

**Case study:** Mississippi Lime play, Oklahoma

# Intelligent gas lift optimization system increased production, revenue from gas lift wells

Triad Energy, Inc. was having problems with two of its gas lifted wells, dubbed Jack and Jane, in the Mississippi Lime play of northwest Oklahoma.

Slugging, an inherent characteristic of many unconventional wells, was affecting compressor performance and run time, resulting in lost production and revenue. It also created demands for human intervention from lease operators and compressor technicians.

Realizing the need for some type of intervention, the operator agreed to conduct a field trial of the new **Intelligent gas lift optimization system** from Baker Hughes.

The Intelligent gas lift optimization system can help you achieve your production goals efficiently and predictably. This surface system uses artificial intelligence and machine learning to automatically determine and adjust the optimum gas injection rate over time using readily available, real-time data at the wellsite.

The trial began by measuring and recording production data, from which a performance baseline was generated.

Baker Hughes then monitored the production data to identify and control the gas injection rate by increasing and decreasing suction pressure and compressor speed. The wells were

stabilized and immediate increases in production and revenue were realized (Figure 1 and Figure 2).

The Baker Hughes team then introduced the first-generation intelligent gas lift algorithm, which performed the optimization routine automatically. By generating a real-time performance curve, the algorithms provided a much more sophisticated and beneficial optimization tool.

The results from both the Jack and Jane wells showed that the Intelligent gas lift optimization system provided the operator with significant production and revenue increases by using real-time measurement, control, and optimization.

"Triad had great success on our two wells with the Intelligent gas lift optimization system last year," says Judd McDonald, operations manager for Triad Energy, Inc. "I would highly recommend their gas lift to other operators looking to improve their production."

Based on the price of oil at \$45 USD/bbl, gas at \$2.5 USD/MMscf, and water disposal at \$0.25/bbl, Jane saw a cumulative profit of \$189,000 USD over an 18-month period (Figure 1); while Jack saw additional profit of \$171,000 USD (Figure 2).

## Challenges

- Well instability
- Compressor downtime due to slugging
- Declining production/revenue

## Results

- Stabilized compressor performance and increased run time
- Stabilized well performance
- Increased production in both wells, thereby increasing revenue \$360,000 USD over an 18-month period
- Decreased HSE risks by reducing the need for on-site intervention

