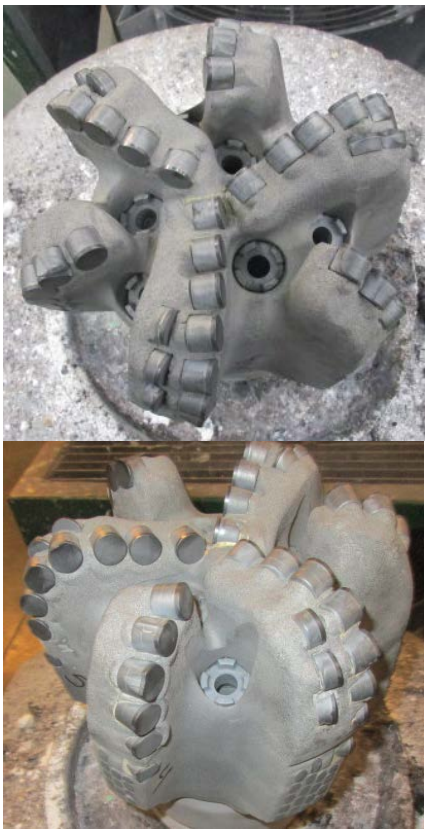
Voyager®

Voyager® Sets New ROP Record from Drill Out to 10,115'

8-1/2" V616P2DG

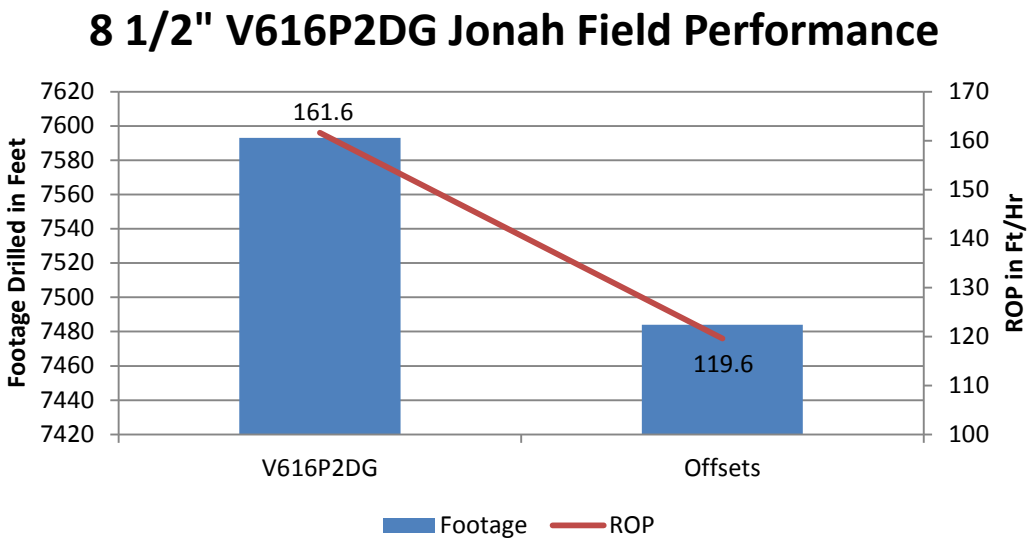
Jonah Field – Sublette County, Wyoming



CHALLENGE: Maximize the ROP and secure a single bit run to 10,000 feet, improving efficiencies and lowering overall drilling cost. The bit will be run on a motor in a vertical application drilling an S curve well profile to the sharp sands at 10,000 foot depth.

SOLUTION: Maximize drill bit efficiency in this mud motor driven vertical application. Varel designers using proprietary SPOT-DN™ software have included "P2" partial PowerCutters™ in the bit design to enhance the abrasion resistance of the cutting structure shoulder combining speed and durability. This arrangement allows optimum ROP while transitioning formations and protection for primary cutters.

RESULTS: This Voyager bit drilled 7593 ft (2314 m) at a record ROP of 161.6 ft/hr (49.3 m/hr). The 8-1/2" V616P2DG bit achieved a 35% ROP improvement compared to the offsets average that drilled more than 6000'. The bit also helped set a record for SPUD to TD time of 8.2 days with a second Varel Voyager bit drilling the lower section. This bit reached the intended target at 10,115' with an excellent dull grade of 1-2-WT-S-X-I-ER-PR. The design of this Voyager bit contributed to efficiency savings for the rig and set an ROP record for the rig and this field.



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For more information on this bit and proposed applications please peak to your local varel representative