

New Well Requires Expertise to Solve Flow Assurance Challenge

A Gulf of Mexico operator planned a well re-completion of a new reservoir and planned to use an existing flowline. Historical data determined significant paraffin deposition across the flowline. Due to well reservoir modeling analysis, the preexisting flowline warranted an aggressive but confident cleaning program to ensure that the volume capacity was realized.

BlueFin conducted preliminary surveys and analysis of records, and upon thorough discussions with the client's operations team, it was determined that in order to reach the desired outcome, a multiphase approach would be in the best interest for the operator's schedule.

PHASE 1: FACT FINDING MISSION

The execution strategy was to evaluate the extent of the restriction in the flowline by establishing baseline differential pressures at various flowrates. This baseline would assist with the planning and execution of Phase 2. BlueFin provided the personnel, equipment, management, and technical advisory support during the evaluation to determine ideal pressure monitoring locations, effective flowline inner diameters (IDs) and general monitoring of the field's pressure trends during the process.

To minimize the spread size and any impact on operations, it was decided not to mobilize a full solids handling spread on the receiving side. Therefore, if solids would be received, the operation would cease making it critical to monitor the flow and adapt decisions based on discharge.

In addition, it was planned that BlueFin's gel surveillance technology would be used to establish a true line volume. However, once the flowline was bled down, solids were immediately pushed out of the flowline and into the process system. The evaluation stopped and Phase 2 remediation was implemented.

PHASE 2: REMEDIATION EFFORT A - LIQUIGEL® TECHNOLOGY

The execution strategy was to remediate the flowline with a combination of seawater flushing, gel surveillance, chemical flushing, and a pig train run. The objective of this phase was to completely remediate the line and be able to send a pig the size of the true ID across the entire flowline. Furthermore, the objective was to avoid the need for mechanical intervention.

Following the seawater flushing, a gel surveillance run was initiated, which included two seawater slugs separated by a LiquiGel® pig.

LOCATION

Gulf of Mexico

SPECIFICATIONS

Operator Type: Upstream
Facility: Subsea Flowline
Hydrocarbon Type: Liquids
Length: 9 miles
Geography: Offshore

SCOPE OF WORK

Determined significant paraffin deposition across the preexisting flowline. This warranted an aggressive but confident cleaning program to ensure that the volume capacity was realized.

CHALLENGE

- Historical Data
- Topsides Work Space
- Fast Turnaround
- Limited Schedule
- Plugged Flowline
- Disposal Waste Handling