VectorZIEL 800 succeeds in a non-conventional drilling application in Norway

LOCATION	APPLICATION
Norway	Utility tunnel, raise boring

TECHNOLOGY

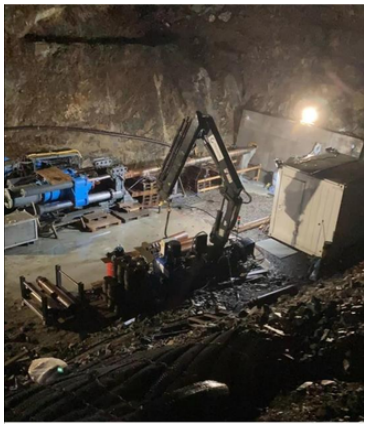
The VectorZIEL™ 800 rotary steerable system offers high accuracy and is especially suited for wells with tight target tolerances. Its autonomous, closed-loop steering system can hold target inclination and azimuth using high-accuracy directional sensors located only 1.5 m from the bit.

CHALLENGE

A city in Norway needed to install utility piping through an environmentally sensitive mountain area. To reduce impact and cost versus laying pipe over the mountain, two parallel horizontal 12¼-in holes were drilled through it and reamed with a raise-bore rig to 1.42 m. Azimuth accuracy was critical so the holes would not intersect, and a small constant decline was needed for water to flow naturally.

RESULTS

The VectorZIEL 800 drilled two 200-m holes only 7.2 m apart, to final plan and with less than 14 cm vertical deviation. A field trainer set up the surface system and initialized the tool. Continuous telemetry let the crew monitor progress without dedicated personnel on site, and turbine power allowed each hole to be drilled in a single run with more than 35 days downhole.



HOLE SIZE	HOLES	SPACING	VERT. DEVIATION	REAMED TO	TIME DOWNHOLE
12¼ in	2 × 200 m	7.2 m	< 14 cm	1.42 m	> 35 days