

LOCATION: BLAINE COUNTY, OKLAHOMA

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HUGHES**
a GE company



Dynamus Extended-life Drill Bit saved 2.3 days of drilling time



After the Dynamus bit drilled the entire lateral in one run, it was in nearly perfect condition with minimal wear or damage.

An operator drilling the upper Meramec formation in Blaine County, Oklahoma was having trouble completing the 8 ¾ in. lateral in one run. The lateral formation consists of interbedded siltstone and limestone rock with numerous zones, and the operator also frequently encountered high-strength stringers as well as chert and dolomite. Crossing these zones commonly caused vibrations and bit-damage. Additionally, previous runs demonstrated that even small amounts of wear on the cutting structure of the bit could lead to dramatic decreases in drilling speed, often prompting the operator to trip out for a replacement bit.

Believing it was possible to drill the entire lateral in one run and with increased speed, Baker Hughes, a GE company (BHGE), recommended the **Dynamus™ extended-life drill bit**. The Dynamus bit is engineered to be highly robust, enabling operators to drill further and faster in challenging applications by preventing the damage and dysfunctions that these applications typically cause.

The bit was outfitted with **StayCool™ 2.0 multidimensional cutters** to reduce wear-rate and cracking tendencies and increase drilling efficiency. The innovative geometry on the face of the StayCool 2.0

Results

- Set a new drilling speed record by improving ROP by 95%
- Completed 10,500 ft lateral in one trip
- Increased footage by 27%
- Saved 2.3 days of drilling time

Challenges

- Complete long, challenging, interbedded lateral in one trip
- Minimize damage through hard, interbedded formations
- Prevent small wear-flats that cause large degradation in ROP

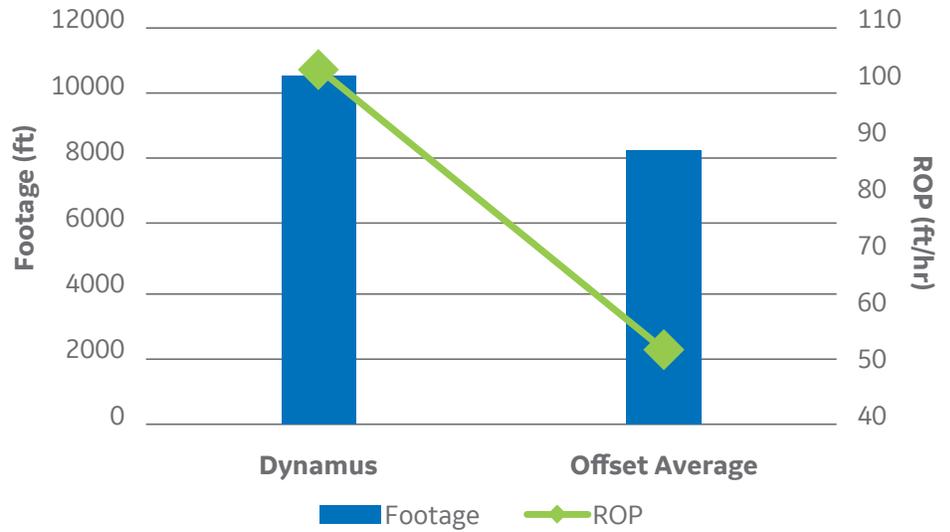
BHGE solution

- Dynamus extended-life drill bit
- StayCool 2.0 multidimensional cutter technology
- Overload protection elements

cutters reduces the temperature at the working surface, preserving cutter life and enabling longer runs at higher ROPs.

The Dynamus bit with StayCool 2.0 cutters completed the 10,500 ft (3200 m) lateral section in one run, increasing footage by 2,500 ft (762 m) compared to the standard PDC offset—a 27% improvement. Drilling speed was also significantly improved—the Dynamus bit drilled the section with an average ROP of 102.5 ft/hr—95% faster than the highest-performing offsets, setting a new drilling speed record for the application. In addition, when it was pulled from the hole, the Dynamus bit was dull-graded at a 1-1, demonstrating its longevity. Even after drilling more than 10,000 ft, the Dynamus bit with StayCool 2.0 cutters had almost no wear or damage.

PERFORMANCE COMPARISON OF DYNAMUS AND TOP OFFSET AVERAGE



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