Petroleum potential of reef-carbonate complexes of Azov-Black sea region

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Reef-carbonate complexes (RCC) of Azov-Black Sea petroliferous province occupy vast geotectonically-heterogenous territory which is characterized by complicated space-time interrelation between Volyn-Azov (SW part of East-European platform), Scythian, Moesian plates and foldbelts (Carpathian, Dobruja, Mountain Crimea). These RCC are characterized by wide stratigraphic diapason (Silurian – Sarmatian) great structure-morphological variety and diversity by their space configurations. Interaction of those main geotectonic element were accompanied by resonance processes of rifting and subduction. It is precisely riftogenic and island-arc faults that controlled localization and distribution of barrier and ringe reefs, major offshore bank and carbonate ramps. Carbonate platform and megaatolls are connected with complicated geotectonic knots. In addition presence of reef-carbonate swells are typical feature of Azov-Black Sea. Contrary to barrier reefs caused by tension faults they are connected with tectonic-inversion structures originated as the result of the compression in rift troughs and subduction zones.

Here a number of self-dependent commercially petroliferous or promising RCC are determined.

Paleozoic pre-Dobruja RCC are connected with pericratonic paleorift system between North-Dobruja orogene and the south slope of Ukrainian shield. The most prospective area are connected with Belolesskiy megaatoll. A set of oil pools (East-Saratske, Sariyarske, Yaroslavske and other fields) are connected with Devonian dolomitized algal bioherms of its inner lagoon. It is fringed on the south (off the coast of Black Sea) by the prospective barrier reef (with Jurassic clay screen) of great commercial interest.

Upper Jurassic RCC of Pre-Dobruja foredeep – Black Sea – Kerch peninsula are connected with inversion uplifts and swells. The most promising assumed carbonate reefs (J_3) are connected with Gubkin-Lomonosov tectonic belt, Andrusov-Arkhangelski and Shatski megavals, Pre-Kerchian shelf.

Upper Cretaceous-Lower Paleocene carbonate platforms (megaatolls, ramps) of the Black Sea are very promising RCC having regard to wide area, tremendous (up to 2,5-3 km) thicknesses and a number of gas, oil and bitumen manifestations.

In addition certain petroleum potential is connected with Neogen atolls and bioherms of Kerch peninsula and Pre-Kerchian shelf.

So we have every reason to believe that essential undiscovered resources of Azove-Black Sea region are connected with carbonate reservoirs.

Technical session (topic)
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