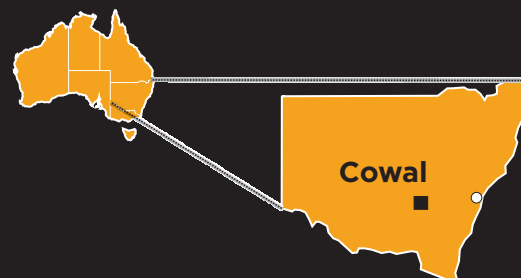




updated June 2021

# Cowal operation - a world-class system


[www.evolutionmining.com.au](http://www.evolutionmining.com.au)
**Location:** 350km west of Sydney, 40km north-east of West Wyalong**Site management:** John Penhall - General Manager**Situated on the traditional lands of the Wiradjuri People****Producing:** Gold**Management:** Owner operator**Contact number:** +61 2 6975 4707

## ➔ Key facts

- **FY21 production guidance:** 205,000 – 230,000oz
- **FY20 AISC:** A\$933/oz
- **FY21 AISC guidance:** A\$1,240 – 1,300/oz
- **TRIF<sup>2</sup>:** 5.2 (12mma March 2021)
- **Mineral Resources:** 290.2Mt at 1.04g/t Au for 9.7Moz<sup>1</sup>
- **Ore Reserves:** 137.9Mt at 1.04g/t Au for 4.6Moz<sup>1</sup>
- **Tenement package:** 1,358km<sup>2</sup>
- **Mine life:** 11 years
- **Mining method:** conventional open pit
- **Ownership:** 100%
- **Plant throughout:** ~9.0Mtpa (permit to 9.8Mtpa)
- **Process method:** crushing, two stage grinding, sulphide flotation, regrind and CIL recovery
- **Recovery:** ~85%
- **Grid power:** through 132kV transmission line
- **Mineralisation type:** structurally hosted sheeted veins and shear hosted lodes (epithermal to mesothermal)
- 500+ local jobs (>70%)
- A\$18M in royalties to NSW paid in FY21
- **Mining commenced:** 2005
- **Processing commenced:** 2006

## Building towards a sustainable 350,000ozpa of safe, reliable, low-cost production

- Organic growth of Mineral Resources from 3.4Moz to 9.7Moz and Ore Reserve growth from 1.6Moz to 4.6Moz under Evolution ownership
- Continued growth is expected from high-grade underground orebodies which remain open
- Large open pit Ore Reserves provide long-term base load production
- Development of a new underground mine is a key step to increasing annual production to 350,000 of low-cost ounces together with:
  - Underground Feasibility Study underway
  - Integrated Waste Landform (Stage 1B underway),
  - Stage H E42 Cutback
  - Production from satellite pits outside E42 (Pre-feasibility study commenced)
- Supportive stakeholders, community and government

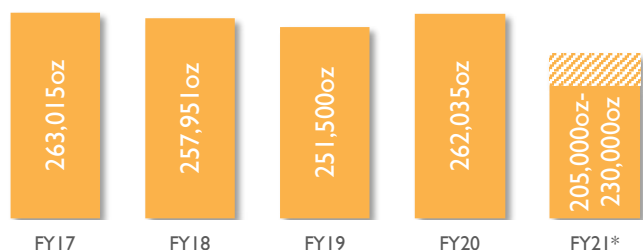
Subject to internal and regulatory approvals the underground mining development project will assist to extend the life of the operation to 2039.

