

Simulation of gas condensate reservoir and investigation of CO₂ injection process

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Abstract

Gas condensates are composed of heavier components than dry gases and this has led to differences in reservoirs containing such gases. The heavy components will be dropped out in liquid form when pressure of system falls below the upper dew point pressure.

The liquid condensed is valuable and main problem arises when these liquids are condensed in reservoir and cannot be produced and because of that the relative permeability of gas will decrease. Therefore, studying factors that affect condensation of these liquids is crucial. Mechanisms of liquid build up in a gas condensate reservoir during production is studied and most important challenge related to production from such reservoirs is proved theoretically.

In this paper, we introduce type of gas condensate reservoir, flow behavior of gas condensate reservoir, parameters affecting flow in gas condensate reservoir, and finally by considering simple synthetic model, investigate the effect of CO₂ injection into gas condensate reservoir.

Key words: gas condensate reservoir, flow behavior of reservoir, injection scenario

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