

Firestorm[®] Achieves 1,000+ Day Run-life Milestone in SAGD Well

PROVEN RELIABILITY IN EXTREME OPERATING CONDITIONS

ALBERTA, CANADA

CHALLENGE

SAGD wells are extremely challenging to operate due to high temperatures, corrosion, abrasion, and gas.

SOLUTION

FireStorm ESP system was specifically designed for SAGD operation challenges. Features include:

- » High-temperature rating up to 250°C (482°F) bottomhole temperature
- » Corrosion-resistant metal bellow
- » Erosion Buster[®] diffuser erosion reduction technology
- » Mechanical thermal locking bearing system

RESULT

Milestone 1,000-day run time for a Canadian operator with especially challenging well-bore conditions, saving the operator over CAN \$110,000 in operating expenses and deferred production.

OVERVIEW

Steam-assisted gravity drainage (SAGD) is an enhanced oil recovery technology that has been around for 20+ years. Electric submersible pumps (ESPs) are the primary form of artificial lift but are challenged by the extreme nature of SAGD production operations, including extreme operating temperatures and swings, wide production flow ranges, corrosion, abrasion, and dissolved free gas.



CHALLENGE

Due to the extreme conditions of SAGD production, operators must be selective in their choice of ESP providers. If a well is pulled due to poor ESP performance or short run-life, it can be offline two to three days, costing the operator deferred production of 500-1000 BOPD and rig time.

SOLUTION

Summit ESP[®] – A Halliburton Service developed the FireStorm extreme high-temperature pump system specifically for the SAGD market. Delivering the latest in ESP technology, every part is designed to manage the challenges of this unique production environment. The system will tolerate bottomhole temperatures up to 250°C (482°F) and temperature cycles up to 140°C (284°F). FireStorm also offers tools that allow maximum contact between the steam and bitumen in the reservoir and gas avoidance technology for optimal production rates during all phases of SAGD production.

All SAGD components undergo extensive high-temperature horizontal well and two-phase gas loop testing at our research and technology center. Additionally, a complete Firestorm ESP system was independently validated via third-party testing conducted by C-FER Technologies at their Edmonton, Alberta, Canada facility, which provides full-scale testing and specialized engineering consulting services.

RESULT

Installed in an incredibly challenging Alberta SAGD well, the FireStorm ESP system has proven its resilience and capabilities. To date, the well has been running for 1,000 days and is quickly approaching the upper end of the typical ESP run life for these types of wells, saving the operator over CAN \$110,000 in operating expenses and deferred production.

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