CASE STUDY

TRICAN

MVP Frac™ - Enhanced Oil Production

The 15 wells that used MVP Frac showed a significantly higher production.

Business Needs

Recently, hydraulic fracturing treatments in oil formations have used slick water systems with the intention of reducing costs and formation damage, while improving fracture length. Our customer wanted to create a more conductive fracture with higher sand concentrations, without returning to a gelled system.

Trican Solution

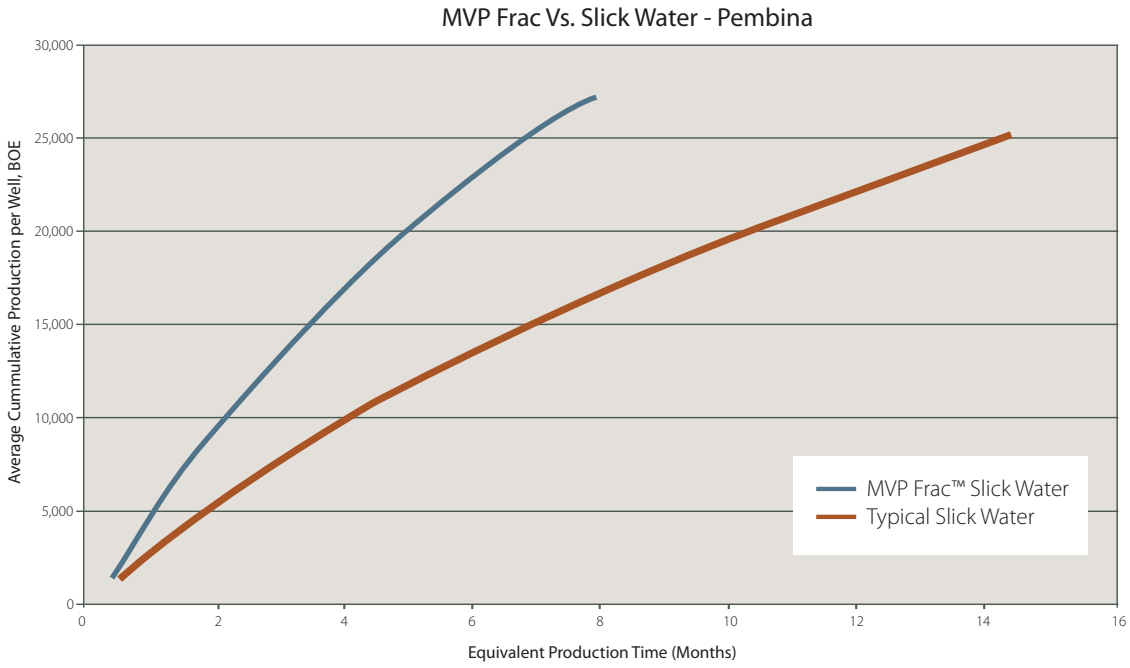
Trican's MVP Frac™ (Maximum Volume Placement) is a two-part slick water frac system consisting of both a non-energized component (Trican's FlowRider® additive) and an energized component. MVP Frac transmits a hydrophobic coating onto the proppant surface, creating an attraction to gaseous phases present in the fluid, making proppant more buoyant without increasing fluid viscosity. This easily fluidized proppant enhances transportation, which allows greater propped fracture height and length, and greater overall conductivity.

This study focuses on our customer's 68 horizontal Cardium wells completed in the Pembina field. Out of those, 53 wells were stimulated using a conventional slick water fluid system. The remaining 15 wells used slick water with Trican's MVP Frac technology. Because the wells produced oil and gas, production was evaluated on barrels of oil equivalent (BOE) and averaged based on the fluid system. All production downtime has been eliminated to compare the results on an equivalent producing time scale.

Results

After 8 months equivalent production, average production for the 15 wells stimulated with MVP Frac was **65% higher** than the average of the 53 wells stimulated with a traditional slick water treatment. Production has been normalized to account for the change in number of stages stimulated and volumes of sand pumped. Average production for MVP Frac is 30% higher per tonne of proppant pumped, and 20% higher per completed fracture stage.

8-Month Equivalent Production	MVP Frac Slick Water	Typical Slick Water
Average Cumulative Production (BOE)	27,209	16,459
Average Cumulative Production per Stage (BOE/stage)	1,088	914
Average Cumulative Production per Tonne (BOE/tonne)	60.5	45.7
Number of Wells	15	53
Average Proppant Pumped tonne (lb)	462 (1,019,000)	360 (793,664)
Average Number of Stages	27.8	17.3
Proppant Size	30/50	30/50
Average Max Proppant Concentration kg/m³ (ppg)	427 (3.56)	343 (2.86)
Average Water Volume m³ (gal)	2,696 (712,207)	2,800 (739,681)



Case Study Snapshot

Date: 2012/2013

Project Area: 68 wells in the Cardium formation, Alberta, Canada

Challenges:

- Less effective proppant placement in slick water fracture treatment due to proppant settling/duning

Trican Solution:

- Stimulation using Trican's MVP Frac™ technology

Results:

- On a cumulative basis, MVP Frac yielded an average production increase of 65%

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