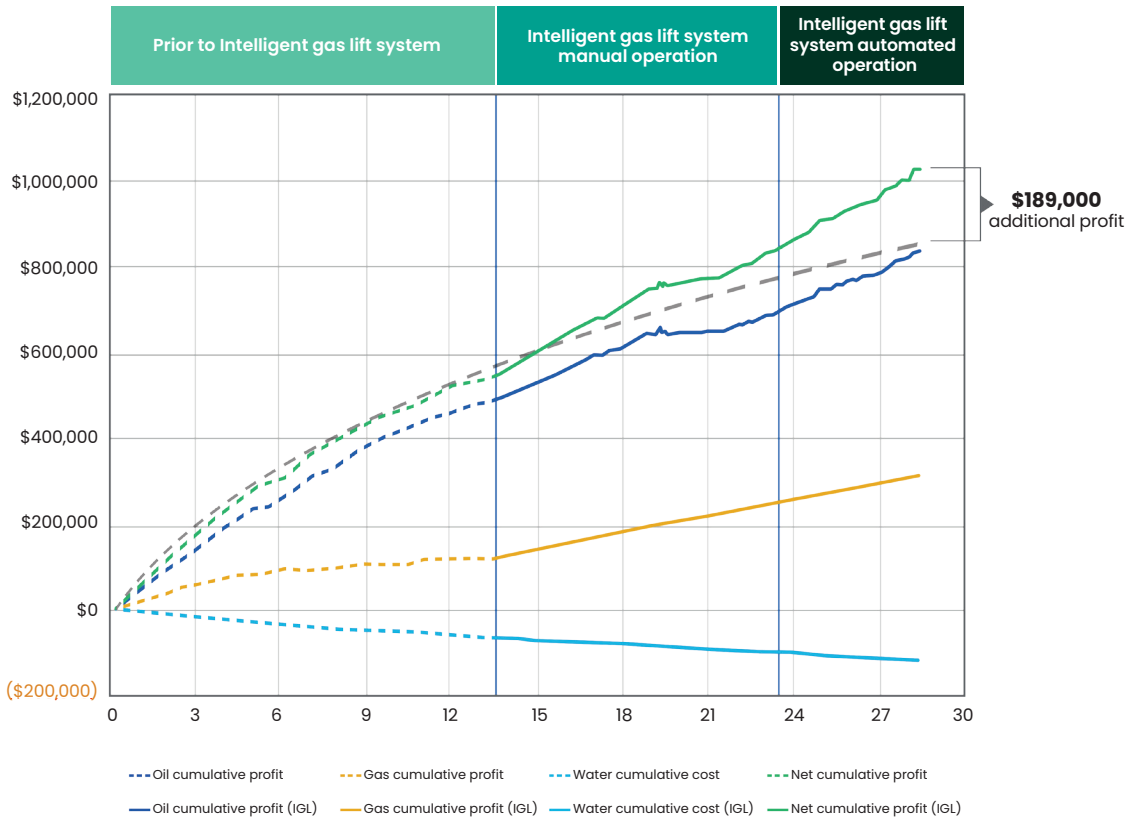


Figure 1

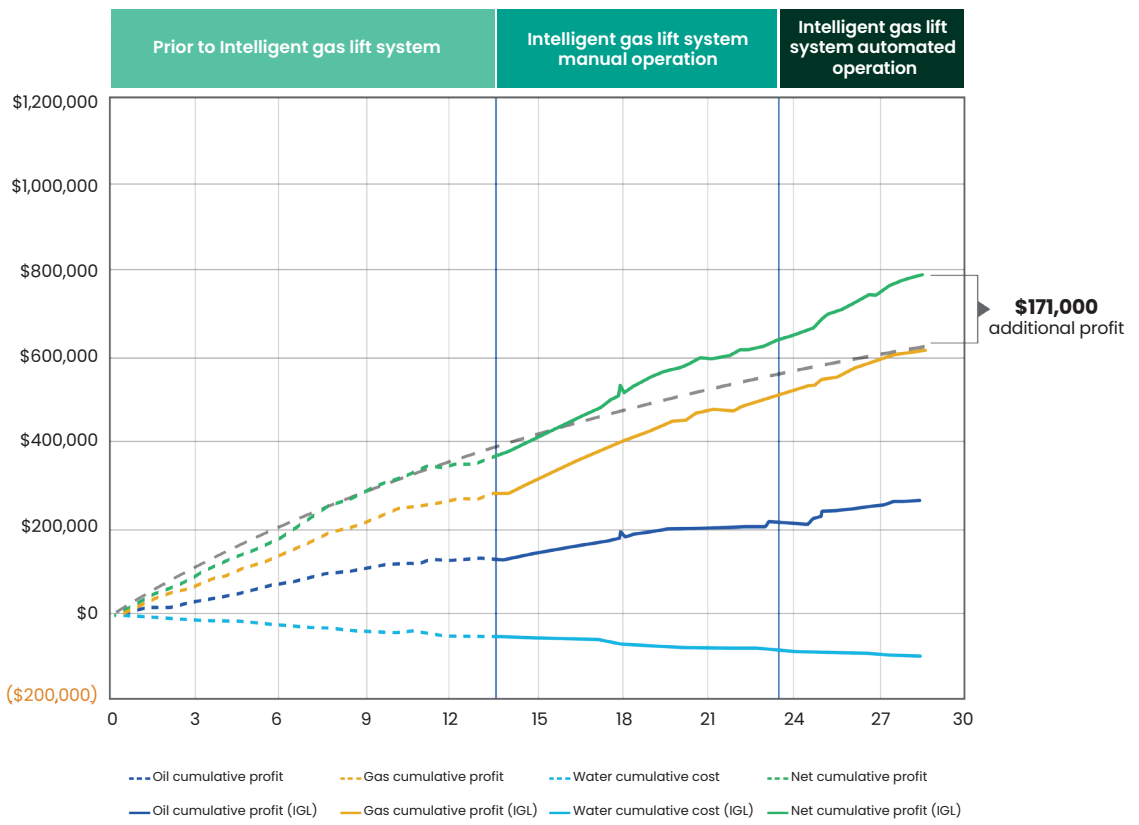


Figure 2

