



SONIC FOR SOFT-GROUND TUNNELING

CONTINUOUS CORES THROUGH ANY GEOLOGICAL FORMATION

Sonic drilling ensures excellent subsurface characterization and provides engineers with expert knowledge of ground conditions that are essential for successful tunneling operations.

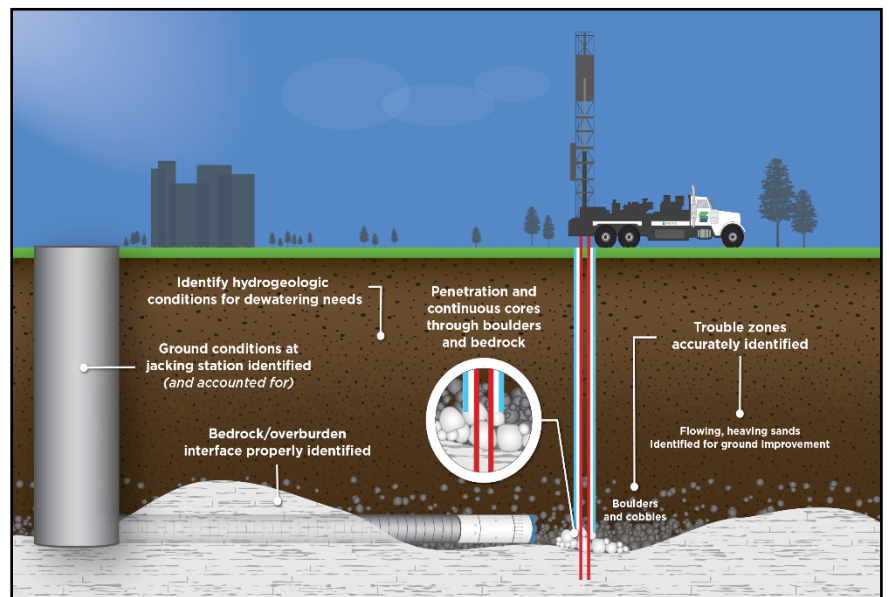
No other geological/hydrogeological data collection method delivers tunnel design professionals, owners and contractors the quality, accuracy and detail that sonic drilling provides.

Sonic drills can also easily incorporate conventional geotechnical sampling techniques (SPT, Undisturbed sampling) where desired.

MINIMIZE PROJECT RISK

The superior information provided by continuous sonic cores substantially minimizes project risk by:

- Providing engineers and geologists with superior subsurface information for realistic cost estimates
- Providing contractors with key site-specific information, maximizing the accuracy of cost proposals
- Identifying natural and man-made obstructions
- Identifying ground conditions requiring physical improvement (such as excessively soft ground or flowing sands)
- Defining conditions for the design and installation of ground freezing systems
- Defining hydrogeology that affects tunneling machine advancement



MINIMIZE CHANGE-ORDERS, PROJECT DELAYS, COST OVERRUNS AND POTENTIAL LEGAL BATTLES

Sonic drilling generates a continuous soil core quickly through virtually any subsurface condition – even boulders, cobbles and man-made debris and obstructions. Furthermore, these high-quality cores are obtained without the waste and mess associated with other drilling techniques in a fraction of the time.