

عنوان مقاله:

Experimental Investigation of Gravity Drainage during Immiscible Gas Injection in Carbonate Rocks at reservoir Condition

محل انتشار:

اولین کنفرانس بین المللی نفت، گاز، پتروشیمی و نیروگاهی (سال: 1391)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

Gravity drainage is one of the most important recovery mechanisms in fractured reservoirs. It occurs due to density difference between gas in fracture and oil in matrix, Oil phase will form films which are produced under gravity forces (film flow). Many gas injection experiments has been done at laboratory experiments with dead oil, but here we like to work with Reservoir condition and recombined oil at reservoir condition. In this paper the gravity drainage process considered during immiscible gas injection in carbonate core saturated with recombined oil at reservoir temperature and pressure. Recombined oil prepared from dead oil and methane and propane by recombination apparatus. In these experiments nitrogen gas is injected in a single matrix block at different rates and directions. Since the recovery of oil depends on the gas injection flow rate, in a specific flow rate the recovery is maximum. These experiments show that gas injection at gravity drainage rate gives maximum recovery, however at much higher injection rates, ultimate recovery will decreases. Comparing of gas injection results at horizontal and vertical directions, it is concluded that the recovery in vertical direction is higher than horizontal direction, due to film flow in vertical direction and also delay in .breakthrough due to better piston like displacement of oil by gas in vertical direction

کلمات کلیدی:

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