XACT downhole acoustic telemetry service

Real-time downhole data eliminates guesswork, improves safety, efficiency and productivity

Wells are getting deeper, more complex, and in many cases, depleted. These conditions are increasing the complexity of drilling and completion operations, resulting in increased nonproductive time (NPT), invisible lost time, and worse still, catastrophic failure. The margin for error can be tight, so operators remain conservative, building in failsafe's and redundancies to their well plans, even skipping over areas with known reserves because the perceived risks are too great or the uncertainty too high due to lack of downhole data.

Know with certainty

Key to reducing this uncertainty is downhole knowledge. For decades, operators have had to rely on surface measurements and indicators to predict what is going on downhole. However surface measurements and models do not always accurately predict downhole conditions, and can often be misleading or incorrect. The answer to NPT reduction and driving efficiencies throughout well construction is real-time downhole telemetry (RTDT). If an operator knew exactly what was going on in the wellbore at all times it can virtually eliminate the guesswork.

Previously bypassed reservoirs may be developed, and operators can safely push he envelope of what can now be completed.

Traditionally, the only available systems for delivering real-time downhole data are mud pulse and electromagnetic telemetry. But these RTDT platforms are only available during on bottom drilling, and are limited by depth or wellbore flow conditions. In other well construction phases, like tripping, completion installation, liner running, and cementing, effective RTDTs are practically nonexistent.

Make objective decisions

Which is why the **XACT™ downhole acoustic telemetry service** from Baker Hughes proves so revolutionary. The XACT service delivers real-time downhole data throughout the well construction process, not just while drilling. By using applied acoustics, operators receive downhole data from previously unavailable environments regardless of fluid, flow, formation, and depth. The XACT service can transmit data through closed blowout preventers (BOP), across packers and valves, during frac and gravel pack installations, while tripping, cementing, running liners, and performing tubing conveyed perforations (TCP).

Applications

- Deepwater and complex wells
- Depleted reservoirs, tight margin wells and managed pressure operations
- Frac pack and gravel pack installation including TCP and displacement operations
- Screen running and displacement operations
- Liner running and cementing

Benefits

- Full pressure management throughout well construction
- Reduce NPT
- Reduce risk and improve safety
- Improve efficiency of operations
- Improve productivity of wells
- Eliminate guesswork and aid in troubleshooting during unplanned events

Improve overall productivity

The benefits of the XACT telemetry service extend across multiple well construction applications, including drilling, completion installation, liner running, cementing, fishing and milling.

In cementing operations, XACT's real-time data enhances safe casing liner rotation for improved well integrity and zonal isolation. The XACT service monitors downhole conditions, including torque and weight while installing liners and differential internal and external pressures to see actual downhole rise pressures to help avoid formation breakdown in tight margin wells and resulting in better cement coverage for well integrity and formation isolation.

During frac and gravel pack installation the XACT telemetry service delivers accurate information necessary to keep an optimum overbalance, maintain service tool position and give key insights into downhole weights, pressures and temperatures during the completion operation.

Downhole measurements during formation integrity and negative testing eliminates fluid rheology and friction uncertainty, improving decision making capability in narrow margin wells.

The telemetry service enables efficient measurements throughout drilling operations regardless of mudflow and depth. Continuous monitoring of top of mud allows hydrostatic barrier verification in situ, complying with all safety standards even while tripping in or out of the hole.

Well control is maintained with the XACT service, providing data while tripping and enabling downhole pressure transmission even below closed blowout preventers (BOP).

In fishing operations, the telemetry data can confirm fish engagement and monitor milling progress with downhole weight and torque.

Controlling and monitoring fluid losses during tubing conveyed perforation minimizes reservoir damage while keeping the well under control and providing an optimum perforation performance with an accurate underbalance. The service can also confirm gun firing and perforating valve position.

With expandable liner deployments, the XACT service monitors effective weight and torque transfer to ensure efficient liner deployment and expansion.

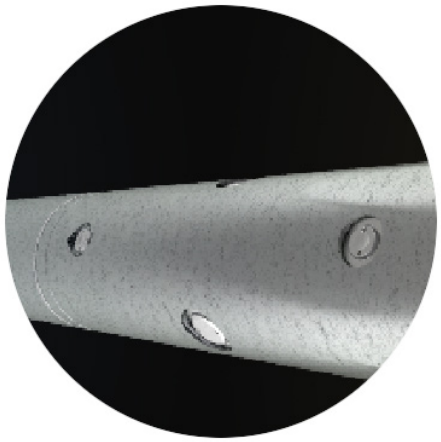
Reliable real-time downhole pressure and temperature readings delivers effective drill-stem test time and avoids redundant data.

Weight on the tool plus a tension/compression profile of the workstring during sand control execution enhances tool position certainty and tubing movement analysis.

The XACT acoustic telemetry service delivers accurate and reliable downhole and distributed data in real-time to improve and optimize the decision making processes throughout well construction from spud to completion. Access to real-time downhole data can increase safety, improve efficiency and drive productivity.

TOOL SPECIFICATIONS

1 million lb tension
30,000 psi (206 MPa) pressure
90,000 ft/lb (122 023 Nm) torque
23,000 psi (158 MPa) differential pressure
7.25-in. body and connection, 3-in. ID 945X alloy material
Detailed specs available on request



Full bore with no moving parts, the XACT tool replicates a drillpipe joint. Threads are matched by the 'tuners' crossover connections

Baker Hughes