



Project name: McKay's Tunnel

Client: Manawa Energy

Project date: 2022-23

Project description

Manawa Energy engaged Geotech Ltd to refurbish the existing 440 metre McKay's Tunnel, part of the Kaneire Forks Hydroelectric System. This tunnel was originally driven in the 1880's, through fluvioglacial gravels for the purpose of powering nearby gold dredges. A 2021 inspection revealed a 12-metre fall of ground (FOG) within the tunnel, as well as other areas of failing tunnel lining.

Geotech were tasked with removal of FOG material, and stabilisation of tunnel lining. Stabilisation works included installation of new timber lining and props, using a steel "ranter" set for overhead protection allowing further progress through areas of instability. Along with the ranter sets, spiling was also employed as a temporary means of overhead protection during advance and installation of timber lining. Similarly, a cellular concrete crash deck was used in roof voids to further safety during works.

Due to the removal of material, this project fell under the Health and Safety at Work (Mining and Quarrying Operations) Regulations (2016), known as MOQO. Geotech worked seamlessly alongside Manawa Energy and Worksafe in development of principal hazard management plans and mine plans under these regulations.

Geotech provided a modest team of skilled operators, who undertook works safely and efficiently despite the confined (2x2 metre) space. Staff on this project have a wide range of tunnelling and underground unit standards (including US7146), as well as years of tunnel works experience, ensuring safety and quality in these works.

Resources applied

Yanmar CR12 rubber tracked buggy (1t capacity)
Yanmar 1t excavator (with mounted rock breaker)
Eimco 911 underground loader

Heavy machinery was supported by hand tools, grout mixers and pneumatic pumps. All machinery was MOQO compliant, including use of 110v electrics.

Project value

2 million NZD

Client Contact

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