A COMPARATIVE ANALYSIS OF THE LENA-TUNGUSKA (RUSSIA) AND TARIM (CHINA) OIL- AND GAS-BEARING BASINS

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The Lena-Tunguska and Tarim oil- and gas-bearing basins are highly prospective for further addition of hydrocarbon reserves in Russia (Siberia) and China.The Tarim basin (northwest China) is one of the largest oil- and gas-bearing basins, in which oil fields with reserves exceeding 300 million tons have been discovered (Lunnan, Toshono). The oil accumulations are located within a large dome-like uplift; the reservoirs are fractured carbonates of the Lower Paleozoic (Ordovician).In the Lena-Tunguska basin of the Siberian platform, a large Yurubchen-Takhom zone of oil and gas accumulation has been discovered in the sub-salt formations, with the Yurubchen and Omorin fields containing the aggregate reserves of more that 1trillion m3 of gas and about 300 million tons of oil. Here, as in the Tarim basin, the hydrocarbon accumulations are mainly restricted to the fractured carbonates of the Lower Paleozoic and, to a less degree, to the Pre-Cambrian (Riphean) carbonates (cavernous dolomites).A complex analysis of geological-geochemical parameters accomplished by the authors indicates that both basins are similar in their geologic structure and conditions of petroleum occurrence: sub-salt Lower Paleozoic carbonates, localization within large arches, Paleozoic source rocks with sapropel-type organic matter, methane type of oils and condensates.