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Numerical Simulation of CO2 Huff-n-Puff to Enhance Oil Recovery from Tight Oil Reservoirs. A Case Study.

Tuesday, 1 June 2021 20:00 (1 hour)

The integration of horizontal well drilling and hydraulic fracturing has improved oil production from tight oil reservoirs. The oil recovery potential using primary recovery is cumbersome due to its robust tight formation; thus, the remaining oil in place in the tight oil reservoir required an effective method to improve the oil recovery from the tight oil reservoir. The implementation of CO2-EOR has substantiated its ability to boost oil recovery from tight oil reservoirs. In this study, a numerical simulation of CO2 injection huff &Puff was conducted—three series of CO2 injection, CO2 shut-in, and production. Huff&Puff is effective to compare to CO2 flood, as CO2 flooding required a long time for pressure dissipation from the injection and production well. Reservoir heterogeneity, permeability, fracture half-length, number of cycles, and the effectiveness of CO2 on the efficiency of huff& Puff were investigated. The result indicates that CO2 propagation in the tight oil reservoir glays a substantial role in enhancing oil recovery from the tight oil reservoirs, emphasizing that CO2 in heterogeneity, low-permeability, and extend fracture half-length is more preferable as it was aforementioned. This paper elucidates the performance of CO2 Huff&Puff in the tight oil reservoir of the Bakken formation, North America.

Time Block Preference

Time Block C (18:00-21:00 CET)

References

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