## PATHWAY TO COWAL UNDERGROUND PRODUCTION



# Snapshot

## Gold production (oz)



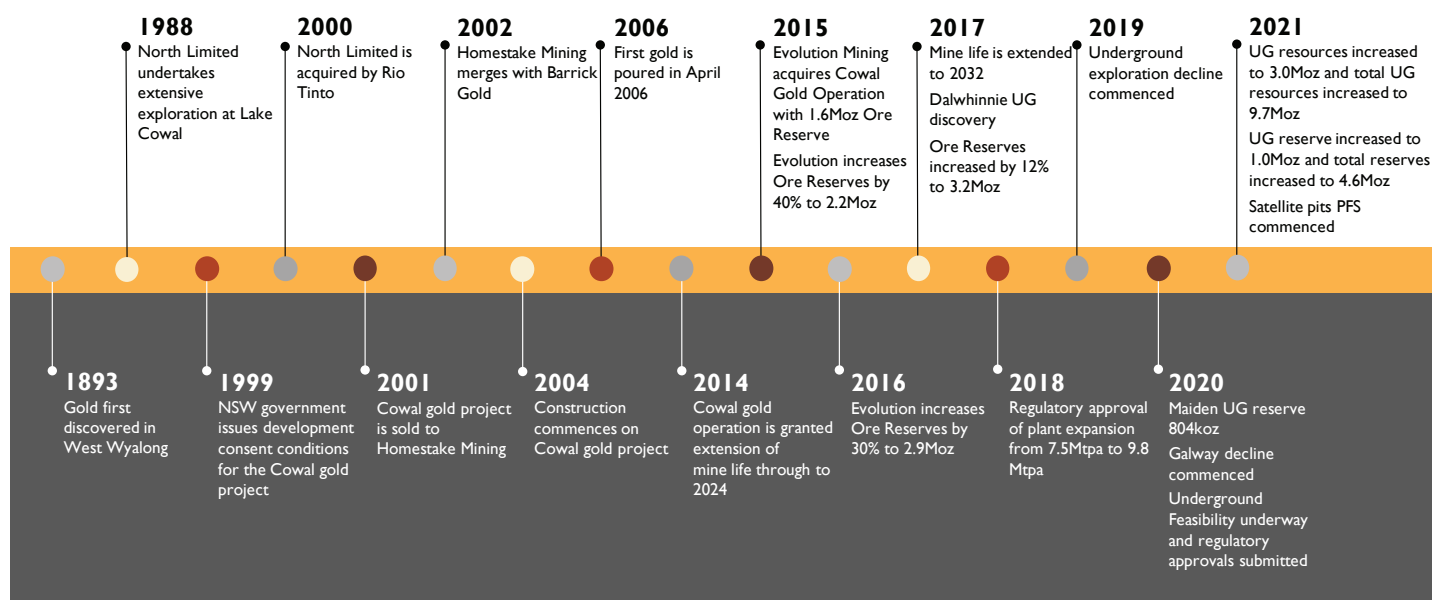
## AISC (A\$/oz)



\* denotes FY21 guidance

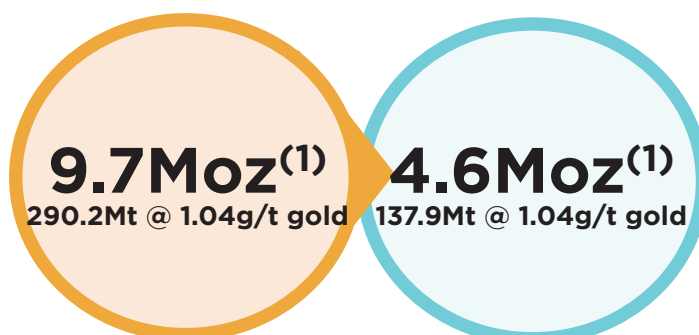
Historic performance data can be accessed at our [Interactive Analyst Centre™](#)

## History - Cowal Evolution



## Organic Growth

### Mineral Resources (Dec 20)      Ore Reserves (Dec 20)



1. For further details refer to ASX release "[Mineral Resources and Ore Reserves Statement](#)" released to ASX on 17 February 2021

2. TRIF: Total recordable injury frequency. The frequency of total recordable injuries per million hours worked. Results above are based on a 12 month moving average as at March 2021

# Discovery

We are committed to organic growth by the discovery of new gold deposits at our existing operations and across our portfolio of greenfield exploration projects.

Under Evolution ownership (2015), we have achieved organic growth at Cowal of 6.2 million ounces in Mineral Resources and 3.0 million ounces in Ore Reserves since acquisition by Evolution in 2015 (net of mining depletion of 1.7 million ounces). Further growth opportunities include GRE46 underground extensions, E42 below Stage H, E41 and E46 open pit extensions.

Early stage exploration continues across the Cowal tenement holding. The area is prospective for the discovery of further epithermal gold deposits (similar to E42) as well as porphyry Copper Gold deposits (similar to Marsden, Cadia (Newcrest) & North Parkes (CMOC)).

