

COOMERA RIVER RECYCLED WATER PROJECT

OIL/GAS | SEWER | STORMWATER | POWER | WATER | TELCO

LOCATION	Gold Coast QLD
CLIENT	Abi Group / Gold Coast Water
PIPE	630mm SDR 9 polyethylene
GEOLOGY	Clay, sand, silts and gravels
LENGTH	330 metres
TECHNIQUE	HDD, pilot bore



PROJECT OVERVIEW

This project formed part of the Gold Coast Water pumps and pipes project – a program aimed at delivering approximately 80 kilometres of water mains and several pumping stations to the Gold Coast area. The HDD crossing of the Coomera River formed a part of the proposed northern extension of the Pimpama-Coombabah trunk recycled water main.

CONSTRUCTION

UEA Trenchless was contracted to install approximately 330 metres of 630mm SDR 9 PE pipe as part of the Pumps and Pipes project. The project was managed by Abi Group on behalf of Gold Coast Water. UEA chose to utilise its recently acquired Vermeer D300 x 500 HDD unit to perform the work. As 90% of the bore was under the river, which was salt water, UEA chose to utilise its own Digital Control Incorporated SSTI steering system. This system enabled the drill crew to ‘locate’ the drill head without the need to use walkover technology and provided reasonable accuracy (+/- 500mm) for the duration of the pilot bore.

The first pilot bore was installed and a return line was pulled in place. The initial pilot bore and ream allowed the drill crew to fully understand the changing ground conditions that varied between high plasticity clay, sand, silts and gravels in preparation for the second pilot bore. Whilst the geotechnical information supplied by the client was very accurate UEA changed its mud plan to ensure the second pilot bore was drilled in effectively and without any mud loss. Upon completion of the second pilot bore an 800mm reamer was attached to the drill string and a tail string installed to ensure the reamed hole was not lost. The mud plan ensured excellent drill returns were received at exit. Upon completion of the ream the 630mm PE pipe was attached to the drill string in preparation for pullback.

The pipe weight was approximately 40 tonnes. The pipe was required to be filled with water to create neutral buoyancy and to prevent the pipe from lifting in the hole and cutting through the surface. Rollers were also used to support the pipe and reduce friction during pullback. The finished pipe weight for install was nearly 90 tonnes. During installation the pullback pressure never exceeded 20 tonnes at any time.