

Caribbean

8-1/2 in. Hedron[®] fixed cutter PDC bit sets record in deepwater exploration well

Drilled interval 45% longer than the previous longest offset well and improved ROP by 68%

CHALLENGE

- Design a new bit to enhance durability in a deepwater exploratory environment

SOLUTION

- Utilizing the DatCI™ customization process, designed the 8-1/2 in. Hedron™ HDi75DMKF drill bit
- Features Razor™ 4D-shaped cutters and Cerebro Force™ in-bit sensing technology
- Oculus™ automated dull grading technology for cutter assessment and optimization

RESULT

- Drilled a 1,034 meter section at 27 m/hr.
- Exceeded previous well length by 45% and improved ROP by 68%
- Achieved significant operational time savings
- Valuable field insights from Cerebro Force technology

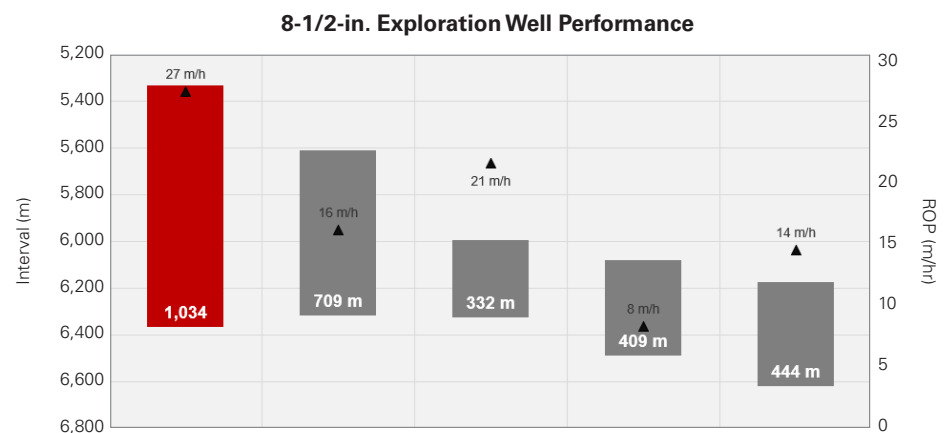
Challenge

A Caribbean operator, committed to continuous improvement, regularly evaluates its technology needs. Their objective is to achieve reliable drilling performance in each new well, pushing boundaries for depth and speed. To address this challenge, they engaged Halliburton to enhance drilling operations for a deepwater exploration well. The team identified the need for a novel bit design that would surpass the durability and performance of previous offset wells.

Solution

Halliburton designed the 8-1/2 in. Hedron™ HDi75DMKF drill bit using the Design at the Customer (DatCI™) process — an industry-leading customization process to deliver the highest-performing, application-specific design in the market. Working with the customer, the Application Design Engineer (ADE™) specialist designed the bit using the proprietary IBitS™ drilling software.

The bit features Razor™ 4D-shaped cutters, purpose-built for the most demanding and abrasive applications. Additionally, it incorporates Cerebro Force™ in-bit sensing technology which captures critical data on weight, torque, bending, vibration, and rotational speed. To further enhance performance, Oculus™ automated dull grading technology precisely assesses each cutter and enables swift troubleshooting and optimization of the bit design.



Result

With the optimized bit configuration, the operator drilled a 1,034 meter section at an impressive rate of penetration (ROP) of 27 m/hr. This interval exceeded the length of the previous longest offset well by 45%, and the ROP improved by 68% compared to the previous record. These achievements translated into operational time savings for the operator. Additionally, a report generated using Cerebro Force in-bit sensing technology offered valuable field insights.

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