

## MC S-2033 Maintains Low PSI and Reduces Oil Carrier Solvent

### \$1.46 Million in Annual Savings Achieved

#### BACKGROUND

A local refinery produces low gravity asphaltic crude from their wells to make asphalt for outside contractors. The 6-8 API gravity formation oil requires a light oil carrier (KD) be distributed down the backside of the wells to negate rod floating at the wells (lost production) and alleviate flowline pressures to the refinery. Without the aid of KD, effective/efficient production was compromised.

#### ISSUES

The light oil carrier (KD) is purchased from an outside source and had become very costly and at times hard to come by. In addition, when a malfunction occurred within the KD distribution system, either production from the wells was curtailed, or the excess flowline pressures restricted flow to the refinery. Normal flowline pressures approximated 250 psi and when elevated, could go as high as 400 psi.

#### ANALYSIS

Viscosity determinations were run on a sample of the heavy oil and KD. Various ratios of the oils were blended to determine baseline viscosities. Once the representative field ratios were observed, the KD was decreased and different blends of surfactants and demulsifiers were evaluated. The key was to expedite a water external phase within the combined fluids and still meet the required viscosity specs. It should be noted that a >20% water cut is required from the produced fluids to effectively accomplish the desired results.

#### RESOLUTION

It was determined after lengthy screening that MC S-2033, water soluble and oil dispersible surfactant achieved the parameters required. MC S-2033 was injected continuously in the KD distribution system at 500 ppm. Within 48 hours, Multi-Chem noticed a water wetting effect on the polish rod(s). In addition, flowline pressures had decreased to 180 psi. Multi-Chem then stepped-down KD rates until the optimum feed as noted in the viscosity analytical evaluations was achieved. Virtually no pressure increases were observed throughout the optimization process.

#### DELIVERED VALUE

By incorporating MC S-2033 on a continuous basis at 500 ppm within the customers KD system, Multi-Chem was able to effectively reduce the KD consumption rate by 30% while maintaining 180 psi on their flowline. This was a tremendous savings as they were able to reduce KD by over 80 BPD, or \$4,000 per day and \$1.46MM/year.

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#### Global Technology Center

World Houston International Business Center  
15865 International Plaza Drive, Suite 200  
Houston, Texas 77032 USA

(800) 805 9178  
(325) 223 6200  
(325) 942 7500 FAX

[www.multichem.com](http://www.multichem.com)