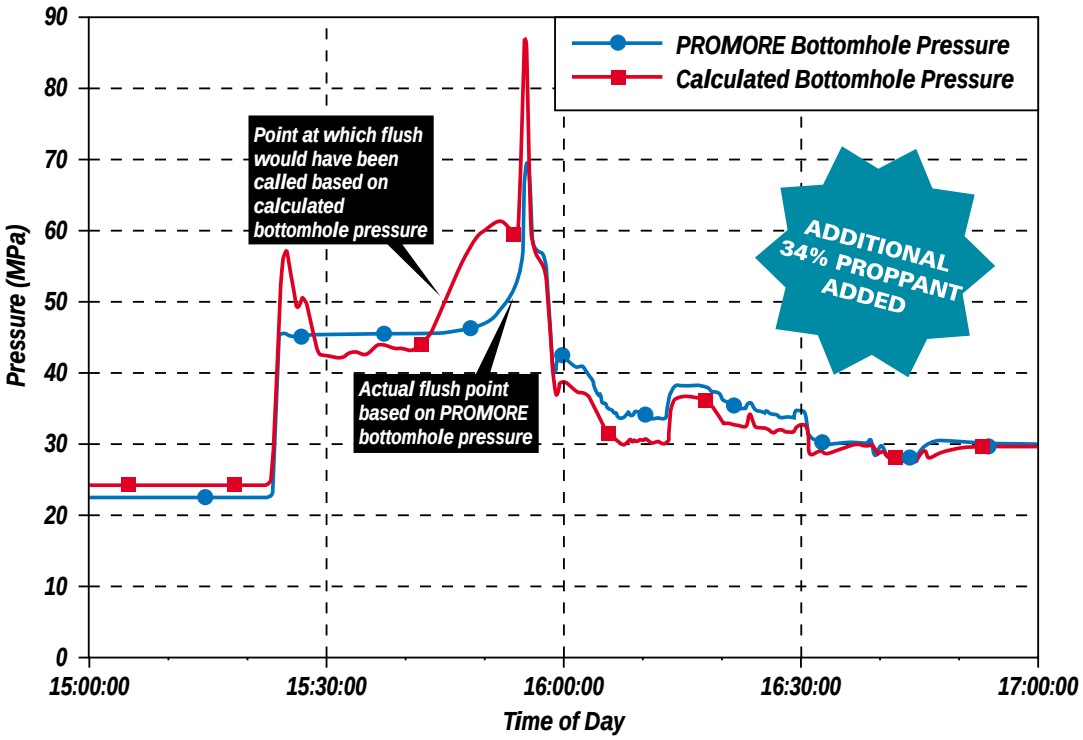
Optimization of Fracturing Operations Using Real-Time Bottomhole Pressure

Case Study #10

Situation

Modelled assumptions of bottomhole pressure from surface measurements have been determined highly inaccurate, reducing fracture design quality and increasing operational problems.

Real Time Fracture Monitoring
PROMORE BHP vs. Calculated BHP and Tubing Pressure



Objective

- Provide actual data from pre-frac tests to properly program a fracture treatment.
- Improve the accuracy of initial pressure (P*), fall-off and build-up data.
- Reduce the risk and associated cost of "sanding the well off".

Results

- Estimated bottomhole pressures were shown to be inaccurate.
- Actual net pressures were obtained to gain an accurate understanding of the orientation of the frac.
- A reliable bottomhole pressure based monitoring system was used to provide accurate bottomhole pressure and temperature during entire frac operations.
- Reduced engineering time to pressure match mini frac; while providing a better frac design.
- An additional 34% of proppant was pumped into the formation due to better understanding of when to "call for flush".
- Sand cleanout operations were reduced.
- Better frac design and increased injection leads to better ultimate recovery.

Case Studies

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