

KILCUNDA HDD SHORE CROSSING

PROJECT ORIGIN ENERGY BASSGAS PROJECT

CLIENT CLOUGH ENGINEERING LIMITED

TIME 3 MONTHS



KILCUNDA



CROSSING LENGTH:
1,477
METRES
300M SEABED
TAILSTRING

PIPE:
NAP-ROCK COATED
DN 355.6 MM
14.3MM WT
AP15L X65

RIG:
COEDRILL 550
DRILLING SPREAD
AND PIPE PUSHER

INSTALLATION:
A COMBINATION OF
ONSHORE AND
OFFSHORE TECHNOLOGIES

The ultimate success of the Kilcunda Horizontal Directional Drilled (HDD) Shore Crossing was due to Coe Drilling's proven approach to accommodating varied geotechnical conditions and environmental constraints.

The project involved the design, fabrication and installation of a welded steel gas pipeline shore crossing at Kilcunda in Victoria to an offshore gas field in the Bass Strait.

To accommodate the difficult environmental and geotechnical conditions, including mudstone and sandstone of up to 142MPa, Coe Drilling undertook extensive pre-planning and coordination with the client. Thorough research identified innovative technologies and alternative construction methodologies to overcome the complex geotechnical conditions through staged pilot hole drilling and a combination of onshore and offshore pipeline installation. Coe designed and engineered a pipe thruster to install the prefabricated pipeline from onshore to offshore with minimal marine support.

Adjusting the construction methodology to suit the geotechnical conditions, Coe Drilling identified a two stage pilot hole drilling operation which minimised the risk of hydrofracture and ensured drilling operations could be completed through hard rock, including:

- 940m drilled through hard sandstone
- 577m drilled through softer mudstone
- Enlarging the pilot hole to 20 inch diameter through forward reaming.

The installation of the pipeline was made difficult by 3 to 5m swells, requiring additional mooring for the offshore marine support vessel to work safely. Using a combination method of assisting winching from the barge in conjunction with onshore thrusting, the pipeline was installed in water over 25m deep including a 300m pipeline tailstring on the seabed. The pipeline was anchor rigged and flooded at this depth to stabilise it against the prevailing Bass Strait sea conditions. Coe Drilling implemented a post-construction ocean survey to verify the stability of the pipeline in the seabed.

PROVEN GEOTECHNICAL ABILITIES

VARIED GROUND CONDITIONS INCLUDING MUDSTONE AND SANDSTONE UP TO 142MPa

PROVEN SEABED STABILITY

OCEAN SURVEY PROVES PIPELINE STABILITY THROUGH PRE-SET ANCHORING AND FLOODING

CONSISTENT ENVIRONMENTAL OUTCOMES

100% DRILLING FLUID RETENTION



OIL & GAS



A QUANTA SERVICES COMPANY