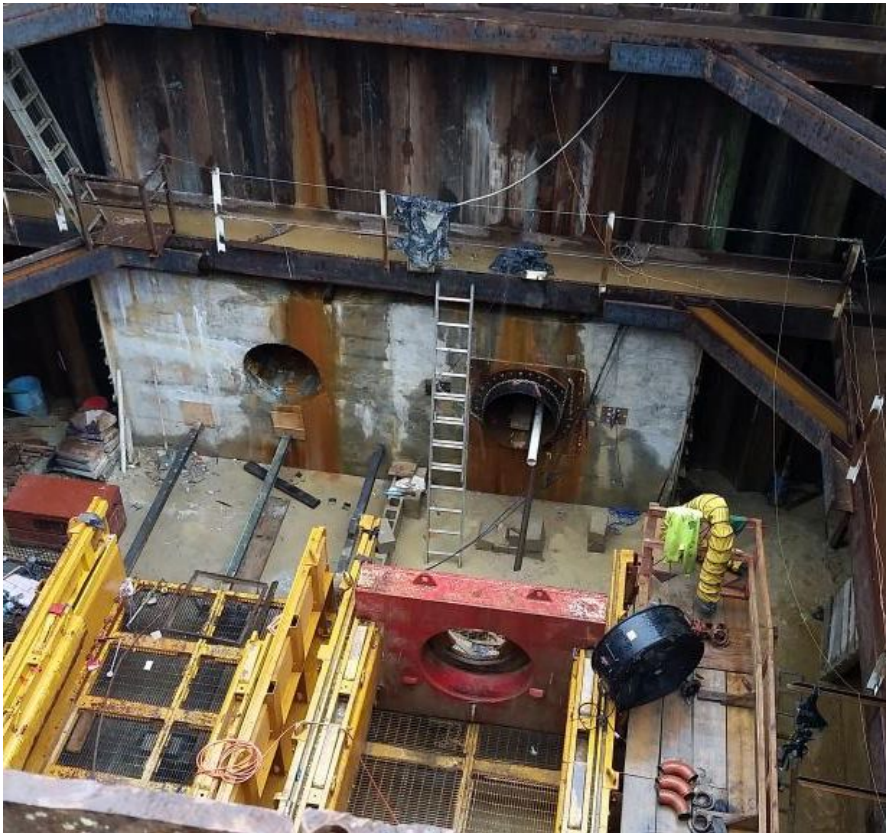


## Water Treatment Plant 5 MGD Capacity Expansion New Raw Water Pump Station Livingston, TX



### PROJECT OVERVIEW AND CHALLENGES

Bradshaw was contracted to install twin 36 inch steel casings from a 30 foot deep pump station shaft at the shoreline of Lake Livingston Reservoir to an intake cofferdam in the lake. Each microtunneled casing was 390 foot long and used to install 24 inch ductile iron carrier pipes. The soil conditions consisted of clay and sandy silt 20 feet below the water table. Due to the non-cohesive soil conditions and shallow cover at the retrieval shaft in the lake, the MTBM recovery was performed under water by divers. Additional challenges included unusually heavy rainfall during microtunneling leading to significant flooding of the Livingston area.



### PROJECT INFORMATION - 545

**OWNER:**

Trinity River Authority  
817-467-4343

**ENGINEER:**

Klotz Associates, Inc.  
Alexander Kuzovkov  
281-589-7257

**CONTRACTOR:**

Layne Heavy Civil, Inc.

**COMPLETION DATE:**

7/24/2015

**GEOLOGY:**

Clay, Sand

**EXCAVATION METHOD:**

Herrenknecht AVN-600 MTBM

**MINING DIMENSIONS:**

780' x 36" Ø

**FINAL LINING:**

24" Ductile Iron Pipe

**FOR MORE INFORMATION:**

Mike Wanhatalo, Project Manager  
410-970-8300  
mwanhatalo@bradshawcc.com  
Refer to Project 545