



## Austin Cove Type 90 Wastewater Pumping Station

**Client:**  
Satterley Property Group

**Location:**  
South Yunderup

**Construction Period:**  
Jun 10 – Jul 11

### Project overview

Austin Cove is a residential estate on the western side of the Forrest Highway in South Yunderup. DM Civil were engaged to construct a Type 90 Wastewater Pumping Station (WWPS) located within the Austin Cove Stage 2 development. This pumping station was required to service the entire Austin Cove catchment area and pump into existing Water Corporation treatment facilities.

The contract involved all aspects of WWPS construction including interconnecting pipework, emergency overflow storage, mechanical and electrical components and managing the overall commissioning of the pump station with Water Corporation.

The site conditions were diverse, with clay overlaying sand and a charged aquifer near the level of the proposed wet well base. The standard construction method of open excavation and well point dewatering could not be used due to the charged aquifer and the risk of ground heave. Instead, DM Civil installed sacrificial sheet piling around the proposed pump station and jet grouted a 3m plug below the proposed base of the pump station. This alternative method created a sealed pit that could be safely excavated, with minimal water entering and a stable and safe foundation to install the pump station wet well.

**The use of sacrificial sheet piling and a jet grouted plug ensured the excavation footprint was confined to 6m<sup>2</sup>, reducing the volume of material required to be treated for acid sulphate soils (ASS).**

## Significant achievements and benefits

Recognising the potential risks associated with ASS and the water charged aquifer, DM Civil proposed alternative construction methods to overcome these issues. These risks were mitigated by the use of proven technologies that still allowed for construction to be completed within the project budget.



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The scope of works included construction of varying sizes of interconnecting pipework, with associated Type 6 plastic lined and standard type 1 access chambers. Five rows of 25m long DN1800 RC overflow storage tanks were also installed.

In addition, the management of mechanical and electrical components of the pump station formed part of the contract. A full commissioning plan was developed, implemented and managed by DM Civil in conjunction with other key stakeholders including Water Corporation and Cossill & Webley Consulting Engineers.

At time of tender, DM Civil identified risks of ground heave and dewatering. With our internal sheet piling capability, we proposed the use of sheet piling and the installation of a plug by means of jet grouting, which allowed the wet well to be constructed in a safe and dry manner. This presented a cost effective and time efficient alternative to the traditional method of open excavation.

The grout plugged methodology minimised the amount of dewatering required, reducing the impact on the surrounding environment and changes to existing groundwater levels. This limited exposure to ASS, associated treatment and applicable costs. These techniques reduced the risk of exposure to the client of excessive provisional dewatering costs as it was a fixed lump sum alternative.

**This project ensured that the entire sewer catchment in the Austin Cove development could be pumped and processed utilising existing Water Corporation sewer infrastructure.**

**Contact DM Civil to discuss your water infrastructure projects.**

**GUARANTEED PERFORMANCE**

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