

CASE STUDY:

CRITICAL PIPELINE REHABILITATION UNDER THE GAUTRAIN BRIDGE, PRETORIA An ASOE Pipeline Rehabilitation Project

OVERVIEW

This case study details how **Orsco** successfully rehabilitated a critical municipal potable water pipeline located in a high-traffic, inaccessible area of Pretoria, South Africa, utilizing the advanced **ASOE pressure pipe lining system**. The project drastically reduced the timeline and minimised disruption compared to traditional excavation methods.

DETAILS

Client: Tshwane Municipality (Potable Water Division)

Location: Adjacent to Loftus Versfeld Stadium, Pretoria, under the Gautrain Bridge

Asset: 250mm Potable Water Pipeline

Problem: Severe corrosion, significant leakage, and inaccessibility for traditional excavation

Solution: ASOE 50-Year Life Span Potable Water Pressure Liner

Result: Full rehabilitation completed in one week, restoring the pipeline's integrity and extending its service life by decades.



THE CHALLENGE: INACCESSIBLE CRITICAL INFRASTRUCTURE



Orsco was engaged by the Tshwane Municipality to assess and address severe issues within a 250mm potable water pipeline.

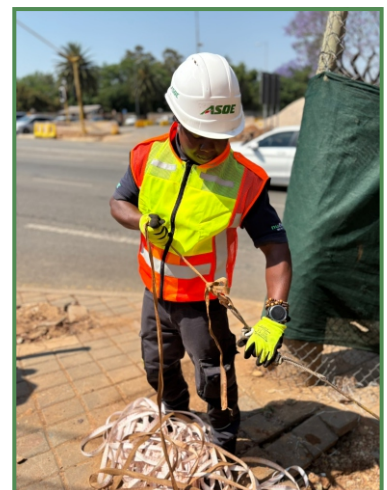
- **Severe Deterioration:** Initial pre-inspection confirmed the pipeline was heavily corroded and rusted, leading to persistent and unmanageable leaks.
- **Inaccessibility:** The pipeline's location, running directly underneath the critical Gautrain railway bridge and adjacent to the heavily utilized Loftus Versfeld Stadium, made repairs via traditional excavation impossible. Digging would have required extensive traffic management, costly infrastructure support, and a projected timeline of one to two months, severely impacting municipal services and public transport.



THE ORSCO SOLUTION: PRECISION RELINING WITH ASOE TECHNOLOGY

Orsco proposed a trenchless solution using the globally recognised ASOE Pressure Pipe Relining System. This durable, long-lifespan liner is specifically designed for rehabilitating pressure pipelines transporting potable water, as well as being used worldwide in sub-sea, mining, ground, and industrial processed water applications.

The liner also offers a 50-year service life.



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EXECUTION PHASE

The project was executed following a rigorous, streamlined process:

- **Cleaning and Preparation:** Orsco first ensured a clean surface for liner adhesion. This involved aggressive High-Pressure Jetting combined with specialised mechanical preparation using Picote Milling equipment. This step removed all internal rust, scale, and debris.
- **Liner Installation:** The ASOE liner was transported to the small, contained worksite on a dedicated trailer. The installation process itself was efficient and compact.

RESULTS: SPEED, PERFORMANCE, AND SIMPLICITY

The combination of Orsco's expert execution and the performance of the ASOE system delivered exceptional results:

- **Rapid Completion:** The entire rehabilitation project, from initial preparation and cleaning to final liner curing and commissioning, was completed in one week.
- **Minimal Disruption:** The trenchless method eliminated the need for disruptive excavation, ensuring the integrity of the Gautrain bridge structure was maintained and traffic flow was minimally affected.
- **Long-Term Value:** By installing a durable, non-corrosive liner, Orsco provided the municipality with a renewed pipeline, for 50 years, thereby eliminating future maintenance and leakage costs associated with the old pipe.



"What would possibly have taken old methods a month or two took a complete week from preparation to completion. This project perfectly demonstrated the simplicity and performance that modern trenchless technology brings to critical infrastructure rehabilitation."

