High-Displacement PCP Model 190 Increases Well Oil Flow Rate By Up to 100%, Decreases Pump Speed By Up to 67%

Objectives

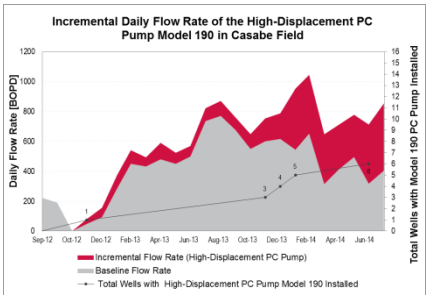
- Increase the flow rate of high sand-cut, water flooding wells in which conventional progressing cavity pumps (PCPs) had been installed. The existing conventional PCPs did not provide sufficient displacement, 7.1 bfpd/rpm (1.13 m^3/d/rpm), to produce all of the fluid from the wells.
- Decrease downtime by increasing the time between well interventions and failures.

Our Approach

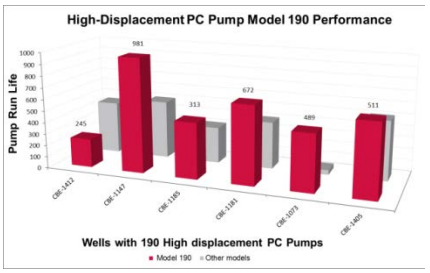
- Weatherford custom-designed and deployed a high-displacement PCP model 190, 11.9 bfpd/rpm (1.9 m^3/d/rpm) in each well, which increased the oil flow rate and reduced the operational to a maximum of 250 rpm.

Value to Client

- By replacing the conventional PCPs with the Weatherford custom-designed high-displacement PCPs, the client was able to increase the well oil flow rate by 100% in two wells, from 34 bopd to 76 bopd in one well, and from 74 bopd to 136 bopd in another.
- The high-displacement PCP decreased the operational speed by 67%, from 320 rpm to 105 rpm in one well, which reduced intervention frequency for failures associated with tubing and rod wear on systems operating at high speed.
- Because of the success experienced with the Weatherford high displacement PCP model 190, the client installed high-displacement PCPs in more wells with similar conditions. Of the six wells in which the client installed a high-displacement PCP, 80% experienced extended run life with no failures.



Incremental daily flow rate increased in the six wells with the Weatherford high-displacement PCP model 190.



The high-displacement PCP model 190 increased run life in six wells in the Casabe Field.

CLIENT
Ecopetrol

LOCATION
Colombia

FIELD NAME
Casabe Field

WELL TYPE
Onshore, deviated well, 20° API

PUMP SEATING DEPTH
3,000 ft (914.4 m)

FLUID TYPE
20° API wellbore fluids

PRODUCTS/SERVICES
PCP model 190

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