*The underground potential at Cowal is presented in a 3D animated video available [here](#).*

## Geology

Mining at Cowal currently exploits the E42 deposit, with a feasibility study underway on UG development of the GRE46 deposit, and pre-feasibility studies underway for the E41 and E46 Open Pits. The gold deposits occur within the 40km by 15km wide Lake Cowal Volcanic Complex. The Lake Cowal Volcanic Complex is part of a dismembered ancient volcanic island arc, the Macquarie Arc, that formed around 480Ma, similar to modern day arcs in Indonesia and PNG. The deposits occur within a 5km (n-s) by 2km (e-w) trend known as the Gold Corridor.

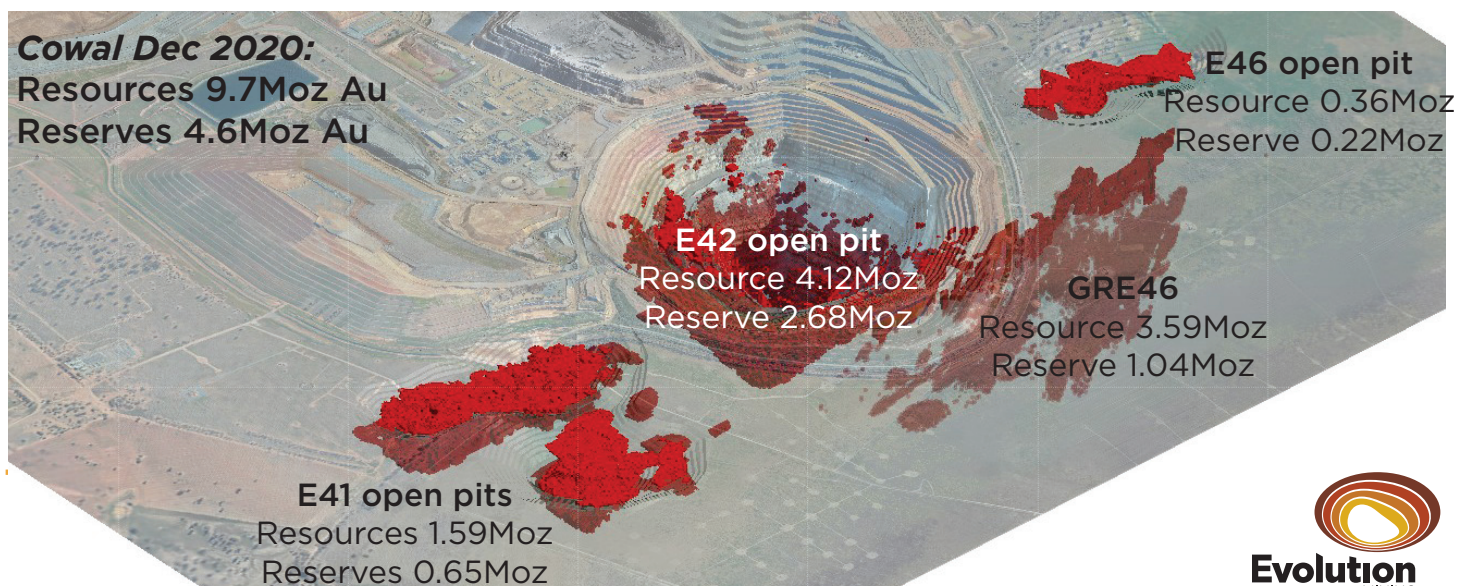
Deposits within the gold corridor are carbonate-base metal epithermal deposits (after Corbett & Leach). The rocks hosting the mineralisation comprise a sequence of sediments (mudstones, sandstones, conglomerates) and lava units that have been intruded by a suite of different intrusive rocks. In the E42 deposit, the main hosts to mineralisation are a trachyandesite lava units, and differentiated parts of the Muddy Lake Diorite. At GRE46, Trachyandesite Lava, the Dalwhinnie Lava and surrounding sedimentary units are the main hosts to mineralisation. At E41, mineralisation is hosted within a Quartz Monzonite, and around the contact between the Muddy Lake Diorite and its enveloping mudstones.

