

PROJECT DETAILS

Customer:

OceanaGold, Waihi

Location:

New Zealand

Project Duration:

June 2019 – November 2019

Products Offered:

- GFRP Joinable Bolts

Industry Sector:

Mining - Hard Rock

Applications:

Ground control



RAISBORE REINFORCEMENT WAIHI GOLD MINE.

OceanaGold's Waihi Gold Mine is a narrow vein underground mine located in the North Island of New Zealand.

As part of the mine extension project from the Correnso to the Martha orebody, a new ventilation shaft was required to be raise bored through some challenging ground

CHALLENGE

As part of the Martha extension project, Waihi required an upgraded ventilation system to ensure sufficient air quality for the Martha underground.

Part of this upgrade required raise boring a 4.5 m diameter Return Air Rise, 120 m long, from the 800 level to the 920 level.

The top 40 m of the shaft was expected to be in poor ground due to the presence of narrow quartz veins. Additional reinforcement was required to assist with the stability of the shaft through this section.





SOLUTION

Minova supplied 540 joinable Glass Fibre Reinforced Polymer (GFRP) bolts for the reinforcement of the ventilation shaft.

Design of the GFRP pattern involved evenly spacing 23 holes around the circumference of the ventilation raise, offset 0.5 m from the proposed shaft wall. An additional four holes were positioned in the centre of the shaft to provide face support to the raise bore.

Twenty GFRP's were required for each hole and were grouted in once installed.

RESULT

During excavation of the ventilation raise, there were no issues encountered within the expected poor ground which had been reinforced with GFRP bolts. No overbreak was observed through this section of the shaft either.

ACHIEVEMENTS

- Return Air Rise was mined through the GFRP reinforced ground with no issues
- No overbreak was observed in the reinforced ground

**SECURING
PERFORMANCE
TOGETHER.**