 10^{20}$ g) is concentrated in the South hollow of the Caspian sea, including $4.3 \cdot 10^{20}$ g in the upper clay series with a thickness of 10 km. The study of the water balance the sedimentary series of the South Caspian megahollow allowed us to estimate that $24.9 \cdot 10^{20}$ g of free and physically bound waters were accumulated within the limits of the megahollow for 185 million years of its history. $19.6 \cdot 10^{20}$ g of these waters were returned to the Caspian sea during the evolution, including $6.2 \cdot 10^{20}$ g returned for last 5 million years of the Middle Pliocene-Quaternary epoch. The mass of subsurface waters oozed out for that period $6.2 \cdot 10^{20}$ g related to the area of the Caspian sea corresponds to the layer of water with a high of 1680 m which is comparable with the total macro-increase of the Caspian sea level (1800 m) for the same period. Undoubtedly, one can conclude that, being of a periodical pulse character and timing to periods of tectonic activity, discharging of free and physically linked subsurface water of the upper structural floor of the South Caspian hollow can make a definite contribution to an increase of the sea level.