

BP Saves More Than USD 1 Million and 24 Days Off of AFE with RockStorm PDC Cutter Technology

Schlumberger and BP use IDEAS platform and DBOS system to select bits, achieve record footage run of 5,249 ft, Woodford Shale

CHALLENGE

Drill the 8.75-in lateral section and achieve better performance than the average 900 to 1,000 ft per bit.

SOLUTION

Use the DBOS* drillbit optimization system and the IDEAS* integrated dynamic design and analysis platform to design bits with RockStorm* wear-resistant high-impact PDC cutter technology to minimize wear, reduce impact damage, and maintain an efficient cutting structure.

RESULTS

Drilled the entire lateral with only two bits to save USD 1.056 million and 24 days versus AFE while achieving record single-run footage—5,249 ft—that is 71% more than the top 10 average of offset wells in the area.

“We were extremely pleased with both the ROP and longevity of the bits from Smith Bits chosen for Hunt Garrett wells.”

Joseph Heimerl
Drilling Engineer, BP



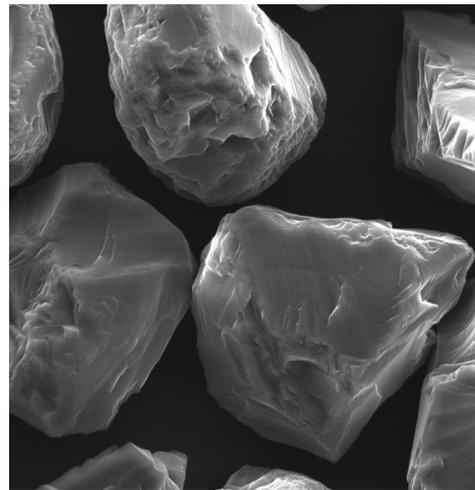
Improve drill bit performance in 8.75-in lateral shale section

BP L48 MidCon sought a better way to improve its bit performance while drilling an 8.75-in lateral section in the Woodford Shale. Drilling the wellbore typically took between 4 and 7 bits for the entire lateral, depending on length. Average footage was approximately 900 to 1,000 ft per bit run.

The formation contains up to 80% chert and some pyrite, both of which cause bit failure and force additional tripping for a new bit. BP's goal was to increase footage at a reasonable ROP, reduce the number of trips, and lower well cost.

