

Case study: Norway

Efficient e-line deployed solution delivers flawless pipe recovery for North Sea operator

Equinor required pipe recovery services in a 90° inclination well due to a cemented bottom hole assembly (BHA) that included a 5.875 in., 5 in. and 3.5 in. drill pipe (DP). The requirement was to detect the deepest point that the pipe could be cut for efficient retrieval to surface to allow a side-track to commence.

Solution

Prior to selecting the technologies required, tension simulation modelling was performed and confirmed gravity alone would not enable the tools to reach the required interval. Tractor deployment was proposed and the Baker Hughes 2.125 in. **PowerTrac** tractor was selected.

A traditional "Free-Point Indicator" (FPI) tool deployed on tractor may not have yielded the data quality and certainty required to determine an accurate cut depth so **Certia™ pipe recovery log** from Baker Hughes was recommended to carry out a continuous logging pass over the zone of interest. The Baker Hughes **Downhole Electric Cutting Tool (DECT)** was also mobilized in the event of a pipe cut requirement in the 5 in. drill pipe.

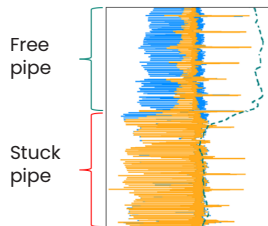
After an initial pre-job meeting with both offshore and onshore teams, a rapid system integration test (SIT) was performed with PowerTrac, Certia and DECT. After successful checks were made, all equipment and crew were mobilized the same day.

Results

Once rigged up, PowerTrac deployed Certia to 2,856 m MD (measured depth) and acquired high quality data across the 3.5 in. and 5 in. drill pipe showing the free pipe was in the 3.5 in. DP, 8 x joints from the top at ~2,640 m MD. The Certia data acquisition was monitored remotely in real-time by the subject matter expert (SME) onshore. Prior to PowerTrac / Certia being rigged down, the log was provided to the customer confirming pipe status.

With most of the 3.5 in. stuck, the customer decided to set a plug and make an electro-mechanical cut using the DECT at a shallower depth in the deepest joint of 5 in. DP. When at cut depth, the DECT took ~5 mins to cut the 5 in. drill pipe. The Operator was appreciative of the clarity and reliability provided by Certia, which enabled a flawless 1st time clean mechanical cut and allowed an efficient side track to commence.

Extract from the Certia log across the 3.5 in. DP



5 in. DP cut



Challenges

- Min restriction 2.44 in. (3.5 in. DP connection)
- Stuck BHA made of 3 sizes of drill pipe (5.875 in., 5 in. & 3.5 in.) in 90° inclination well

Results

- Free-pipe depth identified by Certia in the 3.5 in. DP
- Successful mechanical cut made in 5 in. DP using 2.75 in. DECT electro-mechanical cutter
- All equipment and crew mobilized in <24 hours from customer's call
- PowerTrac / Certia / DECT together delivered a flawless pipe recovery solution
- Single supplier for maximum efficiency pre, during and post operation

"We are very pleased with the result from this job - incredibly easy to identify the optimal area for cutting pipe from the Certia data."

Jan Helge Haugen, OC Leader for Heidrun TLP / Grane / Njord, Equinor