Magnus® Rotary Steerable System

Drills 8 Wells 70% Faster Than Planned

Objectives

- Achieve efficient drilling performance in the 8 1/2-in. sections of eight wells as part of batch-drilling campaign, and avoid nonproductive time (NPT) related to tool failures or service quality issues.
- Build inclination from vertical up to horizontal across 5,741 ft (1,750 m) in an area with a separation factor of 1, which indicates a high risk of collision.
- Create exceptional hole conditions by tripping out of the hole without circulation.

Our Approach

- The Weatherford team recommended an integrated solution, including the Magnus rotary steerable system (RSS) and various logging-while-drilling (LWD) technologies, for efficient drilling of a high-quality borehole.
- The team engaged with the customer from the planning stages of the project to develop a comprehensive Front-End Engineering Design report with the following items:
  - Scope of work based on the customer's detailed data, including the well trajectory, survey program, anti-collision constraints, steerable system selection, sensor requirements, azimuth uncertainty check, tubulars size, and tubular quantities.
  - Offset wells analysis by examining survey quality control (QC), drilling hazards, best practices, and previous bottomhole assembly (BHA) configurations.
  - Detailed hydraulic analysis to optimize RSS directional performance while maintaining parameters within the tool specifications.
  - Risk assessment of the drilling program with consideration of the drilling hazards in offset wells.
- The team deployed the RSS, which drilled the 8 1/2-in. sections of all wells at an average ROP of 121 ft/hr (37 m/hr).
- Out of a total of 75 offset wells in the field, the Magnus RSS delivered the top eight wells for ROP.

Value to Customer

- The Magnus RSS enabled the customer to finish the drilling campaign 70% faster than planned and avoid service quality incidents as well as NPT.
- The RSS accurately followed the trajectory throughout the 8 1/2-in. sections by building inclination from 0 to 85°.
- Excellent hole conditions resulted from tripping the tools out of the hole without circulation, which enabled the customer to run the production casing with no issues.

The Weatherford team deployed a drilling solution featuring the RSS to finish drilling faster than expected.

CUSTOMER
OMV

LOCATION
Austria

WELL TYPE
Onshore, horizontal, oil

FORMATION
Sand, shale, limestone (conglomerate beds)

HOLE SIZE AND ANGLE
8-1/2 in., 0 to 85°

BATCH DRILLING PERFORMANCE
- Number of wells: 8
- Depth: 1,476 to 7,218 ft (450 to 2,200 m)
- Circulation hours: 527 hours
- Operating hours: 684 hours
- Drilling hours: 318 hours
- Distance drilled: 38,901 ft (11,857 m)
- Average ROP: 121 ft/hr (37 m/hr)
- NPT: Zero

PRODUCTS/SERVICES
- 6 3/4-in. Magnus RSS
- HEL™ hostile-environment-logging measurement-while-drilling system
- BAP™ bore and annular pressure sensor
- HAGR™ high-temperature azimuthal gamma ray tool
- Near-bit gamma ray
- TVM true-vibration monitor

Weatherford®

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