

The relationships between petroleum composition and viscosity of oil and petrophysical properties of oil reservoirs

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Abstract

The objects of research were carbonate oil reservoirs of lower and middle Carboniferous on the south-east of the Republic of Tatarstan. They have a complex structure caused by not only heterogeneity of lithology, also changing reservoir properties and oil viscosity. The paper attempts to establish relationships between reservoir properties of rocks and oil compositions. In research used results of thermal analysis, dates of porosity and permeability, petroleum composition and oil saturation. Composition of oil and oil viscosity depends on the porosity and permeability of reservoir rocks. This is due to the destruction of oil deposits as result of partial waterflood oil reservoir. This is the most typical for reservoir rocks, which have high porosity and permeability. The patterns should be used for choosing methods enhanced oil recovery in carbonate reservoirs.

Keywords

Oil, Permeability, Petroleum composition, Porosity, Thermal analysis