

Case study: Gulf of Mexico, Mexico

Sonus acoustic-set liner hanger successfully deployed in Mexico utilizing XACT acoustic telemetry platform

Baker Hughes collaborated with a customer in Mexico to deploy the **Sonus™ acoustic-set liner hanger** – the industry's first, in an offshore exploration well. The customer was experiencing many challenging well environments and were operationally limited by pressures and sensitive formations, which required a robust system to ream/drill down to target depth.

The Sonus acoustic-set liner hanger system introduces a groundbreaking approach, leveraging advanced acoustically encoded digital signals transmitted from the surface down the drill string. By utilizing Baker Hughes' cutting-edge **XACT™ downhole acoustic telemetry platform**, Sonus allows operators to selectively set or release the liner hanger with unparalleled precision and control.

Several Baker Hughes teams performed all pre job planning in collaboration with the customer to install a 9-7/8-in. x 13-3/8-in. liner system. The 2,500-foot-long liner system was deployed to a measured bottom hole depth of 7,185 feet at an inclination of 34° (the liner top depth was at 4,670 ft).

The system configuration consisted of an acoustic surface tool, an Electronic Acoustic Receiver (E.A.R.), two **XACT acoustic telemetry tools**, a **ZXP™ liner top packer**, a **SONUS acoustic-set liner hanger**, and an **ARD-E acoustic release running tool**.

The liner was deployed successfully as planned until reaching a stand from bottom, where it required high flow rates to reach target depth. Once at depth the hanger was acoustically set, and the running tool was acoustically released as planned. The hanger actuation and running tool release only took 17 minutes total (significantly less than traditional hydraulic liner systems). Another benefit was that the sensitive formation was not exposed to any surge events during actuation.

The XACT measurements were insightful during this operation compared to traditional surface indicators. This technology enables Baker Hughes to make informed decisions based on actual down hole measurements that are traditionally not available during all types of liner installations regardless of equipment.

Challenges

- Reaching target depth
- Formation sensitivity

Results

- Liner was deployed and set at target depth
- Surge events were eliminated during the setting and release process of the liner installation utilizing acoustic actuation