

Paraffin Remediation

Custom solvent products and flow assurance engineering provide total approach to plugged GoM pipeline



A GoM operator witnessed increased differential pipeline pressures on multiple production flowlines in a single field. Field history and maintenance projects indicated paraffin and asphaltene deposition. Routine measures to solve this particular flow assurance problem compromised conventional production chemical applications. While such chemical injection and batch solvent treatments provided resolution by retarding deposition, minimal mitigation resulted and no increase of production was achieved.

RESULTS

6 inch Flowline (a): 10,560' @ 340 bbl capacity

- Recovered 105 bbls of solids through the filtration system
- 50 bbls dissolved into solution with the liquid phase.
- 70+% of the line solids removed
- Increased capacity in production.
- Topside ICP flush resulted in substantial paraffin remediation

6 inch Flowline (b): 40,000' @ 1289 bbl capacity

- Displaced crude with confidence of transmission company to account for allocation of all metered oil.
- Deployed heated solvent pump and surge method.
- Remediated and quickly recovered massive obstruction of paraffin.

TECHNICAL ACHIEVEMENTS & BENEFITS

- Increased production on flowline (a) by reducing friction pressure caused by reduced ID. Alleviated the need for additional production pump installation and reduced associated maintenance costs on pipeline production pumps. Prevented total flowline blockage by removing paraffin plug.
- Multiple Management of Changes in Project Work Plan due to field observations. MOC's yielded successful results.
- Alleviated the need for expensive coil tubing intervention. Jobs completed with zero incidents and no environmental impact.

LOCATION

Gulf of Mexico

CHALLENGE

Analyze the problem and develop a remediation plan in order to alleviate the accumulation of deposits.

Furthermore, develop a maintenance strategy to keep production levels at peak performance.

SOLUTION

BlueFin conducted in-depth analysis on the oil product and deposition material, modeled flowline deposition severity and developed a comprehensive approach to regain flow assurance. The project hinged upon a specific combination of the Inferno heated solvent and Polar Solve cold solvent treatments.

Solvent placement utilized pumping mechanics, thermal mechanics and flow back procedures.