Magnus® Rotary Steerable System Drills Nearly 2 Days Faster Than Customer's Best-Case Scenario

Objectives

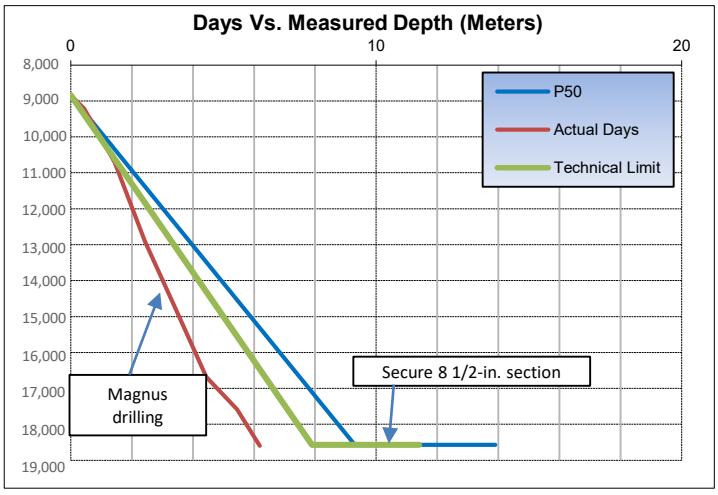
- Maintain the vertical trajectory of an 8 1/2-in. well section without nonproductive time (NPT) caused by tool failures or service quality issues.
- Reduce drilling time from 9.3 days based on the P50 estimate, which represents a median performance outcome.

Our Approach

- During the planning phase, the Weatherford directional drilling team completed a detailed scope of work, offset wells analysis, hydraulic analysis, and risk assessment.
- As part of a mature-field optimization strategy in the North Sea, the team deployed a solution with 6 3/4-in. technologies—including the Magnus rotary steerable system (RSS) and logging-while-drilling (LWD) tools.
- The Magnus RSS intersected all planned targets within the trajectory in 83 drilling hours, and information from the LWD tools enabled the customer to collate its required formation data for the reservoir.
- Despite formation challenges, the RSS finished the section 3 days ahead of the P50 estimate.

Value to Customer

- The Weatherford Magnus RSS, in combination with LWD tools, accurately maintained the trajectory throughout the entire 8 1/2-in. well section without NPT.
- The Magnus RSS drilled 41 hours faster than the customer's technical limit for drilling the 8 1/2-in. reservoir section after sidetracking operations. This achievement enabled the customer to finish the section 3 days ahead of the P50 estimate for a savings of GBP 357,000.



The graph on the left compares estimated and actual drilling performance. The Magnus RSS (red line) finished drilling 41 hours faster than the customer's technical limit for an 8 1/2-in. well section (green line). It drilled 3 days faster than the P50 estimate for mid-range performance (blue line).

LOCATION
North Sea, United Kingdom Continental Shelf (UKCS)

WELL TYPE
Offshore, sidetrack, S-shape

HOLE SIZE AND ANGLE
8-1/2 in., 75.06° maximum inclination

TEMPERATURE
223°F (106°C)

MAGNUS RSS RUN
- Circulation hours: 152 hours
- Operating hours: 193 hours
- Drilling hours: 83 hours
- Footage drilled: 9,766 ft (2,977 m) MD
- Average ROP: 118 ft/hr (36 m/hr)

PRODUCTS/SERVICES
- Magnus RSS
- HEL™ hostile-environment-logging measurement-while-drilling system
- BAP™ bore and annular pressure sensor
- HAGR™ high-temperature azimuthal gamma ray tool
- TVM true vibration monitor
- MFR™ multi-frequency resistivity sensor

