

CASE STUDY

PIPE JACKING | SLURRY MICROTUNNELING



Project Name:
Aurora Gun Club Rd. Microtunneling Project



Prime Contractor:
BTrenchless, Inc.



Location:
Aurora, CO



Ground Conditions:
Silty clay



Akkerman Equipment:
Akkerman SL60C MTBM fitting with a 72-in OD skin kit, 800-ton Jacking Frame



Pipe:
72-in x 1-in wall Permalok® in 20-ft lengths



Total Length/Longest:
458-lf

PROJECT OVERVIEW

The Akkerman SL60C-72 outfitted with a dual-gage soft ground cutterhead is shown being delivered to the jobsite. The Akkerman MTBM received an increased kit to 72-in OD that included a belly-pan kit to assist steering reaction along the alignment.

THE CHALLENGES

- **Soft Ground Conditions:** The alignment passed through silty clay, posing a risk of ground instability and potential face loss during excavation.
- **Accuracy Requirements:** The 72-inch diameter tunnel required precise steering to ensure alignment and avoid costly deviations.
- **Limited Access:** The urban location of the project site restricted available space for staging equipment and operations.
- **Pipe Handling:** The installation of 20-foot, 72-inch diameter Permalok® steel pipe demanded careful coordination and jacking force management.

THE SOLUTION

- **Customized Equipment Configuration:** The Akkerman SL60C MTBM was fitted with a dual-gage soft ground cutterhead and upgraded to a 72-inch OD using a specialized skin kit. This ensured optimal performance and face pressure control in soft ground.
- **Belly-Pan Kit for Steering Support:** A belly-pan steering kit was added to enhance machine stability and alignment control through the variable soil profile.
- **High-Capacity Jacking Frame:** An 800-ton jacking frame provided consistent and sufficient thrust force to advance the steel casing without overloading or causing buckling.

- **Efficient Site Setup:** BTrenchless managed site logistics to accommodate space constraints while maintaining efficient pipe handling and spoil removal operations.

OUTCOME

- **Precise and On-Time Completion:** The 458-linear-foot drive was completed successfully with no significant deviations from the planned alignment, meeting both accuracy and schedule expectations.
- **Optimized Ground Control:** The use of a dual-gage cutterhead and enhanced MTBM configuration allowed for smooth excavation through silty clay without surface settlement or ground loss.
- **Seamless Pipe Installation:** The 72-inch Permalok® steel pipe was installed with excellent joint integrity and minimal downtime, thanks to efficient jacking force distribution and equipment coordination.
- **Client Satisfaction:** The collaboration between BTrenchless and Akkerman equipment ensured project success, reinforcing trust and paving the way for future trenchless solutions in the region.

