

# Case Study: Channel Fracturing Provides Production Benefits while Reducing Risk and Using Less Resources

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## **Abstract**

*The Williston basin has grown and evolved in the last decade by reaching newer areas and horizons of the basin. The Three Forks is one of those formations which has been developed fairly recently in the Williston basin. Production from the Three Forks shale is mainly driven by effective fracture half-length and proppant-pack conductivity. Because of complex geomechanics, wells in the area are prone to screenouts and premature job termination. Unplanned flowback time due to screenout complications led to wasted time and costs.*

*To avoid screenouts, some operators have tried reducing job designs in the toe and getting more aggressive towards the heel, but that method sacrificed production from the early stages. The operator in this case study partnered with Schlumberger to apply the channel fracturing technique on a pilot well.*

*The channel fracturing technique comprised an engineered fracturing fluid to provide improved stability, proppant transport and placement using a zirconate-base crosslinked fluid to reduce gel damage to the proppant pack and enhance proppant placement.*

*27 stages were stimulated with the Channel fracturing technique. The results were compared to 17 offset wells with similar stage count, reservoir characteristics, and lateral lengths. During the first 240 days of production, the well treated with the channel fracturing technique produced 67,706 bbl of oil — 26% higher than wells treated with conventional treatments. These results were obtained with 53% less proppant and 15% less water than offset wells, thus avoiding transporting over 900,000 lb of proppant and 3,900 bbl of water.*

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