Mineralisation typically occurs in narrow (<2cm wide) quartz-sulphide veins with typical sulphides including pyrite, sphalerite, galena and chalcopyrite. Some telluride minerals are also present. Gold is typically hosted as inclusions within the pyrite although some free gold does occur.

Cowal Operations currently has two mining leases, ML1535 and ML 1791, covering approximately 29km<sup>2</sup>. Surrounding the mining leases, Evolution hold exploration tenure over a further 1,555km<sup>2</sup>, which includes the Marsden deposit located approximately 15km south-east of Cowal operations on EL5524.

The main gold deposits at Cowal are the E41, E42, E46, Galway and Regal. These gold deposits occur within the 40km long by 15km wide Ordovician Lake Cowal Volcanic Complex, east of the Gilmore Fault Zone within the eastern portion of the Lachlan Fold Belt. The overall structure of the gold deposits is complex but in general consists of a faulted antiform that plunges shallowly to the north- northeast. The deposits are aligned along a north-south orientated corridor with bounding faults, the Booberoi Fault on the western side and the Reflector Fault on the eastern side (the Gold Corridor).

The Cowal operation on Mining Lease (ML 1535 & ML1791) encompasses an area of 2,886 hectares and lies within Evolution's total property holding of ~13,800 hectares.





# Sustainability

The work we do on sustainability reflects our values driven approach to creating measurable value for our stakeholders through safe, reliable, low-cost gold production in an environmentally and socially responsible way. See our [2020 Sustainability report](#) provided on our website which describes our approach and performance in the areas of health and safety, environmental stewardship, helping our communities thrive, cultural heritage, innovation and the development of our people.

## Health and Safety

Safety is a core value at Evolution Mining and the wellbeing of everyone on site is crucial to our success as a company. At Cowal, we work to ensure everyone leaves the workplace, the same way they arrive. To accomplish this, we have an ever-improving health and safety culture, with an injury-free workplace target. At April 2021, Cowal's total recordable injury frequency (TRIF 12mma) was 5.2. Taking a risk-based approach our focus is on hazard identification, controlling critical and material risks with increased learnings from incidents through storytelling.

## Environment

We believe we have an obligation to not only achieve legislative compliance but to strive for best practice and to meet the expectations of the communities we operate within and are part of.

We are focused on enhancing environmental stewardship through the implementation of our environmental standards and life of mine environmental management plans across all project sites. For further information please go to our website [www.evolutionmining.com.au](http://www.evolutionmining.com.au).

In FY21 we improved our water security significantly by accelerating the completion of critical projects to mitigate the effect of drought conditions experienced in parts of the east coast of Australia. This work included:

- Increased recycling of water (20% annual increase) reducing demand on fresh water per dry tonne milled
- Accelerating a saline water source strategy that identifies, assesses, and implements saline water sources which are not used by regional agricultural or municipal stakeholders

Cowal operations is ISO14001 certified ensuring that we maintain an effective environmental management system (EMS). Additional to ISO 14001 certification, Cowal is a signatory to the International cyanide management code for the use of cyanide in the production of gold. This is a voluntary industry program for gold and silver mining companies that focuses on the safe management of cyanide.

## Community

Our Cowal operation sits within the Bland, Lachlan and Forbes Shires on the traditional lands of the Wiradjuri people. We recognise our obligation to create shared value for all our stakeholders, ensuring we leave the community in a better place than when we arrived.

We invest in and partner with our communities to achieve meaningful outcomes and we prioritise local procurement and employment and training opportunities, as well as health and wellbeing initiatives. We work in partnership with schools to raise awareness of the benefits of mining and future career pathways into the industry.

Our strong community support includes:

- A local employment focus
  - ~70% of employees reside across the region
  - ~5% of employees identify as Indigenous
- A local business focus
  - More than A\$37 million was spend on local procurement in FY20
- We are proud to work alongside
  - Wiradjuri Condobolin Corporation (WCC)
  - Lake Cowal Conservation Foundation (LCF)
  - Bland, Forbes and Lachlan Shire Council

For more than five years, Evolution Mining has supported projects and initiatives across the Bland, Lachlan and Forbes shires through sponsorship, donations and other contributions, in an effort to foster strong, sustainable communities that will thrive well beyond life of mine. Project and initiatives include the Lake Cowal Heritage Centre, Tivoli Theatre and Grazing down the Lachlan.

