

Application of Coiled-Tubing Fracturing Method using Straddle Inflatable Packers
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Abstract

Application of coiled tubing fracturing openhole method has been implemented in the Kisbey, Saskatchewan, Canada area. This new method has allowed all potential pay intervals to be efficiently stimulated, as compared with traditional methods of stimulation. This new approach of stimulating the open hole, without having permanent packers and frac sleeves has resulted in better/reduced cost completions and more sustained production.

In an effort to effectively, efficiently, and affordably stimulate these wells TAM International partnered an operator to implement a new open-hole inflatable packer stimulation system. The Bakken Formation was a known reservoir, but the geology of the field makes it difficult to effectively stimulate all potential pay intervals.

Until October 2009 stimulation of the Bakken Formation used traditional methods of plug, perforate, treat, and repeat, or running mechanical/swellable packers with ball operated frac sleeves. Traditional methods of stimulating large well sections frequently result in two prominent issues:

- There is no way to ensure that all pay intervals are stimulated because of the variations of fracture gradients and issues of limited entry, and it is expensive to isolate each pay interval using existing methods.
- Packers and frac sleeves used for isolation during stimulation are permanent and limit options for future interventions.

The planning stage considered key factors associated selection of number and length of stimulation zones, and fracture design. The installation stage considers equipment and operational issues such as the effect of sand erosion on inflatable packers and the size of coiled tubing to be used. The completion stage involved techniques and procedures for fracing as many as 16 zones in a single trip.

The one-trip multi-stage fracturing completion process utilizing straddle inflatable packers reduces rig time and cost for hydraulic fracturing services, accelerates production and improves reservoir drainage.

Contact TAM for the complete paper.