

Halliburton Pump Down Advisor

INCREASING OPERATIONAL CONSISTENCY AND EFFICIENCY WITH REAL-TIME DOWNHOLE AND SURFACE DATA

OVERVIEW

The Halliburton Pump Down Advisor (PDA) service represents the next generation in perforating technology that is designed to improve the consistency and efficiency of pump-down operations. During a typical completion, operational inconsistencies can arise from variable downhole conditions, surface equipment, and even differing levels of personnel competencies. Since overall pumping efficiency relies on perforating runs being as efficient as possible, eliminating these inconsistencies reduces non-productive time. Preventing wireline from becoming a limiting factor in hours or stages pumped per day is critical in modern operations.

Maximizing perforating run efficiency requires a balance between winch speed, pump rate, and down hole tension on the cable head. If any of these three variables are out of sync, results can include unintentionally pumping off the gun string down hole, wasting operational time, and increasing the environmental impact of wireline through unnecessary water and diesel use.

There is no one-size-fits-all procedure that optimizes wireline pump-down speed and fluid use for every situation. The PDA service integrates real-time data from the wireline speed, downhole tension, and pump rate to advise on optimal conditions for making perforating runs as efficient as possible. Given a set of constraints based on customer and user preferences, PDA will display optimal variables alongside actual, real-time values – and can alert the winchman when speeds, tensions, or rates fall outside of a prescribed range. By using real-time speed and down hole tension rather than surface data, PDA is more responsive and precise when providing feedback since the data used is not muffled by line stretch or friction between the wireline cable and casing.

Two independent field tests compared data from the PDA service to traditional pump-down methods. Results from both tests showed a recommended 24–33% winch speed increase compared to standard procedures. This increase in speed led to a 19–25% decrease in overall perforating stage time, and also to a 20–24% decrease in fluid usage per stage.

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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BENEFITS

- » Increases the overall completion pumping efficiency by reducing the time required for perforating runs
- » Reduces the risk of unintentional pull-offs down hole
- » Decreases the volume of water required for pump-down operations
- » Optimizes efficiency and normalizes operations on a crew-to-crew basis
- » Enables additional analysis through data capture and storage in order to improve diagnostics and determine areas of improvement

FEATURES

- » Provides and analyzes winch speed, downhole tension, and pump rate in real time
- » Delivers downhole tension that is provided with robust, perforating-ready electronics and an integrated casing collar locator (CCL)
- » Alerts the winch operator when variables can be optimized for performance

