Lithologic Pools of Hydrocarbons in the North of West Siberia


(Geologiya Nefti i Gaza, no. 8, p. 15–20, 1979)

The Valanginian productive beds of the Lower Cretaceous Megion Formation of the Surgut and Nizhnevartov arches cut across time. They have a mega-crossbedded character due to a deep-water basin being filled from the southeast. A regional zone of shale-out of these beds extends northward from the Middle Ob region into the northern parts of West Siberia. Here in the north, just as in the Middle Ob region, the Megion Formation youngs to the northwest. See Fig. 1.

The direction from which the clastic material of the Megion Formation was derived is indicated by the following.

1. Shale-out to the west and northwest of the upper part of the formation was pointed out by Kulakhmetov and others (1975). Facies change of sandy shelf beds into clay has now been established by drilling in the Urengoy, Yamburg, Zapolyar, Pestsov, and Novoportov areas. Individual sandy beds have been found to pass into clays in this same direction in many other areas.

2. The thickness of the upper part of the Megion Formation increases toward the west; this indicates that the basin floor was inclined in this direction.

3. Common depth point seismic surveys show an inclination of the middle and lower parts of the Megion Formation toward the west and northwest.

The direction of transport of the detritus is shown in Fig. 2. For practically the entire territory including also parts of Yamal the source area during deposition of the Megion Formation was the southeast frame of the West Siberian Platform.

The regional correlation chart compiled by this study differs significantly from previous charts. On earlier charts, strata with the same number were assumed to have more or less the same age. On the new chart, however, BU16 of the Urengoy region correlates with BT6 of Tazov, BP12 of Purpey and BV2 of Nizhnevartov; BU1 with BN1 of Nadym; BU4 with BS1 of Surgut. Paleotectonic information is not at variance with this correlation.

The information gathered indicates a series of regional zones of shale-out of Valanginian pays. See Fig. 3. They have a north-south trend. These zones are on the east flanks of clearly expressed highs and should be good strat traps for hydrocarbons.

It has long been discussed whether or not oil would be found in the north of West Siberia. The discovery of oil pools in lithologic traps on the east flanks of the Ayvasedopurov (Tarasov field) and Vostochno-Tarkosalin structures suggests that oil may be found in other such traps in this large region.