WellSET® Wellbore Strengthening Treatment Helps Operator Set North American Record for Core Length and Recovery

KAKWA FIELD, ALBERTA, CANADA

CHALLENGE

» Cut and recover long core section in Montney shale formation
» Maintain upper hole stability
» Avoid stuck-pipe issues
» Prevent NPT

SOLUTION

Apply WellSET® wellbore strengthening treatment, in order to:

» Treat upper formations while drilling to target zone
» Increase hoop stress and pressure containment in near-wellbore region

RESULTS

» Increased wellbore integrity, enabling operator to cut and recover 222 meters (728 feet) of core
» Set new record in North America for core length and recovery
» Avoided need for a wiper trip and prevented NPT, thus saving USD 60,000 in rig time

OPERATOR PLANS 222-METER CORING RUN IN MPD WELL

On a managed pressure drilling (MPD) well in the Kakwa field, Seven Generations Energy Ltd. planned to core 222 meters (728 feet) in the Montney shale formation. The Montney formation is located below the Belly River, Falher, and Wilrich formations at a depth of approximately 3,000 meters (9,842 feet).

Maintaining wellbore stability and integrity in the upper hole sections would be essential to obtaining the core and preventing nonproductive time (NPT).

UPPER HOLE STABILITY ESSENTIAL TO FULL CORE RECOVERY

To stabilize the upper hole sections, the Baroid team proposed applying WellSET® wellbore strengthening treatments to increase the hoop stress in the near-wellbore region.

The WellSET treatment, applied while drilling the three potentially troublesome formations, would improve wellbore pressure containment ability by preventing further pressure and fluid transmission to the fracture tip, while at the same time widening and propping any fractures.

The wellbore strengthening treatments contained lost circulation material (LCM) with particle size distributions engineered to seal and stabilize each formation type. The LCM blend used in the treatment included STEELSEAL® resilient graphitic carbon, various grades of calcium carbonate bridging agent, and BARABLOK™ 400™ gilsonite filtration control agent.

LCM APPLICATION SUPPORTS RECORD-SETTING CORING OPERATION, WITH ZERO NPT

The WellSET LCM application increased the wellbore integrity and prevented NPT as Seven Generations Energy cut 222 meters (728 feet) of core. There was no need for a wiper trip (which normally took 18 hours), thus saving approximately USD 60,000 in rig time. Maintaining wellbore stability above the Montney shale helped eliminate the risk of stuck pipe that had been associated with previous coring operations.

Per the operator’s statement, the WellSET treatment led to a successful coring job that set a new record for North America onshore in terms of core length cut and recovered.