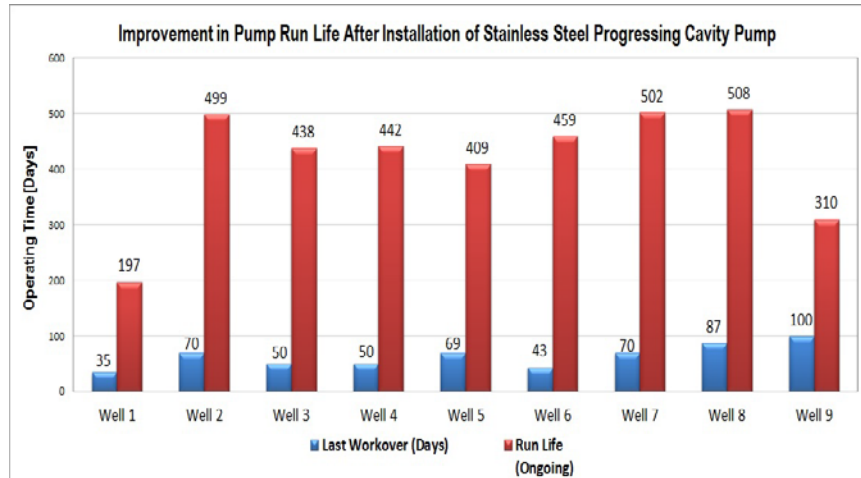


Stainless Steel Progressing Cavity Pumps Improve Run Life By 584% On Average and Reduce Workovers In 9 Wells



After the installation of stainless steel PCPs in nine wells, pump run life significantly improved while workovers decreased, despite corrosive downhole conditions and the completion of several acid stimulations.

Objectives

- Reduce the frequency of workovers for progressing cavity pumps (PCPs) in nine wells with high levels of carbon dioxide (an average of 15%), high water cuts (an average of 85%), sand production, and heavy, viscous oil. Acid stimulations had also been performed in the wells. These conditions caused corrosion and pitting on the carbon-steel stators on the PCPs used previously in the wells.
- Mitigate production losses associated with frequent interventions.
- Optimize project economics.

Our Approach

- In collaboration with the client, Weatherford developed stainless steel PCPs to avoid corrosion and pitting on the stator housings. Compared to other materials, stainless steel offers superior corrosion resistance in applications in which aggressive fluids, such as acid, are pumped downhole.
- In each well, Weatherford set the PCPs at depths between 1,000 and 3,000 ft (305 and 914 m).
- Since the installation of the PCPs, the client has performed several acid stimulations that have required pulling the PCPs out of hole and re-running them multiple times. Throughout these operations, the PCPs have had no failures requiring intervention.

LOCATION

Gabon, West Africa

NUMBER OF WELLS

9

WELL TYPE

Onshore, vertical, oil

HOLE SIZE

5-1/2 in.

CASING SIZE

5-1/2 in., 14 lb/ft (20.8 kg/m)

TUBING SIZE

3-1/2 in., 9.2 lb/ft (13.7 kg/m)

OIL TYPE AND VISCOSITY

10 to 16° API, 1,000 cP

AVERAGE CO₂ LEVELS

15%

AVERAGE WATER CUT

85%

PUMPING DEPTH

1,000 to 3,000 ft (305 to 914 m)

PRODUCTS/SERVICES

Stainless steel PCP



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Value to Client

- The stainless steel PCPs have improved pump run life across all nine wells by 584% on average. The PCPs continue to run in all nine wells without issues.
- For an average of 326 days across all nine wells, there have been no workovers performed on the PCPs. The reduction in workovers has helped to avoid production losses, downtime, and associated costs.

