

CAMShale Fracturing Fluid Delivery and Flowback Service Reduces Costs More than 30%, Canada

Operator improves efficiency and safety on 27 wells in the Duvernay Shale while realizing 99% uptime during hydraulic fracturing operations

CHALLENGE

Reduce costs 30% and decrease HSE risk during hydraulic fracturing in the Duvernay Shale play, Alberta, Canada.

SOLUTION

Deploy the CAMShale* fracturing fluid delivery and flowback service, including the Monoline* flanged-connection fracturing fluid delivery technology; the F-T90* horizontal frac tree with no buffalo head; and a modular, lightweight frac manifold.

RESULTS

- Reduced fracturing costs more than 30%.
- Shortened installation time by up to 60%.
- Eliminated 75% connections—more than 150 hammer unions and 300 tiedowns on a nine-well pad.
- Increased uptime to 99% for 925 stages.
- Enhanced wellsite safety.



Canadian operator wanted to optimize hydraulic fracturing

An operator in the Duvernay Shale play sought to streamline fracturing operations. A typical eight-well pad was taking 90 to 120 days to fracture and the operator wanted to reduce costs by 30%. The conventional setup was not only time-consuming and expensive, it incorporated a maze of flowlines, which presented a wellsite hazard. This frac iron linking the frac manifold to the frac tree comprised several pipe segments and numerous threaded hammer-type connections. Because of the high fracturing pressures, if any one of these connections failed during a pumping operation, the potential for equipment damage and personnel injury was high. The operator approached Cameron for a solution.

Fracturing fluid delivery service streamlined operations

Cameron eliminated the traditional buffalo head to make the F-T90 horizontal frac tree; the version used had a single 5½-in, 15,000-psi API flanged connection to the manifold. A modular frac manifold replaced the conventional four-valve, 60,000-lbm manifold skid. The new, lightweight design consists of a valve, skid, and studded tee and provides maximum flexibility to efficiently accommodate various pad layouts. Weighing less than 6,000 lbm, this manifold design reduced both shipping and setup costs.

The team also deployed the Monoline flanged-connection fracturing fluid delivery technology, which replaces four separate flowlines to the frac tree with a single line. The Monoline technology uses a series of high-pressure pipe segments joined together with 90° elbows and swivel flanges that provide the full three degrees of freedom needed to accommodate alignment between the frac tree and manifold. By eliminating hammer unions, this new technology removes the potential for mismatched equipment, simplifies hookup, and reduces installation time significantly compared with conventional frac iron.



The Monoline technology used a series of 5½-in high-pressure pipe segments joined together with 90° elbows and swivel flanges, eliminating leak paths and reducing safety hazards. A single modular manifold connected to as many as nine wells on one pad.

Operator reduced costs more than 30% while improving uptime and safety

The comprehensive, integrated service and support from a single provider helped optimize overall performance. The operator fractured more than 925 stages in 27 wells during the course of 286 days with an estimated 99% uptime. The Monoline technology required 75% fewer connections and was 60% faster to install compared with conventional frac iron. All these efficiencies, together with the lower equipment rental resulting from less time on site and the reduced scaffolding and cold-weather insulation required by the compact design, helped the operator reduce fracturing costs more than 30%.

While the time and cost savings were significant, the greatest benefit was the elimination of threaded hammer unions—more than 150 unions and 300 tiedowns on a nine-well pad—which dramatically reduced HSE risks. Having experienced the improvement in safety and reliability, this Canadian operator intends to use the innovative fracturing fluid delivery service in other fields in the future.

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