

## CAPRICORN COPPER

19 December 2023

Queensland Department of Environment and Science

**ATTENTION:** Ms REBECCA MCAULEY

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Dear Rebecca

**CAPRICORN COPPER MINE**

**RE: APPLICATION TO AMEND EPML00911413  
ESPERANZA PIT – DSA AND INTERIM TAILINGS STORAGE CAPACITY**

Capricorn Copper Pty Ltd ('CCPL') has today submitted an application to amend Environmental Authority EPML00911413 (the 'EA'), pursuant to which CCPL seeks:

- changes to the hydraulic performance criteria prescribed under the EA for regulated structures – principally the Esperanza Pit (the 'EPit'); and
- an extension of the existing authorisation to deposit tailings into the EPit, consistent with past practices, for an interim period of up to 11 months as CCPL transitions the Capricorn Copper Mine (the 'CCM') to the life-of-mine ('LOM') tailings strategy, (the 'Application').

**Application materials**

The Application comprises:

- the prescribed form for an amendment of the EA;
- this letter;
- a comprehensive supporting submission report, prepared by CCPL's external consultant for environmental approvals, Epic Environmental (the 'Supporting Report'); and
- as appendices to the Supporting Report, the following technical reports:
  - System Design Plan (including Water Balance Model Report (the 'WBMReport'), and EPit Operation, Maintenance and Surveillance Manual);
  - EPit, Esperanza TSF ('ETSF') and Mill Creek Dam ('MCD') Consequence Category Assessment (the 'CCA'); and
  - EPit Tailings Management Plan.

The Application materials include a checklist of prescribed application requirements, identifying (where applicable to the Application) where in the Materials the requirements are addressed.

Where applicable, and in accordance with guidelines published by the Queensland Government Department of Environment and Science (the 'DES'), technical reports provided by this application have been prepared by a requisite Registered Professional Engineer of Queensland ('RPEQ').

Other than the WBMReport and CCA, which are certified and signed by the RPEQ, relevant documents are provided in final draft form pending approval of the Application.

The Application seeks an assessment level decision of Minor. This is consistent with the DES' assessment level decision for a prior amendment to the EA approved in 2017 in relation to (among other things) tailings deposition in the EPit. The Supporting Report includes CCPLs consideration of the prescribed assessment level decision criteria.

## Context and Rationale for Application

To assist the DES, CCPL provides the following by way of context and rationale for the Application.

### **Background and environmental management priorities**

CCM has a long operating history, characterised by a wide range of operating activities, numerous periods of CCM being placed in care and maintenance, various changes in ownership, and changes in environmental management practices. This history contributes to the historic compliance performance of the site.

CCPL has invested (and continues to invest) heavily to implement improvements at CCM to put the site on a sustainable long-term footing, in the interests of all stakeholders. CCPL's investment has included a focus on developing a long-term plan for key regulatory approvals.

CCPL's two highest priorities for environmental management are:

- water management – seeking to address issues for the site and put CCM on a sustainable long-term footing for compliance and environmental risk management; and
- tailings management – formulating and implementing a long-term plan for tailings capacity to support mining operations.

The Application intersects with both these priorities, with the proposed EA amendments to:

- assist with ongoing water management with a clear pathway to compliance - implementing changes to the prescribed hydraulic performance criteria for the EPit:
  - calculated by strict application of the published *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* Version 5.02 (the 'Manual');
  - incorporating layers of conservatism to ensure environmental risks are managed;
  - calibrated against 44 months of *actual* site data; and
  - informed by the performance of established water management infrastructure and management systems during a more than 1:200-year event (in March 2023) – refer below; and
- to extend previously approved tailings deposition in the EPit, providing tailings storage capacity for an interim period as CCPL transitions to the LOM tailings strategy.

### **DES concerns regarding changes to EPit hydraulic performance criteria**

CCPL acknowledges that:

- the DES has recently refused an application to amend the prescribed DSA for the EPit (ref: A-EA-AMD-100331903); and
- the amendments to the prescribed hydraulic performance criteria under the [current] Application are more extensive than the prior application.

In submitting the Application, CCPL has not disregarded the concerns raised by the DES in its decision regarding the prior application, far from it. The Application materials include responses to the reasons given in the DES decision on the prior application (from page -v- of the Supporting Report).

In the materials supporting the Application, CCPL has provided additional detail, particularly regarding key assumptions applied in the modelling, how those assumptions have been validated (e.g., extensive calibration, applying 44 months of actual data), and sensitivities.

### ***Risk of environmental harm***

CCPL notes that the management of the risk of an uncontrolled release from regulated structures at CCM sits at the heart of the concerns raised by DES (in the reasons given for its decision on the prior application).

In addition to the deliberate and extensive layers of conservative applied in formulating the proposed changes to the hydraulic performance criteria (referred to above), CCPL submits that in consideration of the Application the DES should have due and full regard to the extreme weather event in March 2023:

- an event characterised as a greater than 1:200-year event (far exceeding the standard prescribed by published DES guidelines for hydraulic performance criteria); and
- which event, **did not** result in any uncontrolled release of mine-affected water from regulated structures (including the EPit) to the environment - this was achieved despite water levels in the EPit being ~215.1 m AHD at commencement of the wet season (*current* EPit DSA: 217.7 m AHD; Mill Creek Dam was below its prescribed DSA).

