

Case study: Jacana, Colombia

ProductionLink provided accurate flow rates using virtual metering technology

A major operator in Colombia selected the **ProductionLink™ Expert artificial lift monitoring service** for real-time flow measurement and reducing the operational expenses (OPEX) caused by frequent production flow tests. Continuous flow measurement of wells is a critical and indispensable part of operations because it allows operators to maximize the inflow potential, select appropriate artificial lift methods, diagnose well inflow issues, and determine surface facilities requirements.

There are two industry-accepted solutions for providing flow measurements: test separators and multiphase flow meters. Both of them require hardware installation, which limits their applicability due to logistics and cost issues. The ProductionLink virtual flow metering (VFM) combines static and dynamic simulator from the **AutographPC™ artificial lift and application simulation software** to generate thousands of operating scenarios for electrical submersible pumping (ESP) systems. This data, in conjunction with Baker Hughes's data driven/machine-learning model, can accurately predict ESP and reservoir characteristics.

The VFM technology was successfully used on three wells in the Jacana field where it consistently delivered flow measurement within one percent of error: well 1 was 0.39%, well 2 was 0.48%, and well 3 at 0.91%. The operator was also able to increase production on two of the three monitored wells.

The ProductionLink Expert service provided the operator with an affordable and accurate flow-monitoring solution using virtual metering technology. It is an effective way to measure real-time flowrates for ESP run life optimization, production optimization, and production allocation when frequent production flow tests are not possible and physical flow meters are not available.

Challenges

- Reduce the frequency of production flow tests
- Simulate multiphase flow conditions and accurately measure flow rates
- Optimize well production

Results

- Achieved 98% accurate measurement of total fluid production
- Reduced the number of production flow tests by 25%
- Improved ESP equipment performance
- Optimized field production