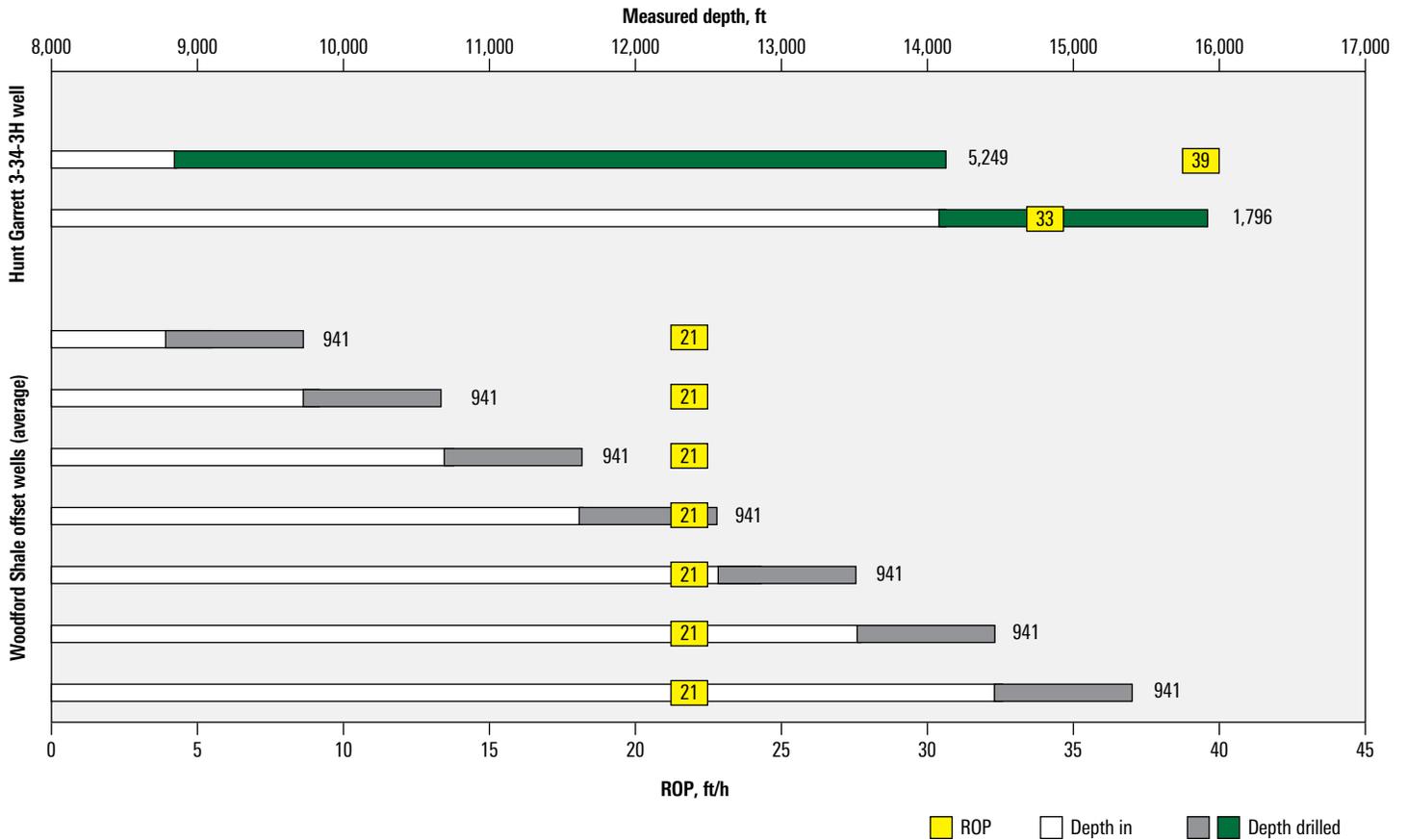
Design shale-optimized bit to minimize wear and maintain cutting structure

Using the IDEAS platform to select the optimal bit for the challenging formation and the DBOS system to analyze offset well data, engineers from Smith Bits, a Schlumberger company, proposed incorporating RockStorm cutter technology to minimize abrasive wear, reduce impact damage, and maintain an efficient cutting structure. An advanced services engineer (ASE), located in the BP office for six months, collaborated with the customer to ensure a smooth design and deployment process.



RockStorm technology was selected to overcome bit failure challenges with its superior wear and impact resistance, enabled by a proprietary diamond grain-size distribution and engineered tungsten carbide substrate.

CASE STUDY: BP saves USD 1 million and 24 days with RockStorm technology, Woodford Shale



Compared with the average run performance of other 8.75-in bits in offset Woodford Shale laterals, RockStorm technology enabled improvements in both ROP and footage. In the Hunt Garrett 3-34-3H well, BP set an area record with a run length of 5,249 ft.

Saved USD 1 million, 24 days by drilling lateral in only two bit runs

BP ran an 8.75-in MDSi813MUPXG 65684A0105 bit on the Hunt Garrett 3-34-3H well, achieving a footage record run for the area of 5,249 ft (71% longer than the top 10 offset well footage average). ROP was competitive at 38.6 ft/h, even when starting at 74° and adding sliding time to finish the curve.

BP was able to drill the entire lateral with only two bits: both 8.75-in MDSi813 bits from Smith Bits, which enabled saving USD 1,056,000 and 24 days versus AFE. The MDSi813 bit design was used on the next well, Hunt Garrett 5-34-3H. Again, the bit drilled the entire lateral in only two runs.

slb.com/RockStorm

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