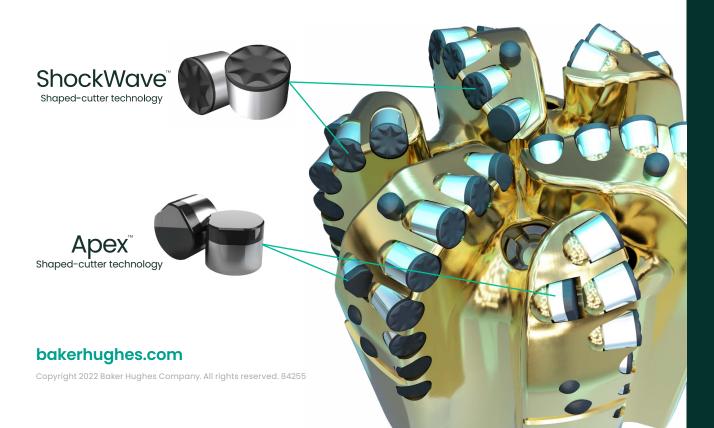
Shaped-cutter combination saves time, eliminates runs vs. conventional technology

CHALLENGES

- Complex interbedded lithology containing hard rock and highly abrasive formations
- Excessive vibrations typically encountered while drilling
- Frequent cutter breakage in offset wells

SOLUTION

- Advanced simulation modeling to identify optimal bit/shaped-cutter combination for this application
- 6-3/4-in. <u>Dynamus</u>[™] extended-life PDC bit
- ShockWave[™] shaped-cutter technology
- Apex[™] shaped-cutter technology



RESULTS

76% meterage improvement vs pad average

One run eliminated planned bit trip

26 hours rig-time savings vs. offset

