



FAIRBAIRN DAM SPILLWAY IMPROVEMENT

EMERALD, QLD

ANCHORING SERVICES

PROJECT

Provision of Anchoring Services for Fairbairn Dam Spillway Improvement Project

CLIENT

Sunwater

FORTEC CONTACT

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DESCRIPTION

Fairbairn Dam spillway crest and chute were constructed between 1969 and 1972 from reinforced concrete. An inspection of the dam in 2015 recorded an increasing level of seepage through the joints in the spillway chute concrete slabs. After an investigation was performed, it was revealed that the transverse drainage underneath the chute floor had suffered varying degrees of damage and was blocked in places. Varying degrees of corrosion were also found in the ground anchors.

The works were confined to the 10:1, 2:1 slopes of the spillway chute, dissipating areas and included reinforced concrete continuously poured forming an overlay slab over the existing concrete spillway surface.

Fortec was engaged by Sunwater to undertake drilling, grouting and installing of anchors as part of the Fairbairn Dam Spillway Improvement Project.

The scope of works consisted of:

- ▶ Trial anchor to verify drilling waterproof grouting and anchor installation procedure
- ▶ Supply drill rig and drill equipment to drill holes
- ▶ Waterproof grouting and re-drilling of anchor holes
- ▶ Water testing of anchor holes
- ▶ Fabrication of anchor arrangements
- ▶ Installation of fabricated anchor arrangements
- ▶ Installation and grouting of passive anchors

HIGHLIGHTS

- ▶ Developed drilling and grouting procedure to overcome artesian water encountered in the porous sandstone material in the spillway foundations.
- ▶ This project forms part of SunWater's ongoing Dam Safety Improvement Program. The first stage of the improvements commenced in April 2016 and was completed in December 2016. The second stage commenced in April 2017 and is scheduled for completion early 2020.



IMAGES (FROM TOP TO BOTTOM)

- ▶ Overview of works.
- ▶ Slope access system.
- ▶ Anchor drilling in progress.