CCPL considers that the extreme weather event serves as a significant consideration when assessing the actual capacity of the water management system at CCM, even before taking into account the many improvements implemented by CCPL since the extreme weather event.

### ***Long-term tailings storage strategy***

Since 29Metals acquired CCM, in mid-2021, the remaining tailings capacity in established facilities has been short (c.1-2 years). As a result, under 29Metals' ownership, a critical focus for CCM has been formulating a long-term tailings storage strategy.

The work to formulate a long-term strategy for tailings storage capacity (the '**LT Tailings Strategy**') has been iterative in nature and has included:

- changes to respond to matters raised by the DES; and
- experience gained through applications for regulatory approvals over the period.

Under the LT Tailings Strategy, CCM will have planned tailings storage capacity of approximately 12 years, commencing in the quarter ending 31 March 2024 (subject to regulatory approvals) – equating to approximately 12.24 Mt of tailings capacity - which extends beyond the *current* LOM for the site (based on estimated Ore Reserves alone).

The foundation of the LT Tailings Strategy is a new engineered tailings storage facility – to be called **TSF3**. The first stage of TSF3 is expected to have up to ~7.2 million m<sup>3</sup> of tailings capacity, supporting mineral processing operations at CCM for ~six years. Stage 1 of TSF3 alone, with up to six years capacity, will be a *step change* in available tailings capacity for CCM.

For comparison purposes, the table below summarises the tailings capacity for recent tailings storage facilities utilised or proposed for CCM since 2017, up to and including the first stage of a future TSF3.

Facility	Status	Est. Capacity (months)
EPit	Utilised (2017-2021)	~51 (act.)
ETSF Lift 1	Operating (2022- )	~27 <sup>1</sup>
ETSF Lift 2	Application on foot	~ 6
<b>EPit 2024</b>	<b>Current application</b>	<b>~ 11</b>
<b>Future TSF3 Stage 1</b>	Application planned to be submitted Mar-Qtr 2024	~72

- <sup>1</sup> Capacity (months) for ETSF lift 1 extended to ~Apr-24 as a result of the suspension of mining and mineral processing operations following March 2023 extreme weather event, and lower milling rates in phased operations restart

The step change in capacity that TSF3 provides, in turn, provides the planning certainty and time required to prepare relevant applications (and supporting activity) for the subsequent stage(s) of the LT Tailings Strategy. Such a staged approach is common, striking an appropriate balance between regulatory certainty, stakeholder engagement and cost.

#### **Current Application – extension of authorisation to deposit tailings in EPit for interim period**

TSF3 will be a new engineered tailings storage facility to be located at a previously undisturbed area of the site within existing mining tenure. As such, there is necessarily an extensive body of work required as a precursor to submitting a comprehensive application for necessary amendments to the EA.

Currently, it is anticipated that the EA amendment application, and applicable supporting documentation, will be ready for submission in the quarter ending 31 March 2024. The time required to complete this work is a function of:

- the circumstances of TSF3 (ie, new engineered facility, new location); and
- the impact of delays to other approval processes over the past 18 months (both tailings and non-tailings related) which has required redirection human and financial resources, as has the extreme weather event in March 2023.

As a result, there is a 'gap' between the time when tailings storage capacity in ETSF Lift 1 is expected to be fully utilised and the earliest date that it is feasible for deposition of tailings to commence in ETSF3.

Previously, CCPL's plans assumed tailings capacity between ETSF Lift 1 and TSF3 would be delivered by a second (and potentially third) lift of the ETSF – an EA amendment application for ETSF Lift 2 was originally submitted to the DES in August 2022 (and re-submitted in December 2022). Currently, the ETSF lift 2 EA amendment application is due to be determined by the DES on or before 29 February 2024.

The considerable uncertainty regarding approval of ETSF Lift 2 (and, by extension, confidence in the duration of the approval process and any approval for a further ETSF Lift 3) has necessitated CCPL examining alternative options to provide tailings capacity for the gap in tailings capacity between ETSF Lift 1 and TSF3.

To overcome this:

- CCPL has adjusted operating plans to seek to maximise utilisation of remaining capacity in ETSF Lift 1; and
- As outlined in the Application, CCPL proposes to return to tailings deposition in the EPit for the period of up to ~11 months.

As outlined further in the Application materials, key points in support of the Application include:

- the EPit is a technically sound location for deposition of tailings, considered effectively *watertight* below the maximum operating level prescribed by the EA (which is not proposed to be amended);
- it is proposed that the maximum level (m AHD) of tailings deposition would be substantially below the level of known environmental risk – via seepage at the EPit level 222 m AHD;

- tailings deposition in the EPit has previously been approved – as a minor amendment in 2017, which approval was provided in circumstances where water levels in the EPit exceeded the prescribed DSA; and
- approval of this Application will enable continuing operations at the site which is in the public interest for:
  - local, regional and state economic reasons; and
  - environmental outcomes, as maintaining operations positively supports continuing investment in sustainable environmental performance and compliance improvements.

As the DES is aware, this application is of critical importance to CCM. CCPL and its technical advisers stand at the ready to clarify and address any concerns that the DES may have regarding the Application.

Yours sincerely

**CAPRICORN COPPER PTY LTD**



**PETER ALBERT**

Managing Director & CEO, 29Metals Group