

PI-7595 Inhibitor Removes Asphaltene Deposits from Subsea Fields in the North Sea

Biodegradable asphaltene inhibitor meets rigorous performance, compatibility, and environmental standards

CHALLENGE

Control asphaltenes in two North Sea fields identified as at high risk of asphaltene deposition.

SOLUTION

- Conduct a thorough assessment of asphaltene inhibitors for prevention of asphaltene-related problems.
- Select and deploy PI-7595* asphaltene inhibitor for its effectiveness, compatibility, and environmental rating.

RESULTS

Mitigated risk of asphaltene blockages in subsea tiebacks.



Reduce risk of asphaltene deposits

Two fields located in approximately 90-m water depth in the UK sector of the North Sea were developed using subsea tiebacks connected to an existing platform, with independent flowlines for produced fluids from each well. One of the treated fields typically produced 4 MMcf/d of gas with 3,000-bbl/d dry oil; the other field typically produced 30-MMcf/d gas with 1,700-bbl/d condensate and 350-bbl/d water. Because these fields' production commingled with oil, gas, and condensate from other fields in the separators located on the hub platform, they were identified as being at risk of asphaltene deposition.

The operator required an effective, environmentally acceptable asphaltene inhibitor. In addition to high-quality performance, compatibility with materials of construction in the umbilical used to inject the product was considered critical. The operator needed to assess multiple solutions for suitability in the pipeline system exporting the crude.

Prevent buildup with effective, biodegradable asphaltene inhibitor

Schlumberger recommended PI-7595 asphaltene inhibitor for this application. Based on performance testing, the operator shortlisted the inhibitor as one of the two most effective products. In third-party testing, PI-7595 inhibitor exhibited superior compatibility with the umbilical materials of construction. In addition, PI-7595 inhibitor achieved a gold rating—the highest environmental category of all evaluated products. Based on these factors, the operator selected PI-7595 inhibitor for application in these fields.

Mitigated risk of asphaltene deposition in subsea equipment

PI-7595 asphaltene inhibitor was injected continuously into the subsea riser on one field and downhole on the other. Since field startup, the product has successfully prevented any significant asphaltene deposition in the commingled topside fluids as demonstrated by no asphaltene blockages of pumps or filters and no significant turbidity observed in a formulation stability test.