Operator Saves 32 Days When Drilling High-Pressure Wells Using Petrel and Techlog Platforms

Multidisciplinary team employs real-time monitoring and collaborative modeling solution to reduce NPT when drilling in Gulf of Mexico

**CHALLENGE**
Reduce NPT caused by wellbore instability issues, stuck pipe incidents, and lost circulation in a high-pressure zone.

**SOLUTION**
- Improve well planning and drilling operations using the well design module of the Petrel* E&P software platform and the geomechanics functionality of the Techlog* wellbore software platform.
- Provide real-time monitoring and collaborative well planning and operations methodology to empower the operator to make more informed drilling decisions.

**RESULTS**
- Reduced well planning and operations cycle through improved collaboration.
- Decreased total drilling time and NPT by 32 days or 59% while drilling through the high-pressure zone.
- Avoided well control incidents using an optimized mechanical earth model (MEM) for more accurate mud weight selection.

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**Decrease NPT while drilling high-pressure zone**
When drilling through a high-pressure zone in the shallow waters of the Gulf of Mexico, several challenges were encountered that increased NPT and operating costs. Technical field studies determined that ineffective hole cleaning practices and incorrect mud density selection were contributing factors to the drilling difficulties, including stuck pipe, high torque, and lost circulation.

**Perform advanced modeling for informed drilling decisions**
To prevent and mitigate drilling incidents, a multidisciplinary team of Schlumberger experts recommended the operator use the Petrel and Techlog platforms and the PERFORM Toolkit* data optimization and analysis software to combine subsurface models with surface and downhole data. The approach enabled the geophysicists, geologists, petrophysicists, and other team members to quickly make informed drilling recommendations based on real-time information.

**Achieved maximum drilling efficiency**
Using the advanced modeling technology, major improvements were made to the field’s MEM, ensuring proper mud weight management and avoiding well control incidents in abnormally pressured zones. With this information, the operator was also able to avoid potential NPT events related to existing geological features, such as faulted zones and challenging geomechanics. As a result, total drilling time decreased by 32 days or 59% and no NPT incidents occurred.

Collaborative modeling and real-time monitoring effectively reduced drilling time by 32 days or 59% while drilling through the high-pressure zone.

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