

## CASE STUDY

# SOLID-STATE QUEST GWD SYSTEM MITIGATES WELLBORE COLLISION RISK AND ALLOWS XTO CANADA TO ACHIEVE OPTIMIZED SEPARATION FACTOR

### ► TECHNOLOGY

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

### ► APPLICATION

- Wellbore placement
- Collision risk mitigation
- Lateral drilling

### ► LOCATION

- Cold Lake, Alberta Province, Canada

### INDUSTRY CHALLENGE + OBJECTIVE

XTO Canada was drilling a series of infill wells from a pad near Cold Lake, Canada in the province of Alberta. As these wells were within close proximity of those drilled from existing pads in the area, ensuring there was no wellbore collision was critical. XTO Canada also wanted to improve efficiency, reduce the risk of getting stuck, and drill the lateral sections with a narrower ellipse of uncertainty to improve wellbore placement and achieve an optimized separation factor.

## 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.
- EM telemetry was used for optimal survey times and drilling efficiency.

## RESULTS + VALUE DELIVERED

- XTO Canada deployed the Quest GWD system in the 8½-in. section in a compact collar, providing real-time collision management while drilling the lateral section at 300° azimuth.
- The shorter BHA length improved BHA handling, and survey times using the system were reduced by almost 47% (1 min 20 seconds versus 2 min 30 seconds) when compared to the conventional GWD system used on previous infill wells.
- The solid-state system also reduced the risk of getting stuck by shortening the time required for the BHA to be stationary while surveying.
- There were no issues backreaming while pulling out of the hole.
- The system experienced no NPT, no missed surveys, and no disruption to BHA functionality.
- The tighter ellipse of uncertainty revealed an improved wellbore placement and will enable optimized spacing between future wells.

