

DALRYMPLE BAY COAL TERMINAL

HAY POINT, QUEENSLAND
STORAGE DAM GROUT CURTAIN



Sustainable Technology



Client: Ports Corporation of Queensland
Consultant: Connel Wagner/Golder Associates

Contractor: Henry Walker Contracting
Specialist Contractor: Austress Menard Pty Ltd

THE PROJECT

As part of the expansion of the coal terminal storage facilities at Dalrymple the industrial dam had to be deepened and enlarged to accommodate greater storage of water for coal washing and other industrial uses. The Andesite rock beneath the dam was heavily jointed and a cut off was required along the ocean side of the dam to reduce saline seepage contaminating the fresh water storage.

The original design was to excavate a trench in the strong Andesite rock and to fill this trench with clay. Austress Menard proposed a more cost effective grout curtain solution.

AUSTRESS MENARD'S ROLE

Austress Menard, in conjunction with Henry Walker Contracting reviewed the geotechnical data and proposed a single row, 10 metre deep curtain, 800 metres in length.

A proving trial was carried out on three sections of the dam wall totalling 80 metres, to assess the practicability of a grout curtain treatment and prove the design and the techniques and execution method for the main works.

These tests showed the clayey decomposed Andesite near the surface to be essentially impermeable, but that the rock at depth was highly permeable consisting of fine fractures that could easily be grouted.

Using descending stage grouting techniques, a multiple phase curtain was constructed and proved by a program of water testing to the satisfaction of all parties. A target permeability of 2-4 Lugeons was set as satisfactory. A cementitious grout mixed in colloidal mixers was placed by mono pump in accordance with normal dam grouting practice.

Austress Menard provided:

- Technical expertise to review geotechnical information and design a grouting program
- Engineering expertise to carry out site trials and analyse the results
- Specialist equipment, material and labour
- Expert supervision of site operations

The work was completed ahead of schedule in August 1997 and demonstrated the innovative use of grouting techniques to provide most effective alternative solutions

SYDNEY

13-15 Lyonpark Road, Macquarie Park NSW 2113
Tel: 61 2 9491 7100 Fax: 61 2 9491 7111

BRISBANE

20 Bogan Street, Albion, QLD 4010
Tel: 61 7 3862 1511 Fax: 61 7 3862 1516

MELBOURNE

41 Boundary Road, North Melb. VIC 3051
Tel: 61 3 9321 1333 Fax: 61 3 9326 8996

AUCKLAND

PO Box 72734, Papakura, Auckland NZ
Tel: 64 9 236 3385 Fax: 64 9 236 3385