



Mount Eliza Reservoir Pond 2 Outlet Structure Modifications

Client:
Water Corporation

Location:
Kings Park - Perth WA

Construction Period:
Jul 15 – Nov 15

Project overview

This project required the relining and modification of the main reservoir outlet of pond No 2 at the Mt Eliza reservoir complex in Kings Park. DM Civil was awarded the contract to install an HDPE outlet within the existing DN1400 mild steel concrete lined pipework. This was one of the first main reservoir outlet structures to be upgraded within the Perth metropolitan area using this technique.

DM Civil drew on previous experience to propose an alternative to extrusion welding for the installation of the HDPE pipe system. The initial contract scope required the installation of the pipe segments and bends sequentially joining them by extrusion welding from within the confined pipe space. DM Civil proposed an alternative, using a butt fusion welding machine where the weld times could be reduced by half while increasing the level of quality control. The originally scope was made more complex when taking into account the pipe size of DN1200. Creating a safe and functional welding area 6 metres below ground for a butt welding machine of this size was critical to the success of this methodology.

Meticulous planning was required for multiple shutdowns and isolations to avoid interruption of the water supply to Perth's western suburbs and CBD area.

Significant achievements and benefits

The reservoir had to remain operational while the valve and magnetic flow meter were removed. Through detailed planning and a series of isolations, the crew installed a new DN900 butterfly valve while maintaining continued supply to several thousand households, businesses and hospitals around West Perth and the Perth CBD.



Mount Eliza Reservoir Pond 2 Outlet Structure Modifications

Having to construct this outlet structure within the Kings Park conservation area added to the complexity of the task. DM Civil had to take extreme care to ensure that foreign vegetation and soils were not introduced into the park. Strict guidelines were adhered to when excavating the 6 metre deep pit including backfilling and dewatering. The DM Civil crew worked closely with the Kings Park Botanical Gardens and Parks Authority in managing and monitoring all environmental requirements.

This was the first relining of a reservoir outlet modified and upgraded by the Water Corporation through a butt welding methodology. The technique proved to be faster and easier to install and provided better control through butt welding. The project was considered a resounding success by the client and DM Civil. Another factor for the success of the project was the requirement to create a water-tight seal within the reservoir, where the DN1900 flange had to be seated and bonded to the existing reservoir floor.

Community and stakeholder liaison was an important element of the project. Being located in one of Perth's popular tourist venues, the works were required to be completed with no interruption or inconvenience to the public or park visitors. Night works were performed on many occasions and the local business community and park personnel had to be kept well informed, ensuring that works were completed with minimal impact and that the site was kept secure at all times.

The completion of the relining and modifications to the reservoir outlet will ensure a substantial extension to the service life to a critical water asset.

Contact DM Civil to discuss your trenchless technology projects.

GUARANTEED PERFORMANCE

T: (08) 9492 1800
dmc@dmcivil.com.au