

IRP10

Low Salinity Water Injection with Sidr Surfactant to Recover Crude Oil from Sandstone/Carbonate Reservoir (EOR)

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SUMMARY

Crude oil today is considered as the main source of energy used to provide heating, lighting and transportation for the entire world. The use of renewable energy sources was initially used to compensate for the increasing demand for crude oil as a source of energy. However, due to the lack of efficiency and increased capital and operational costs, crude oil remains to be the only source of energy that serves to provide for the increased demand for energy.

Crude oil today is considered as the main source of energy used to provide heating, lighting and transportation for the entire world. The use of renewable energy sources was initially used to compensate for the increasing demand for crude oil as a source of energy. However, due to the lack of efficiency and increased capital and operational costs, crude oil remains to be the only source of energy that serves to provide for the increased demand for energy. Therefore, methods to improve oil recovery are needed to increase the oil supply in oilfields. Oil recovery using natural energy drives will result in 40-45% recovery of the total oil in place. The remaining oil is trapped due to surface and interfacial forces. Enhanced oil recovery methods such as water injection operate on reducing capillary forces that would facilitate the flow of oil from the reservoir to the well bore. The purpose of this report is to provide a comprehensive literature review on the use of low salinity water injection with natural additives in sandstone reservoirs. The literature review will provide an understanding on rock and fluid properties used to evaluate sandstone reservoirs. Moreover, an overview of how enhanced oil recovery methods and how it is used to increase the percentage recovered in the oilfield. In addition, a review of water injection as an EOR and the use of plant based additives to increase the efficiency of the recovery process will be presented.

The purpose of this research is to meet the fall in oil prices increases the demand for cheap and effective enhanced oil recovery methods. Combining the enhancing effects of low salinity water and Sidr Surfactant to recover more oil efficiently and economically.