



Weatherford®

REAL RESULTS

Hostile-Environment LWD System Allows Operator to Safely Drill and Log HTHP Well

Objectives

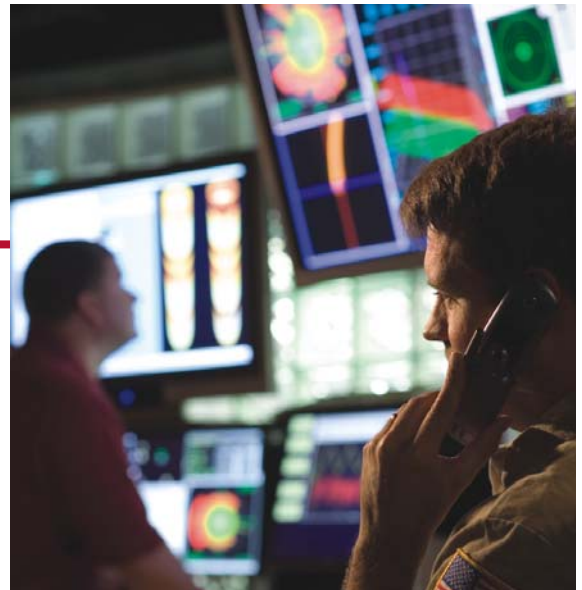
- Provide real-time directional, engineering and formation evaluation information to safely and efficiently complete the drilling of a high-temperature, high-pressure (HTHP) well in the Gulf of Mexico.

Results

- Weatherford's PrecisionLWD™ system performed 11 logging-while-drilling (LWD) bit runs without any failures. The average bit run time was 121 hours below the rotary table. The total distance drilled was more than 17,000 ft (5,182+ m), with temperatures ranging from 182° F (83° C) to 329° F. (165° C).
- During runs, BHA modeling successfully minimized vibration in the well's vertical 14 3/4-in. hole.
- MFR™ multi-frequency resistivity sensor data accurately predicted pore pressure and helped determine what type of wireline data to use at specific intervals.
- BAP™ bore and annular pressure sensor data measured equivalent circulating density (ECD) to aid in minimizing mud losses.
- The HAGR™ high-temperature azimuthal gamma-ray tool provided lithology data and was used in conjunction with seismic data for better correlation.
- IDS™ integrated directional sonde provided directional and toolface measurements.

Value to Client

- The reliable acquisition and surface transmission of formation evaluation and while-drilling data in an extreme environment were critical to this offshore project's successful execution.



The *PrecisionLWD* system is ideal for deep well and high-temperature, high-pressure drilling environments. The system transmits real-time directional data, gamma ray data, bore and annular pressure data, downhole shock/vibration data, and all petrophysical measurements. It is rated to an operating temperature of 356° F (180° C), a survival temperature of 392°F (200° C) and a survival pressure of 30,000 psi (207 MPa).

Location

Gulf of Mexico Shelf

Total Runs

11

Operating Hours

1,341

Circulating Hours

1,004

Maximum Temperature

329° F (165° C)

Maximum Pressure

19,990psi (138 MPa)

Products/Services

- LWD service
- *PrecisionLWD* system with *MFR*, *BAP*, *HAGR*, and *IDS* sensors