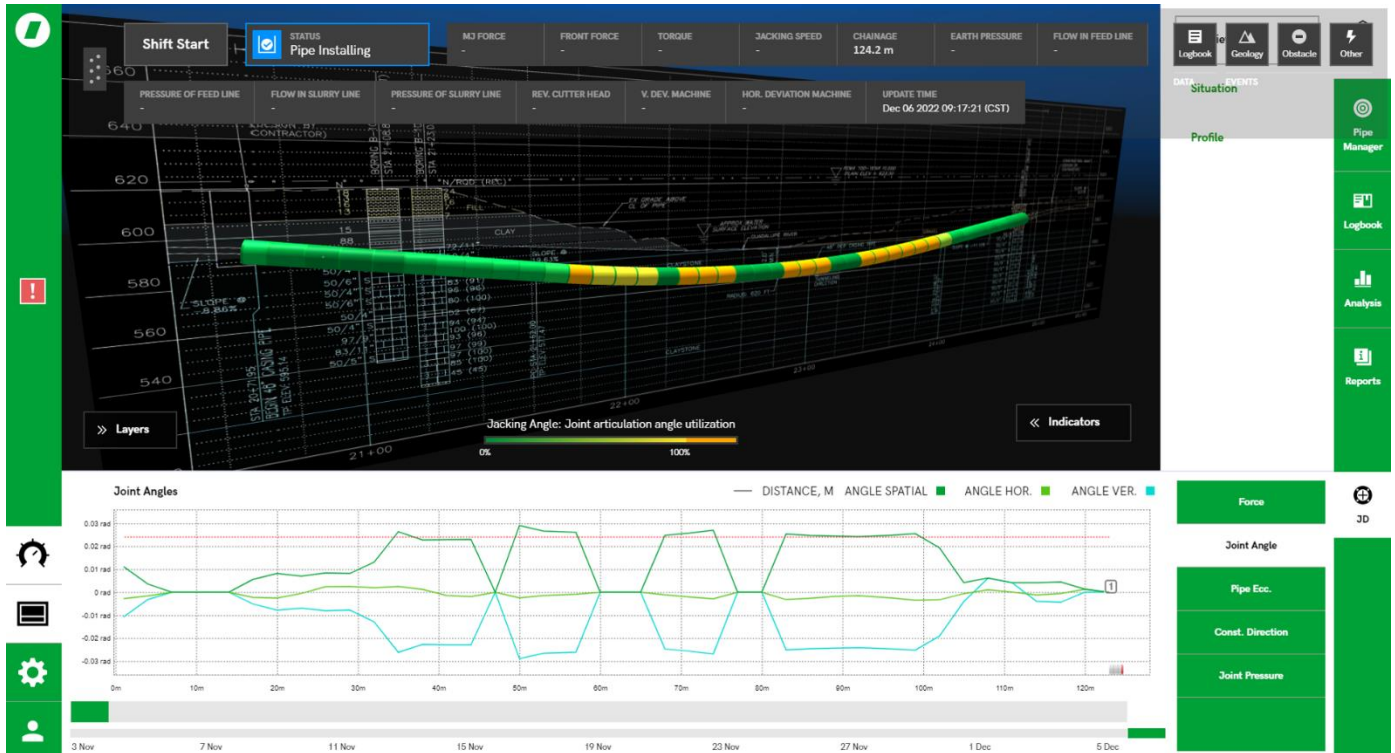# **Microtunnel river-crossing** with very tight vertical curve radius in Texas

The New Braunfels Utilities (NBU) Surface Water Treatment Plant-Discharge Line (SWTP-DL) project in New Braunfels, Texas, was initiated to provide a connection between the NBU SWTP to the FM 306 Pump Station. The waterline was constructed primarily utilizing open cut methods, however, where the pipeline crossed beneath the Guadalupe River, the trenchless construction method of microtunneling was used.

One of the main challenges on the project was the alignment, which had a vertical radius of R = 189m (=620 Ft) in its tightest sections (one of the tightest curve radii performed to this date in N-America).

The combination of MSS and the Hydraulic Joint supported the jacking pipes to go safely through, without having to compromise on pipe length. The great advantage here was that possible problems, like pipe-joints opening too much and causing ground water entrance, were often discovered preventively. However, special congratulations go to the team. We thank them for their great cooperation and look forward to work together again in the future.

AT A GLANCE

Project name	New Braunfels Utilities SWTP Discharge Water Line Project
Project location	New Braunfels, Texas, USA
Time of completion	2022
Specialties	Tight vertical curve radius, River crossing
Total length	126 m / 413 ft.
Pipe ID	1219 mm / 48 in.
Pipe OD	1524 mm / 60 in.
Alignment	Curved
Min. curve radius	189 m / 620 ft.
Pipe material	Reinforced Concrete
Pipe length	3 m / 10 ft.
Geology & groundwater	Mixed ground, Clay, Gravel Groundwater present
Hydraulic Joint	JC250, single loop, admissible jacking force during curve = 5'000 kN
Guidance system	VMT TUnIS MT Gyro
TBM	Herrenknecht AVND1200TC
Owner	New Braunfels Utilities (NBU)
Designer	ALDEA
Contractor	Bradshaw Construction Corp.

Jackcontrol
monitoring microtunneling