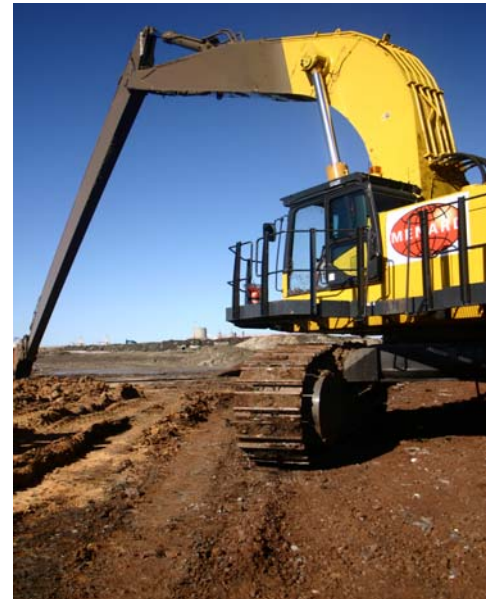


MAYFIELD FORMER NEWCASTLE STEELWORKS

GROUNDWATER BARRIER WALL



Sustainable Technology



Client: Regional Management Land Corporation
Consultant: URS/Douglas Partners

Specialist Contractor: Austress Menard Pty Ltd

THE PROJECT

The world's deepest groundwater barrier wall using continuous open trench method is currently under construction at the former Newcastle Steelworks site. Contractor Austress Menard was engaged by the Regional Land Management Corporation (RLMC) to design and construct the barrier wall to reduce the migration of contaminated groundwater to the adjacent Hunter River, as part of a remediation strategy for the site.

The site is within the former Newcastle Steelworks site on the south bank of the Hunter River at Mayfield. Over a period of 130 years this site has housed copper smelters, steelworks and ancillary operations. Steelworks wastes (slag) have been used to fill much of the site.

The site was previously occupied by coke ovens, gas holders and other processes associated with steel making. Contaminants of concern identified on site include petroleum hydrocarbons (including benzene, toluene, ethyl benzene and xylenes), metals, ammonia, cyanide, phenols and polycyclic aromatic hydrocarbons.

The strategy for site remediation of the Closure Area is based principally on containment (through capping and groundwater controls) rather than on in-situ cleaning or pump and treat methods.

WORKS DESCRIPTION

The barrier wall is a key element of the proposed remediation strategy by forming an up-gradient barrier diverting groundwater flows away from the most heavily contaminated area of the site. The barrier wall is 1.5 km long and has depths of between 30 and over 50m, required to key into the basal confining layer of alluvial clay or soft rock.

AUSTRESS MENARD'S ROLE

The works are currently performed using specialised excavation equipment and include:

- Mix designs, quality control systems, laboratory and in-situ testing
- Site preparation of the 37ha site, including access roads, contaminated excavated soil management and environmental controls

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