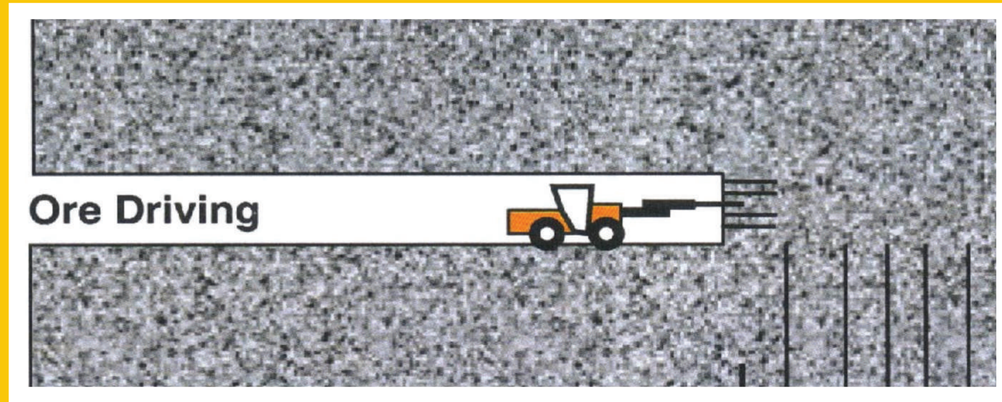
Developing a gold mine

To access the gold bearing ore body, FGM develops a series of tunnels which are typically 5.5m wide and 5.5m high.

This starts by creating an access portal at the surface and a main decline, which runs at a 1:7 gradient.

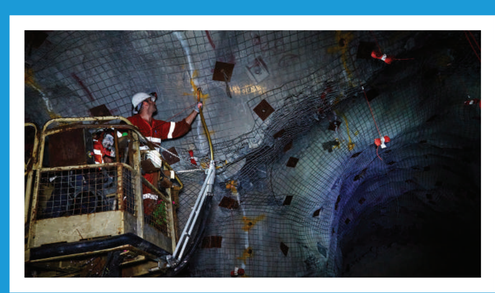


Once the decline has reached the desired depth, horizontal tunnels are then developed in order to reach the ore body.

The furthest end of a tunnel, is called the “face”.

A jumbo drill, a Load Haul Dump machine (also known as a “bogger”), haul truck and shotcrete machine are used to bore out the face and lengthen the tunnel. It involves the following steps:

1. The jumbo drills multiple holes in the face.



2. These holes are then charged (filled with explosives).

3. The explosives are detonated and create a pile of broken rock (either waste or ore).

4. The bogger loads out all the broken rock and either deposits it into underground voids or loads it onto haul trucks to be taken to the surface.

5. The shotcrete machine then sprays the new tunnel area with a layer of shotcrete.

6. The jumbo drill returns to install ground support into the rock to stabilise the tunnel.

This process takes 24 hours and adds approximately 4m of length to the tunnel at a time.

Battery-powered loader

Fosterville Gold Mine is trialling a battery electric loader with a vision to move to a battery powered fleet in the future.

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