Lithologically Shielded Oil Pools in the Lower Menilitov Formation of the Oligocene

E. V. Tkachenko

(Geologiya i Geofizika Goryuchikh Iskopayemykh, no. 47, p. 58–63, 1976)

The Lower Cretaceous sediments of the Borislavsko-Pokut sub-zone of the Inner Zone of the Cis-Carpathian downwarp in the Borislav oil region is facially uniform. A characteristic of this facies is that the rocks with good reservoir characteristics come and go.

The Orov-Ulichnyan field occurs on the southeast pericline of the Borislavsko-Orov fold; sediments from the Upper Cretaceous to the lower Miocene, inclusively, are present. Commercial oil was discovered here in 1962 in a sandy horizon of the lower Menilitov formation of the Oligocene.

Laboratory studies determined that the porosity of the sandstones ranges from 4.07 to 17.43%, carbonate content from 0 to 3.85%, permeability from 0.1 to 112 md, oil saturation from 4.0 to 49.0%, and water saturation from 14 to 94.56%.

Testing of Orov well 21 and Ulichno well 1 disclosed two separate oil pools in the lower Menilitov sediments. These pools differed in the physical properties of the oils, the initial formation pressures, the saturation pressure of oil by gas, and the gas-oil ratio. Subsequent drilling showed that the pools were separated by a zone in which the sandstones have comparatively low porosity and permeability. There are actually two such zones: one between the pools and one in the western part of the field. See Fig. 1.

The discovery of these lithologically shielded pools suggests the possibility for finding more such pools in this region. This prospect increases considerably the prospects for the region because of exhaustion of the backlog of structural traps for exploration.