

SPM™ EXL Frac Pump

Delivers Zero Nonproductive Time Saving an Estimated \$1 Million in the Haynesville Shale

SPM™ Oil & Gas

A Caterpillar Company

Case Study



Haynesville Shale

TOTAL SAVINGS:



Zero NPT



\$1 million
in NPT cost savings



ENGINEERED TO OVERCOME

13,000 psi
pumping pressure

2,000
pumping hours in the field

A service provider wanted to reduce pump-related NPT during hydraulic fracturing treatments in the Haynesville Shale. With extended pumping hours, 13,000-psi treating pressure, and poor sand quality, the company's pumping equipment required above-average maintenance and downtime. Bringing the highest rod load in its class, the SPM™ EXL Frac Pump delivered zero NPT and enabled the operator to increase pumping hours despite the Haynesville's harsh fracing conditions. With a fleet of SPM™ EXL Frac Pumps, the company is estimated to save an hour of pumping time per day—generating a cost savings of more than \$1 million per fleet.

THE CHALLENGE

The Haynesville Shale has some of the most brutal fracing conditions of any unconventional play. Its low-quality in-basin sand and 13,000-psi treating pressure dramatically reduce equipment reliability and maintenance cycle times.

Pumps in the field regularly crack under the stress, gear sets wear down prematurely, and the fluid ends require significant repairs for damage. With 20 pumps—and 20 sets of expendables—to maintain, an oilfield services company in the Haynesville wanted to reduce its above-average nonproductive time (NPT), which was cutting into pumping hours and economics.

THE APPROACH

To increase pumping hours, the service company installed an SPM™ EXL Frac Pump to run with the rest of its fleet. In addition to reducing onsite maintenance, the flexibility and rod load capabilities of the SPM™ EXL Frac Pump eliminated the need for separate fleets for high- and low-pressure environments.

THE RESULTS

Despite 18 to 22 hours of pumping time per day in Haynesville's extreme environment, the service company experienced zero NPT throughout the test period. The SPM™ EXL Frac Pump logged over 2,000 hours while consistently pumping over 13,000 psi. It ran for more than 1,000 hours before it required maintenance and was the only pump on location to not get pulled due to reliability issues. Outfitted with a fleet of SPM™ EXL Frac Pumps, conservative estimates expect the company to save one hour of NPT per pumping day, for a cost savings of more than \$1 million.

THE SOLUTION

Weir designed the high-performance frac pump to address the unique challenges of pressure pumping in extreme conditions. With fewer internal welds, a redesigned gear set, and a solid-steel unibody-nose plate, the SPM™ EXL Frac Pump delivered greater rigidity and reliability than traditional frac pumps. Featuring the SPM™ Everbore hardened steel packing bore, the new pump eliminates washboarding and the need to re-sleeve.

Increasingly brutal conditions, longer operating hours, less-frequent service intervals and limited field resources—these are the challenges that inspired SPM Oil & Gas (SPM) to engineer the SPM™ EXL Frac Pump. With the highest rod-load rating in its class—238,000 lbf—it systematically addresses the biggest issues confronting operators and manufacturers.

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