

CASE STUDY

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MOOMBA TO CROSS- BORDER CSS PIPELINE



1 / Introduction

The Moomba facility, located in South Australia's Cooper Basin, is a crucial component in the purification and distribution of natural gas to Australia's East Coast. A standout project at this facility, undertaken by Veritech's Roma branch,

focused on the Moomba Carbon Capture and Storage (CCS) project. This groundbreaking initiative aims to transform the CO₂ waste byproduct into a securely stored compound, significantly reducing atmospheric emissions.

2 / Innovation

A key innovation in this project was the application of advanced Radiography and Non-Destructive Testing (NDT) techniques. Veritech's team employed cutting-edge equipment such as JME Crawlers, Rigaku X-RAY Tubes, advanced computerised radiography, traditional wet film radiography, and portable darkroom units.

These technologies were crucial in ensuring the pipeline's integrity and safety, especially given the challenging environmental conditions and the pipeline's critical role in transporting CO₂ to underground reservoirs for storage.

3 / Project Summary

The Moomba CCS project entailed several complex stages, each vital for the efficient and safe handling of CO₂:

- **Capture:** Utilising a stainless steel header, the CO₂ from the Benfield units was effectively collected and transferred to the CCS compressor.
- **Compression:** A four-stage centrifugal compressor compressed the CO₂ to approximately 13 MPa, making it suitable for pipeline transportation.
- **Dehydration:** A Tri-Ethylene Glycol unit dehydrated the CO₂, preventing corrosion or hydrate formation in the pipeline.
- **Transport:** The CO₂ was conveyed through a 50 km DN250 carbon steel pipeline, designed precisely to ensure integrity under various conditions.
- **Injection:** With meticulous monitoring and control, the process concluded with CO₂ being injected into the Marabooka and Strzelecki fields.

The Moomba to Cross-Border CCS Pipeline, spanning 55 km with specific

design considerations for fracture control and environmental adaptability, was a testament to engineering precision.

The expert team from Vertech's Roma branch, commissioned by MPC Kinetic, executed Radiography and NDT using various specialised equipment. Their work was instrumental in ensuring the pipeline met all client specifications and industry standards. Slated for completion in 2024, the Moomba CCS project demonstrates Australia's commitment to sustainable natural gas processing and marks a significant step forward in carbon management.



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