

Turning a Failed Section into a Completed Well

Managed Pressure Wells Approach Saves More Than \$1 Million USD In Dynamic Gain/Loss Environment

Objectives

- Drill the 12 1/4-in and 8 1/2-in sections through a shallow, highly dynamic gain/loss environment after a previous conventional approach failed to reach TD in the 12 1/4-in section and required plug and abandonment.
- Manage severe crossflow and pressure communication likely influenced by injector activity and fault connectivity within a narrow operating pressure window.
- Develop a field-specific managed pressure wells (MPW) philosophy to improve pressure management, section exit, isolation, casing-running strategy, and operational continuity in future wells.

Our Approach

- Applied learnings from the prior section failure to build a structured MPW strategy for the next well.
- Adjusted the operating philosophy from targeting a single stable balance point to maintaining equilibrium within a dynamically interacting pressure system influenced by faulted and previously injected intervals.
- Used the Modus™ managed pressure wells solution and surface backpressure as active control tools while interpreting real-time pressure response, mud dilution, polymer contamination, instability cycles, and crossflow behavior.
- Successfully managed a complex formation pressure interval while drilling the 12 1/4-in section between 2,475 ft (754 m) MD to TD at approximately 3,525 ft (1,074 m) MD. The highly dynamic gain/loss fluid conditions were caused by faulted formation intervals influenced by communication with other injector wells that induced evolving downhole pressure requirements.
- Reached TD in the 12 1/4-in section, drilled the 8 1/2-in section, completed the well, and incorporated learnings into a field-specific MPW strategy for future wells.

Value to Customer

- Enabled the operator to reach TD and complete the well after the previous 12 1/4-in section was plugged and abandoned, saving more than \$1 million USD in rig time and materials.
- Provided real-time pressure management in a shallow, highly dynamic gain/loss environment influenced by crossflow, injector communication, and fault connectivity.



The Modus managed pressure wells solution enhances operational performance with simple, precise pressure management while capturing data in a digital platform.

LOCATION

India

WELL TYPE

Horizontal, producer

FORMATION

Dharvi Dungar

HOLE SIZE AND ANGLE

12-1/4, 8-1/2 in, 70°

CASING SIZE

9-5/8, 5-1/2 in

TEMPERATURE

140 degF (60.2 degC)

MEASURED DEPTH

Section TD: 3,524 ft (1,074 m)

PRODUCTS/SERVICES

- Modus managed pressure wells solution
- SafeShield® Model 7100 RCD



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Value to Customer (continued)

- Maintained operational continuity by using MPD surface backpressure as an active control parameter within an estimated 10 psi (0.07 MPa) operating window.
- Established operational learnings and an engineering foundation for future optimization of instability management, section exit, isolation, casing-running strategy, and field-specific MPW planning.

