

CASE STUDY

SOLID-STATE QUEST GWD SYSTEM MITIGATES WELLBORE COLLISION RISK, IMPROVES WELL PLACEMENT FOR XTO CANADA

► 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 set of four wells from a pad near Cold Lake, Canada in the province of Alberta. Based on previous work projects, XTO Canada knew that wellbore collision would be a concern due to the tight lateral spacing of the wells in the horizontal sections, as well as the proximity of several other existing pads. XTO Canada needed to implement a surveying technology that would allow them to drill the wells precisely due-east at 90°, mitigate the risk of wellbore collision, improve well placement, and optimize reservoir access.

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 confirmed that they would have been unable to drill such close-proximity wells without our high-accuracy Quest GWD system.
- Due to improved drilling and surveying efficiencies associated with solid-state GWD, XTO Canada was able to continue drilling long lateral sections with a 6¾-in. agitator without switching to heavy-weight drill pipe.
- Two of the four wells were notable for record lateral lengths, and one was the deepest well drilled by XTO Canada in the Cold Lake area.
- Survey times using the Quest GWD system were reduced by almost 47% (1 min 20 seconds versus 2 min 30 seconds) when compared to the conventional GWD system used on earlier campaigns.

