



WellLink Performance improves weight-to- weight time by 19%

To be profitable in a low-margin, low-oil price environment, US land shale operators place significant emphasis on footage drilled per day through better well plans, drill bits, and innovative bottomhole assemblies (BHA) as solutions.

Often overlooked are the minor off-bottom activities that add up to achieving certain footage per day, such as weight-to-weight (W-W) times. The traditional way to measure these key performance indicators (KPIs) and identify operational inefficiencies are manual, time-consuming, and after the fact.

Performance analysis

Baker Hughes, a GE company, was providing drilling services and data to an operator in the Marcellus shale play when the operator asked BHGE to provide an analysis of its operational performance.

To increase overall drilling performance for the operator, BHGE leveraged its **WellLink™ Performance analysis service** combined with real-time advisory service to identify operational inefficiencies.

WellLink Performance is a web-based application using industry-standard wellsite information transfer standard markup language (WITSML) protocol for automatic real-time drilling performance KPI monitoring and advisory services to focus on standardizing operational performance and reducing invisible lost time.

The application calculates real-time KPIs such as average rate of penetration (ROP), ROP while sliding/rotating, W-W and connection times to automatically detect the performance of a rig or crew without manually importing data and analysis through spreadsheets.

The focus of this study was average W-W time improvement, operational consistency, and crew comparison on two rigs while drilling 32 wells from seven pads.

A BHGE real-time advisor used the WellLink Performance application to continuously advise the operator, in real time, as well as through daily reports on the operational performance of its drilling campaign.

Results

- Improved weight-to-weight time benchmark goal attainment by 50% on one rig
- Improved overall average W-W time by 19%
- Saved operator 54 hours of rig time over the course of the drilling campaign
- First time BHGE has delivered performance improvement through a digital solution in US Land

Challenges

- Identify operational inefficiencies in shale drilling program by analyzing and measuring key performance indicators in real time



Reporting was divided into weight-to-slip (W-S), slip-to-slip (S-S) or connection times, and slip-to-weight (S-W) times.

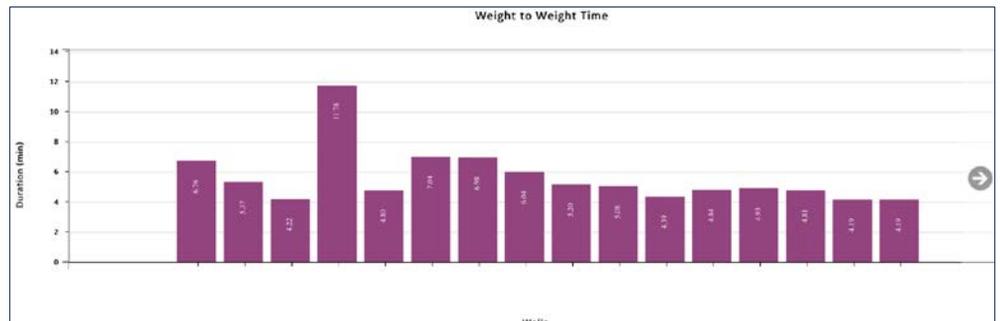
By providing information regarding operational performance through KPIs from WellLink Performance, BHGE real-time advisor was able to provide intelligence and recommendations the customer needed to make knowledgeable decisions.

During this continuous improvement process, the operator identified best crew performance using automated crew comparison KPIs and disseminated best practices among the crews.

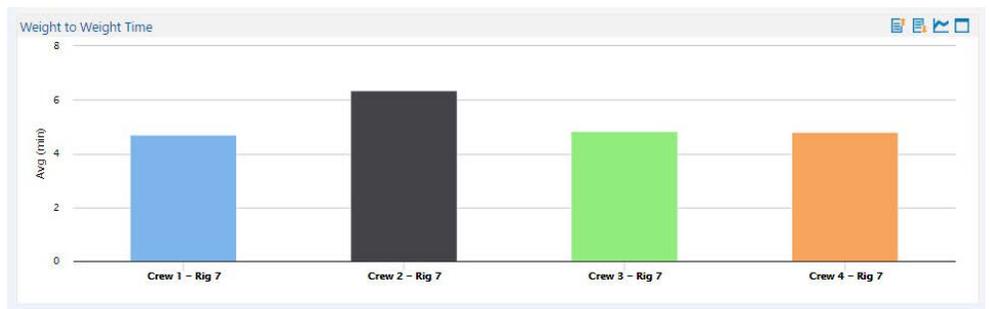
At the end of the study, one rig increased its W-W goal attainment rate by 50%. The operator also worked with the rig contractor to shuffle the rig crews by including personnel from the most efficient rig to the less efficient rig to accelerate the sharing of best practices. This led to a 19% improvement of average W-W time over the course of a drilling campaign. It also led to improved overall drilling performance. The best well was used for benchmarking and updated throughout the drilling campaign for continuous improvement of drilling performance.



The WellLink Performance service calculates real-time KPIs to automatically detect performance of a rig or crew without manually importing data and analysis through spreadsheets.



This study showed comparison of weight-to-weight time (above) and crew-to-crew comparison of weight-to-weight time (below) on two rigs while drilling 32 wells.



bhge.com

© 2017 Baker Hughes, a GE company, LLC – All rights reserved.

Baker Hughes, a GE company, LLC and its affiliates (“BHGE”) provides this information on an “as is” basis for general information purposes and believes it to be accurate as of the date of publication. BHGE does not make any representation as to the accuracy or completeness of the information and makes no warranties of any kind, specific, implied or oral, to the fullest extent permissible by law, including those of merchantability and fitness for a particular purpose or use. BHGE hereby disclaims any and all liability for any direct, indirect, consequential or special damages, claims for lost profits, or third party claims arising from the use of the information, whether a claim is asserted in contract, tort, or otherwise. The BHGE logo is a trademark of Baker Hughes, a GE company, LLC. GE and the GE monogram are trademarks of General Electric Company used under trademark license.
77526