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Executive Director Energy and Resource Assessments  
Department of Planning and Environment  
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**ADVICE RESPONSE:** Cowal Gold Operations Underground Development Project – Modification 1 (SSD-10367-Mod-1) – Advice on Modification Report

Dear Clay,

I refer to Department of Planning and Environment correspondence dated 17 August 2022 inviting the Department of Regional NSW – Mining, Exploration and Geoscience (MEG) to provide comments on the Cowal Gold Operations Underground Development Project – Modification 1 (SSD-10367-Mod-1) (the Modification) submitted by Evolution Mining (Cowal) Pty Limited (the Proponent).

**MEG position**

In view of the opportunities and constraints outlined in the Proponent's Modification and based on the information currently available, MEG considers that the Modification is consistent with the objects of the *Mining Act 1992*. Furthermore, in relation to clause 2.21 of the State Environmental Planning Policy (Resources and Energy) 2021, the Modification represents an efficient development and utilisation of minerals resources which will foster significant social and economic benefits.

MEG is satisfied that, should the operational outcomes be achieved, the proposed mine design and mining method submissions to be an efficient use of resources and will provide an appropriate return to the state.

**Executive summary**

The Modification proposed is to allow for a change of access to underground workings, minor changes to the mine design and an increase in annual production from 1.8 million tonnes per annum (Mtpa) to 2.6 Mtpa at Cowal Gold Underground Development Project (the Project).

The Modification will provide economic benefits to the state sooner than previously anticipated as the mine redesign will allow for higher production volumes than compared with the original EIS and thus providing royalties to the state sooner.

The Modification will further mine optimisation to:

- provide on average 160 full-time equivalent (FTE) continuing jobs during operations over a mine life of 17 years. The mine would also employ an additional 65 FTEs during the construction period
- Support a capital expenditure of approximately \$380 million.

MEG considers the Modification will provide an appropriate return to the NSW Government and be an efficient use of resources. If the Modification does not proceed the economic and social benefits of the overall operation may be limited.

### **Project strategic considerations**

The Cowal Underground Development Project (SSD 10367) was approved in September 2021, the development consent allowing for underground stope mining at a rate of up to 1.8 Mtpa, until the end of 2040.

The modification improves the safety and operational efficiency of the operation through:

- changing how the underground workings are accessed from the surface
- minor changes to the location of access tunnels to the underground stopes
- increasing the annual production rate from 1.8 Mtpa to 2.6 Mtpa, overall, the total resource will however remain unchanged (27 million tonnes (Mt)).

The overall benefits of the modification are:

- improvements to operational efficiency and safety
- preserving the potential for further expansion of the E42 open pit
- the potential to increase production rates will equate to royalties returned to the state sooner.

All gold from the Modification is expected to be sold in the form of unrefined gold bars.

### **Resource Assessment**

#### *Background*

Evolution has state-significant development approval in place to develop underground operations at the Cowal Gold Operations (CGO), located 38 kilometres northeast of West Wyalong. Mining at Cowal commenced in 2005 with open pit development of the E42 deposit and underground mining subsequently approved in 2021.

#### *Size and quality of the resource*

The current proposal refers to the GRE46 ore body which lies at depth beneath the eastern parts of the E46 resource, just north of the Cowal open pit (E42).

Mineralisation at CGO is of carbonate base-metal epithermal style. Pyrite is the most abundant sulphide and an important host mineral for gold. Deeper parts of the GRE46 underground deposit have minor epidote-K-feldspar-bearing alteration and slightly elevated Cu, suggesting slightly higher peak temperatures during ore emplacement.

Resources at CGO have been prepared in accordance with the 2012 Edition of the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code 2012).

Cowal Total Mineral Resources and Ore Reserves at 30 April 2020 (as approved - inclusive of open-cut and underground) were estimated at:

- Mineral Resources of 264.6 Mt grading 1.06 g/t for 9.0 Moz gold; approximately 50:50 indicated & inferred) and;
- Ore Reserves of 142.2 Mt grading 0.97 g/t for 4.4 Moz gold (all reserves blocks to at least 75% indicated level of confidence).

At approval, underground resources totaled 36.51 Mt @ 2.48 g/t Au.

**Table 1: Cowal GRE46 Underground Mineral Resource Statement - 2020**

Gold			Measured			Indicated			Inferred			Total Resource			CP <sup>1</sup>	Dec 19 Resource Gold Metal (koz)
Project	Type	Cut-Off	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)		
Cowal	UG	1.5	-	-	-	17.46	2.61	1,461	19.08	2.37	1,451	36.51	2.48	2,912	1	2,502

Data is reported to significant figures to reflect appropriate precision and may not sum precisely due to rounding. Mineral Resources are reported inclusive of Ore Reserves. UG denotes underground.