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# Mining

The Cowal operation is currently an open pit mining operation utilising conventional drill and blast, load and haul methodologies, mining nominally 9m benches as 3 x 3m flitches. Mining commenced in 2005 and processing started in 2006. Mining is carried out with a company-owned fleet of mining equipment. Ore is hauled by truck from the pit face to either a stockpile area or directly fed into the primary crusher.

The operation is currently scheduled to continue until 2032 and the processing until 2033 at current estimates. A Feasibility Study and regulatory approvals process is underway to prepare for a potential Underground development at Cowal which will extend the mine life until 2040.

**Ore mined:** 2.8Mt (FY20)

**Waste mined:** 0.16Mt Open pit operating waste, 14.0Mt Capital waste (FY20)

**Mine work roster:** 7/7, 8/6, 5/2, 4/3

**Explosives:** AN Suspension / Electronic & Nonel initiation systems

**Blasting contract services:** Maxam Australia P/L

**Drilling contract services:** SRG

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## Mining fleet

■ <b>Haulage/mine trucks</b> 20 x Cat 789C Dump Trucks 3 x Cat 785C Dump Trucks	■ <b>Shovels/excavators/loaders</b> 1 x Liebherr 9400 Excavator 1 x Liebherr 994B Excavator 1 x Liebherr 9200 Excavator 1 x Hitachi EX1200 Excavator 3 x Cat 992G Loaders	■ <b>IWL Equipment</b> 3 x Hitachi Excavators 4 x 777F Caterpillar Haul Trucks 5 x 745 Caterpillar Articulated Haul Trucks 2 x Watercarts
■ <b>Drilling equipment</b> 6 x Atlas Copco D65 (Hired) 1 x Drill rig Australia GC600	■ <b>Haul road maintenance equipment</b> 2 x Cat 16H Graders 1 x Cat 345 Excavator 2 x Cat 777D Water Carts	1 x 992G Caterpillar Loader 4 x Caterpillar Track Dozers 4 x Rollers 1 x 14M Caterpillar Grader
■ <b>Dozers</b> 5 x CAT D10T Tracked Dozers 1 x CAT834H Wheel Dozer		

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## Processing

The Cowal processing plant was commissioned in May 2006 and consists of crushing, two stage grinding, sulphide flotation, regrind and CIL recovery. The plant currently processes around 9.0Mtpa.

At 30 June 2020 over 3.5 million ounces of gold had been produced at Cowal.

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|---|--|
| <ul style="list-style-type: none"><li>■ <b>Power supplied</b> by AGL</li><li>■ <b>Crushing</b> Primary crushing: Metso 54-75 Superior MK-II gyratory crusher</li><li>■ <b>Grinding</b> FFE 36' x 20.5' SAG mill, FFE 22' x 36.5' ball mill. Forged steel 125mm balls (SAG), 80mm balls (ball mill)</li><li>■ <b>Screening</b> - Schenck Vibrating screens (SAG discharge), Delkor Linear (COF)</li><li>■ <b>Recycle crusher</b> - 2 x Sandvik H6800 hydrocone cone crushers</li></ul> | <ul style="list-style-type: none"><li>■ <b>Mineral liberation/recovery</b> -<br/>Method: flotation, regrind, CIL of flotation concentrate and tail<br/>Equipment: 2 x SK1200 and 10 x OK200TC (flotation), Metso Vertimill (VTM1000WB), 2 x Metso 355kW SMDs, Con Pre-ox - 4,000m<sup>3</sup>, 2 x 4,000m<sup>3</sup> Con Leach, 6 x 1,000m<sup>3</sup> Con CIL, 7 x 2,400m<sup>3</sup> Tail CIL<br/>Cyanide supply – Orica<br/>Lime supply – Boral<ul style="list-style-type: none"><li>■ <b>Refining</b> - 10t AARL elution circuit, ANSAC regeneration kiln</li><li>■ <b>Gravity Circuit</b> - Falcon concentrator / Acacia Reactor</li></ul></li></ul> |
|---|--|

# Process flowsheet

