

## Asphaltene Inhibition

### Sub-Sea Tieback

#### BACKGROUND

An independent producer has a sub-sea well located in 1200' of water in the Gulf of Mexico and 7 miles from the host platform. This well flows through a 4" flowline, which also had an additional 4" "loop" line for running a pig. The oil had an asphaltene content of 17%, a paraffin content of 6%, a cloud point of 109 F and a pour point of 30 F, with an API gravity of 17.4 (corrected to 60 F). It produced 300 BOPD, 30 BWPD, and 1.2 MMCF gas. The well had a bottom hole temperature of 275 F and the BHP was 3500 psi.

#### ISSUES

High Asphaltene and Paraffin content of a crude has been presenting flow assurance issues in a sub-sea tieback flowline.

#### ANALYSIS

A complete oil analysis revealed that the asphaltene content would cause more flow restrictions than the paraffin. Testing revealed that MC SS-5900 would inhibit the asphaltene precipitation, as well as provide some solvency benefit for paraffin.

#### RESOLUTION

Our SS-5900 was introduced via the capillary at a rate of 350 ppm. Surface samples of the oil revealed that the asphaltene was remaining in solution and not presenting any flow assurance issues. Subsequent pigging operations of the flow line revealed no appreciable amount of either paraffin or asphaltenes in the line. This well has remained online at its oil production rate of 300 bopd for four years now.

#### DELIVERED VALUE

This well was purchased from another producer that deemed it unprofitable due to its oil composition. Multi-Chem® was able to bring it on and keep it flowing for the past four years, resulting in gross profits of app. \$20,000,000. The treating cost on this well is \$125,000/yr. Over four years, they have spent \$500,000 on chemical and had a net return of \$19,500,000.

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