

Case Study

New PDC Benchmark Sets in OMAN

APPLICATION

Onshore – 16” vertical section
Interbedded, Limestone and Shale
surface sediments formations

TECHNOLOGY

RAIDER 619
STEEL BODY
HYDRA CURVE NOZZLES FEATURE

LOCATION

OMAN
Onshore

CUSTOMER CHALLENGE

The Customer focused on drilling the complete 16” section in one PDC bit run while achieving the best possible ROP and lowest cost per foot.

The previous wells used mainly PDC bit design achieving 31.7 m/h ROP average across the field.

Record run in the area was set @ 66.1 m/h.

VAREL SOLUTION

VAREL proposed a specific PDC design leveraging the RAIDER platform with part of HYDRA™ technology. Design optimization using our PDC Designer and DIG-IT 3D™ software for optimal simulation and CFD analysis was performed for superior Hydraulics design.

Solution: 6-bladed, 19-mm aggressive cutting structure with steel body bit to maximize open face volume and junk slot area. Curve nozzle features were utilized.

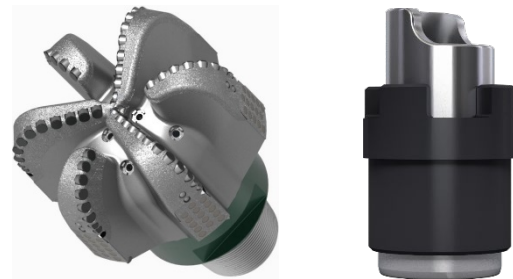
Purpose: Superior drilling efficiency and cutting removals from the cutter / rock interface to allow optimal cleaning and cooling together with sharpness preservation of the PDC.

CUSTOMER VALUE

New consistent field record achieved and time saving on the planned objective.

- ROP Field record run with **89.5 m/h**
- Achieved **35.4%** increase in ROP as compared to previous run record performance.
- Achieved **182.3%** increase in ROP as compared to field / application average.

Steel PDC design + Curved Nozzles



Performance Comparisons

