

Lift IQ Service Improves ESP Uptime by 33.6%, Reducing Deferred Production for NAOC

Surveillance and remote intervention eliminate time-consuming wellsite visits and improve reservoir knowledge, Nigeria

CHALLENGE

Maximize field production by optimizing ESP performance and uptime despite frequent shutdowns and restarts.

SOLUTION

Deploy Lift IQ* production life cycle management service with downhole monitoring systems for real-time surveillance and remote control of hardware.

RESULTS

- Improved ESP uptime by 122 days, an average of 33.6% over 3 years.
- Eliminated the need for 245 field visits over 3 years.
- Enabled incremental liquids production of 56,000 bbl at reservoir conditions.

“Lift IQ service has been tremendously good to us in several ways: It helps us make fast decisions on optimizing the flow rate of our ESP wells, detect the behavior of the pumps so we can take quick action to correct imminent failures, estimate and calculate reservoir values, and avoid ambiguity in data presentations.”

George Iwo
Senior Facilities Engineer
NAOC



Frequent production stops reduce profits and ESP run life

Flowline problems, electrical power outages, and surface equipment malfunctions resulted in frequent shutdowns and restarts for Nigerian Agip Oil Company (NAOC) wells in remote fields in Nigeria. Each shutdown deferred production not only for the outage time but also for time required to mobilize technical crews to stop and restart the ESPs.

Reducing the stress on ESP components increases their run life but requires rapid intervention to eliminate high-temperature, high-vibration, high-electrical-load events that can be immediately catastrophic. When a shutdown is inevitable due to flowline or production concerns, stopping the ESP as soon as practicable is essential to avoid events that might reduce the ESP run life. Restarts can also be detrimental if equipment is incorrectly controlled and allowed to operate outside its design limits or if multiple attempts are made in close succession.

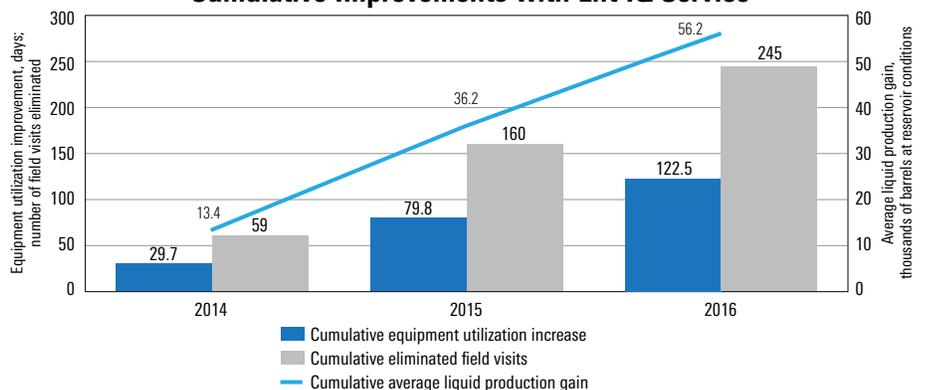
To improve well production and ESP uptime and run life, NAOC asked for technology that would function with existing well infrastructure to optimize flow rates and ESP performance and enable remote stops and restarts for all planned shutdowns.

Experts monitor real-time data and intervene remotely

The Lift IQ production life cycle management service is the premiere monitoring and surveillance platform to prevent or resolve problems for all lift systems using reliable, secure data acquisition and transmission hardware and control systems. Data is transferred via satellite to and from remote locations, hostile environments, and sites with limited or no data acquisition capabilities.

Experienced engineers at Artificial Lift Surveillance Centers (ALSCs) monitor the data 24/7/365, responding to alarms and intervening as needed. They relay recommendations to customers via text messages, e-mail, or telephone. For wells with appropriate control equipment installed, recommendations can be implemented without a field visit, enabling rapid response for critical events requiring immediate action to prevent undesirable operation or equipment failure.

Cumulative Improvements with Lift IQ Service



By eliminating 245 field visits over 3 years, the Lift IQ service eliminated 122.5 days of ESP downtime and enabled incremental liquids production of approximately 56,200 bbl at reservoir conditions.

Remote intervention improves productivity and ESP efficiency

NAOC began to use the Lift IQ service on its wells to limit the number of field visits required to maintain production from its remote wells. In 2014, ALSC engineers recommended remote control actions that eliminated 59 wellsite visits and extended ESP uptime by 29.7 days. The successful actions increased NAOC's confidence in the Lift IQ service, leading to additional remote activities, especially for planned shutdowns and restarts.

In 2015, ALSC engineers executed more than 200 remote restarts and shutdowns for the 11 wells monitored through the Lift IQ service, eliminating approximately 100 field visits and 50 days of ESP downtime. In 2016, the engineers eliminated approximately 85 field visits and 43 days of ESP downtime.

These remote interventions directly eliminate the need to mobilize local support, removing the cost and reducing the HSE risk associated with operations in these remote and hazardous locations, while also reducing the environmental impact for multiple confirmed flowline leaks. Furthermore, since 2014, the Lift IQ service interventions have increased ESP uptime by an estimated 122.5 days, enabling incremental liquids production of approximately 56,200 bbl at reservoir conditions.

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