Remote Monitoring Enables Critical Drilling Surveillance on Platform with Limited Space

Mud logging and surveillance were crucial for enhancing safety in North Sea field

CHALLENGE
Provide remote drilling surveillance on wells drilled from a platform in the UK North Sea that had acute space restrictions affecting the number of people allowed on board.

SOLUTION
Monitor drilling parameters in real time using a shore-based mud logging system supplied by Geoservices, a Schlumberger company.

RESULTS
Enhanced drilling safety through continuous remote monitoring of comprehensive mud logging and drilling parameters.

Mud logging was critical to enabling timely operational decisions
An international energy company was engaged in drilling operations on a platform in the UK North Sea. Continuous real-time mud logging and drilling surveillance were crucial to enabling timely and informed operational decisions to maximize the safety of the well construction process. However, conventional manned surveillance in a standard mud logging unit was not possible at the wellsite because the platform had limited capacity for personnel on board (POB).

Limited platform space necessitated remote access by mud logging engineers
The GN4 data acquisition system, which is capable of operating remotely, was used at the wellsite to collate data from multiple surface sensors. Through the existing Schlumberger secure data transmission service and the operator’s wide area network (WAN), a real-time link was established between the wellsite and experienced Geoservices engineers on shore. No mud logging unit was required on the platform and neither were the two associated engineers, thereby reducing POB.

Using specially developed process workflows, the link enabled two-way communication of drilling parameters, geological data, and comments and recommendations in real time. To test the system, fluid gains were simulated several times without prior warning. The system captured all events remotely without exception, increasing the operator’s confidence in the reliability of this operation.

Geoservices engineers on land remotely monitored mud logging and drilling data acquired on an offshore platform that had very limited room for personnel.
CASE STUDY: Mud logging and surveillance were crucial for enhancing safety in North Sea field

The specially developed remote mud logging workflow enabled two-way communication of data and recommendations for timely and informed decision making.

Real-time data network enabled comprehensive monitoring of rig sensors

Geoservices engineers continuously monitored critical parameters such as mud pit volumes, mud flow rate and weight, return flow rate, and return mud weight remotely in real time. Drilling events were analyzed and recommendations communicated to the operator’s drilling personnel offshore, so that they could respond to drilling events in a timely manner, avoid safety incidents, and make informed drilling decisions.

Data was simultaneously transmitted to the operator’s office via the InterACT® global connectivity, collaboration, and information service. Modular real-time data displays incorporated intuitive and interactive time-depth log viewers, numerical displays, and event updates.

Over a 19-week period, the operator successfully avoided any compromise to well safety, while simultaneously addressing the challenge of acute restrictions on space and the number of personnel allowed on the platform.