

ForeSite® Edge Autonomous Gas Lift

Reduces OPEX 78%, Increases Production 5%, Reduces Buyback Gas 30%, Maintains FBHP with 100% Success

Objectives

- Set and maintain flowing bottomhole pressure (FBHP), which is the cornerstone of the operator's production-optimization philosophy.
- Increase personnel efficiency, reduce wellsite visits, and maintain COVID-19 compliance. The asset relies on pumpers and field technicians to travel to the wellsite and perform manual pressure adjustments. This hands-on process typically requires eight separate trips over a week.
- Reduce buyback gas costs.

Our Approach

- A Weatherford team consisting of production software experts and engineers conducted an optimization analysis. To enact remote well management and enhance well visibility, the team recommended ForeSite Edge—a next-generation controller that leverages high-frequency data and modelling at the wellsite to provide programmable, closed-loop autonomous control.
- Deployed to the field alongside the existing gas-lift controller, ForeSite Edge was programmed with a closed loop autonomous control logic to maintain a user-defined FBHP setpoint. The device continuously adjusted wellhead choke and stabilized wellhead pressure every 2 minutes. Using a well model to run a nodal analysis based calculation on the Edge, the device autonomously maintained the FBHP setpoint and tuned the well model daily to reflect well performance from measured parameters.
- ForeSite Edge autonomously maintained the user-defined FBHP with 100% success. As the constantly tuned production model increased well visibility, the operator remotely adjusted the target FBHP set point to align to real-time production needs without dispatching field personnel.

Value to Customer

- ForeSite Edge autonomously maintained FBHP and executed the operator production-optimization philosophy, which increased production by 5%.
- Autonomous control enhanced personnel efficiency by eliminating the previous manual, trial-and-error optimization method that required an average of 8 trips to the wellsite. Furthermore, remote-management capabilities eliminated the need to dispatch field crews to reduce the target FBHP. This represents a 78% reduction in OPEX.
- ForeSite Edge enhanced well visibility with high-frequency data, provided tuned well models onsite, and enabled autonomous control. The solution managed slugging and reduced buyback gas usage by 30%.
- Based on the success of the installation, the client will expand the ForeSite Edge solution to 80 more wells.



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LOCATION

Kingfisher County, Oklahoma, USA

BASIN

Anadarko Basin Stack Play

ARTIFICIAL LIFT TYPE

Gas lift

AUTONOMOUS FBHP SET POINTS

1,700 psi, 1,600 psi, and 1,500 psi

WELL DEPTH

8,185 ft (2,495 m)

PRODUCTS/SERVICES

- ForeSite Edge
- Production optimization consulting

