

HYDROCARBON HABITAT IN THE PECHORA-KOLVA AULACOGEN OF THE PECHORA BASIN, RUSSIA

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Pechora-Kolva aulacogen (PKA) or paleorift zone situated on the European Northeast in the central part of Pechora basin. The results of geophysical studies in the offshore of Pechora and Barents Seas testify that it could be traced in the northern direction up to Northern Kara Sea. The top of the basement within PKA is traced up to the depth of 3-10 km. PKA started active development beginning from the Ordovician time (in the northern part). In the Middle Devonian-Early Frasnian western and southern parts PKA were involved into active subsidence. Beginning from the Early Carboniferous the rate of subsidence slowed down and in the Late Carboniferous - Early Permian inversion of tectonic regime took place. It resulted in the formation of swell-like structures. All variety of transfer zones (TZ) have been recognized in PKA in spite of the fact that it was subjected to inversion in the Late Carboniferous-Early Permian. TZ of individual rifts are combined in linear zones coming across the entire PKA and providing its cross zonation. We believe the latter is inherited from the basement cross faults of strike-slip type. TZ in PKA are dominated by synthetic approaching, overlapping or collateral types. Conjugate convergent or divergent types are less spread. In those TZ where synrift clastic Middle Devonian deposits are present their reservoir properties are usually enhanced in comparison with other areas. The same zones were very favorable for reef growth in the Upper Devonian. All these make transfer zones very favorable for hydrocarbon accumulations. Ordovician-Silurian sequences are most productive and prospective in synthetic and conjugate transfer zones with approaching or partially overlapping fault termination. In conjugate mostly convergent TZ formed by overlapping or collateral (in plan-view) faults Devonian synrift and Carboniferous - Permian postrift deposits appear to be most prospective.