

PressurePro® Set Point Choke, MPD Technology Drilled 2 Hole Sections to TD in Longest Horizontal, Extended-Reach Well in Kazakhstan

Objectives

- Drill 8 1/2-in. and 6-in. hole sections to target depth, diverting the fluid returns flow path through a managed pressure drilling (MPD) system.
- Add flexibility to the drilling operations by adjusting bottomhole pressure (BHP) instantly by means of the MPD choke manifold.
- Reduce any potential nonproductive time (NPT) related to a kick/loss scenario, including detection, and manage BHP while maintaining pipe movement.
- Enhance drilling performance by drilling the well in near balanced conditions and avoid excessive overbalance.
- Reduce NPT associated with differential sticking challenges.
- Perform managed pressure cementing (MPC) operations in a tight operating drilling window, minimizing losses and influxes while cementing the 7 1/4-in. liner and improve wellbore integrity.

Our Approach

- Weatherford deployed an MPD system including RCD 7100, PressurePro set-point choke with Coriolis mass flowmeter. The Weatherford engineering team conducted on-site trainings to the rig crew.
- The PressurePro system rapidly reacted to pressure fluctuations, and the constant bottomhole pressure technique helped to keep constant bottom hole pressure during connections and tripping operations. The system's capability helped the customer circulate gas while drilling and reduce NPT to successfully reach the target depth (TD).

Value to Customer

- The MPD system proved a reliable tool not only for drilling, but also for MPC, compensation of a swab effect, tripping in the liner and lower completion, handling small volumes of influx, and circulating associated gas while drilling.
- MPC improved zonal isolation by cementing the 7 1/4-in. liner in the narrow operating window successfully without any losses and kicks.
- The PressurePro system enabled tripping out of the hole with the compensation of swab effect by applying surface backpressure and avoiding redundancy of weighting up the drilling mud density.
- With the application of MPD technology, the customer was able to reach 24,015 ft (7,320 m) in a horizontal section in the safest manner. The design of this specific extended-reach well was created to increase productivity and avoid high fractured areas without the requirement of closed-hole circulating drilling.



Managed pressure drilling solutions, including the PressurePro Set-Point Choke, allowed closed-loop drilling to the target depth without NPT.

LOCATION

West Kazakhstan

WELL TYPE

Onshore, horizontal, development

FORMATION

Salt, limestone, anhydrite

HOLE SECTIONS

8-1/2 and 6 in.

MEASURED DEPTH

24,015 ft (7,320 m)

PRODUCTS/SERVICES

- Constant bottomhole pressure (CBHP) application
- PressurePro set-point choke
- RCD Model 7100
- Coriolis mass flowmeter
- 4-in. HP/LP flowline

