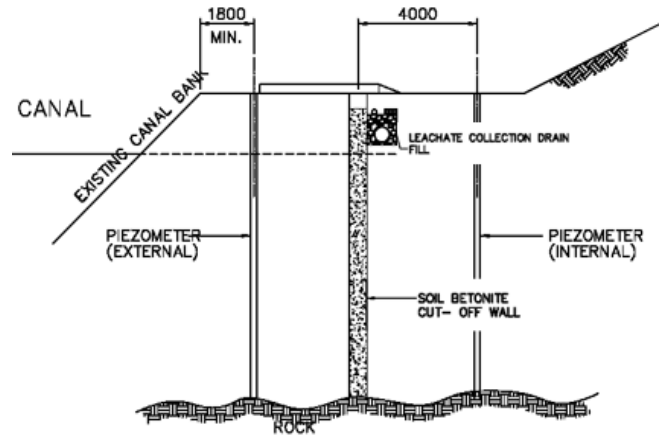


TEMPE LAND REMEDIATION

LEACHATE CUT-OFF WALL



Sustainable Technology



Client: Marrickville Council

Contractor: LSM Projects

Specialist Contractor: Austress Menard Pty Ltd

THE PROJECT

In order to comply with EPA regulations, the Marickville council decided to confine an existing refuse tip located in Tempe, NSW.

The scope of works included the design, construction and commissioning of a leachate control system (LCS) comprising:

- 1.36km long cut off system to prevent the leachate from causing a risk of harm to the Alexandra canal
- a collection drainage system installed in front of the wall comprising of collection drains, pump pits and rising mains allowing the transfer of the leachate affected groundwater to a treatment facility

AUSTRESS MENARD'S ROLE

Austress Menard was awarded the project in December 2003 as a specialty contractor to carry out the design and construction of:

- a leachate cut off wall to prevent migration of leachate from the site
- a collection system to transfer the leachate retained by the cut off wall to it's final disposal point at the South Western corner of the site
- monitoring bores for validation of the effectiveness of the leachate collection system.

In addition, the contract included the selection, supply and installation of:

- plant and equipment necessary for the operation of the collection system
- a suitable control system including remote alarm via telemetry

and the commissioning and testing of the completed system including all Quality Assurance and certification.

The first phase of the project involved the construction of a soil-bentonite wall to a maximum depth of 18 meters alongside the Alexandra canal, the Tempe reserve and the landing lights area (international airport boundary). The specified wall permeability was of 10⁻⁹m/s for 0.5m minimum thickness, including at the rock-toe of the wall interface.

Additional soil investigation was carried out to monitor the site conditions, including an extensive laboratory testing program to evaluate the long term compatibility of the different leachate components with the soil bentonite mix (presence of sulphates and oil by-products). Installation and monitoring of a test box area was also part of the quality control program to measure the wall performance in-situ.

Construction of the collector system – designed to collect the leachate affected groundwater upstream of the wall and maintain the water table to below surface level – involved the design and installation of 6 sumps with automated pumping

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