



case study:

Dalby HP Transmission Polyethylene Gas Pipeline

In 2008 Tenix pioneered the use of polyethylene (PE) in high-pressure pipeline applications in Australia by designing and building a nine-kilometre gas transmission pipeline to deliver methane to the Dalby Bio-Refinery in southern Queensland. By proposing and using PE, Tenix provided a cost-effective solution that was easy to install, requiring minimum welding and no X-rays.

The project was delivered under a contract to Gas Pipelines Victoria as part of the Bio-Refinery Project sponsored by ANZ Infrastructure Services.

Key Features & Outcomes

Tenix designed and constructed the nine-kilometre pipeline plus custody transfer station and pressure reduction facility (City Gate) adjacent to the Dalby Compressor Station, along with a customer meter/regulator set at the Dalby Bio-Refinery. The pipeline used PE 100 type resin, was 200mm in diameter, standard diameter ratio (SDR) 9 wall thickness providing a maximum allowable operating pressure (MAOP) of 20 bar. The pipeline was buried at a depth of 1.2 metres. Construction began in August 2008 and commissioning was completed by mid-October 2008.

- **Safety** - 3,900 total hours were worked with no lost-time injuries and no injuries requiring medical treatment..
- **Innovation** - The PE pipeline was the first of its type in Australia to be a rated licensed gas pipeline, with such pipelines traditionally being constructed using steel.
- **Design management** - Only the highest standards (AS 2885.1) were used in the construction of this pipeline
- **Client relations** – Tenix maintained a close working relationship with stakeholders including Dalby City Council, Queensland Gas Regulator, Queensland Roads and Queensland Rail.
- **Environmental management** - Studies were undertaken involving local stakeholders. A number of species of native grasses were identified during the study and protected during the project.
- **Construction management** – delivered at the highest quality with all piping and jointing identified and logged against a GPS location.



Tenix[®]



Field Services

- ✓ New Build

Management Services

- ✓ Design
- ✓ Project Management & Systems
- ✓ Quality Management & Systems
- ✓ Subcontractor Management
- ✓ Planning Approvals
- ✓ Community & Stakeholder Management



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“Tenix over the years has been pioneering the use of PE as a substitute product to steel both in pressures and pipe diameter.”

Key Successes

- Delivery of a high quality pipeline hydrostatically tested to 2500 kPa
- The pipeline was easy to install, requiring minimum welding and no X-rays
- The PE pipeline was 25-30 per cent more cost-effective than traditional steel pipelines
- The project was completed on-time and on-budget

Our Role

Tenix provided the design and construction of the pipeline plus the associated custody transfer station, pressure reduction facility and customer meter/regulator set.

Tenix has for a number of years been pioneering the use of PE as a substitute product to steel and is actively working with the Australian Pipelines Industry to develop further guidelines, hence providing substantial value engineering opportunities to clients through the choices of alternative materials.

A major challenge for Tenix was in obtaining the necessary regulatory approval for the non-metallic licensed pipeline.

Resources & Skills

Tenix used its in house skills to provide all technical, engineering and project management along with all supervision and the vast bulk (90 per cent) of the pipeline construction workforce. Tenix also used internal resources to provide 70 per cent of the plant and equipment used. Our gas services operations are fully accredited for Quality (AS/NZS ISO9001:2008), Safety (AS/NZS ISO AS/NZS 4801:2001) and the Environment (AS/NZS 14001:2004).

For more information contact:

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Asset Type:

HP gas transmission pipeline

Duration:

14 months

Client:

Gas Pipelines Victoria (GPV)

Value:

\$2.3million

Location:

Dalby South East Queensland

Scope:

Design and Construct

Contracting Style:

Fixed Price

Contract Secured:

August 2008