<sup>1</sup>Cowal GRE46 UG Mineral Resources Competent Person (CP) Notes refer to 1. James Biggam

2022 Resources (Table 2) for the GRE46 underground resource have changed only slightly overall from those at approval. Additional drilling, however, has increased indicated vs. inferred resources from 47.8% to 62.7%.

**Table 2: Cowal GRE46 Mineral Resource Statement - 2022**

Gold Resources Statement			Measured			Indicated			Inferred			Total Resources		
Project	Type	Cut-Off	Tonnes (Million)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Million)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Million)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Million)	Gold Grade (g/t)	Gold Metal (koz)
Cowal <sup>1</sup>	Open-Pit	0.35	24.8	0.46	367	207.5	0.83	5,555	37.3	0.78	929	269.6	0.79	6,852
Cowal	Underground	1.50	-	-	-	22.4	2.47	1,776	13.3	2.32	991	35.7	2.41	2,766

Current reserves stand at (probable) 14.4 Mt @ 2.31 g/t Au (1,069 Koz Au contained).

All reserves are from indicated resources.

### Resource recovery

The GRE46 underground project is to be mined by sub-level open stoping with paste fill, a technique typical of current Evolution underground operations. Underground production is proposed to increase from 1.8 Mtpa to 2.4 Mtpa for the same total project tonnage overall (27 Mt) with no change to mine life.

The current average gold recovery rate is 84-87% which will not change. The slightly different alteration assemblages and minor Cu mineralisation in deeper parts of the ore body are not abundant and will not substantively change recovery of Au, nor is sterilisation of Cu considered to be any issue.

### JORC code considerations

The Proponent has completed resource and reserve estimations for the Modification in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC code) produced by the Australasian Joint Ore Reserves Committee. The JORC Code is an industry-standard professional code of practice that sets minimum standards for public reporting of mineral exploration results, mineral resources and ore reserves. Reserves are the economically mineable portion of a resource. A JORC compliant reserves report assists in independently assessing the commercial viability of the Modification and the proposed mining method.

In view of the opportunities and constraints outlined in the Proponent's Modification and based on the information currently available, MEG considers that the Modification is consistent with the objects of the *Mining Act 1992*. Furthermore, in relation to clause 2.21 of the State Environmental Planning Policy (Resources and Energy) 2021, the Modification represents an efficient development and utilisation of minerals resources which will foster significant social and economic benefits.

MEG is satisfied that, should the operational outcomes be achieved, the proposed mine design and mining method submissions adequately recover resources and will provide an appropriate return to the state.

## The requirement for a mining authority and royalty liability

### *The requirement for a mining lease*

As gold is a prescribed mineral under the Act, the Proponent is required to hold appropriate mining title(s) allowing for mineral extraction, such as a mining lease, to undertake mining.

The mining and prospecting activities under the currently approved SSD-10367 are located within Mining Lease 1535 (Act 1992) (ML 1535). Based on current title information MEG advises that the Proponent holds the appropriate titles as required for mineral extraction. This satisfies the requirements of sections 5 and 73 of the Act within the limits of ML 1535.

Based on current authority information MEG advises that the Proponent holds the appropriate authorities as required for mining operations as relating to the project.

### *Royalty Liability*

The holder of a mining lease is also liable to pay a royalty for both publicly and privately-owned minerals (refer to section 282-285 of the Act).

## Biodiversity offset assessment

MEG requests that the Proponent consider potential resource sterilisation should any future biodiversity offset areas be considered. The Proponent must consult with MEG and any holders of existing mining or exploration authorities that could be potentially affected by the proposed creation of any such biodiversity offsets, prior to creation occurring. This will ensure there is no consequent reduction in access to prospective land for mineral exploration or potential for the sterilisation of mineral and extractive resources.

## Summary of review

MEG requests that it be provided with an opportunity to review the draft conditions of approval before finalisation and any granting of development consent.

For enquiries and further information on this matter, please contact Katherine Courtney, Senior Analyst Industry Advisory & Mining Concierge Unit within the Industry Development Branch on 02 4063 6860 or [mining.concierge@regional.nsw.gov.au](mailto:mining.concierge@regional.nsw.gov.au).

Yours sincerely,



**Adam W. Banister**

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for

**Tony Linnane**

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Department of Regional NSW - Mining, Exploration and Geoscience