Baker Hughes

Case study: Permian Basin, Texas

ProductionLink Expert service reduced excessive high-temperature motor cycling, improved uptime

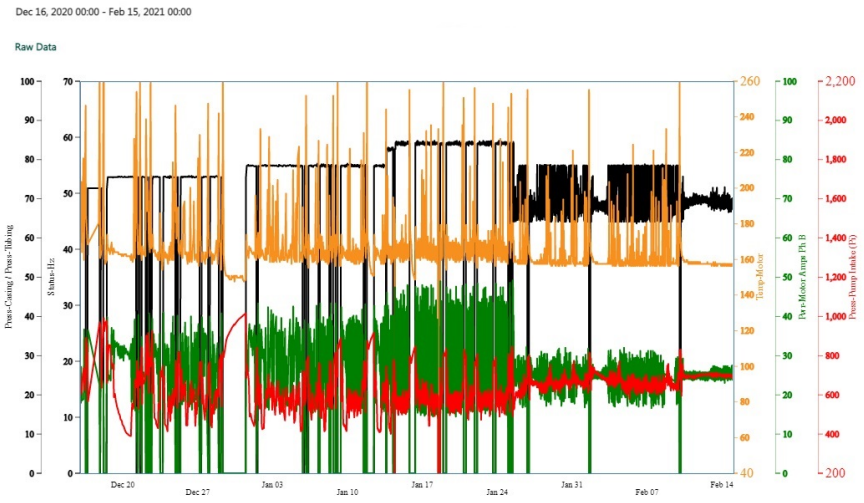
A customer's well was cycling at a nearly daily rate from high motor temperature conditions in the electrical submersible pumps (ESP). The installed ESPs encountered issues with iron sulfide plugging and erosion/plugging from sand. When the intake pressures drew down, the pumps experienced gas interference that often led to excessive cycling caused by low-flow conditions resulting in shutdowns.

The customer installed the **ProductionLink™ Expert artificial lift monitoring service** to improve ESP run life by minimizing frequent high motor temperature shutdowns caused by pump-off conditions. The ProductionLink Expert service includes 24/7 surveillance by a team of experts who are continuously monitoring the condition of ESPs and well conditions using customized alarms, analytics, and a highly interactive dashboard.

The ProductionLink Expert engineer studied the customer's ESP wells and, drawing on his expertise, made some recommendations—remote changes to the set points of the in-the-variable speed drive—to try and reduce the cycling and improve run times.

The customer agreed to the changes and the ProductionLink Expert engineer implemented the new process. A key highlight of the ProductionLink Expert service is the ability to identify and resolve issues remotely from the ProductionLink dashboard.

The ESPs now run and handle gas interference more efficiently, and have significantly reduced the number of



Two-month well trend showing excess cycling until January 25 when the operational changes, as recommended by the ProductionLink Expert engineer, took place.

Challenges

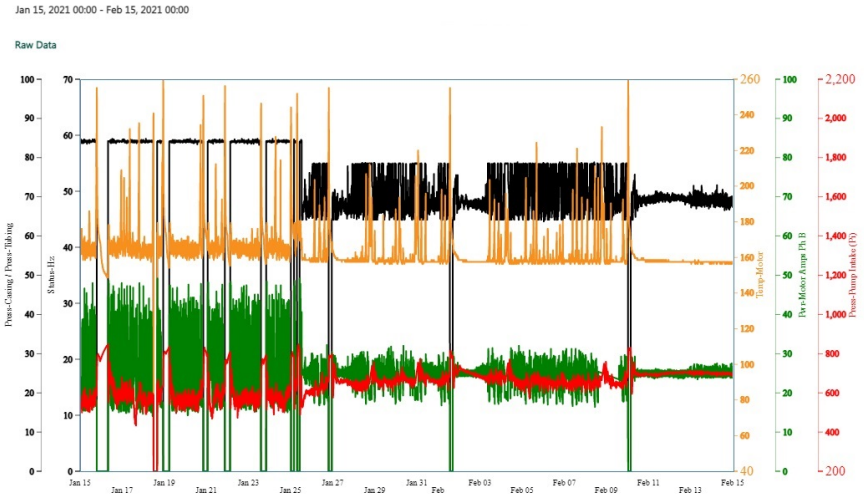
- Reduce excessive pump cycling as a result of high-temperature shutdowns
- Optimize production to increase uptimes

Results

- Increased run life by reducing high motor temperature cycling
- Improved uptime by reducing the excessive cycling
- Decreased customer man-hours required to attend/monitor the well
- Mitigated HSE exposure to customer employees by reducing the number of times/week they needed to attend the well

high motor temperature shutdowns. Prior to the changes, the wells were averaging nearly six shutdowns per week. After the implementation of the new processes, the ESPs have shut down only three times, an average of only once a week.

The combination of the optimization team's diligence with 24/7 monitoring and the remote ProductionLink Expert service contributed to the overall success of improved runtime. The customer also saved the cost of dispatching a technician or a pumper to the rigsite to troubleshoot, mitigating the risk of health, safety and environmental (HSE) exposure.



One-month well trend showing excess cycling until January 25 when the operational changes, as recommended by the ProductionLink Expert engineer, took place.