



Migration Aspect of Formation of Oil Fields in the Shale Rocks of the Domanic Formation in Volga-Ural Region

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The presentation highlights the problem of oil bearing of the Domanic shale formation (Upper Devonian System) on the territory of the Republic of Tatarstan. Comparing the geochemical characteristics of bitumen of the Semilukskian horizon and oils of the Eifelian-Frasnian terrigenous complex, it was concluded that in the Semilukskian horizon, mobile bitumen are present along with the syngenetic dispersed matter, which, according to gasliquid chromatography, are identical to the oil of the underlying terrigenous deposits of the Pashian and Timanian horizons. These bitumens are migratory and reflect the process of upward vertical oil migration, which is responsible for the formation of industrial deposits in the Semilukskian, Sargaevskian, and Rechitskian horizons (Upper Devonian System) in those areas where the lithological features of the rocks and the development of superficial fracturing in them make it possible to create a collecting space.

The rocks of the Domanic facies should be considered as accumulation or accumulation-generation system, oil deposits of which were formed due to oil systems generated in other sources. New methods of search are needed that allow us to quickly assess the content of migratory hydrocarbons and syngenetic organic matter. This is possible on the basis of a rapid study of the sludge, which will allow to assess the presence of mobile hydrocarbons and their quantity during drilling. An analysis of the spatial distribution of migratory hydrocarbons will allow localizing oil migration channels.

Using techniques of molecular weight distribution of n-alkanes in bitumens of the Semilukskiy horizon the migratory hydrocarbons were identified. Migration hydrocarbons have another source of generation. Active bacterial exposure was the dominant process in the formation of organic matter of the Semilukskiy horizon. This is due to anoxic situation and hydrogen sulfide contamination sedimentation basin. The appearance of anoxic environments, and hydrogen sulfide contamination is likely to have been caused by the periodic activation of volcanic events and other endogenous processes that were regional in nature and occurred in large parts of the continental slope of the ancient platform.