



VICTORIAN DESALINATION PROJECT

30 August 2010

DESAL SPOTLIGHT

The Victorian Desalination Project includes an 84km transfer pipeline, to connect the desalination plant to Melbourne and regional water networks, and an 87km underground power supply to supply power to the plant from the electricity grid at Cranbourne.

Pipe laying started in February this year and more than 30km of the 84km pipeline is already in the ground, while power construction crews have installed more than 20km of conduit and 10km of power cable.

Pipe and power construction involves around 100 road and waterway crossings.

Careful assessments of potential environmental and local traffic impacts are undertaken which helps determine the most appropriate construction methodology for each individual location.

Traditional 'open cut' trenching involves digging a trench, laying pipe, backfilling the trench and then reinstating the land.

An alternative construction technique known as 'pipe jacking' is considered in areas that are environmentally sensitive, difficult to access or where surface activities cannot be disrupted.

Pipejacking does not require a trench. Instead, a vertical pit or 'shaft' is dug on either side of the road or waterway to be crossed. To make the shafts a safe place to work, their walls are lined with 'sheet piles', interlocking sheets of steel, which are driven into the ground with a vibrating hammer.

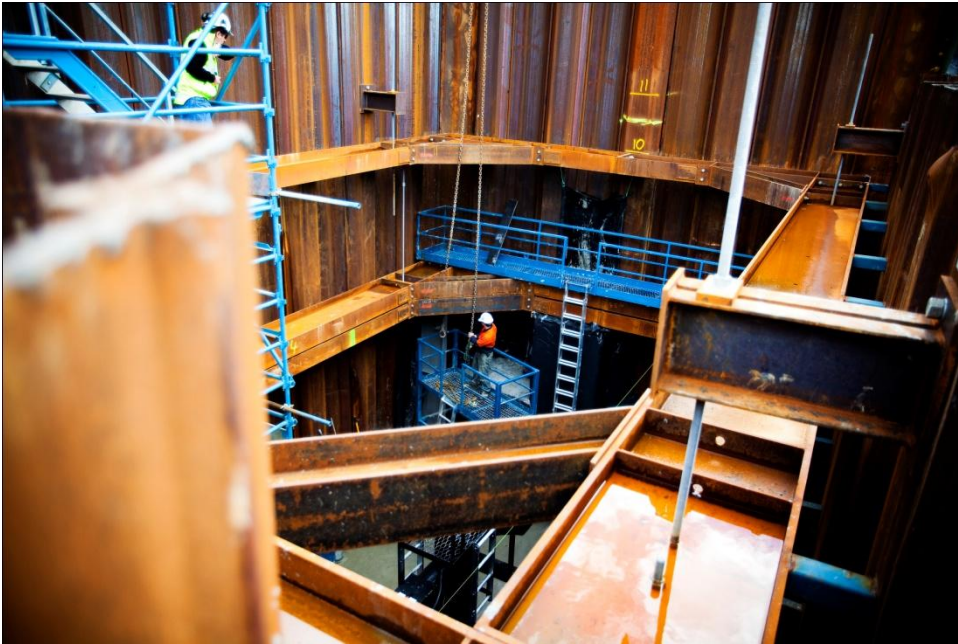


Figure 1: Preparing the vertical pit for pipejacking

An underground Tunnel Boring Machine (TBM) is then used to push lengths of pipe through the ground, forming a continuous string of pipe with minimal disruption at the surface.



Figure 2: TBC cutter head arrives

Manufactured in Ringwood (Victoria), the TBM weighs nearly 40 tonnes. It has a 2.8 metre rotating cutting face, which can bore up to 12 metres per day, depending on ground conditions.

The TBM excavates a length of ground, while hydraulic jacks push lengths of high strength concrete pipe into place behind. Mild steel cement line pipe is then pushed through.

Once the pipe is installed the shafts are backfilled, sheet piles removed and reinstatement works carried out to return the area to its original condition.

The TBM recently completed its first crossing under Boundary Drain near Koo Wee Rup and is currently being assembled at the Bass River.

Open cut trenching is much faster than pipe jacking - while a pipejack road crossing can take many months, an open cut road crossing can be completed in a matter of days, reducing the impact of construction traffic in local communities.

Open cut trenching also avoids social impacts like noise from sheet piling and the extended construction period which can be disruptive for local residents.