

# Drilling & Blasting

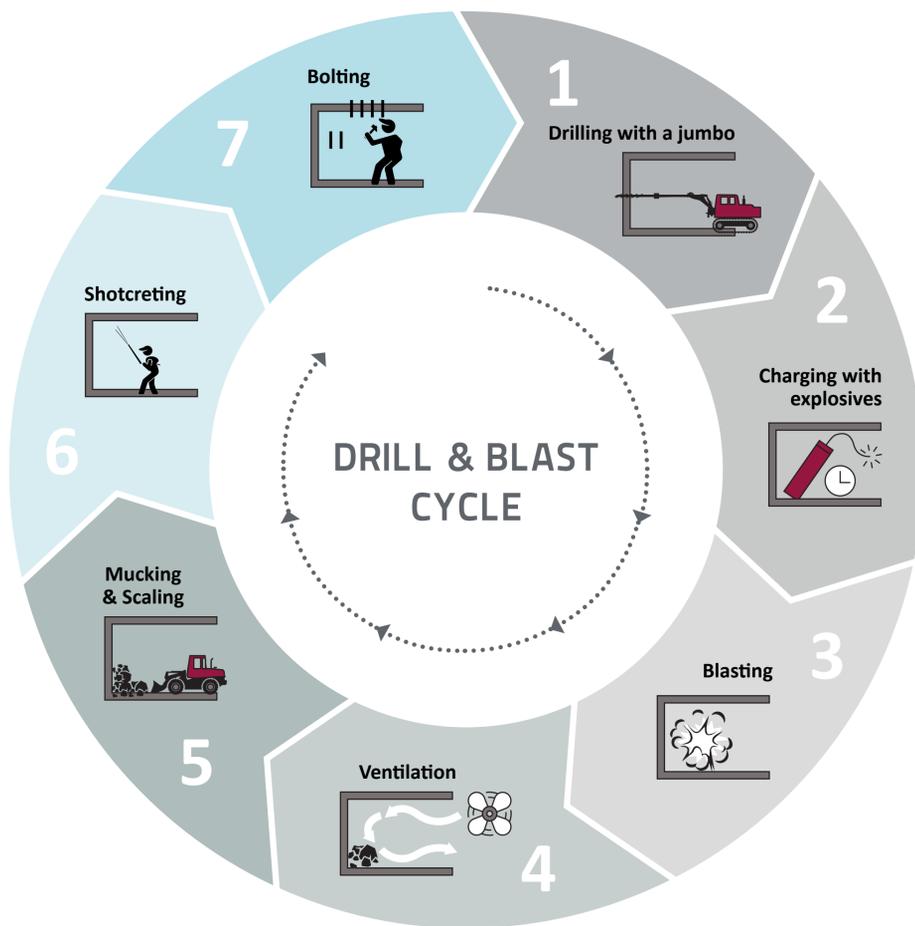
No adverse impact on public amenity or third party damage from blasting



The cut and fill method involves drilling into the site rock and using controlled blasting to break the rock into a transportable size to bring it to the surface where the gold containing rock (ore) will be loaded onto trucks and taken to Strathalbyn for processing. Rock without gold will be used for backfilling the mine voids.

## Drilling

A pattern of holes 30mm – 45mm in diameter are drilled using specialised drilling machines (Jumbo) to a depth of approximately 3.5m – 5.0m into the 'face'.



## Blasting

A typical development face will use 250 – 300kg of explosive product in 50 – 60 holes. Holes are fired in a timed sequence to allow the fired rock to move out of the way of the next hole being fired.

The timing of a single heading blast will take less than 5 seconds. Overall blasting will take less than 60 seconds per day.



A 'Jumbo' drill rig drilling out a development face in a decline tunnel



Typical drill bit



Setting explosives in tunnel 'face'



Controlled firing

## Shotcrete

- Sealing the decline and mine voids.
- Small aggregate concrete mix applied to walls to create a 'shell' or cover.
- Prevents smaller rocks from slipping out of the walls.
- Common applications include mining, civil applications (retaining walls, road cuttings, tunnel linings etc).
- Helps seal cracks minimising ground water entering the mine.

A similar process has been successfully used in local infrastructure projects like the Heysen Tunnels on the South Eastern Freeway.

## Controlled & targeted blasting

- Removes rock to produce the tunnel or to remove rock containing gold.
- Blasted rock allows for ease of handling – no big lumps!
- Minimises damage (including vibration and overpressure damage) to the rock left in the newly exposed surfaces – less damage means a safer environment for miners as well as less ground support required.



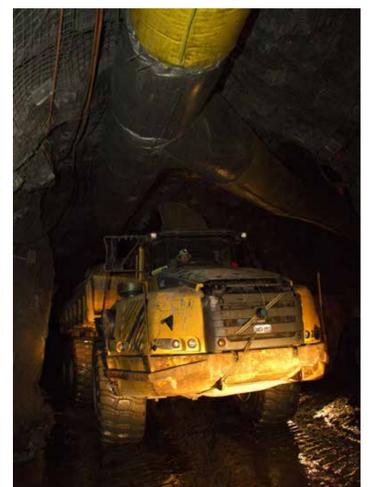
SA Chamber of Mines and Energy Student Inspections at Strathalbyn



Shotcrete Stabilisation



'Jumbo' Drilling Rig



Underground Truck