Case Study

Outstanding Performance Best New ROP Record in the field for 12.25” bit in Oman

APPLICATION
Onshore– 12.25” Section
Soft Carbonate formation.

TECHNOLOGY
VION™ 519S
Hydra™
PDM BHA

LOCATION
Oman
Onshore

CUSTOMER CHALLENGE
The Customer focused on drilling with 12.25” PDC bit to achieve the best possible ROP drilling through the reactive shale layers with potential bit balling, maximizing overall bit hydraulics efficiency and minimizing the drilling time.

The TOP 13 achievement using PDC bit design achieving 23.4m/h ROP average for the field.

VAREL SOLUTION
VAREL proposed a specific PDC bit that has been modified and re-designed leveraging the VION™ bit technology with HYDRA webbed blade design for hydraulic optimization especially to mitigate bit balling, also included is the reinforced shoulder coverage and newly designed cutting structure, especially for drilling applications where control and durability is essential.

Solution: 5-bladed, 19mm cutting structure with steel body matrix incorporating Varel Hydra™ Hydraulics Technology.

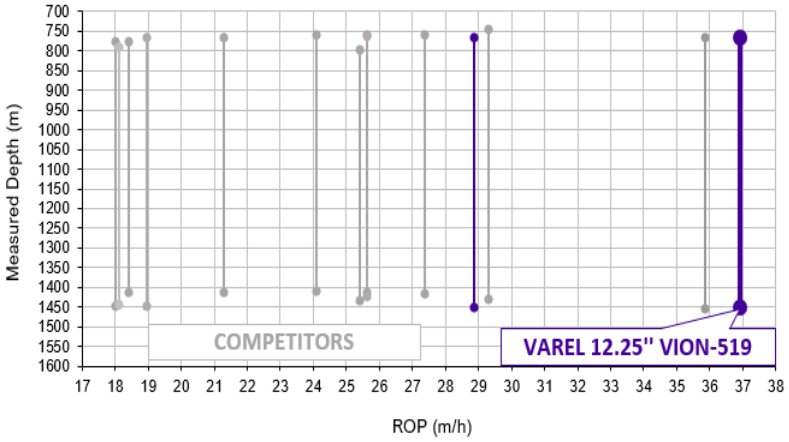
Purpose:
Steel Body PDC bits provide better torque management and greater stability and whirl resistance.
Varel Hydra™ Hydraulics optimization program combines CFD analysis with curved nozzles, webbed blade design and other application specific bit design features. This solution approach provides better bit cleaning and cooling which leads to extended bit life and longer runs.

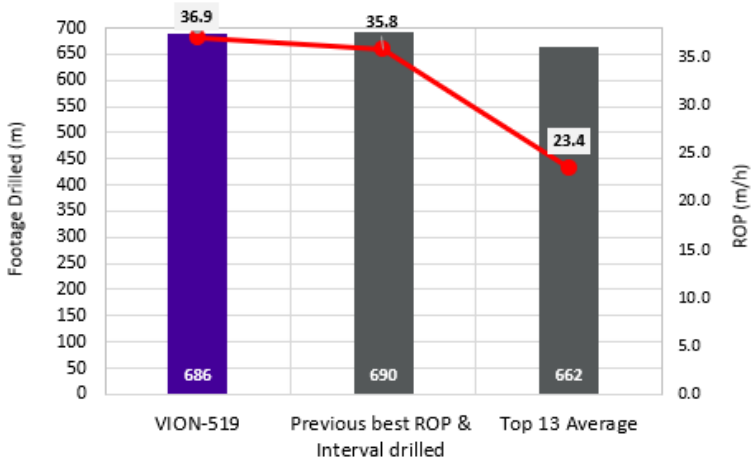
CUSTOMER VALUE
The 12.25” VION-519S achieved the best Field ROP record in these 2 years.

- The bit achieved excellent interval drilled of **686m** with best ROP in the field of **36.9m/h.**
- Achieved **3.1%** increase in ROP as compared to previous best ROP in the field.

Steel Body PDC design

Performance Comparisons





VAREL ENERGY SOLUTIONS