

Hydrogen Peroxide: A Future for Well Stimulation and Heavy Oil Recovery

Authors : Meet Bhatia

Abstract : Well stimulation and heavy oil recovery continue to be a hot topic in our industry, particularly with formation damage and viscous oil respectively. Cyclic steam injection has been recognised for most of the operations related to heavy oil recovery. However, the cost of implementation is high and operation is time-consuming, moreover most of the viscous oil reservoirs such as oil sands, Bitumen deposits and oil shales require additional treatment of well stimulation. The use of hydrogen peroxide can efficiently replace the cyclic steam injection process as it can be used for both well stimulation and heavy oil recovery simultaneously. The decomposition of Hydrogen peroxide produces oxygen, superheated steam and heat. The increase in temperature causes clays to shrink, destroy carbonates and remove emulsion thus it can efficiently remove the near wellbore damage. The paper includes mechanisms, parameters to be considered and the challenges during the treatment for the effective hydrogen peroxide injection for both conventional and heavy oil reservoirs.

Keywords : hydrogen peroxide, well stimulation, heavy oil recovery, steam injection

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