

# Pumping the Curve with LPS

Landing sucker rod pumps “around the curve” of a deviated well has always been a goal for operators in unconventional reservoirs. Bottom hole pressures in horizontal wells are typically not able to be reduced as low as those in traditional vertical wellbores. This is due in part to the excess head pressure exhibited by the fluid column in the deviated section of the wellbore, along with high fluid and gas flow rates. However, landing the pump in the horizontal section of the wellbore can allow operators to reach low bottom hole pressures, increasing production and potentially extending the life of the well.

## Challenges

- Increased loads due to friction
- Accelerated rod on tubing wear in deviated section
- Centralization of rods and pump in lateral

## LPS Can Help

- Increase Production
- Reduce Bottom Hole Flowing Pressure
- Extending the Life of your Well

Pumping the curve has been shown to increase failure rates in traditionally rod pumped wells. This increase in failures often outweighs the benefits of lowering the pump. However, with LPS products, pumping the curve can become a reality. Thermoplastic lined tubing has been shown to dramatically reduce the affects of rod on tubing wear that might be seen in the deviated section of a horizontal wellbore. Continuous rod can distribute the side loading seen in the deviated section along the entire string of the rod instead of concentrating loads on a short sucker rod coupling. These products together can handle extremely high side loads without leading to increased rod or tubing failures.

## Case Studies

LPS currently has lined tubing and continuous rod installed in four wells with the pump landed above 60 degrees inclination. The wells have been operating for more than one year each without any failures in the rod or tubing.

Two wells would not have been able to be economically produced from the vertical section, and their life has been extended by lowering the pump.

