

# Vulcan® Abrasion Resistant Cutters Save Costly Trips

## 13-1/8" R616DGX, Tarim Field, China

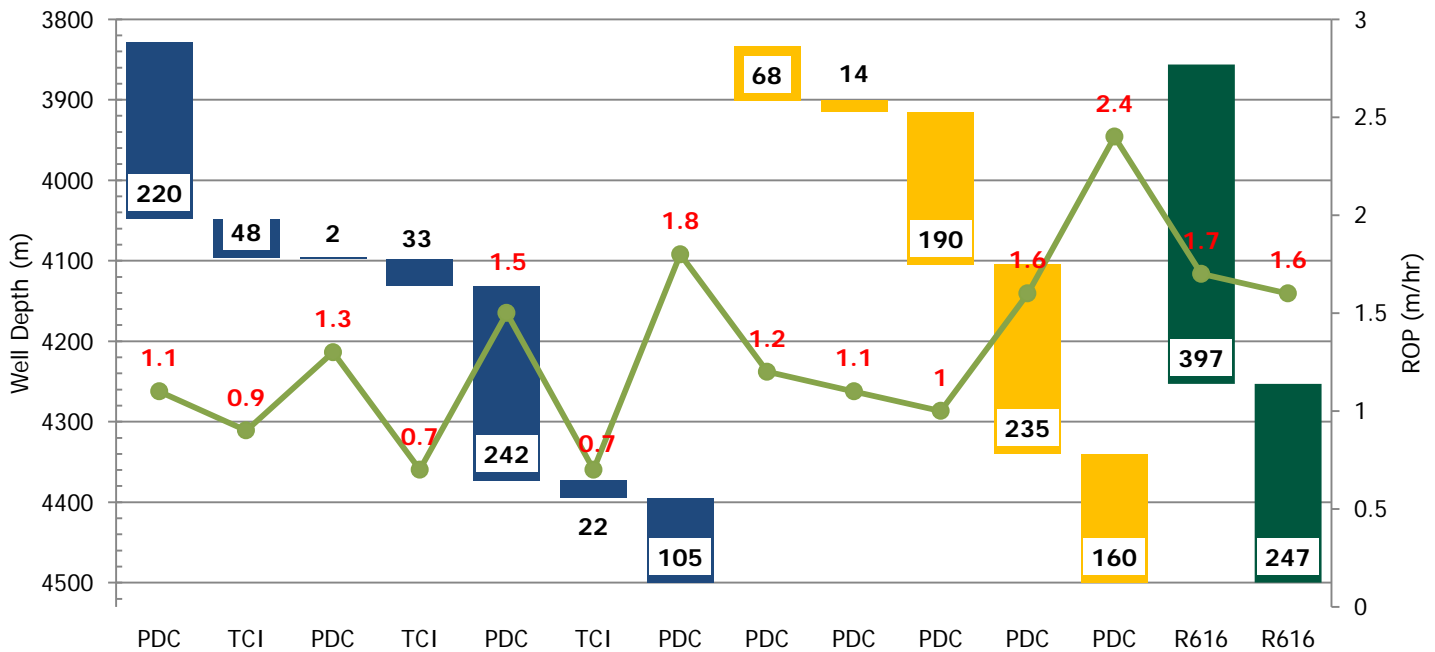
**CHALLENGE:** To drill the 13-1/8" vertical section in the Tarim field with fewer than five bits and a competitive ROP better than 1.3 m/hr (4.3 ft/hr). The hard shale and sandstone encountered in this approximately 650 m (2,132 ft) section leads to various bit trips due to less than optimal ROP and short footage.

**SOLUTION:** Varel engineers designed a custom built, fully optimized Raider® bit, the R616DGX. This advanced Raider is outfitted with carefully selected abrasion resistant Vulcan cutters. Varel selects cutters specifically for each application to provide the most appropriate combination of thermal, impact, and abrasion resistance available. This selection process allows for increased ROP, improved cutting action, and longevity. The bit also features tungsten carbide shock studs to maintain smooth cutting action and Varel's premium gauge of Thermally Stable Polycrystalline (TSP) diamond ovals.

**RESULTS:** Varel exceeded all customer expectations for this run. By incorporating these custom design elements, the operator required only two R616DGX bits to drill the 644 m (2,112 ft) to TD. These two bits drilled at 1.65 m/hr (5.4 ft/hr), a 27% increase on the average offset run. By maximizing the PDC cutters' durability, these bits were able to stay downhole longer with competitive ROP and eliminate four trips at over 4000 m deep.



Both bits were pulled with a 1-2 dull grade.



For more information on this bit and proposed applications please speak to your local Varel representative.