



MATURE FIELDS



UNCONVENTIONALS

Summit ESP® Doubles Run Life for Bakken Operator, Increasing Production USD 24 Million

OPTIMIZATION AND ADVANCED TECHNICAL SOLUTIONS MEAN MORE BARRELS

NORTH DAKOTA

CHALLENGES

- » Gas locking
- » High downhole temperatures
- » Corrosion and abrasion

SOLUTIONS

- » Tiger Shark® XR pump
- » Liberator™ high-flow gas separator
- » Defender® sand seal
- » Well surveillance and monitoring

RESULTS

- » Improved run life
- » Reduced downtime
- » Increased production by 20,000 BO per well

OVERVIEW

Early in 2015, Summit ESP® – A Halliburton Service began working with a customer who operates in the tough North Dakota Bakken formation, where challenges such as gas locking, high downhole temperatures, corrosion, and abrasion meant electric submersible pump (ESP) systems were lasting only few months. After performing a fieldwide optimization study, Summit ESP applied several advanced technologies that increased run life and increased production by 20,000 barrels of oil (BO) per well.

OPERATORS FACE MULTIPLE COMPLEX CHALLENGES

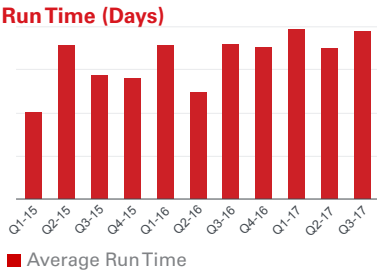
Unconventional wells in the North Dakota Bakken formation are challenging for ESPs. The wells are fracked, and tend to bring in sand when produced. Temperatures can reach 260°F (127°C), and the wells are produced at low pressures (200 psi) with levels of 1,000 MCF of gas, resulting in GF ratios larger than 80 percent at the pump intake. The reservoirs have high levels of CO₂ and water gravity above 1.2 with high level of chlorides, making the conditions downhole very corrosive.

SUMMIT ESP® COLLABORATES WITH CLIENT

Summit ESP began by performing a fieldwide optimization study to determine where to apply advanced technologies. Initial results were so impressive that the customer signed a contract with Summit in mid-2016. Continuing to work with the customer, the Summit ESP Well Surveillance team provided an ongoing, holistic approach to well surveillance, backed with a 24/7 monitoring service to further improve run life, reduce downtime, and increase production.

SOLUTION EXCEEDS EXPECTATIONS

By the end of 2017, Summit ESP had doubled run life and increased production by 20,000 BO per well for a total fieldwide increase in revenue of USD 24 million (at USD 60/BO).



\$24M
ADDED
PRODUCTION



Summit ESP views client relationships as alliances of organizations in pursuit of the same goals. Summit ESP looks to exceed expectations with further product and application optimization.

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Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

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