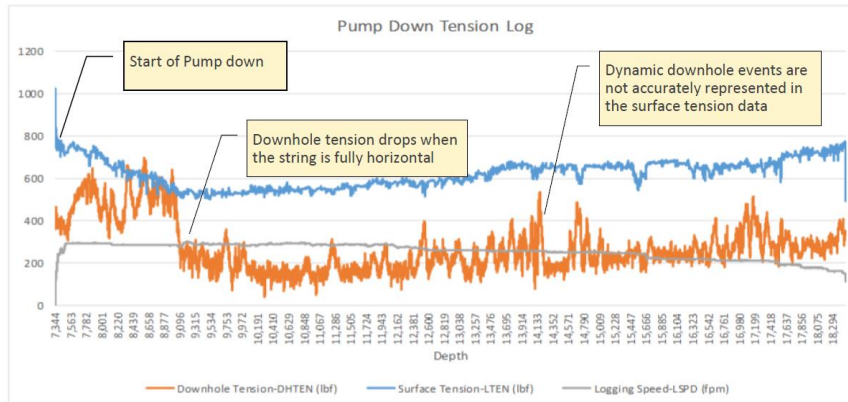


# SMART Sens™ Delivers Pump Down Assurance in Extended Reach Lateral

## PRODUCTS/SERVICES

- SMART Sens tool



Example SMART Sens pump down log

## Objectives

- Client planned a multi-stage “plug and perf” operation with more than 50 stages per well.
- There has been a history of pump down conveyance problems due to complex well profiles.
- Because of the combined effects of cable friction in the flow tubes and cable friction in extended lateral wells, the tension measured at surface was not considered a reliable indicator of downhole tension at the logging head.
- Client requested the SMART Sens tool to provide a real time measurement of downhole tension during pump down

## Our Approach

- Two SMART Sens tools were deployed to the district and shop tested with a mock perforating string prior to deployment on location.

## Value to Customer

- 110 Pump down runs were completed in two wells with SMART Sens.
- Perforating strings with plugs successfully conveyed to over 18,200 feet measured depth with over 9,200 feet of lateral.
- Campaign successfully completed with zero tool maintenance, zero tool failures, and zero lost time.
- Multiple instances observed where downhole head tension behaved differently from surface cable tension.

