

Accumulation of petroleum deposits in the light of abiogenic origin of petroleum
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The theory of the abyssal abiogenic origin of petroleum denies the lateral migration of oil and gas in their reservoirs unless a hydrodynamic (hydraulic) fluid movement exists. Capillary forces which are related to the pore radius and to the surface tension across the oil-water (or gas-water) interface (the process is described by Laplace's Equation) are, generally, several thousand times stronger than the buoyancy forces of oil and gas (according to Navier–Stokes Equation) in the natural porous, permeable media of subsurface. According to the theory of the abyssal abiogenic origin of petroleum oil and gas fields are born as follows. Rising from sub-crust zones through the deep faults and their feather joints or fissures the petroliferous fluid of Mantle is injected under high pressure into any rock and distributed there. The hydrocarbon composition of oil and gas accumulations formed this way depends on cooling rate of the fluids during their injection into the rocks of the Earth's Crust. When and where the further supply of injected hydrocarbons from the Mantle stops, the fluids do not move further into any forms of the Earth Crust (anticline, syncline, horizontal and tilted beds) without the re-start of the injection of the abyssal petroliferous fluids. The most convincing evidence of the above-mentioned mechanism of oil and gas deposit formations is the existence of such giant gas fields as Deep Basin, Milk River and San Juan. They are located in the Alberta Province of Canada and the Colorado State, U.S.A. The formation of these giant gas fields questions the existence of any lateral migration of oil and gas during the oil and gas accumulation process. Those giant gas fields occur in synclines where gas must be generated but not be accumulated, according to the hypothesis of biotic petroleum origin and hydrodynamically controlled migration. The giant gas volumes ($12.5 \cdot 10^{12}$ cu m in Deep Basin, $935 \cdot 10^9$ cu m in San Juan, $255 \cdot 10^9$ cu m in Milk River) are concentrated in the very fine-grained, tight, impermeable argillites, clays, shales and in tight sandstones and siltstones. These rocks are usually accepted as source rocks cap rocks/seals rocks in petroleum geology but by no means of universally recognized reservoir rocks of oil and natural gas. All the gas-saturated tight rocks here are graded updip into a coarse-grained, highly-porous and highly-permeable aquifers with no visible tectonic, lithological and stratigraphic barriers to prevent updip gas migration. Therefore, the tremendous gas volumes of above-mentioned gas fields have the tremendous buoyancy but it never overcomes capillary resistance in pores of the water-saturated reservoir rocks.