

CASE STUDY

QUEST GWD PROVIDES REAL-TIME SURVEY DATA VIA WIRED DRILLPIPE, ALLOWING OPERATOR TO SURVEY CHALLENGING TOPHOLE SECTIONS AHEAD OF AFE

▶ TECHNOLOGY

- Quest™ gyro-while-drilling (GWD) system
- SPEAR™ solid-state sensors

▶ APPLICATION

- Wellbore placement
- Collision risk mitigation
- Remote operations

▶ LOCATION

- Norwegian North Sea

INDUSTRY CHALLENGE + OBJECTIVE

An operator in the Norwegian North Sea was batch-drilling three tophole wells from a semisubmersible rig. In addition to the already-challenging surveying conditions associated with tophole sections, the project was carried out in frigid winter weather conditions. The operator needed to ensure that the sections were drilled as efficiently as possible, incorporating wired drillpipe for instantaneous data transmission and implementing our solid-state Quest GWD system to reduce the rig time necessary to survey the wells.

TECHNOLOGY + SERVICE SOLUTION

- We suggested implementing our Quest GWD system, powered by SPEAR solid-state sensors.
- The solid-state SPEAR sensors measure the earth's rotational rate precisely and accurately.
- The sensors are able to handle harsher downhole environments when compared to conventional GWD systems.
- The shorter SPEAR sensor package, loaded into a compact collar, allows greater steerability and sensor placement closer to the bit without the need for non-mag.
- The Quest GWD system's low power consumption enables remote operations and multi-well deployment on a batch.
- The Quest GWD system is compatible with wired drillpipe for real-time survey transmission to surface.

RESULTS + VALUE DELIVERED

- The Quest GWD system was incorporated into the third-party service company's directional BHA, which was successfully run with wired drillpipe for real-time data transmission to surface. With the use of wired drillpipe, survey quality control (QC) was rapidly interpreted by survey specialists in the remote monitoring center, allowing drilling to proceed more quickly.
- The system was programmed in intelligent mode tool (IMT), with a survey delay to allow weight on bit when necessary.
- Quest GWD short collar was able to be pre made to other BHA compents saving online rig operations.
- The lower power consumption of Quest GWD enabled all three wells to be completed with one BHA, removing the need to change the tools between wells.
- The three wells were successfully drilled within AFE thanks to the increased survey speed and reliability of the Quest GWD system. Collective time savings across the three wells totaled roughly 3 hr 56 minutes, which based on a rig spread rate of \$575,000 yielded more than \$94,000 in savings.

