



MATURE FIELDS



UNCONVENTIONALS

ESP System with Avenger® Motor Lead Extension Delivers Longer Run Life, Maximum Drawdown

ELECTRICAL INTEGRITY IS MAINTAINED IN 16,000 SCF/BBL GAS-TO-OIL RATIO ENVIRONMENT

ALBERTA, CANADA

CHALLENGE

- » Thermal expansion from high temperature leading to electrical failure at the MLE
- » Gas impregnation causing MLE O-ring swelling
- » Electrical stress from gas slugging causing excess heat in the motor/ electrical system
- » High GOR/GLR

SOLUTION

Avenger MLE designed to handle extreme heat and electrical fluctuations, complemented with Tiger Shark® II pump, and Liberator™ gas separator with patented Erosion Buster® technology

RESULT

- » Run life of 341 days and counting
- » Producing at highest GOR tested since completion (16,000 SCF/BBL)
- » Less non-productive time (NPT)
- » Greater drawdown than previous system for greater value

OVERVIEW

The Montney formation in Northwest Alberta has gas-to-oil ratios (GOR) in the range of 5,000–17,000 SCF/BBL. Electrical submersible pump (ESP) systems produce wells at maximum drawdown, achieving greater production than gas lift.

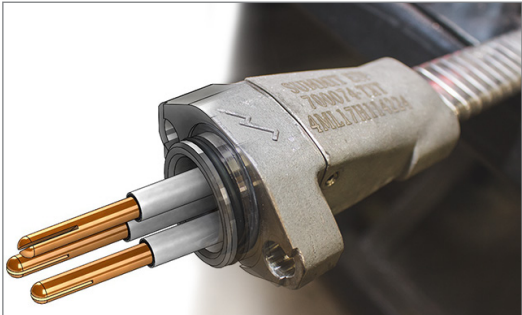
CHALLENGE

In horizontal wells in the Montney formation, gas rate fluctuations cause fluid density changes at the pump intake. These changes cause electrical stress on the motor and motor lead extension (MLE), shortening pump run life.

SOLUTION

Summit ESP – a Halliburton service, proposed an ESP system with increased gas handling ability and electrical protection. The system included the Tiger Shark II pump and tandem Liberator gas separators for better gas handling and overall reliability.

The key to this system is the Avenger® MLE, designed to withstand amperage fluctuations and electrical stresses created in high gas applications such as in the Montney formation. The Avenger MLE design reduces rubber in the seal by 90 percent and uses an O-ring to protect the seal. The industry leading reliability of this tape-in connection creates a 260% longer arc path versus the competition.



RESULT

The operator has achieved greater drawdown and economic value due to higher electrical integrity of the Avenger MLE and its ability to handle extreme heat fluctuations from gas cycling in a high GOR environment. The Summit ESP system has been running for 341 days and still going, versus the competition’s system, which ran for 218 days.

[Halliburton.com/SummitESP](https://www.halliburton.com/SummitESP)

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