

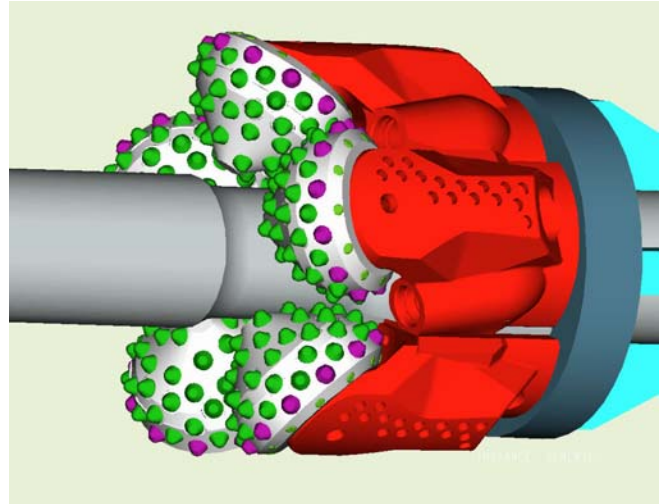
10" Random Rock 5 Cone Hole Opener Performance Update

Location: Job #1 – Kentucky
Job #2 – New York

Operator: US HDD contractor

Challenge: #1 - 800 Foot River Crossing
#2 - 400 Foot River Crossing
Hard Rock HDD Applications

Geology: Job #1 – 35 kpsi UCS
Limestone
Job #2 – Hard Sedimentary
Shale



Result:

- *Each ream was completed on time with no trouble on the hole opening sections.*
- *To date, the hole opener has successfully reamed 1200 feet and will be used on the next rock job.*
- *Cutting structure is virtually untouched and the bearings are in excellent condition!*

Features/Benefits:

1. *Patented Random[™] cutting structure provides more effective use of applied weight.*
2. *Specifically designed for the toughest drilling conditions. One cone style for any position.*
3. *Compensated Lubrication System*
4. *Unique locating system provides truer cutter positioning*
5. *Improved wall clearance for reduced shirrtail wear*
6. *Improved shirrtail protection – Hardfacing and TCI Inserts*
7. *5 cone reamer ensures SMOOTH running in difficult drilling conditions*