

2nd International Conference and Exhibition on

POLYMER CHEMISTRY

November 15-17, 2017 | San Antonio, USA

Recommendations for optimizing the efficiency of polymer flooding techniques in production operation of an oilfield

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Thermal and chemical flooding are good alternatives to recover heavy oil. Polymer flooding procedure is one of the most important enhanced oil recovery (EOR) methodologies which improves the mobility ratio of water and oil. Adding polymer in water flooding method which involves the addition of soluble polymers in water before being injected into the reservoir, increases water viscosity even by adding a small amount of these materials. It reduces the swept zone permeability and allows an increase in the vertical and areal sweep efficiency of the water injection. In this study, polymers containing compounds of long chain such as polyacrylamide, polysaccharides, etc. leads to increase the oil movement ratio to water movement ratio. Another effect of this injection in to the reservoir is block the routes which have higher permeability by passing the time. As a result, the water passes through these pathways are being blocked. Consequently new directions caused to increase recovery factor in the reservoir. Therefore, by increasing shear stress regarding the oil movement, the mobility will be increased.

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