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A Break-Through Technology for Maximizing Water Injectivity and Asset Integrity

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ABSTRACT

The importance of maintaining oil production has never been more critical than it is today. For many fields utilizing water injection to maintain reservoir pressure, the injection rate can decline over time due to the blocking of pore throats in the near well bore region. Remediation can be expensive, incur lost production and expose operations personnel to hazardous chemicals. Additionally, the material which blocks the pore throats, also deposits within the injection infrastructure resulting in significant asset integrity challenges. This paper describes a new technology that has been developed that can significantly increase water injectivity, potentially prevent well interventions, maximize production and preserve the integrity of the injection infrastructure.

Through extensive research, a new, patented multifunctional product has been developed that, when injected into the water injection system, cleans away deposits, prevents new deposits from forming and provides corrosion inhibition to the injection infrastructure. This paper discusses the fundamental research that was performed to develop this new technology, and the results of several field applications.

Key words: water injection, corrosion inhibitor, cleaner, surface-activity, inhibition performance, ‘schmoo’, detergency, surfactant, interfacial tension, production maximization, MIC